20 30 MOBILES HESSEN
HESSEN
WIR BEWEGEN ZUKUNFT.

HESSIAN MOBILITY CONGRESS

PARKUNLOAD

SMART LOADING ZONES

SUSTAINABLE & SMART URBAN FREIGHT

PARKUNLOAD
SMART LOADING ZONES

PARKUNLOAD · SMART LOADING ZONES

BARCELONA, SINCE 2017

18TH HESSIAN MOBILITY CONGRESS

VISION

Smart Loading Zones
to improve urban freight and commerce in large cities and for retailers

MISSION

Digital Transformation of loading zones with **variable and dynamic parking conditions** based on a sustainable business model

OPPORTUNITY

Lead and accelerate the shift to sustainable and smart urban freight in the EU and US

PARKUNLOAD · LARGE-SCALE SUSTAINABLE BUSINESS MODEL FOR LOADING ZONES

- Loading Zones are **"Only-Authorized · Free · Short-time"** shared or exclusive parking spaces *
- Loading Zones in Cities: **Regular LZ · Commercial LZ · Delivery Fleet LZ · TNC · Passenger LZ · Food Pick Up…**

* Loading zones types vary between countries and cities.
* Existing parking signs are not well understood, are expensive to control and do not achieve the desired parking turnover or parking priority goals of the city

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COMMON PROBLEM WORLDWIDE
URBAN FREIGHT · LAST MILE DELIVERY

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URBAN FREIGHT · 2015

alice | Alliance for Logistics Innovation through Collaboration in Europe

10% -15% of traffic in vehicle equivalent miles	**25% of urban transport related $C0_2$ emissions**	**30-50% of other transport related pollutants** Particulate matter, Nitrogen Oxide

ALICE · ERTRAC · Urban Freight Research and Innovation Map · August 2015 · Since 2015 "The e-commerce has grown at a double-digit rate per year".

COMMON PROBLEMS IN CITIES

Growing parking demand in dense areas for urban freight & delivery activities	Cities demand for more efficient and **sustainable urban freight**
Frequent illegal parking, few spaces and inefficient parking control means	**Lack of big data** to analyze and improve
Other vehicles are also **competing for short-term curbside spaces:** TNC, Residents, PRM, Private, …	

CHAIR LOGISTICS CITY PARIS

"We feel like curb management, and looking at the curb as dynamic, rather than static, is the way forward."

Laetitia Dablanc · Chair Logistics City · Paris · March 2020

DOORDASH

"We feel like curb management, and looking at the curb as dynamic, rather than static, is the way forward."

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SMART LOADING ZONES

FOR LARGE CITIES & URBAN AREAS

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App detects YOUR Loading Zone · 3 sec.
Automatic zone code detection via Bluetooth

App displays YOUR parking permit & time
Variable and dynamic parking conditions defined by the city

Just start your proof-of-parking
Receive parking time event notifications

The City Sets Parking Permit & Max. Time based on:

- **Precise type and location of the Loading Zone**
- **Max. parking time during peak & off-peak hours per weekday**
- **Vehicle type and tonnage. Vehicle emissions** (National regulation)
- **Profile of the driver:** Commercial, Private, PRM, Residents (Whitelist)
- **Different parking conditions on Pollution or Emergency episodes**

Also works inside the vehicle.
EPO & PCT patent · Parking control method for **smartphone and connected car**

PARKUNLOAD

PARKUNLOAD COMPONENTS

+

Bluetooth™

PARKUNLOAD

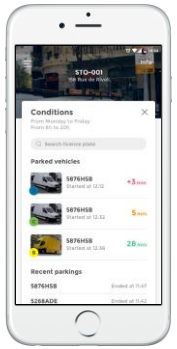
Sign with a Bluetooth device attached

App for drivers

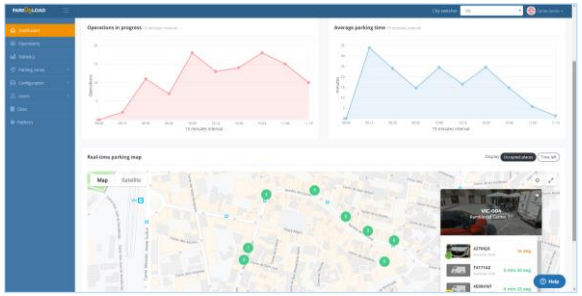
Add-on

Smart Parking Button · Click to Start

+



App for parking agents



Online BackOffice

See Parkunload video - Link

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SMART LOADING ZONES

SMART LOADING ZONES WITH BLUETOOTH

BETTER & FASTER LOCATION ACCURACY · ANY SMARTPHONE

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MANY TYPES OF LOADING ZONES · VERY SCATTERED AND DISPERSE IN THE CURBSIDE

Cities have many types of loading zones
with different parking conditions each

Parking conditions vary between streets
or even sides of the same street

Loading zones are **very scattered along the curbside**,
with diversity of LZ types & parking conditions

GPS IS NOT GOOD ENOUGH

4.0 Bluetooth®

Smartphone's GPS cannot quickly and accurately detect the LZ Type and Code in cities

LZ users park many times per day. Manual map selection per operation is not productive

Parkunload's Bluetooth detects the LZ type and code in 2-3 sec. from inside the vehicle

IP-protected Parkunload's solution detects the closest loading zone based on Bluetooth signal strength. **Compatible with any smartphone in the market**

Many Loading Zone Types

Standard LZ
Shared-use commercial & private

Commercial or Truck LZ
Only Commercial or Truck vehicles

Only-delivery LZ
Registered delivery fleet vehicles

TNC or Passenger LZ
Wait, Pick up, Drop off zones

Residents · Accessible LZ
Shared-use o exclusive zones

Food Pick up LZ
Short-term for local commerce

The curbside management is dynamic and with variable parking conditions based on Byelaws, sophisticated digital platforms to manage the curbside do not work on a large-scale

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SMART LOADING ZONES

MOBILE APP FOR DRIVERS

GET IT ON Google Play

Available on the App Store

SMART PARKING BUTTON

Available on amazon.com

MOBILE APP FOR ENFORCEMENT

GET IT ON Google Play

ONLINE BACKOFFICE

Standard LZ · Commercial LZ · Delivery Fleet LZ · Click & Collect · TNC · Passenger · Food Pick Up · Residents · PRM

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App for drivers

SIGN UP

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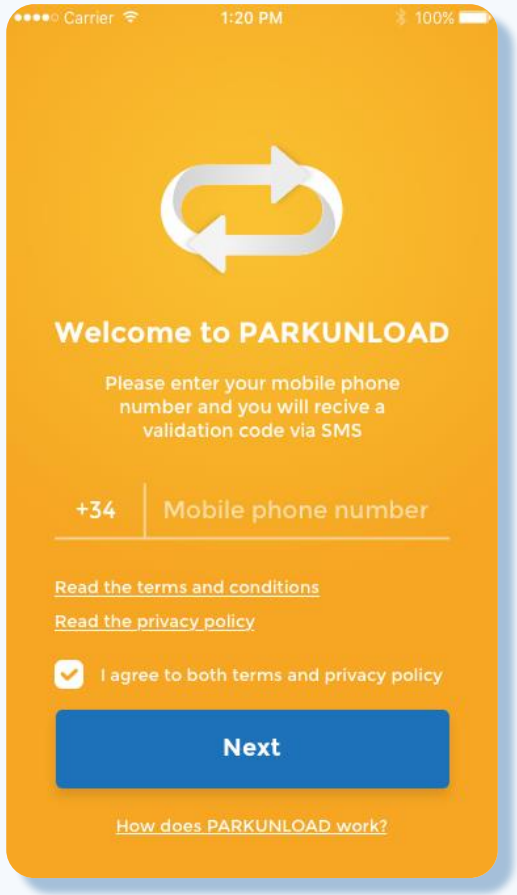
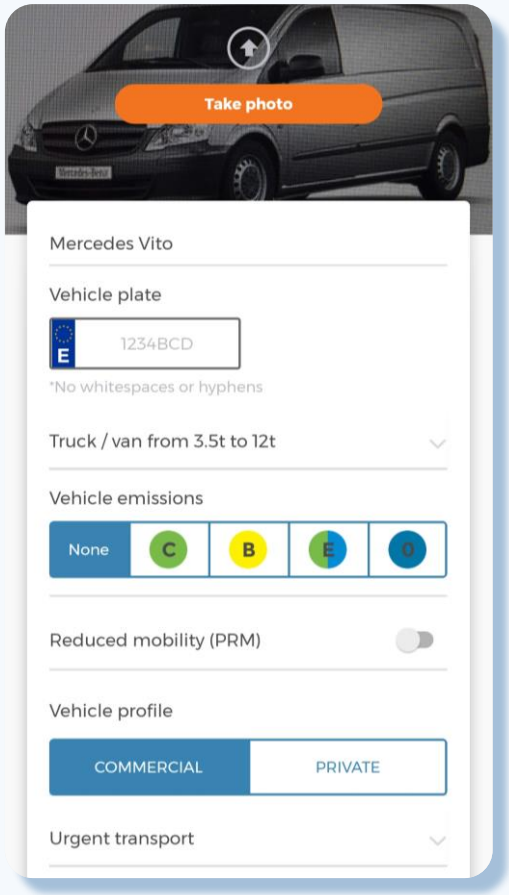
Quick sign up process



Only mobile phone number
Automatic validation by SMS

Terms & conditions acceptance

Vehicle data & profile



Optional picture

Basic vehicle data
Brand, License, Type and tonnage

Vehicle emissions
Based on National regulation

Driver profile
Professional (including sector), Private or PRM

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SMART LOADING ZONES

App for drivers
YOUR PARKING CONDITIONS

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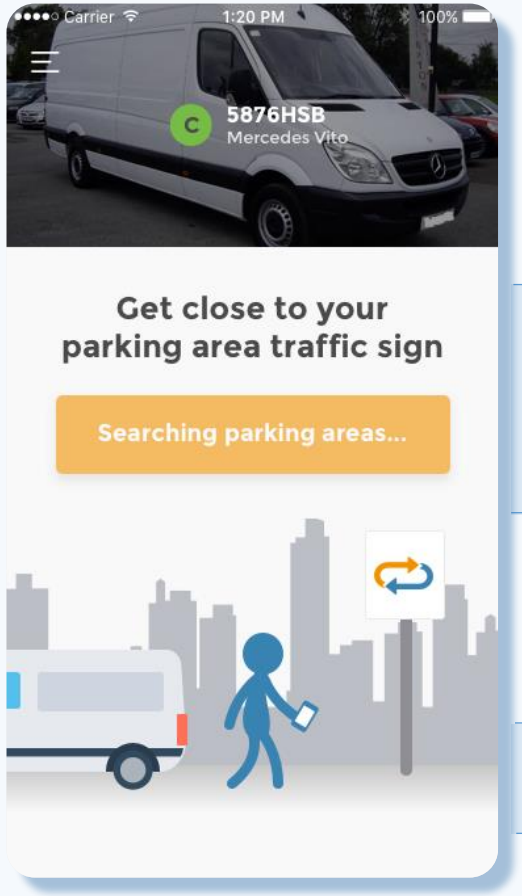
Automatic zone code detection

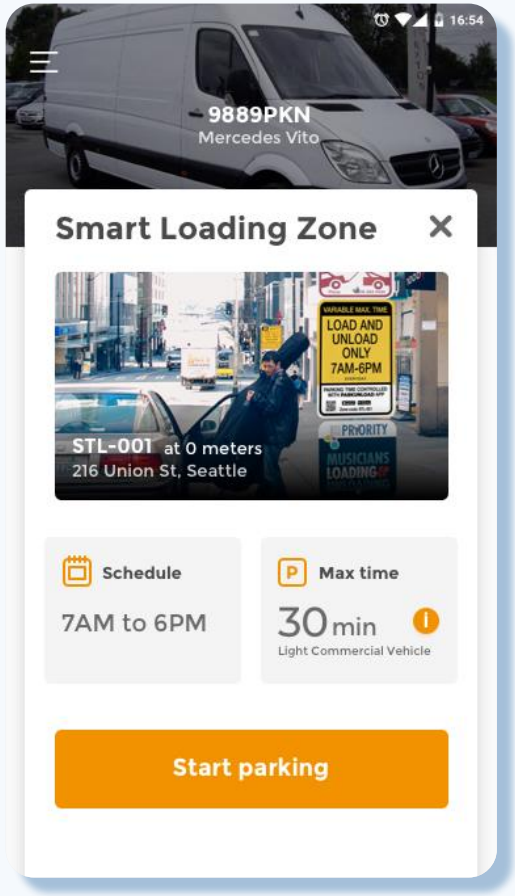


Automatic zone code detection via Bluetooth*

In 2-3 sec. the closer zone code is automatically detected

Option to enter zone code or select zone on a map

YOUR parking conditions



Permit and max. parking time
App displays current regulation **for you** in the current smart loading zone

Get valid proof-of-parking
Click Start to initiate countdown

* Bluetooth Low Energy is also used for hands-free, headphones and connected cars

* GPS consumes more battery power, is much less precise and takes longer

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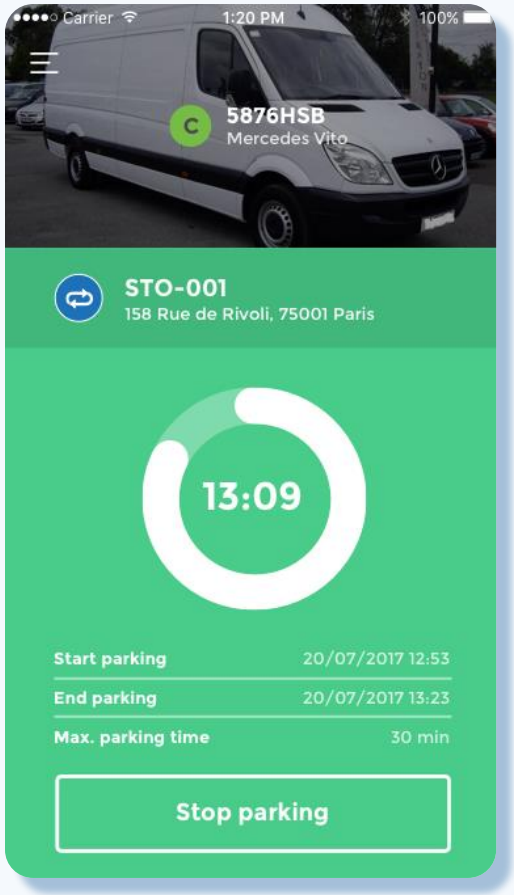
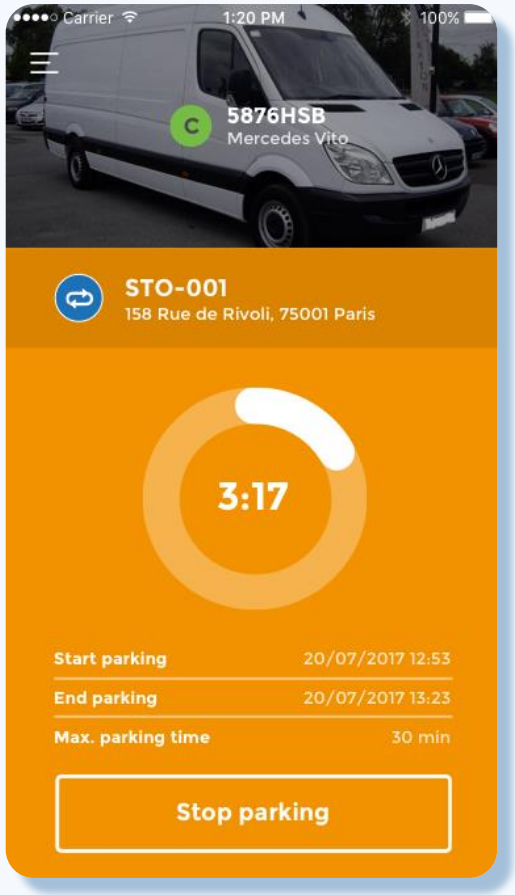
App for drivers · Smart Loading Zones

PARKING TIME EVENTS

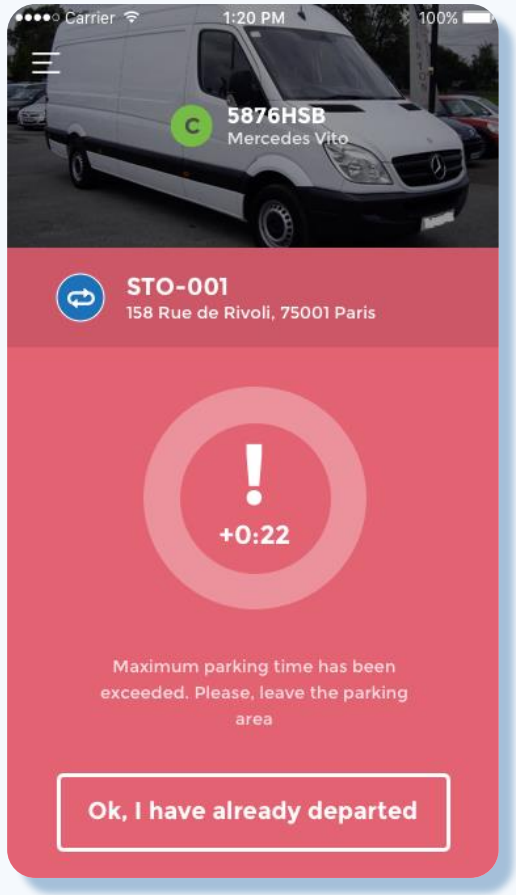
Correct prof-of-parking



5 minutes left



Proof-of-parking expired



Notifications
The app notifies any changes on current parking operation

"No return" configuration
The city defines when the vehicle can return to the same zone (30').

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App for drivers

REAL-TIME PARKING AVAILABILITY

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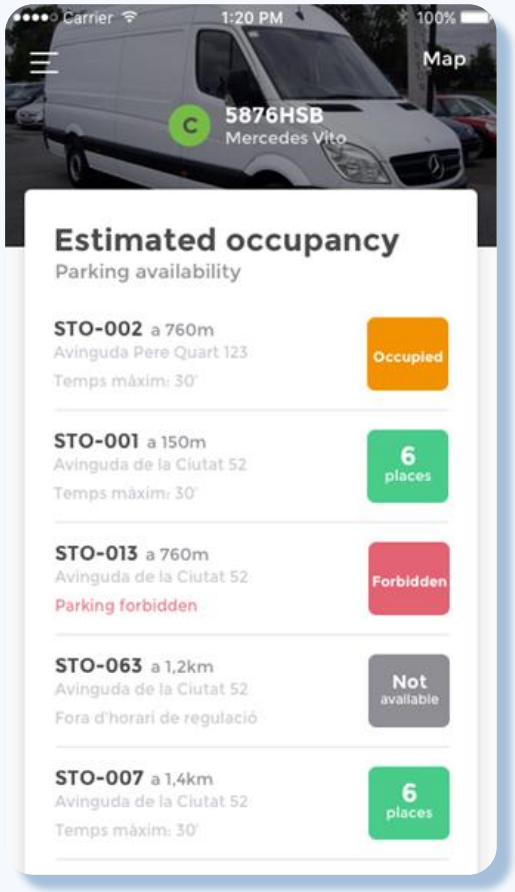
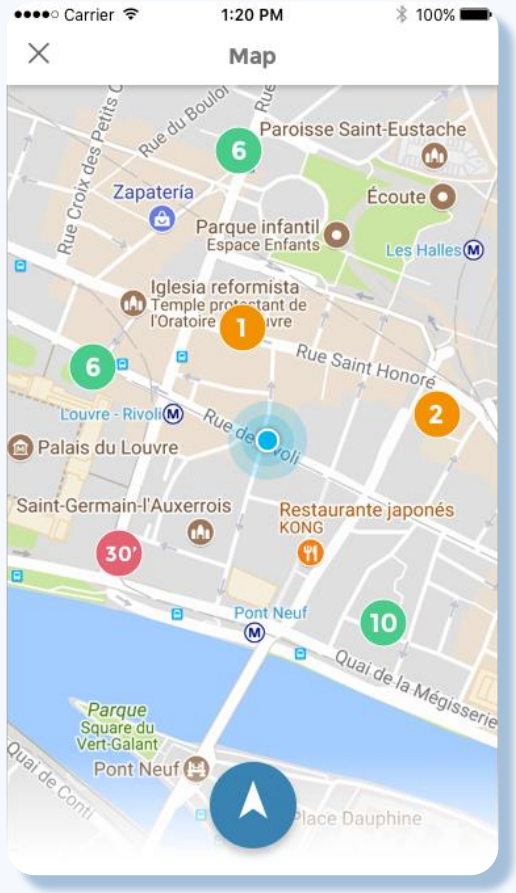
Occupancy· Permit & time



Real-time parking availability
Free parking spaces near-by

Permit and time per zone
Right now and for your vehicle

Real-time map



Parking availability map
Real-time information

Remaining time per zone
Best-case information

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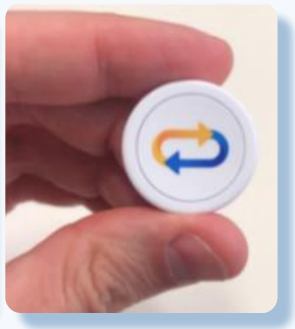
App for drivers
SMART PARKING BUTTON

AN EVEN SMARTEST SOLUTION



Just one-click
Without touching smartphone

Feedback by voice
To confirm or reject parking

Easy set-up
Just 10 sec. for pairing with app

Thanks to Bluetooth at sign
Not feasible with GPS-based location

INSTANT PROOF-OF-PARKING

"Just one-click parking to start delivering"

For frequent users: **Urban Freight · Deliveries · TNC · …**

PARIS

Can be customized with the logo of the city

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SMART LOADING ZONES

App for parking enforcement
PARKING CONTROL OPERATION

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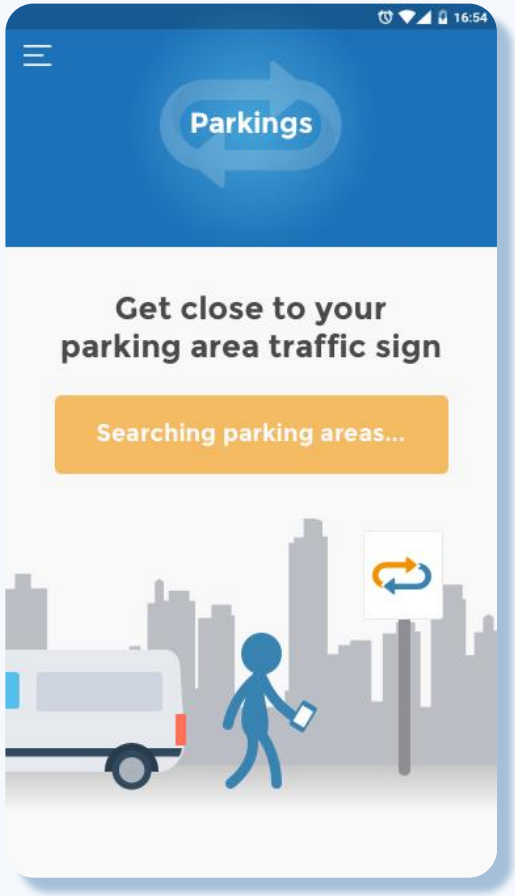
Automatic zone code detection

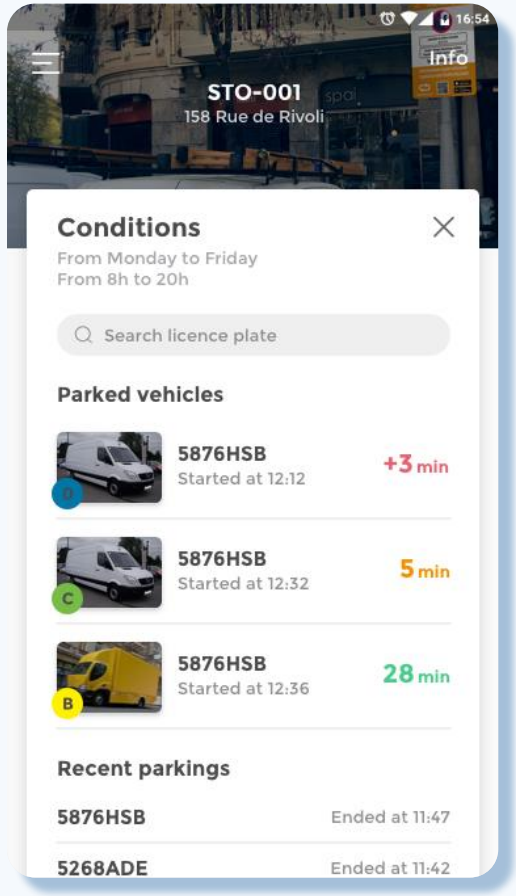


Automatic zone code detection via Bluetooth*

In 2-3 sec. the closer zone code is automatically detected

Option to navigate, enter zone code or select zone on a map

Instant vehicles' status list



Current prof-of-parking status

Remaining time per vehicle
Clear information in real-time

Search for parking operations per license plate

* Bluetooth Low Energy is much better than GPS-based or LPR software in smartphones

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Online BackOffice
REAL-TIME KPI AND BIG DATA

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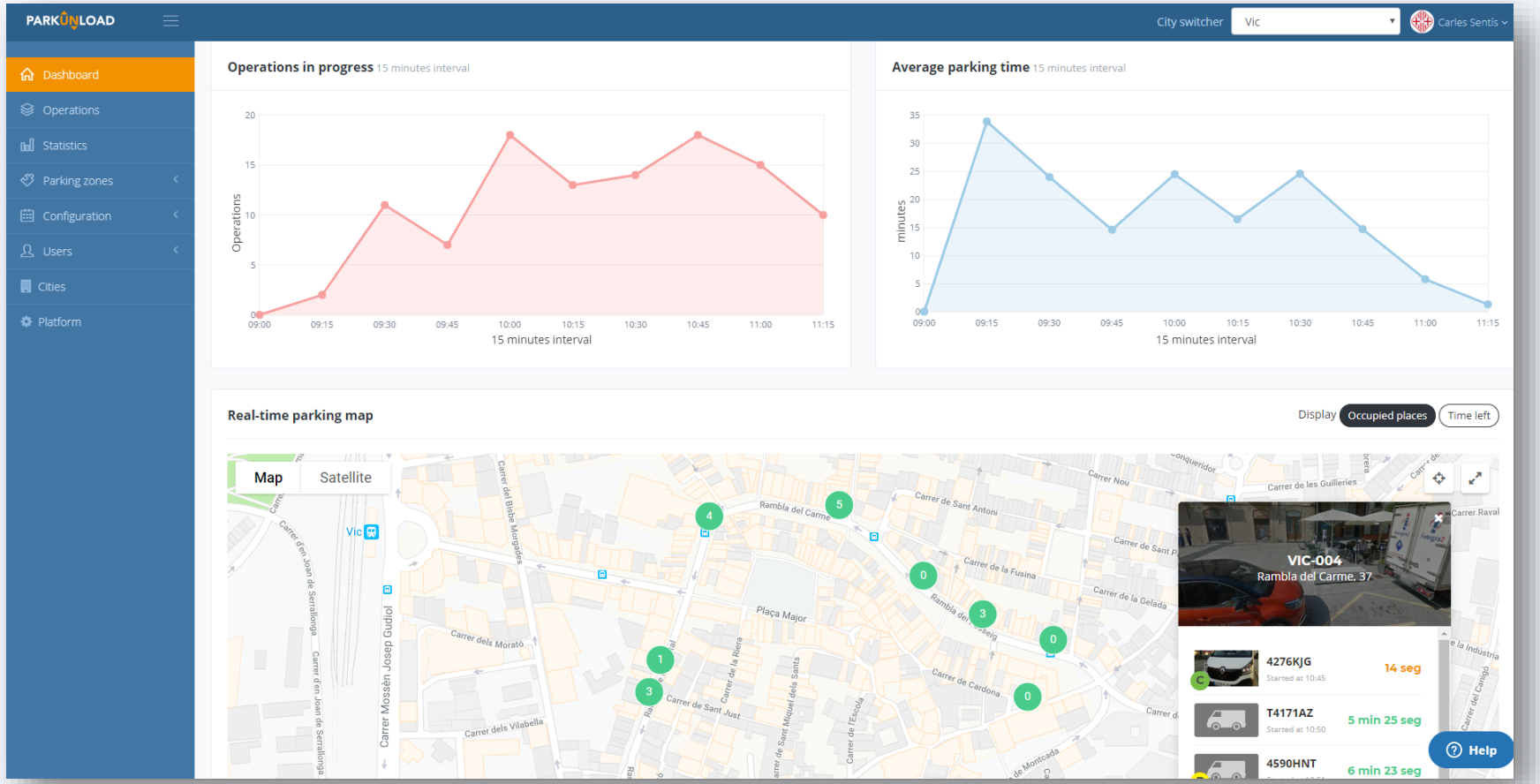

KPI · Key Performance Indicators
Parking Operations · Avg. Time · Occupancy

Real-time charts
Parking Operations · Avg. parking time

Real-time parking availability & time left
Occupancy level · Worst-case per zone

Big data of City Logistics
Loading patterns, occupancy levels, …

Parking control service analysis
Activity · Queries· Notifications · Registers

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BENEFITS AND IMPACTS

SMART LOADING ZONES · SUSTAINABLE & SMART URBAN FREIGHT

Shared LZ · Commercial LZ · Delivery Fleet LZ · Click & Collect · TNC · Passenger · Food Pick Up · Residents · PRM

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SMART LOADING ZONES

MARKET DEVELOPMENT IN THE EU & US
RAISING INTEREST, NEEDS AND CONFIDENCE

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SPAIN · 2018

Live deployments. Proposals and tenders in some mid and large cities

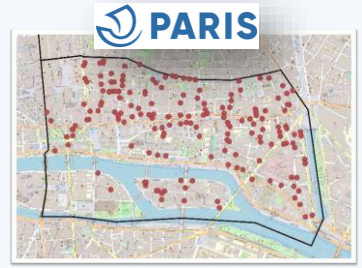
GERMANY · 2019

Pilots in Stuttgart.
Proposals to Hamburg and Berlin

IRELAND & UK · 2019

Pilots in Dublin and Belfast.

FRANCE · 2020



Pilot in Paris (4th district): 168 LZ with 42 LZ including occupancy sensors
* Contract in progress

US CITIES · DOT · RESEARCH AGREEMENTS · 2019

- **Philadelphia:** RFP offer "App for Commercial Loading Zones"
- **New York:** Proposal " Neighborhood LZ Program"
- **Seattle:** RFP Loading Zones & UW Urban Freight Lab Tech Day
- **Nevada DOT:** RFI Urban Truck Parking · Cambridge Systematics
- **TRB & IPMI:** Washington DC, Los Angeles, Chicago, Boston, …

Parkunload has already met with largest of cities of Spain, Germany, France, Ireland, UK, United States, Portugal, Netherlands, Belgium, Sweden, Andorra, Switzerland, Luxembourg, Canada and Argentina

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SMART LOADING ZONES

BENEFITS & IMPACTS OF SMART LOADING ZONES

URBAN MOBILITY · DRIVERS · CITY · ENVIRONMENT

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PARKING AUTHORITY BENEFITS	DRIVERS BENEFITS	CITY · URBAN MOBILITY BENEFITS	ENVIRONMENT · SUSTAINABILITY BENEFITS
Higher parking rotation and available spaces: +30%	**Clear and precise parking conditions for everyone**	**Variable and dynamic curb side parking policies**	**Public environmental policies** Local, Regional, National, EU level
Less illegal parking: -50% Less circling and double parking	**Compatible with any smartphone** Free · Easy · Quick	Real impact on urban mobility Less congestion · Less emissions	Effective reduction of air pollution and noise
Optimum “shared-use” of available public loading zones	Estimated parking availability info	Valid during emergency, pollution or peak-demand periods	Enables Soft, Temporary or Hard restriction based on vehicle emissions
More efficient and productive parking enforcement: x2	Excellent user interface compatible with daily delivery work	Big data to analyze and improve regulations many times	Further environmental taxations for urban freight and delivery fleets

* “Operational KPI” of Digital Loading Zones

* Environmental efficiency and KPI

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SUSTAINABLE & SMART URBAN FREIGHT

Urban Freight · Deliveries · Customers · TNC · Residents

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