

**SERNIS**

LIFE IS TOO SHORT TO  
**WASTE TIME  
LOOKING FOR  
PARKING**

Intertraffic  
INNOVATION AWARD  
2018  
**NOMINEE**



**iMAPARK**  
REQUEST. ARRIVE. PARK.



# iMAPARK

The logo 'iMAPARK' is displayed in white on a blue background. A white horizontal line with three brackets underneath it spans the width of the text. Three vertical lines connect the bottom of these brackets to the labels 'Intelligent', 'Management', and 'Parking' respectively. The 'i' is lowercase, while 'MAPARK' is uppercase.

Intelligent

Management

Parking

# THE PROBLEM

Parking issues cause **street congestion** and **wasted time** for drivers searching for spots



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# Large cities currently face major traffic problems

The increase in population (and consequent increase in passengers) leads to traffic congestion in urban areas.



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30% traffic congestion in urban areas is caused by drivers seeking a available parking spot

This wastes time, is inconvenient and increases carbon dioxide emissions.



# THE OPPORTUNITY

The European Union has **130 million parking spots** in the public roads



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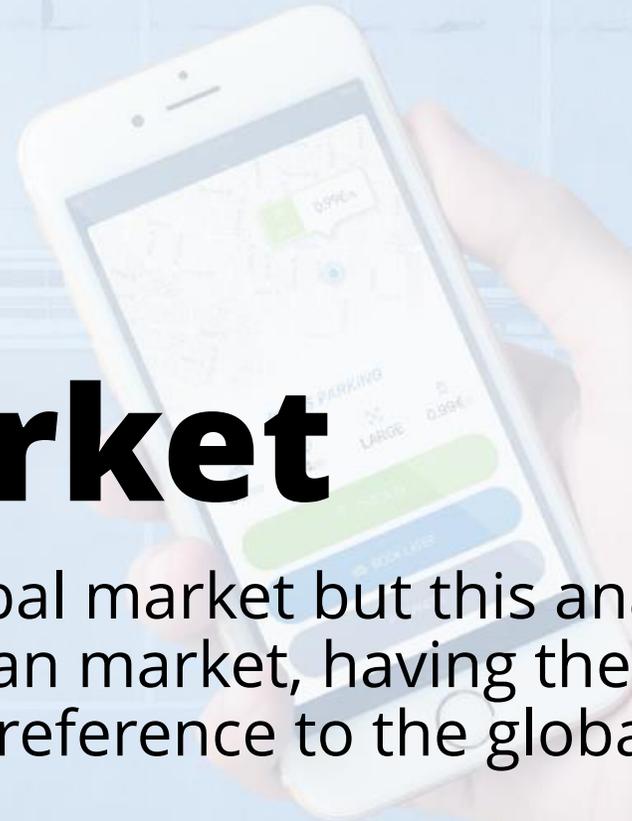
## iMAPARK

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# The Market

iMAPARK have a global market but this analysis will be based in the European market, having the study EU car parking market as a reference to the global market.



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✓ Parking spots on public road are very important to cities. **Cities must have enough parking spots to provide their residents and visitors with a place to park the car.** If people can not find a parking spot, they probably will not go back to that city to shop, eat, or spend money in any other way.

✓ **iMAPARK allows drivers to locate a available parking spot that best suiting them as quickly as possible.** From the application is possible to **find and reserve the parking spot for a certain time**, receive voice guidance to the parking spot, **extend the parking time** and **paying** the service, making parking in the center of cities easier and more convenient.

✓ It allows drivers to **save time, fuel** and other costs by **reducing search time, accidents and CO2 emissions**, helping to improve the urban environment.

✓ Meanwhile, this solution provides municipalities/parking companies with a **real-time management platform** that ensures system-oriented scheduling and targeted analysis data by developing complex historical and information reports. This tool will provide **valuable information to achieve an optimized and efficient parking management service.**

## COUNTRIES WITH MORE PARKING SPOTS IN PUBLIC ROADS



**2 638 385**

Parking spots in  
public roads in  
Germany



**1 600 000**

Parking spots in  
public roads in the UK



**1 028 250**

Parking spots in  
public roads in France



# THE PARTNERSHIP

SERNIS, Globaltronic and Altice Labs joined forces to create the iMAPARK solution with the aim of creating an **integrated parking control system**



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## SERNIS

- SERNIS is a company in the area of development, production and commercialization of products and solutions in the areas of **Road Safety**, LED Lighting, Fiber Optics and Electronic Displays.
- Road Safety is the core business of the company.** SERNIS offers a wide range of products for Road Safety – Road Studs, Flexible Bollards, LED Signs, LED Traffic Lights, VMS, Controllers and ITS - which combine technological innovation with efficiency and high performance, answering to the great challenges of quality and competitiveness in the international market.
- SERNIS has developed the **solar signaling devices** for the iMAPARK project as well as **informative Electronic Displays** with LED technology. SERNIS is also responsible for the commercialization of the system.

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## Globaltronic

- Globaltronic is a company in the area of development and commercialization of **electronic and telecommunications products and services**.
- Globaltronic has developed the **hardware, firmware and communication system** related to the iMAPARK project.



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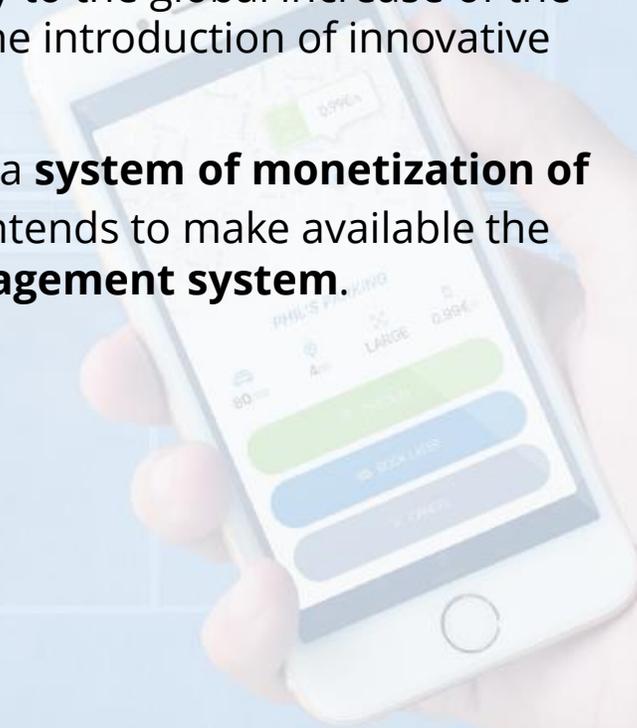
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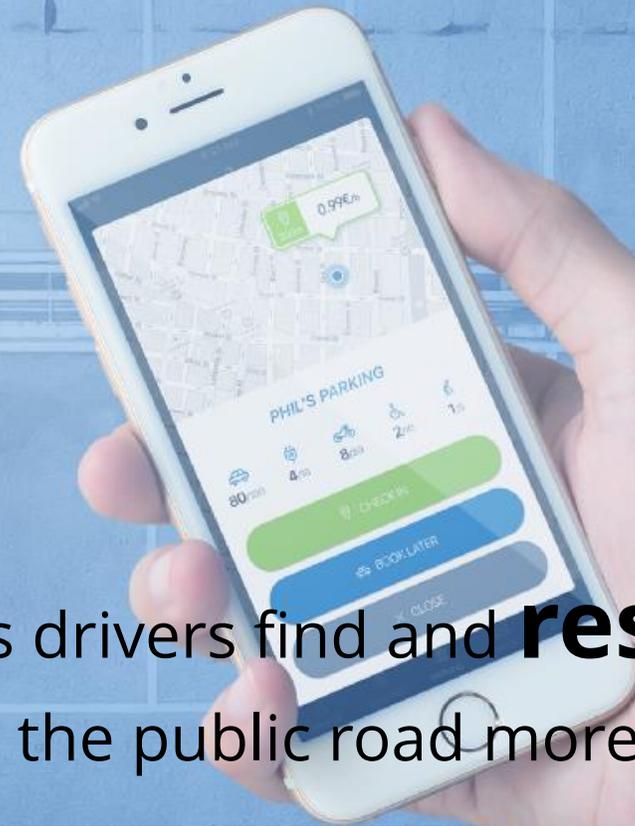
## Altice Labs

- Altice Labs is a company of the Altice Group, aiming to develop new products, services and applications for the **telecommunication and information systems market**, contributing in a sustained way to the global increase of the value of this market through the introduction of innovative products and solutions.
- Altice Labs has developed a **system of monetization of IoT** and, within this initiative, intends to make available the **client interface** and the **management system**.



# MAIN FEATURES

**Intelligent system** that helps drivers find and **reserve a available parking spot** on the public road more quickly



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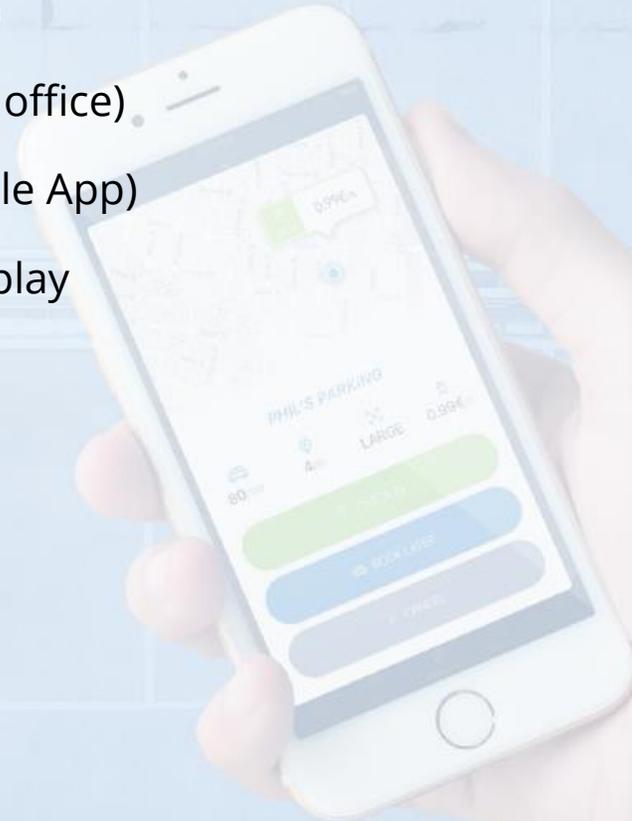
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## 5 stakeholders

- System Administrator (Back office)
- Park Manager (Back office)
- Enforcement Officer (Back office)
- Customers (Web and Mobile App)
- Electronic Information Display



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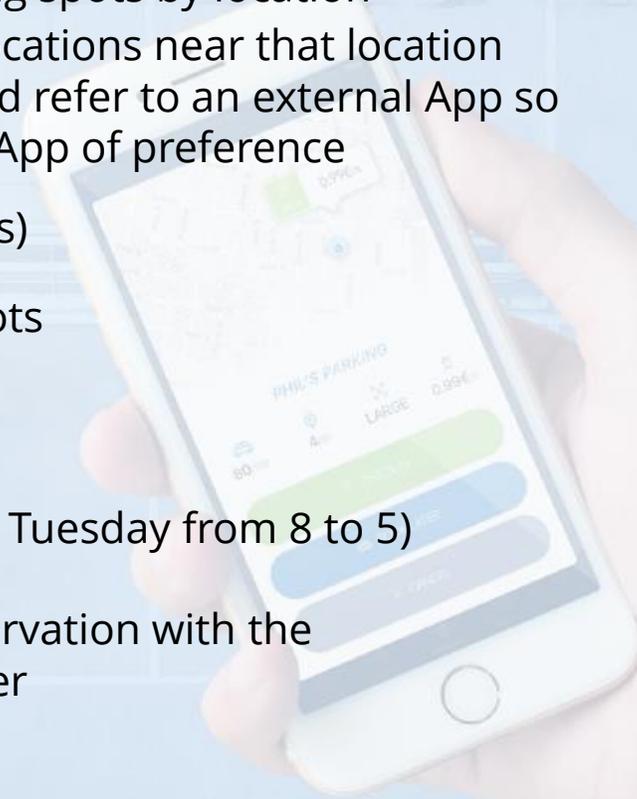
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## Basic features - Customers

- Registration and Profile
- Search for available parking spots by location
  - Will show different locations near that location
  - The navigation should refer to an external App so that the user can use his App of preference
- Entry of registration plate(s)
- Reservation of parking spots
  - Geographic position
  - Hour
  - Time
  - Weekly repeat (every Tuesday from 8 to 5)
  - Extend parking time
  - Response to the reservation with the assigned spot number



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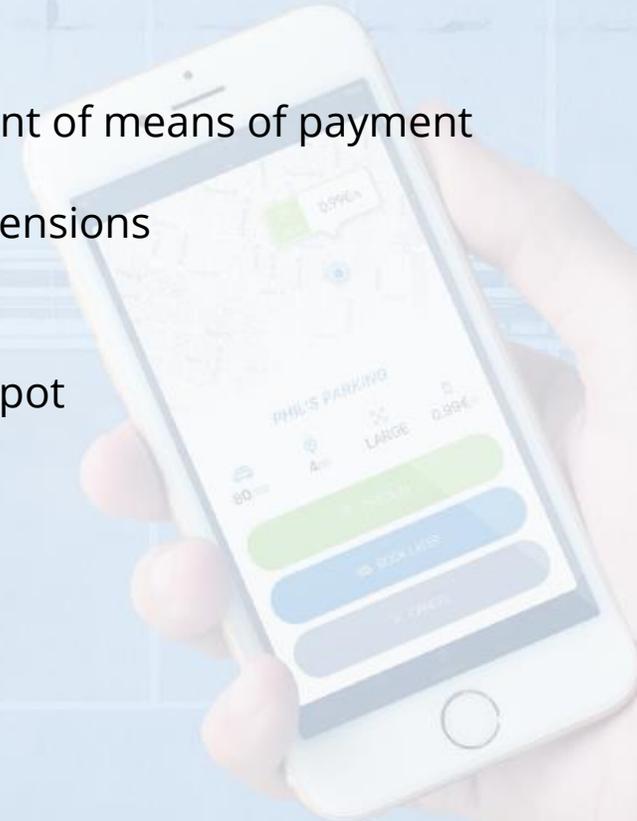
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## Basic features - Customers

- Alerts of parking terms
  - Possibility to extend time
- Payments
  - Management of means of payment
  - Prepaid
  - Parking Extensions
- Consumption report
- Confirmation I got to the spot
- Report issues
- Invoicing



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## Basic features – Back office (Administrator)

- Account Management (Park Administrator)
- Indicators/reports from various parks with alerts for specific events (e.g. total revenues)
- Platform Configuration
- Inventory Management of Hardware Installed



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## Basic features – Back office (Administrator)

- Account management (e.g. Park manager, accountant)
- Park Management (a park is a set of parking spots)
  - Define characteristics of the park (e.g. Total number of parking spots, associate physical spots and sensors, configuration of specific texts to the park, such as warnings)
  - Define characteristics of each parking spot (e.g. parking direction, spot dimensions, electric car jack, street slope, position/coordinates)
  - Association of officers to the parks
- Actions on parking spots
  - Activate
  - Deactivate
- Real-time hardware integration (occupied/available parking spots)

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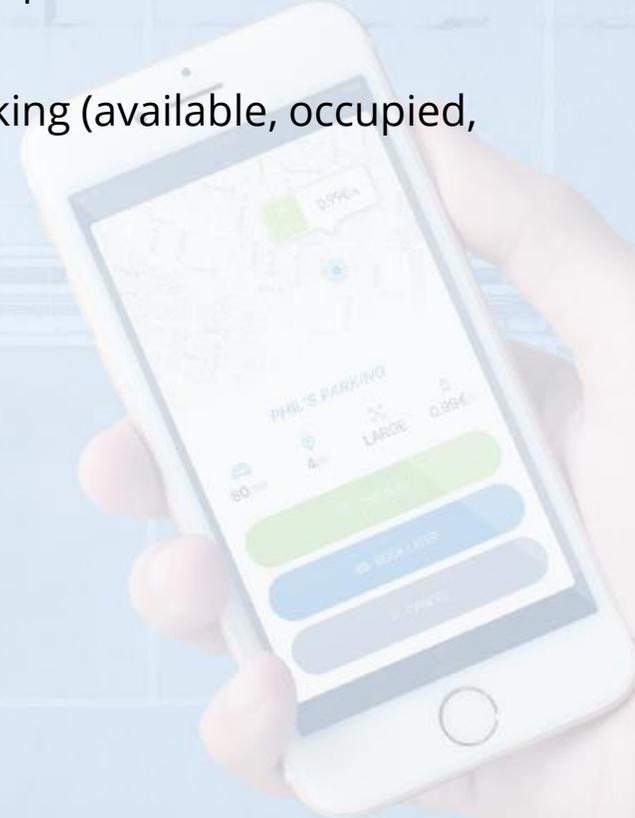
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## Basic features – Back office (Administrator)

- Search by spot/registration plate (the search for registration plate will serve for sporadic assistance to the officers)
- View of park status by parking (available, occupied, infringement, in doubt)



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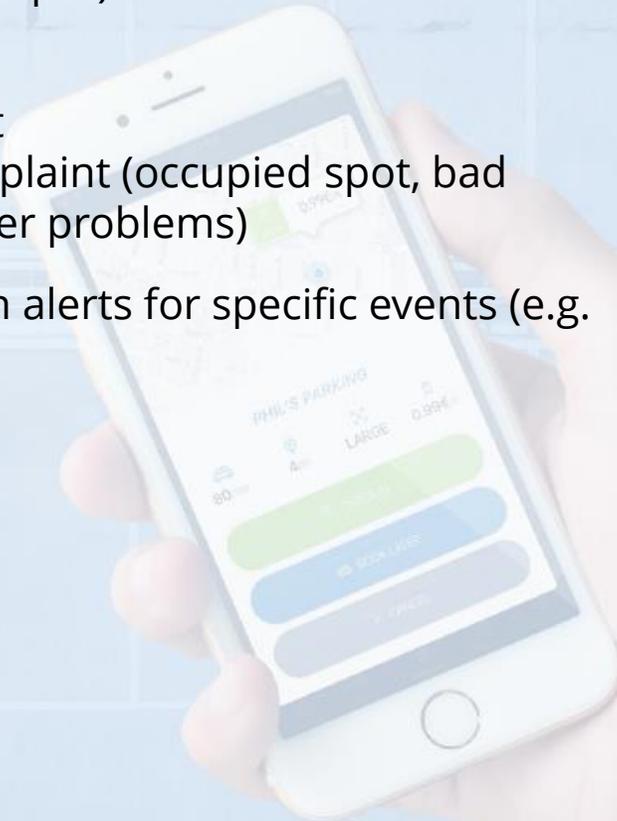
# iMAPARK

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## Basic features – Back office (Administrator)

- Alerts of infractions (parking without payment, time exceeded, parking in a reserved spot)
- User complaint alerts
  - Parking spot
  - Type of complaint (occupied spot, bad parking, other problems)
- Park indicators/reports with alerts for specific events (e.g. park with 80% of occupancy)



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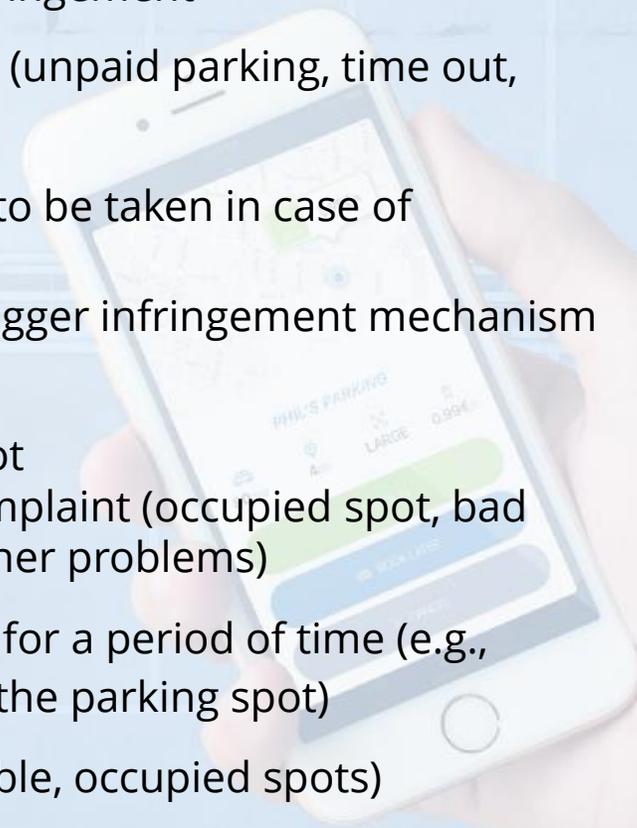
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## Basic features - Officers

- Validate if a car is properly parked in a certain spot  
Identify infringement
- Receipt of infraction alerts (unpaid parking, time out, parking in a reserved spot)
- Access to the mechanism to be taken in case of infringement  
Eventual trigger infringement mechanism
- User complaint alerts  
Parking spot  
Type of complaint (occupied spot, bad parking, other problems)
- Mark spots as unavailable for a period of time (e.g., because a tree has fallen over the parking spot)
- View of park status (available, occupied spots)



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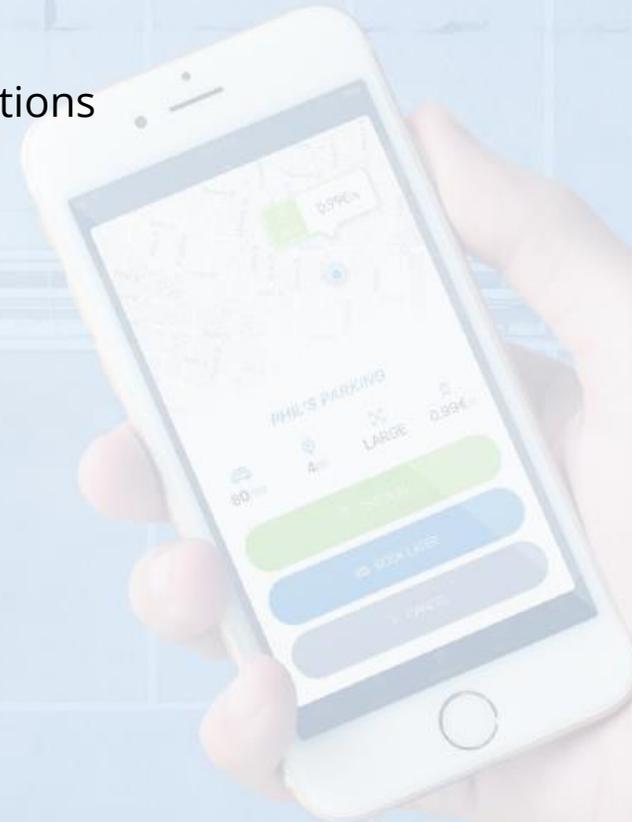
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## Basic features – Electronic Information Display

- Information about available parking spots
- Fares information
- Information of fines/infractions
- Advertising

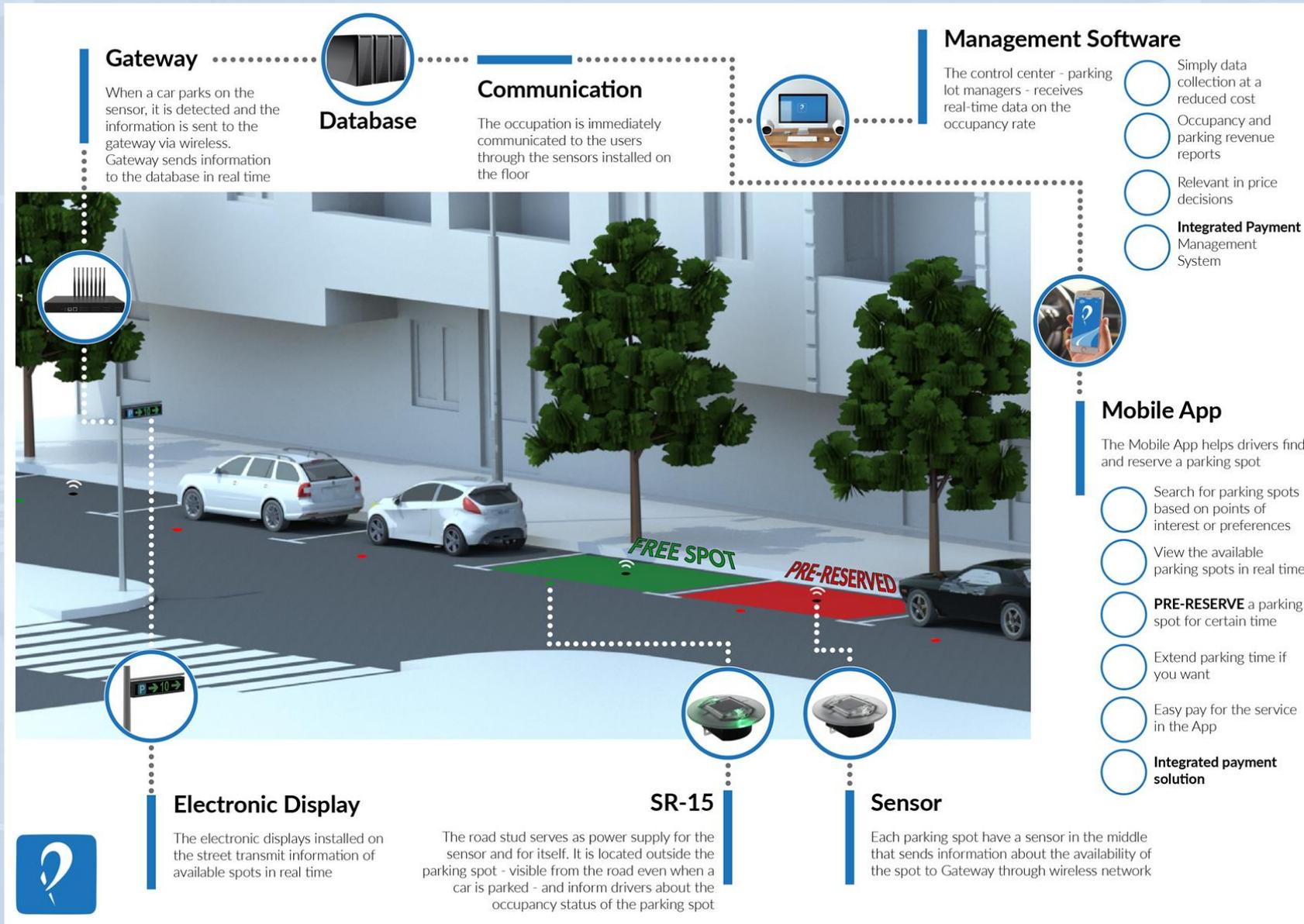


# SOLUTION ARCHITECTURE

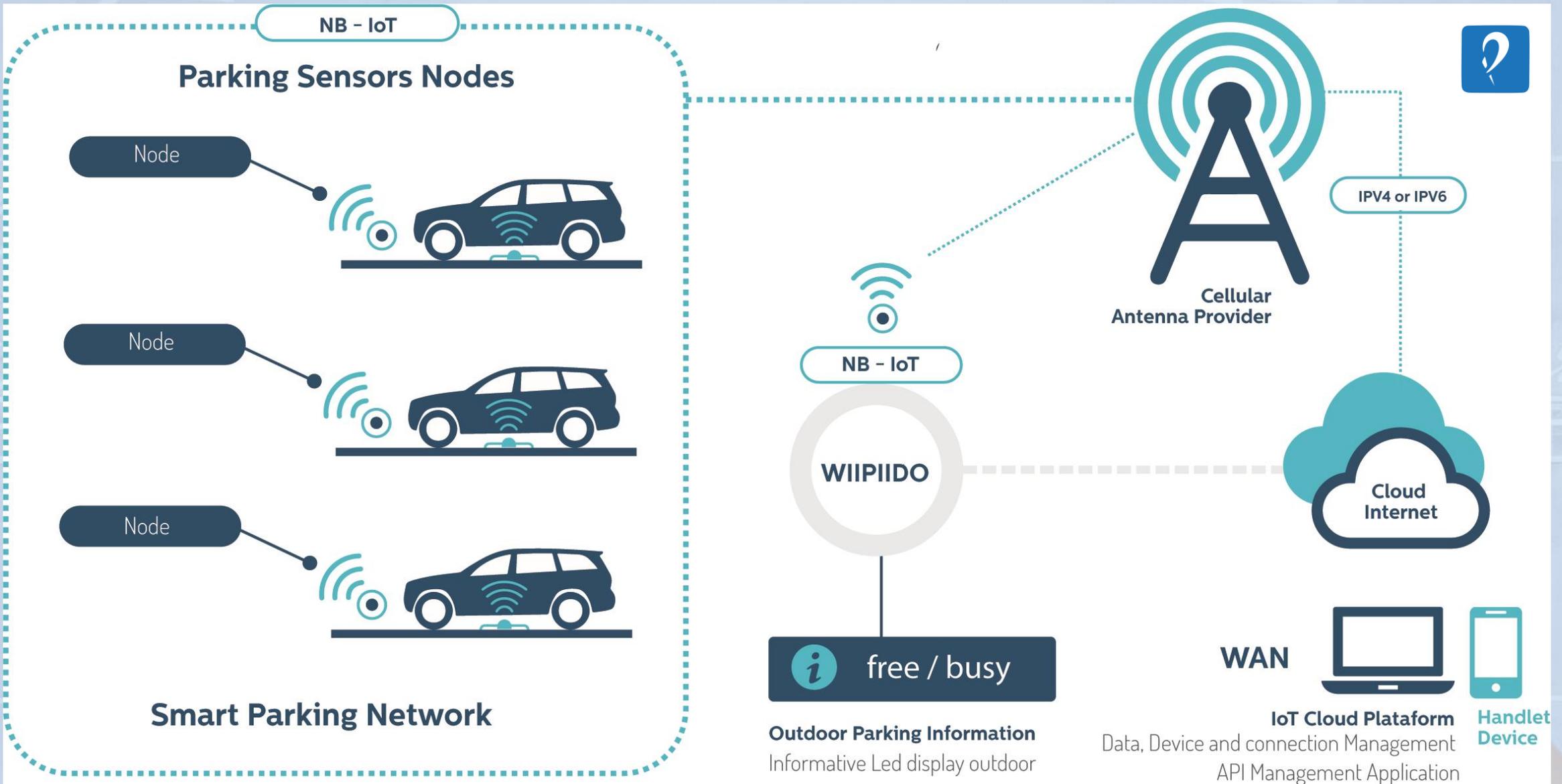
The system consists of a **management solution** that interacts with **electronic displays, sensors, road studs lights** and **sensors** required to manage parking spots.







# Architecture 1 - RF Technology



# Architecture 2 - NB-LoT Technology

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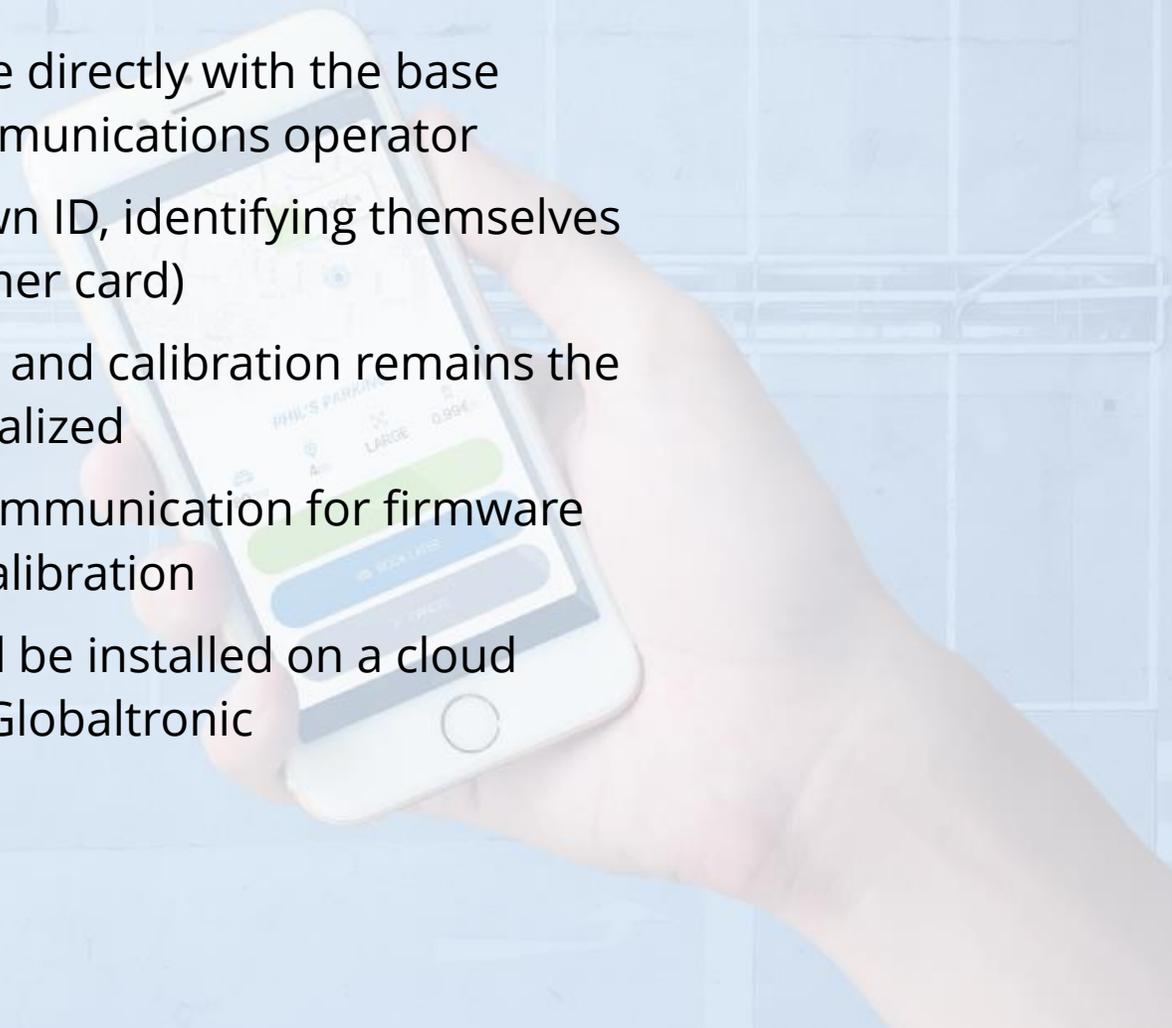


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## Solution Architecture 2 With NB-IoT Explanatory Memorandum

- ✓ All iMAPARK sensor are equipped with NB-IoT communication module
  - ✓ All sensor communicate directly with the base station of the selected communications operator
  - ✓ All sensor have their own ID, identifying themselves before the network (customer card)
  - ✓ The method of start-up and calibration remains the same method currently idealized
  - ✓ All sensors have BLE communication for firmware update, status check and calibration
  - ✓ The virtual Gateway will be installed on a cloud server, being managed by Globaltronic
- 

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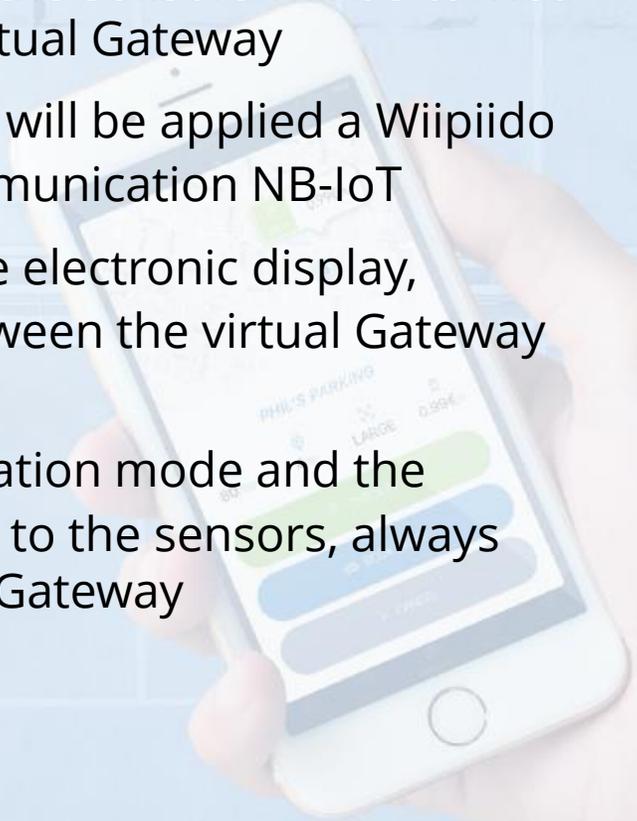
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## Solution Architecture 2 With NB-IoT Explanatory Memorandum

- ✓ The communications between iMAPARK management platform and the sensors will be carried out and managed by the virtual Gateway
  - ✓ In the electronic display will be applied a Wiipiido module, this being the communication NB-IoT
  - ✓ Wiipiido will manage the electronic display, information exchanged between the virtual Gateway and the display
  - ✓ The Wiipiido communication mode and the iMAPARK platform is similar to the sensors, always passing through the virtual Gateway
- 

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Customer will access the system via a specific App



App  
Android

iOS

App  
iOS



Web  
App

Enforcement



App  
Android

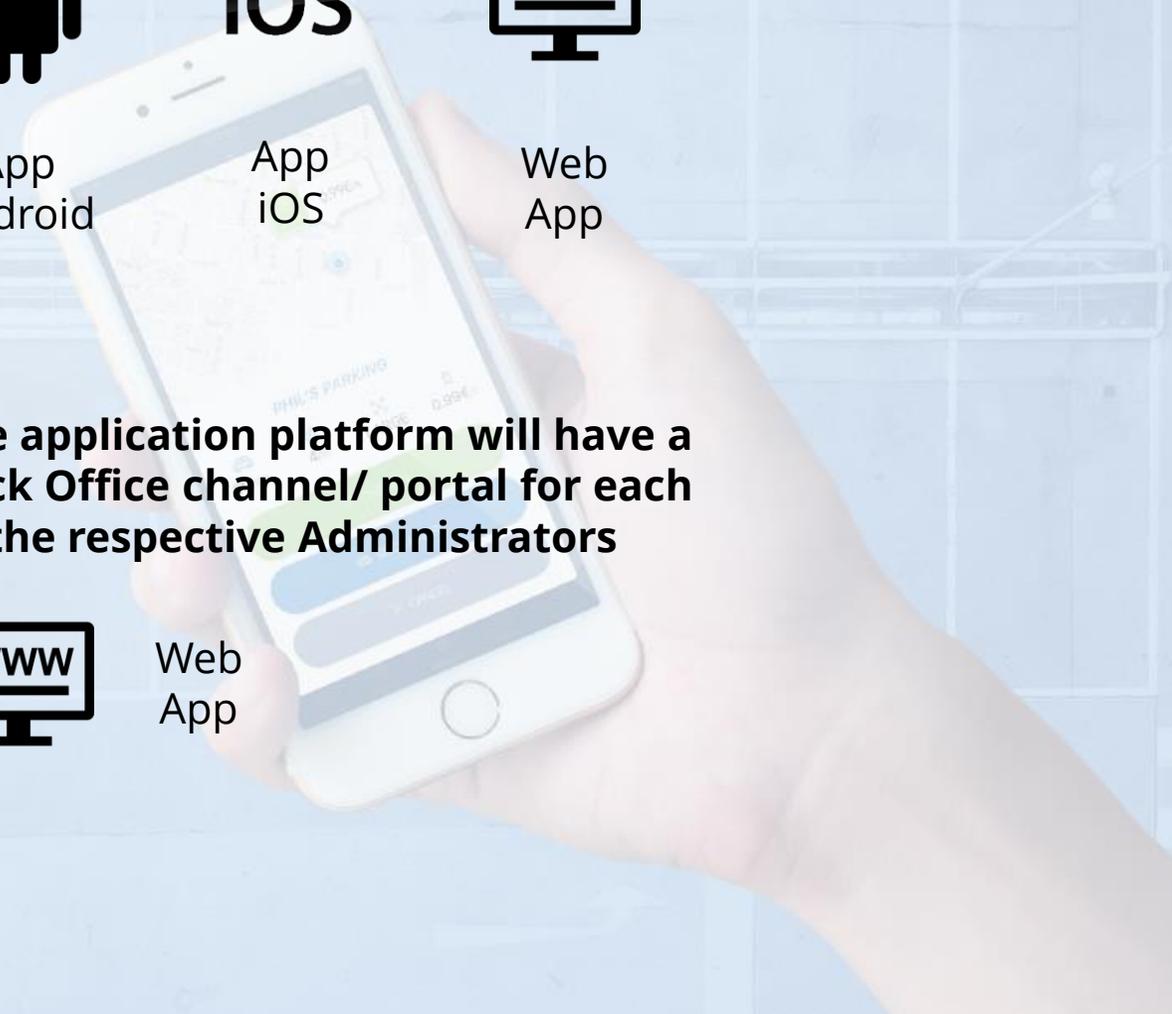
iOS

App  
iOS



Web  
App

The application platform will have a  
Back Office channel/ portal for each  
of the respective Administrators



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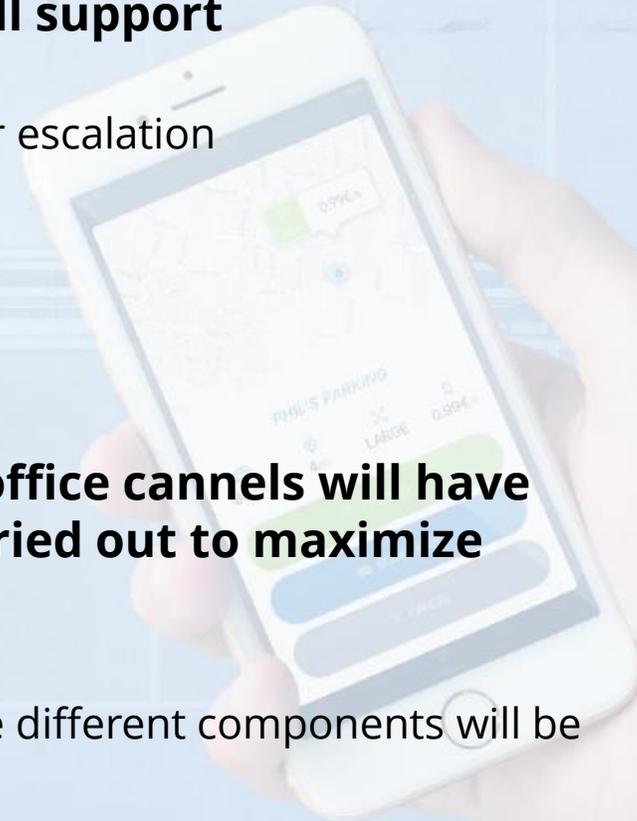
**The system will be integrated with the field parking information devices via Gateways that will feed the application platform**

**The application server will support**

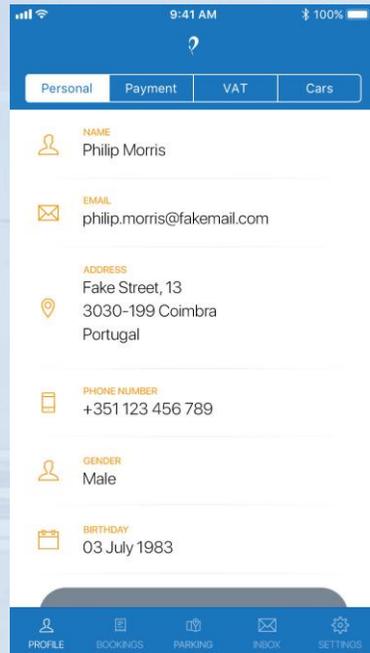
- Core solution prepared for escalation
- IoT Integrations
- Back Office Support

**Both customer and backoffice channels will have specific UI & UX work carried out to maximize adoption rate**

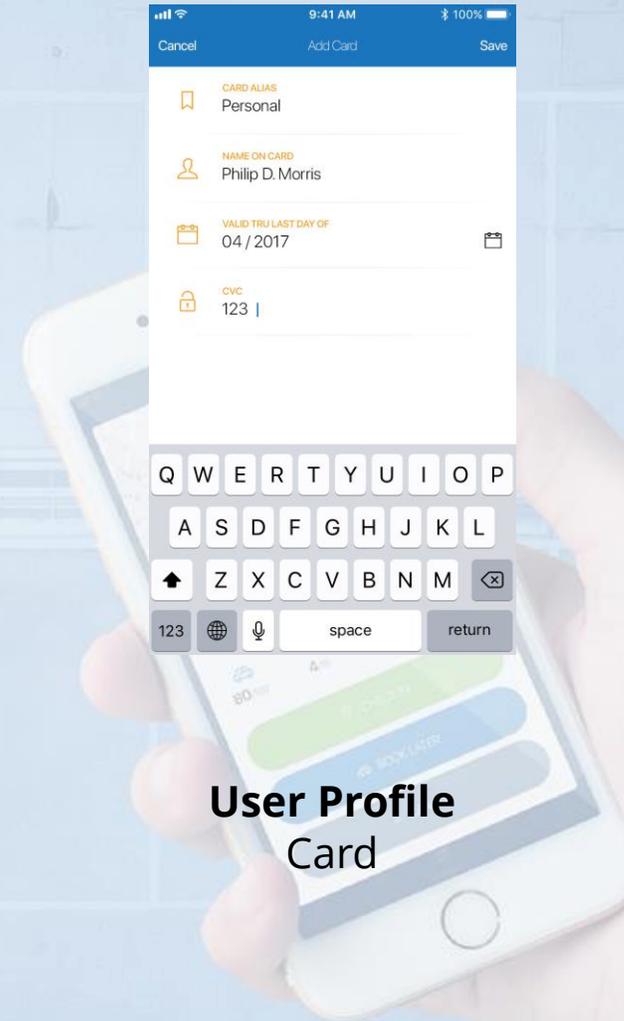
- Design and usability of the different components will be essential



# Profile



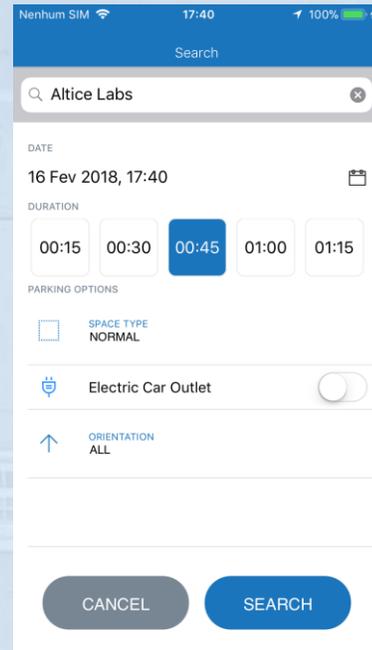
User Profile



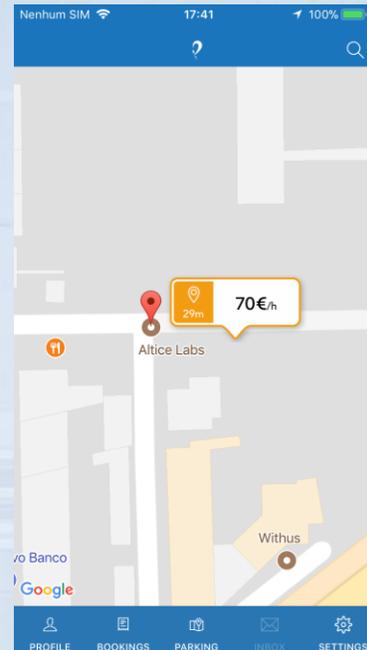
User Profile Card

# Customer App

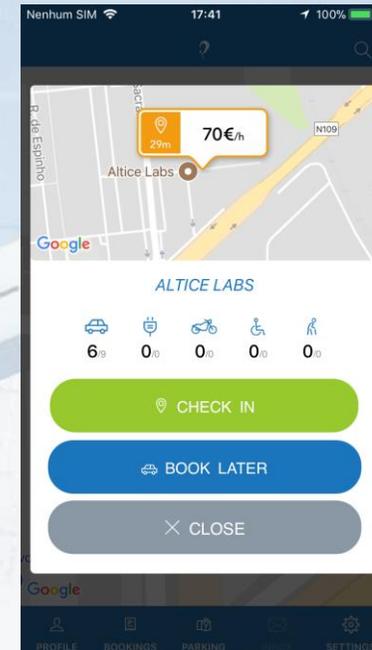
# Booking



Search



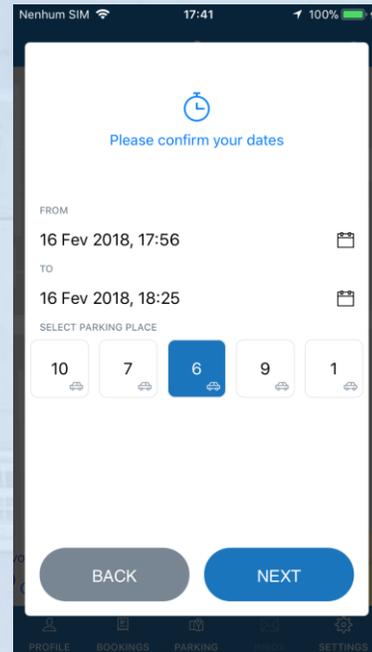
Search Result



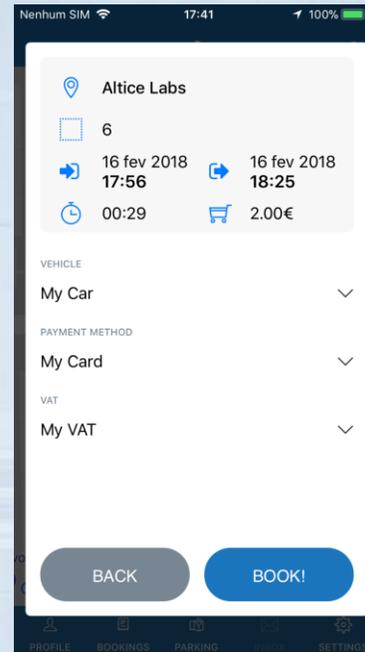
Park Details

# Customer App

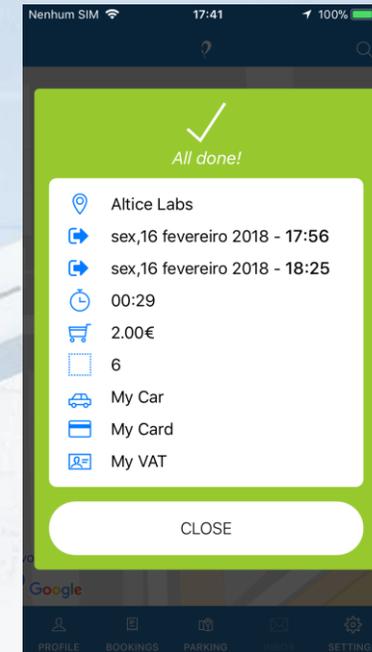
# Booking



**Dates  
Confirmation**



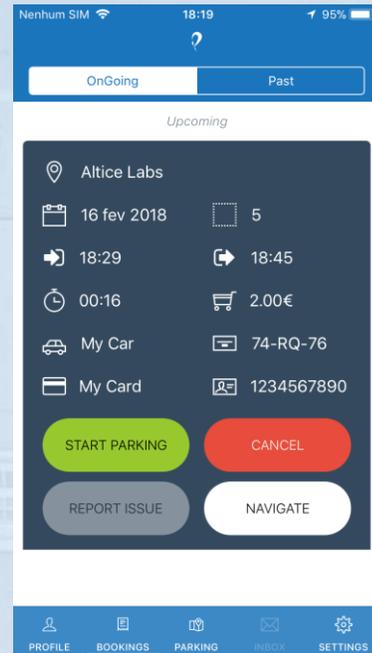
**Payment  
Details**



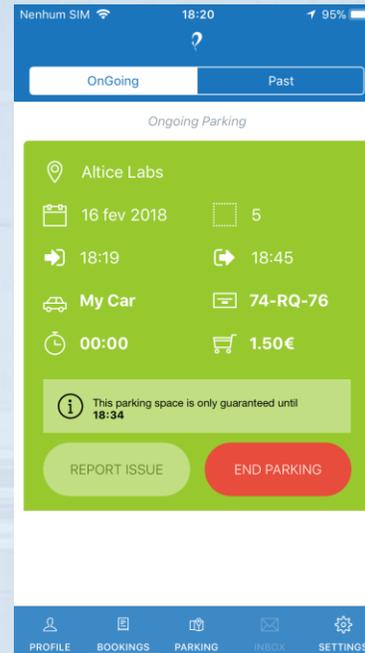
**Reservation  
Confirmation**

# Customer App

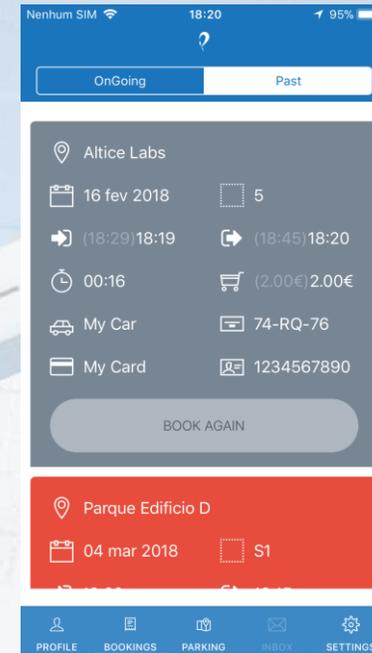
# Booking



**Upcoming  
Reservation**



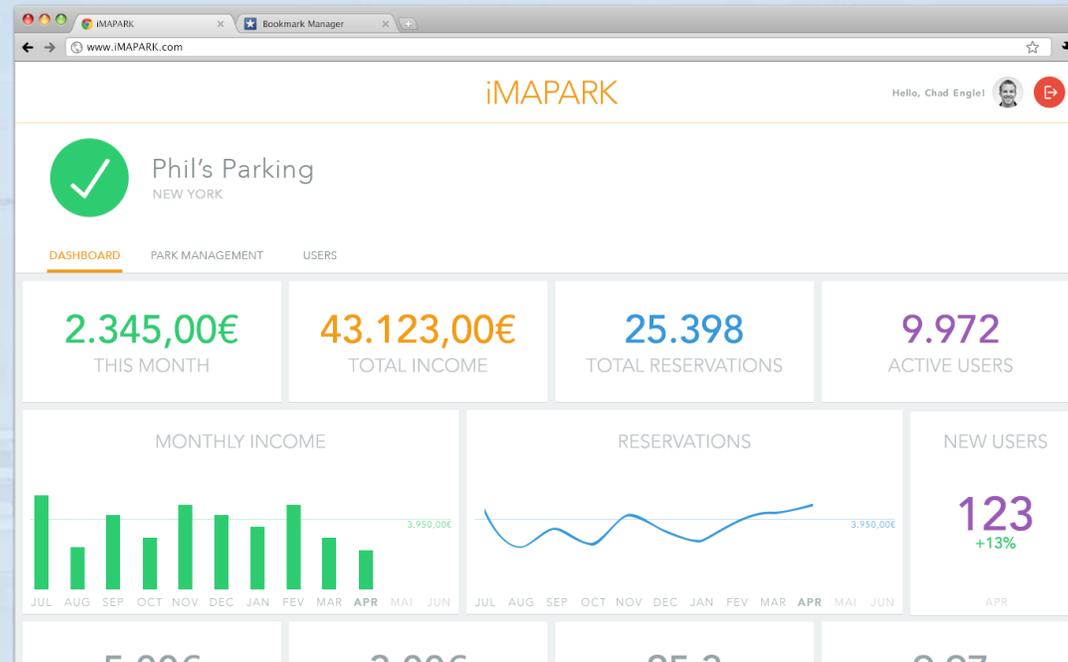
**Ongoing  
Session**



**Finished  
Session**

# Customer App

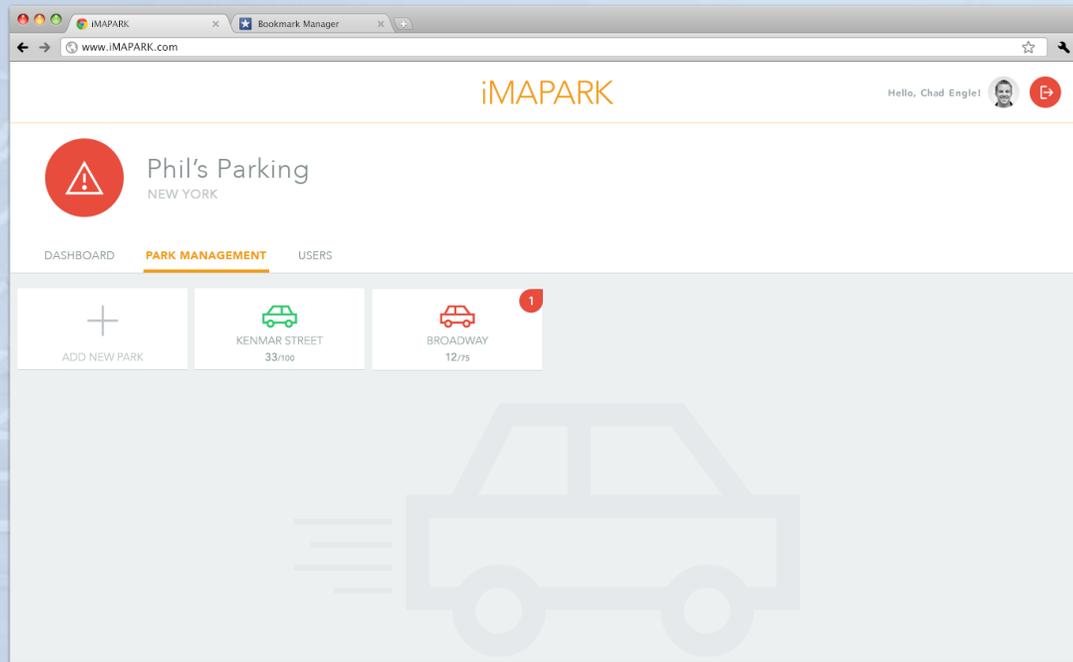
# Dashboard



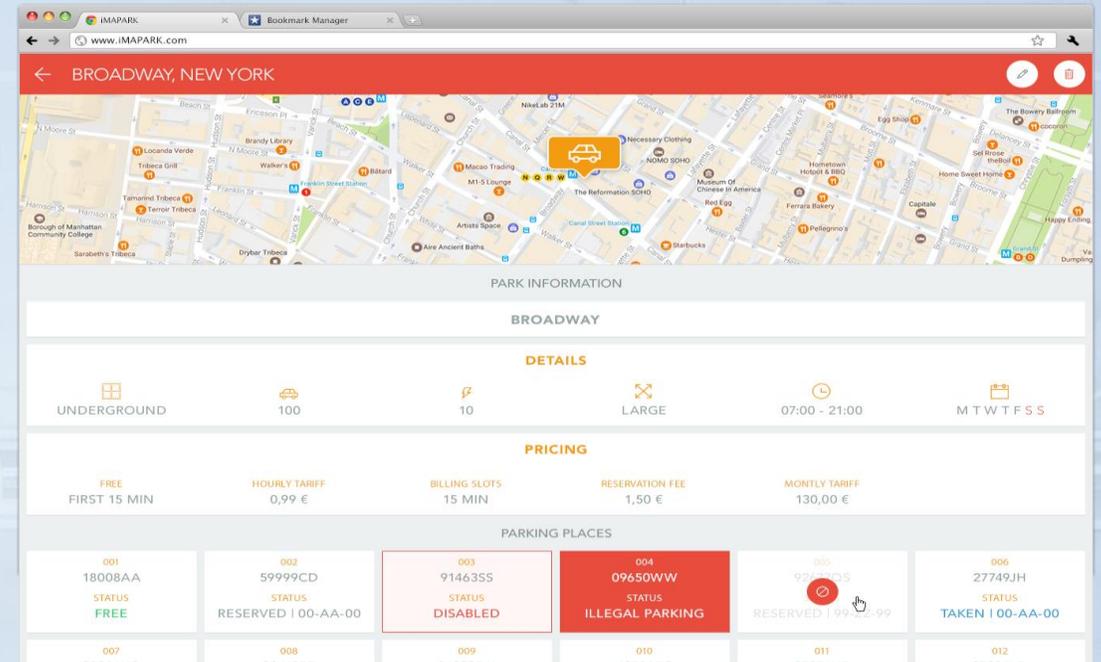
## Dashboard

# Administrator App

# Park Management



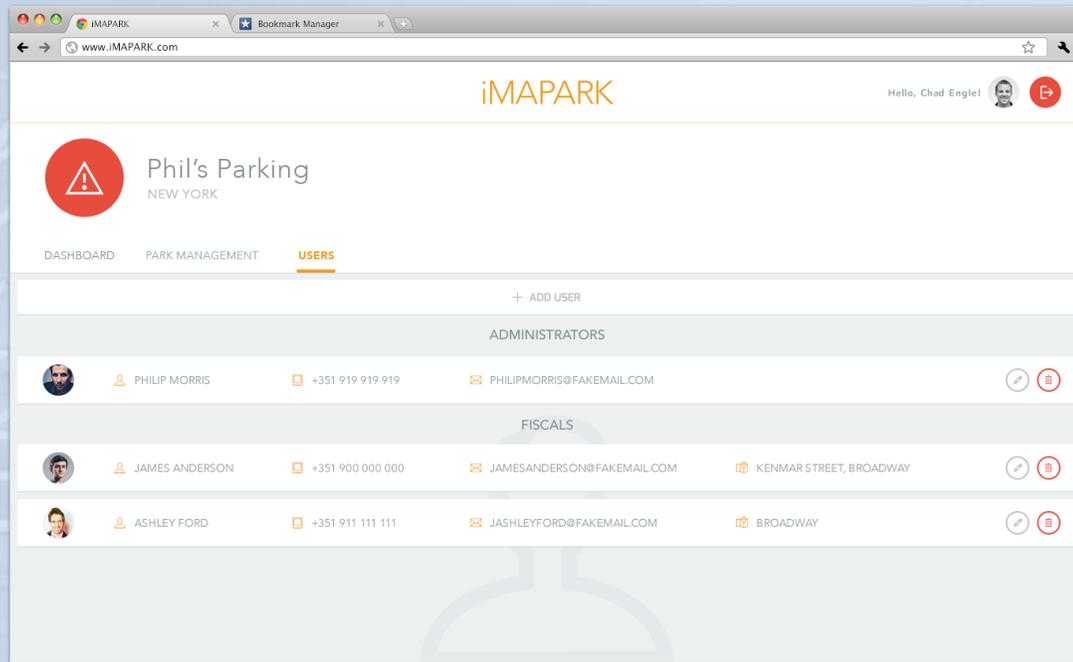
Park  
Management  
List



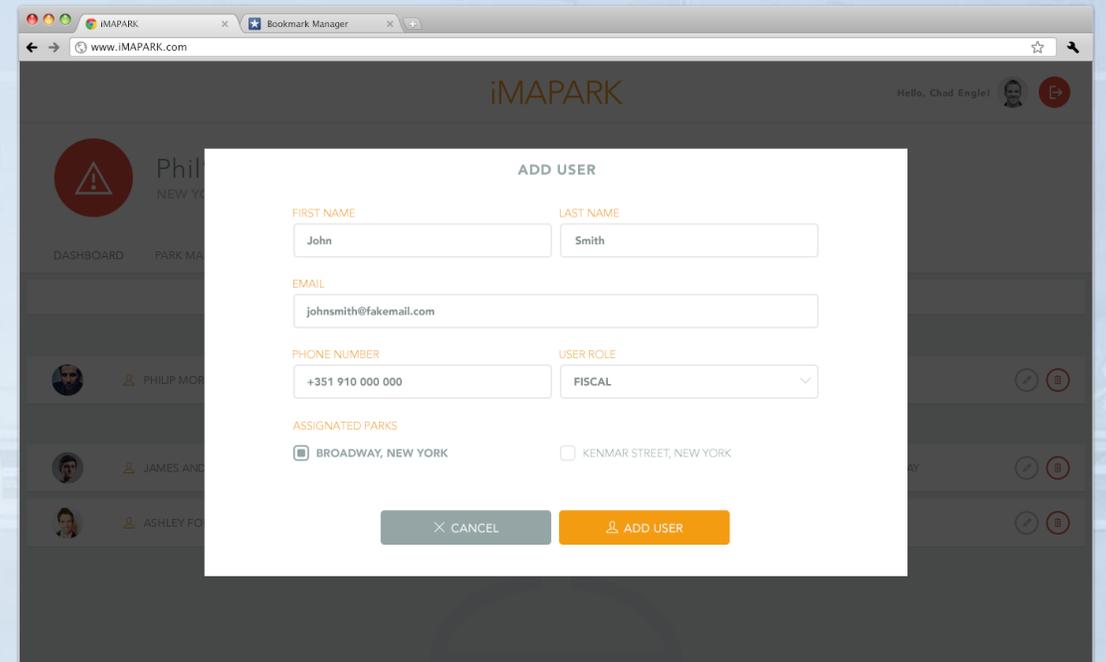
Park  
Management  
Details

# Administrator App

# Users



List of users

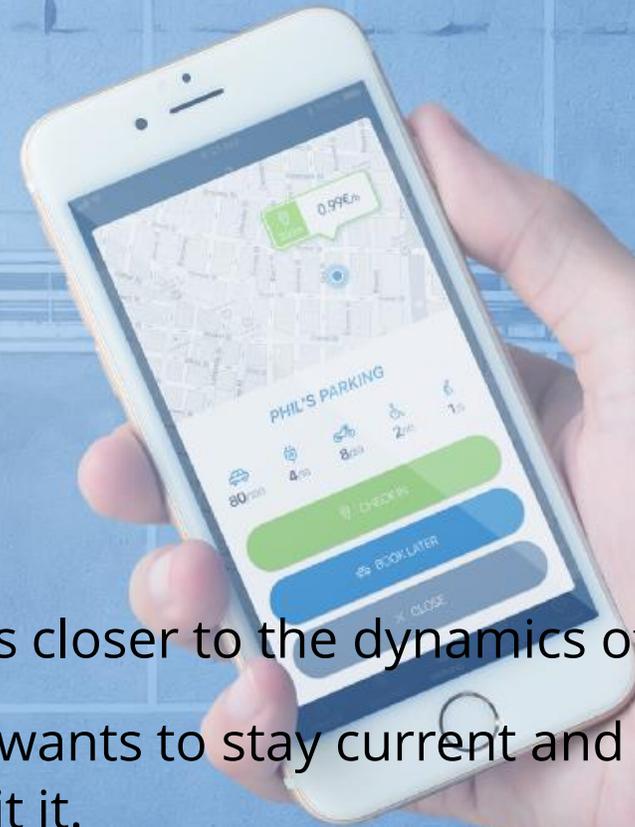


Add users

# Administrator App

# DISTINCTIVE ADVANTAGES

This integrated system places the Municipalities closer to the dynamics of **Smart City** that become imperative for a city that wants to stay current and meet the expectations of its residents and those who visit it.



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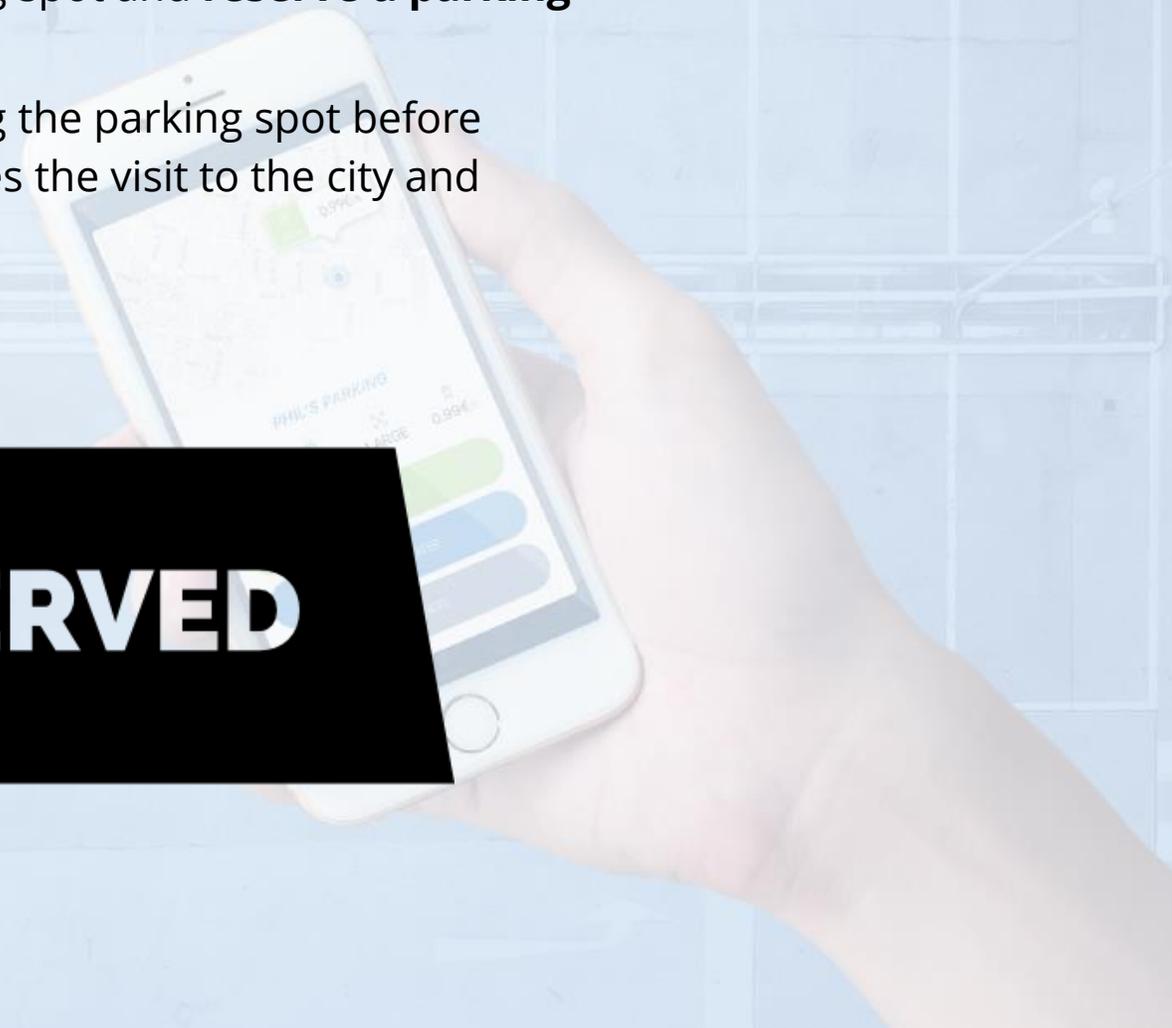


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## Parking spot Reservation

- Through the mobile application it is possible to locate the most suitable available parking spot and **reserve a parking spot for a certain time.**
- The possibility of reserving the parking spot before moving to the place encourages the visit to the city and encourages the return.

A hand is holding a smartphone that displays a map application. A black trapezoidal overlay with the word 'RESERVED' in white capital letters is positioned over the bottom half of the phone's screen. The background of the slide is a light blue grid pattern with a faint image of a parking lot.

**RESERVED**

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## Parking more easier and convenient

The mobile application allows the customer to plan trip. In the app the customer is able to:

**Locate** the most suitable available parking spot

**Reserve** a parking spot for a certain time,

Receive voice guidance for the parking spot

**Extend or reduce the parking time**

**Pay** the service,

making **parking in the center of cities easier and convenient.**



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## Real-time information on available parking spots

- ✓ Through the mobile application it is possible to have statistical and **real-time information** on available parking spots, reservation of parking spots in advance
- ✓ iMAPARK provides drivers with real-time occupancy information, easily guiding them to the nearest available parking spot through a mobile application and/or electronic displays.



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## Reduced traffic congestion - improving the quality of life

- ✓ Reduced circulation, lead to **time and fuel savings, improved traffic flow and reduced congestion, improving the quality of life in the cities.**
- ✓ Optimizing the parking process and **reducing the time spent searching for an available parking spot** raises the quality of service provided and customer satisfaction, promoting customer loyalty.
- ✓ As they search for available parking spots, drivers neglect attention to other drivers and pedestrians who are on the move, resulting in accidents. With this system, the number of accidents will decrease.



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## Simplified data collection

- ✓ The system allows the Municipalities and park administrators to **collect parking data at a reduced cost:** occupancy and parking revenue reports, detailed information such as time of day, day of week, etc. to **help with pricing decisions**, additional revenue.
- ✓ iMAPARK enables strategic management of car parking in urban areas by minimizing waiting times.
- ✓ This solution provides a real-time management platform that ensures the system scheduling process and targeted analysis data, developing complex history and information reports (by area, sector or location, date range, time interval, Week, etc.). This tool will provide valuable information to achieve an optimized and efficient parking management service.



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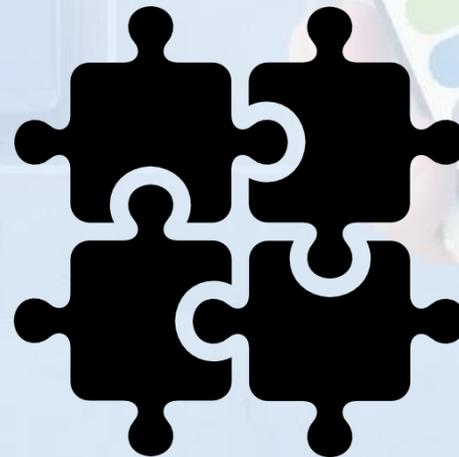


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PARKING**

## Integrated system

- iMAPARK is an **integrated solution** that provides drivers with real-time occupancy information and guides them easily to the nearest available parking spot. Provides a package of products, **services and technologies that function more effectively as a whole** than the sum of the individual elements that comprise it.
- The system is composed by traffic lights - road studs - on the pavement-, the communication hardware devices required to monitor parking spots, electronic displays and iOS/Android/Web application.



# SERNIS

Intertraffic  
INNOVATION AWARD

2018  
NOMINEE



# iMAPARK

REQUEST. ARRIVE. PARK.

LIFE IS TOO SHORT TO  
**WASTE TIME  
LOOKING FOR  
PARKING**

## Integrated system

- ✓ The electronic displays placed in the various intersections of the cities inform in real-time the number of available parking spots in a certain street or avenue, **facilitating the choice of the driver to enter or not in that street or avenue to park**, reducing the congestion.



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Intertraffic  
INNOVATION AWARD

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**iMAPARK**  
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## Low energy consumption and easy maintenance

- ✓ iMAPARK uses active sensors and LED signaling devices - **solar road stud SR-15 that serves as power for the sensor and for itself.** Energy costs are extremely low and the system is ecologically responsible.
- ✓ The sensors/road studs lights of this system are embedded in the asphalt to avoid vandalism.

**ECO**



# PRODUCT LAUNCH

**Intertraffic Amsterdam** is the **world's largest trade exhibition** for infrastructure, **traffic management, smart mobility**, safety and **parking**



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Intertraffic  
INNOVATION AWARD  
2018  
NOMINEE



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## Product launch at Intertraffic Amsterdam 2018

Intertraffic Amsterdam is the world's largest trade exhibition for infrastructure, traffic management, smart mobility, safety and parking. iMAPARK will be launched to a big public that is looking for the new and innovative products in this area.



# MEDIA COVERAGE

**International Media** showed a lot of interest in iMAPARK



Intertraffic  
Preview 2018  
www.intertraffic.com | www.innovation.com

## INNOVATION AWARDS

### PARKING CATEGORY

#### Self-powered Parking Sensor

**PARKHERE, GERMANY**

Parking sensors register whether a car is parked in a spot. This is the first parking sensor that doesn't need any kind of external supply. It uses kinetic energy-harvesting to produce the energy it needs to send a signal to the base station which forwards the data to a cloud server. This solves the most pressing issue for parking sensors: power. Furthermore, the possibility to inform drivers of the size of a parking space on-street meets the current demands of cities to optimise the available space for different car sizes.

Stand 07.410  
[www.park-her.eu](http://www.park-her.eu)



### ITS/TRAFFIC MANAGEMENT CATEGORY

#### Sprinx Traffic AID

**SPRINX TECHNOLOGIES, ITALY**

Based on innovative 3D tracking technology, Sprinx Traffic AID running on-board Hiawaha Technix Wlsenet X cameras, has significantly enhanced the ability to detect incidents and keep traffic on the move. It offers distinctive advantages over normal cameras by performing not just image capture but also image analysis and event detection, turning a standard CCTV camera into a smart CCTV camera for professional traffic systems.

Stand 12.316  
[www.sprinxtech.com](http://www.sprinxtech.com)



#### The Urban Mobility Control Management Hub (Paris)

**PARKNOW, PARKMOBILE GROUP, THE NETHERLANDS**

ParkNow has delivered an integrated parking ecosystem for Paris with its new urban mobility control management and parking system. The total digitisation of parking combines cashless apps, parking meters, permits and enforcement data to optimise traffic flow. It processes penalties and helps reduce emissions during "pollution days" via dynamic pricing. A unified on-demand dashboard provides hands-on control for a real smart city.

Stand 02.105  
[www.park-now.com](http://www.park-now.com)



#### Signs to Lines TRO Mapping

**APPYPARKING, UK**

Signs to Lines Mapping is the latest technology that creates the world's most accurate map of all the paint on the street related to traffic and parking management. These regulatory maps are required by law to be kept up to date by local authorities. The Signs to Lines mapping technology uses a combination of state-of-the-art vehicle-mounted Lidar scanners, photography, artificial intelligence and machine learning.

Stand: ITSUP Hall  
[www.appyparking.com](http://www.appyparking.com)



#### Imapark

**SERNIS TECHNOLOGIC SOLUTIONS, PORTUGAL**

Imapark is an on-street intelligent parking management system that helps drivers find and pre-reserve a free parking space on public roads more quickly, using sensors, road studs, electronic displays and a mobile app. In the app it is possible to visualise, in real time, parking spots available, reserve parking space for a certain time and pay for the service.

Stand 01.236  
[www.sernis.com](http://www.sernis.com)

#### Citix-3D

**ECO-COUNTER, FRANCE**

Citix-3D, Eco-Counter's latest innovation, is a wide-range counter capable of automatically counting and differentiating pedestrians, cyclists and vehicles simultaneously. Its advanced technology is the result of five years of research and development in partnership with top European research organisation, CEA.

Stand 12.228  
[www.eco-compteur.com](http://www.eco-compteur.com)



**Judge's comment:**  
The trend for increasingly multifunctional systems was evident in the strongest entries in the Traffic Management category. In the past multiple devices were required, each performing a single function. Now, smarter hardware is being built that can perform multiple tasks; and smart software is being developed to turn simple cameras into advanced systems.

Tom Stone  
Editor, Traffic Technology International magazine

# Innovation Awards finalists

The wait is over! This morning the winners of the Intertraffic Innovation Awards will be announced for each of the five categories as well as the overall overall winner. Here are the finalists, selected from over 60 high quality entries this year.

### INFRASTRUCTURE CATEGORY

#### FlexyLight Bollard

**Saedi, Italy**

The pioneering design of the FlexyLight Bollard combines the advantages of different kinds of bollards to create an innovative infrastructure solution. It is flexible and can be moved up to 90 degrees in any direction. In addition, there are various rigidity set-up options. The FlexyLight Bollard is illuminated and has a colour-change function. There is the option of either solar or network power supply and it is removable in under 20 seconds. The bollard can be used in locations such as bus stations, turnings and parking garages.

Stand 5.337  
[www.saedi-group.com](http://www.saedi-group.com)

#### OptiWIM

**Cross Zlin, Czech Republic**

Weigh-In-Motion (WIM) is an important technology for protecting infrastructure from excess wear and tear from overweight vehicles. The new OptiWIM sensor combines several world firsts: free-flow capable, accurate to 3% (even in free-flow), temperature compensated, and RF immune. A single sensor row detects vehicle width, double-tyre and tyre pressure. Non-invasive maintenance and replacement assures a 10-year lifetime and low total cost of ownership.

Stand 10.111  
[www.cross.cz](http://www.cross.cz)

### PARKING CATEGORY

#### Self-powered Parking Sensor

**ParkHere, Germany**

Parking sensors register whether a car is parked in a spot. This is the first parking sensor that doesn't need any kind of external supply. It uses kinetic energy-harvesting to produce the energy it needs to send a signal to the base station which forwards the data to a cloud server. This solves the most pressing issue for parking sensors: power. Furthermore, the possibility to inform drivers of the size of a parking space on-street meets the current demands of cities to optimise the available space for different car sizes.

Stand 7.410  
[www.park-her.eu](http://www.park-her.eu)

#### The Urban Mobility Control Management Hub (Paris)

**ParkNow, Parkmobile Group, Germany**

ParkNow has delivered an integrated parking ecosystem for Paris with its new urban mobility control management and parking system. The total digitisation of parking combines cashless apps, parking meters, permits and enforcement data to optimise traffic flow. It processes penalties and helps reduce emissions during "pollution days" via dynamic pricing. A unified on-demand dashboard provides hands-on control for a real smart city.

Stand 2.105  
[www.park-now.com](http://www.park-now.com)

#### Imapark

**Sernis Technologic Solutions, Portugal**

Imapark is an on-street intelligent parking management system that helps drivers find and pre-reserve a free parking space on public roads more quickly, using sensors, road studs, electronic displays and a mobile app. In the app it is possible to visualise, in real time, parking spots available, reserve parking space for a certain time and pay for the service.

Stand 1.236  
[www.sernis.com](http://www.sernis.com)

#### Citix-3D

**Eco-Counter, France**

Citix-3D, Eco-Counter's latest innovation, is a wide-range counter capable of automatically counting and differentiating pedestrians, cyclists and vehicles simultaneously. Its advanced technology is the result of five years of research and development in partnership with top European research organisation, CEA.

Stand 12.228  
[www.eco-compteur.com](http://www.eco-compteur.com)

**Judge's comment:**  
The trend for increasingly multifunctional systems was evident in the strongest entries in the Traffic Management category. In the past multiple devices were required, each performing a single function. Now, smarter hardware is being built that can perform multiple tasks; and smart software is being developed to turn simple cameras into advanced systems.

Tom Stone  
Editor, Traffic Technology International magazine

# Clipping

## 15 nominees confirmed for Intertraffic Amsterdam Innovation Award 2018

First published on [www.ITSInternational.com](http://www.ITSInternational.com)

An international jury of transportation experts have shortlisted 15 candidates across the five categories: Infrastructure, Traffic Management, Safety, Parking and Smart Mobility for the Intertraffic Amsterdam Innovation Award 2018. The final winners will be announced at the opening ceremony of the three day event, which will take place from 20-23 March.

Under Infrastructure, Saedi has been selected for its FlexLight Bollard, which is designed with the intention of combining the advantages of different kinds of bollards to create an infrastructure solution. Asura's plug & play solution, Asura Recognition Unit, which is said to enable high accuracy license plate recognition in any visual data collection system will also compete for the award along with Cross Zlin's Optiwim sensor. The device aims to detect vehicle width, double-tyre and tyre pressure.

For parking, Pakrhere's self-powered parking sensor which does not require an external supply has been nominated alongside ParkNow's urban mobility control management and parking system which integrates cashless apps, parking meters, permits and enforcement data to optimise traffic flow. Sernis' Imapark system has also been shortlisted for providing a system which helps drivers find and pre-reserve a free parking space on public roads more quickly using sensors, road studs, electronic displays and mobile app.

Under Traffic Management, Sprinx has been shortlisted for its Traffic AID innovation, which is intended to detect incidents and keep traffic moving. It will compete with Eco-Counter's Citix 3D counter that automatically counts and differentiates pedestrians, cyclists and vehicles, as well as ApplyParking's Signs to Lines Mapping, which maps paint on the street related to traffic and parking management.

The Safety nominees feature Viion Systems' TrafficCam 3D Lidar smart camera with on-board processing and telemetry for traffic safety and security applications alongside Sernis Technologic Solutions' SR-90 system which is said to provide speed reduction of vehicles in controlled speed zones. In addition, Traffic Technology's SpeedWatch+ has also been chosen for the award with for its system that wirelessly interfaces to the SpeedWatch device with the intention of warning drivers of their disregard for community road safety.

ParkNow's On-Street Parking Info (OSPI) has been selected for the Smart Mobility award. It aims to forecast space availability based on historic traffic flows, parking meter data and transactions from parking apps. Additionally, Dynniq's CrossCycle app, which is said to identify cyclists when they approach an intersection and offer them the green light more quickly has also been shortlisted along with EasyPark Group's Find&Pay app. The solution is designed with the intention of offering payment and turn-by-turn navigation directly to find available parking for on and off-street locations.

More information is available on the [website](#).

Page Comments

➤ Add a comment

### 15 Nominees Intertraffic Amsterdam Innovation Award 2018

From: [RAI Amsterdam](#)

Nominees Intertraffic Amsterdam Innovation Award 2018 announced: Jury selects 15 candidates

Today an international jury of transportation experts announced the final shortlist of nominees of the prestigious Intertraffic Amsterdam Innovation Award. Out of well over 60 high-quality entries the field has been narrowed down, after careful analysis and intense consideration, to the final 15 - leaving three nominees in each of the five categories: Infrastructure, Traffic Management, Safety, Parking, and Smart Mobility. Each nominee is now in the running to potentially win their category and just one category winner will ultimately be chosen as this year's overall winner. The final winners will be announced at the opening ceremony of Intertraffic Amsterdam, the world's largest trade event for the infrastructure, traffic management, safety, parking and smart mobility sectors, taking place from 20-23 March 2018, at RAI Amsterdam.

#### Shortlisted companies in the category Infrastructure:

##### FlexyLight Bollard by Saedi (Italy) - Stand 05.337

The pioneering design of FlexyLight Bollard combines the advantages of different kinds of bollards to create an innovative infrastructure solution. It is flexible and can be moved up to 90 degrees in any direction. In addition, there are various rigidity set-up options. It is illuminated and has a colour-change function. There is the option of either solar or network power supply and it is removable in under 20 seconds. The bollard can be used in places such as bus stations, terraces and parking garages.

##### Asura Recognition Unit by Asura (Hungary) - Stand 11.107

AURU is a newly developed plug & play solution enabling high accuracy license plate recognition (LPR) in any existing or new visual data collection system. AURU is camera-independent, works with any IP camera and delivers high recognition rates with its sophisticated validation algorithms making the system very effective. AURU stores and pushes LPR results to any business application in either MySQL, XML or CSV format.

##### OptiWIM by Cross Zlin (Czech Republic) - Stand 10.111

Weight in motion (WIM) is an important technology for protecting infrastructure from excess wear and tear from overweight vehicles. The new OptiWIM sensor combines several world firsts: free-flow capable, accurate to 3% (even in free-flow), temperature compensated, RF immune. A single sensor row detects: vehicle width, double-tyre, tyre pressure. Non-invasive maintenance and replacement assures a 10-year lifetime and low total cost of ownership.

#### Jury comments:

"Evolution rather than revolution was a major theme of the entries in the Infrastructure category this year: on display were a number of more refined ways of performing existing tasks, with smart uses of technology. A couple of entries stood out for their imagination, apparent simplicity and technical savvy, with environmental considerations strongly to the fore." Adam Hill, Editor - ITS International Magazine

#### Shortlisted companies in the category Parking:

##### Self-powered Parking Sensor by Pakrhere (Germany) - Stand 07.410

Parking sensors register whether a car is parked in a spot. This is the first parking sensor that doesn't need any kind of external supply. It uses kinetic energy harvesting to produce the energy it needs to send a signal to the base station which forwards the data to a cloud server. This solves the most pressing issue for parking sensors: power. Furthermore, the possibility to inform drivers of the size of a parking space on-street meets the current demands of cities to optimise the available space for different car sizes.

##### The Urban Mobility Control Management Hub (Paris) by ParkNow, Parkmobile Group (Germany) - Stand 02.105

ParkNow has delivered an integrated parking ecosystem for Paris with its new urban mobility control management and parking system. The total digitisation of parking combines cashless apps, parking meters, permits and enforcement data to optimise traffic flow. It processes penalties, and helps reduce emissions during 'Pollution Days' via dynamic pricing. A unified on-demand dashboard provides hands-on control for a real smart city.

##### Imapark by Sernis Technologic Solutions (Portugal) - Stand 01.336

Imapark is an on-street intelligent parking management system that helps drivers find and pre-reserve a free parking space on public roads more quickly using sensors, road studs, electronic displays and mobile app. In the app it is possible to visualize, in real time, parking spots available, reserve parking space for a certain time and pay for the service.

# Clipping

# The intelligent management parking system

Intelligent management parking system iMAPARK was nominated for an Innovation Award at Intertraffic Amsterdam 2018. It is an on-street smart parking system that helps drivers to find and reserve available parking spaces by using studs in road surfaces, electronic displays and an app. Each parking space has a light signal and a sensor that sends information through a wireless network.

Drivers can receive information in real time about available parking spaces in the area via an app or electronic displays installed on public roads. With the app, as well as reserving parking spaces, drivers can also pay for their parking and extend their parking session time.

This smart-city solution enables municipalities and parking management companies to manage parking areas much more efficiently, as well as analyzing, optimizing

and managing street assets through a single platform. The payment system is fully integrated into the parking management system.

## Fighting congestion

When installed, iMAPARK – which was developed by Sernis Technology Solutions, Altice Labs, Globaltronic and Present Technologies – can reduce traffic density in busy city centers and increase the revenues of municipalities and parking management companies by increasing occupancy and reducing non-payments.

Large cities are having to deal with increasing amounts of traffic congestion. According to a report by ITS America, cars are parked on average 90% of the time and around 30% of traffic congestion in urban areas is caused by drivers seeking an available parking spot. This not only wastes drivers' time, it also increases harmful emissions.

Often driving can be stressful. Driving to a destination, only to find that there are no available parking spaces, causes more stress.

It not only affects motorists – the town or city also suffers from the shortage of convenient parking. Having to search for a long time for a parking space in a city center ultimately encourages people to consider out-of-town shopping centers or shopping online.

If people cannot find a parking spot, they probably will not go back to that city again to

shop, eat, or spend money in any other way. Therefore on-street parking spots are very important for cities.

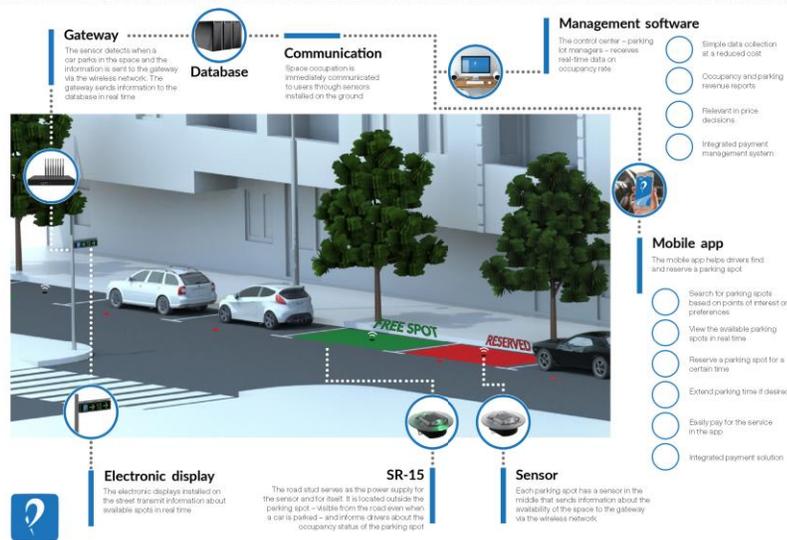
While often an afterthought, creating good parking spaces is essential in creating a smart city with a more efficient, sustainable and liveable environment. A smart city needs to have parking that

is easy to find, leave and pay for. Badly coordinated parking provisions can make any city a frustrating place to visit or live in.

## A smart solution

iMAPARK is an on-street smart parking system, developed with smart cities in mind, that helps drivers reserve and find an available parking spot by means of road studs in the ground, electronic displays and a smartphone app.

The system consists of the sensors, signaling and the communication hardware devices needed to monitor parking spots, as well as



Above: iMAPARK alerts drivers to parking spaces through an app

For parking managers, it simplifies parking data collection and reduces costs. iMAPARK enables detailed occupancy and parking revenue reports, with precise timing information that is relevant to pricing decisions.

The system is integrated with the field parking information devices through gateways that provide the data used by the application platform.

The application platform has a web-based back-office channel for the use of administrators. It supports the preparation of basic solutions for scheduling and IoT integrations, as well as full back-office support.

The functions of the software for parking management companies include the ability to: search and withdraw information about the business; manage accounts (customer, billing) and monetization services; perform customer account management operations; manage top-up requests; manage payment requests via the fully integrated setup (no need for third party system); manage vouchers; analyze data; and use the

interface to send bills to external billing systems responsible for invoice generation/receipts. iMAPARK enables parking management companies to operate their parking facilities much more efficiently, allowing the analysis, optimization and management of street assets in a single platform.

When installed, this system will reduce traffic density in the center of a city as well as increase the revenues of municipalities/car parking area managers by increasing occupancy and reducing issues of non-payment. ☐

## Need to know

This is what makes iMAPARK unique and made judges choose the system:

- Search for parking spots based on points of interest or preferences;
- View in real time the available parking spots;
- Reserve parking spot for certain hours;
- Extend parking time;
- Pay for the service (payment system integrated – no need for third party system).



**FIND**  
Find parking. Check availability and pricing in real time



**RESERVE**  
Reserve and make sure that a spot is available when you arrive



**PAY**  
Easily pay for the service with the integrated payment solution



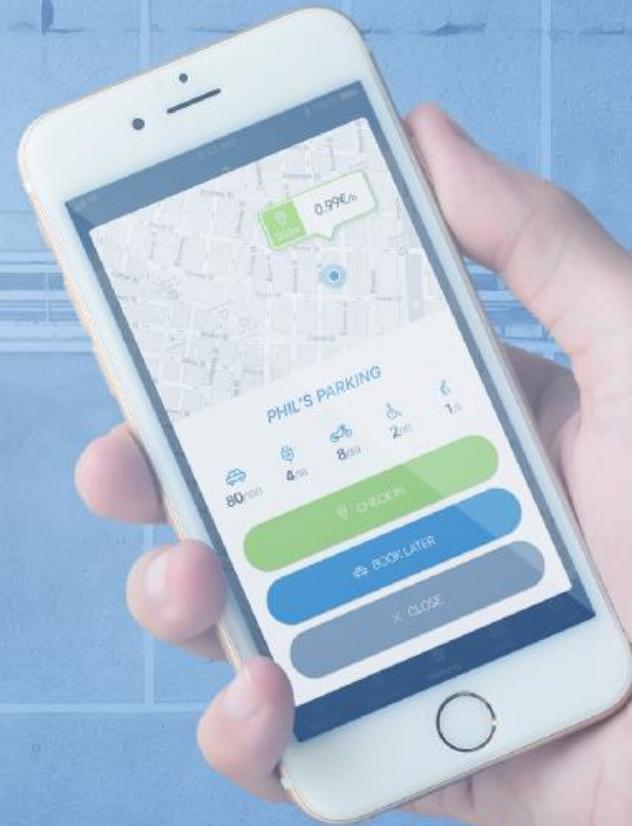
**PARK**  
The road stud will change color. Check in when you arrive. Park stress-free, enjoy the city and check out

This article is part of the Sernis internationalisation project (identified as Norte-03-075) FEDER 1975 Incentive System to the internationalisation of SMEs according to Portugal 2030) and is co-funded by the European Structural and Investment Funds (ESIF) from European Union, framed in the Norte 2020

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# Q&A TIME

Fell free to ask us anything



**Thank you!**



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