



SMART-TECH

**SMART
CITY
PARKING**

Park.CITY.RP



**GLOBAL REVENUE FROM
SMART PARKING SYSTEMS
IS EXPECTED TO TOTAL
\$1.5 BILLION
FROM 2015 TO 2024**

The parking industry is being revolutionized by new technologies that enable cities to reduce levels of traffic congestion, conserve fuel, and lessen air and noise pollution levels. Sensor networks that can detect vehicle occupancy are enabling smart parking systems, which give drivers real-time availability information that makes it easier to find a parking space. According to a recent report from Navigant Research, global revenue from smart parking systems is expected to total \$1.5 billion from 2015 to 2024.

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INTRODUCING URBAN INTEGRATION



- SMART-YECH is a global developer of smart parking solutions.
- We're driven by a passion to help our cities to be better places to live. Parking is an integral part of transport infrastructure. Smart parking is improving overall mobility and transport eco-system effectiveness.
- We leverage cutting edge technologies to enable sustainable development strategy for city of any size.
- Our parking management and parking technology expertise build unique value proposition for municipalities and parking operators.
- We provide a comprehensive solution where all possible data and processes run in one place with a high level of transparency and accuracy.
- Cloud based platform empowered by strong IoT set up and unified billing capabilities drives technology leadership for better customer satisfaction.
- We can customize it to your needs.

SMART-TECH'S SMART PARKING SOLUTION AT A GLANCE

The cloud-based platform is the core of real smart parking. It enables data and process transparency, runs all processes in one place, and provides scalability for future development. Most parking systems with modern parking meters, mobile apps, and sensors used to be called “smart parking”, but this is no longer the case. The constantly-growing number of cars, as well as the adoption of connected and self-driving cars, requires a strategic approach from parking authorities and operators. Real-time information and payment flexibility are critical when adjusting a parking system.

IoT

The IoT is the next big thing for urban living. Sensors and connected car devices are a part of our smart parking system today as we build a solid base for future IoT service integration and development.

Scalability

Our Smart Parking Solution is designed to be scalable, meaning entire cities can be seamlessly connected regardless of their needs today or tomorrow.

Transparency

We're putting more processing power and intelligence where data is transferred and received, enabling information to be more intuitive and dynamic.

PAYMENTS

PERMITS & ENFORCEMENT

ADDITIONAL MODULES

SMART CITY PLATFORM

- E-wallet
- Reports & analytics
- Central billing
- User accounts
- Asset management
- Billing
- GIS for Parking objects
- Booking

Open API for 3rd party partners
Mobile commerce
Zone management

Appeals management
Parking web portal
Transport telematics

Rates management
Monitoring
Special event parking

- Taxi parking
- Bus parking
- Truck parking
- Bike parking

OCCUPANCY MONITORING

TRANSPORT SERVICES

TOWING MANAGEMENT

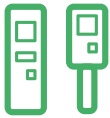
DASHBOARDS AND ANALYTICS

Integration

Hardware



Parking meters
(Parkeon, MacKay,
IPS, T2 Systems,
Meypar, etc.)



Payment kiosks



Occupancy
monitoring
system

Mobile tech



Web portal



User's personal
account pages



Mobile
applications
(Park.CITY,
ParkMobile,
PassportParking,
ParkMe, etc.)

Administration



Permits and
subscriptions

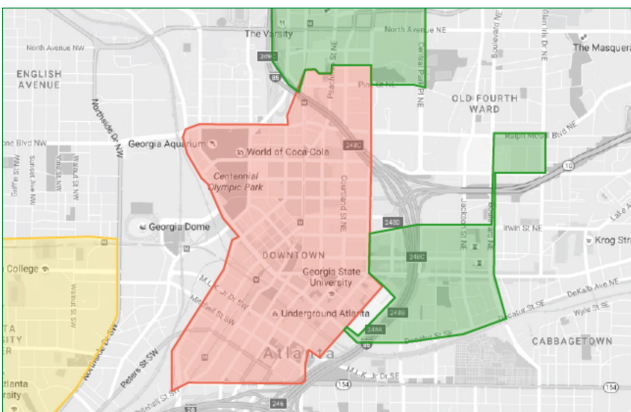


Enforcement
solutions
(T2 Systems,
Gtechna)



Evacuation

Heatmap



A map with graphical representation of objects and color-coding of the trend (red for a drop / green for growth).

Periods for reports and analytics

- Today
- Yesterday
- Week-to-date - the current week
- Month-to-date - the current month
- Quarter-to-date - the current quarter
- Year-to-date - the current year
- Custom - any period

DASHBOARDS AND ANALYTICS



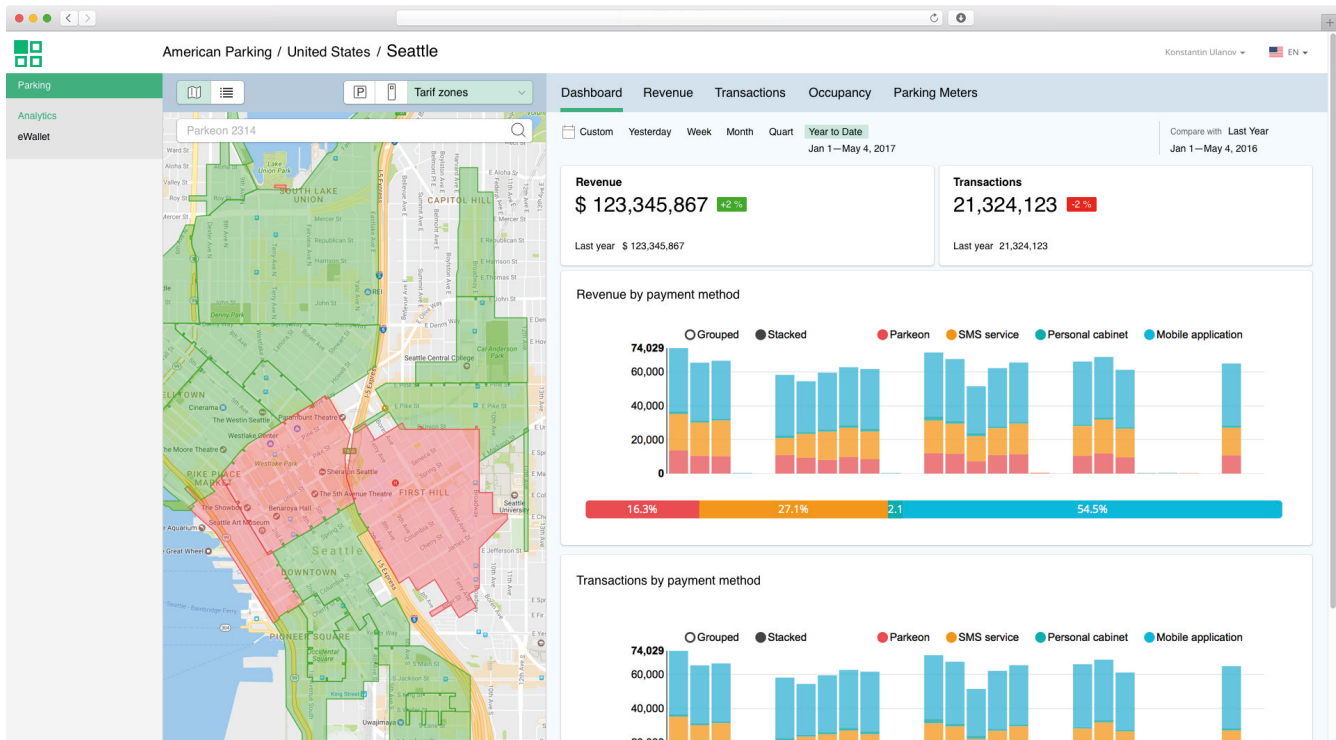
- View all paid parking data in one place, filter by parking area or parking zone, and generate report on specific date ranges
- Create hierarchy that meets local operation
- Customize the dashboards to display key reports or KPIs reports, including:
 - Revenue Summary
 - Quantity of Parking Sessions
 - Revenue vs. Target
- Make intelligent decisions about your parking asset

DASHBOARDS AND ANALYTICS

Analytics are a critical part of any solution, as it provides the basis for intelligent management decisions.

- The Park.CITY.RP forecast sub-system offers a simple, economical and user-friendly solution to dramatically improve your forecasting and reporting capabilities. Ideal for automated occupancy and revenue management without sensors and the associated cost.
- Real-time occupancy statistical forecasting and visualization on Google Maps
- Import existing GIS data, convert ESRI format to Google Maps
- Capability to draw parking, tariff zones right in GIS, drag and drop functionality
- Flexible tariff engine supports tariffs of any complexity: recurring, calendar based, any tariff step, any grace period
- Aggregated view on assets reporting and classified by type
- Aggregated view on real time reporting of payment transactions from multiple channels: meters, mobile app, etc.
- Aggregated view to the citation data
- Aggregated view of enforcement efficiency
- Heat map dashboard granular to the parking zone and specific parking (date and time view)
- Revenue forecasting dashboard granular to the parking zone and specific parking (date and time view)
- Support of any meter or combination of meters in your park
- Capability to integrate any brand or brands of mobile payment
- Capability to manage on-street, off-street, surface and other parking at one GIS at the same time
- Automatic cashless revenue reconciliation tool

DASHBOARDS AND ANALYTICS



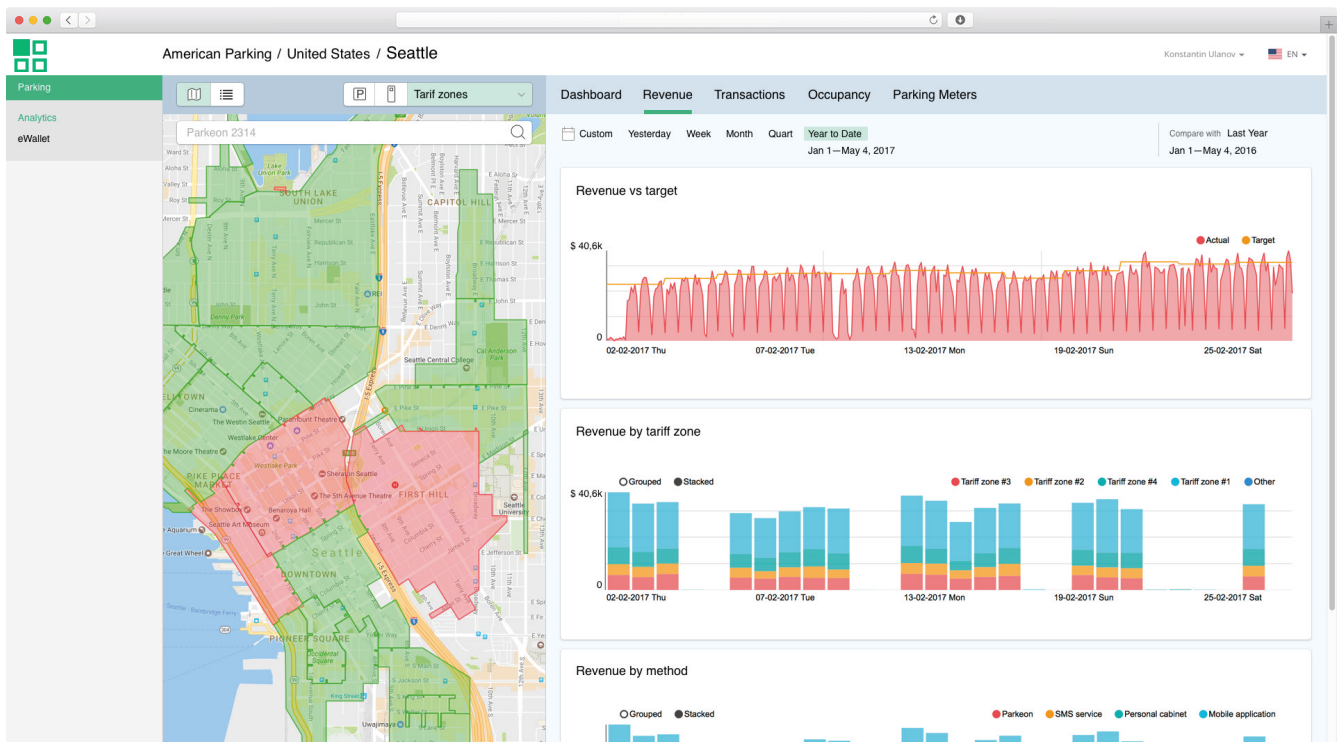
Park.CITY.RP revenue management system

- Park.CITY.RP dashboards and analytics modules integrate transaction, payment, citations, and other data from various channels, such as parking meters, mobile applications, off-street systems, the Park.CITY.RP customer web portal, enforcement programs, and others into the one solid database.
- Park.CITY.RP dashboards and analytics modules allow getting and filtering information by:
 - On-street, off-street parking
 - Country - city - parking zone - parking place - garage
 - Specific date ranges

DASHBOARDS AND ANALYTICS

Revenue management

Business intelligence is a technology-driven process of analyzing data and presenting actionable information to help municipalities and operators make more informed business decisions.



Reports

- Revenue by periods
- Revenue by payment channels (parking meters, mobile applications, Web site)
- Revenue by payment means (cash, bank cards, e-money)
- Revenue by subscriptions

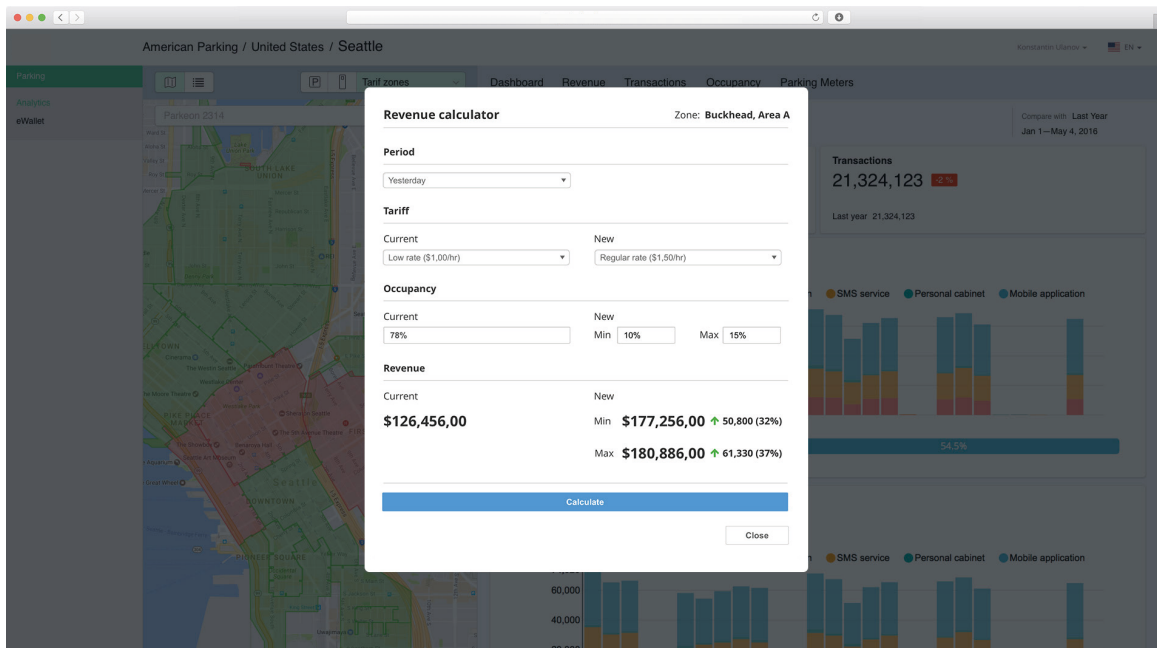
Analytics

- Revenue breakdown by parking session prices
- Revenue breakdown by hours, with visualization of peak values
- Breakdown of an average bill by time intervals
- Trend data for an average bill

DASHBOARDS AND ANALYTICS

Revenue analysis with Park.CITY.RP scenario manager

Demand Pricing – dynamically selects and recommends optimal rates for on-street parking zones (including progressing and dynamic tariff) or off-street parking zones and objects based on forecasted demand, arrival time, parking duration, and more.



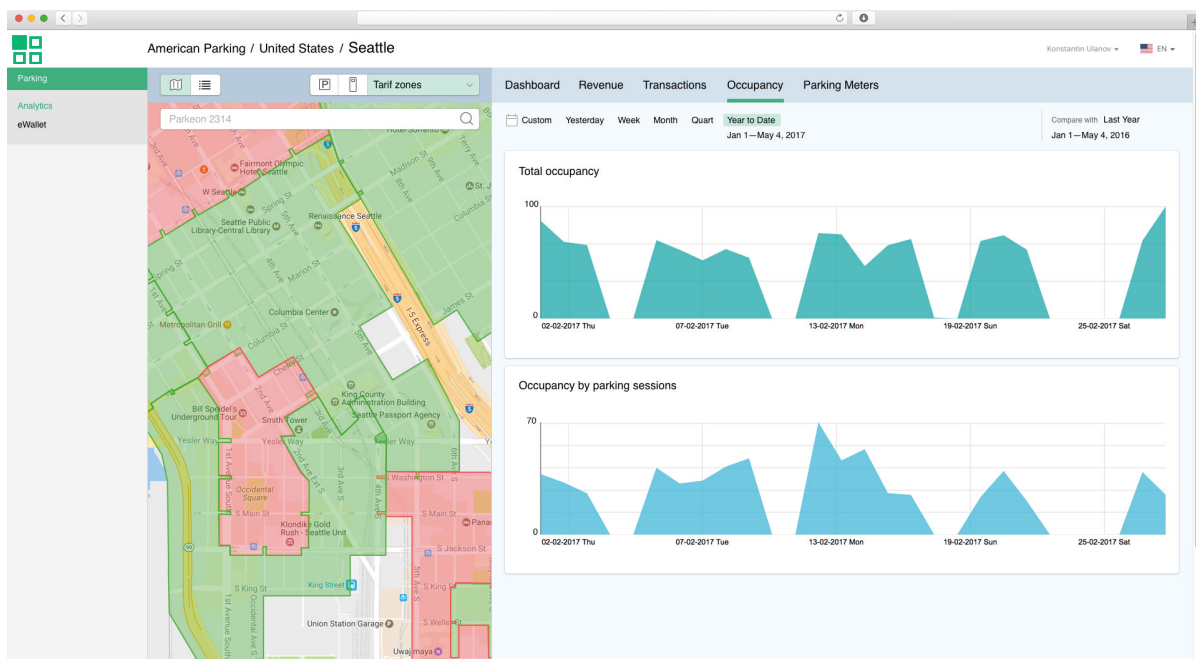
Data visualizations and dashboards – understand your business at a glance with actionable insight:

- Dashboard view – graphical dashboard views of key metrics.
- Performance map – quickly identify underperforming and maximized meters and assets across your parking plant.
- Personalize reporting – ability to view custom reports based on role and authorization level.
- Intuitive comparison – assess multiple reports side-by-side to recognize new patterns and guide decision-making.
- Visualization – getting a snapshot of business trends and exceptions, and much more
- Powerful business forecast – in-depth business forecasting, which lets you drill down to almost any level of detail.
- Flexible reporting – custom and standardized reporting features manage-by-exception functionality.

DASHBOARDS AND ANALYTICS

Occupancy forecasting

With the right approach and historical data, parking occupancy forecasts can go far deeper than manual processes and educated guesses, yielding new insights that elevate business performance. Park.CITY.RP forecasting algorithm creates a diagram for every minute of the day for each parking space. It generates parking spaces occupancy forecast with accuracy more than 90%.



Reports

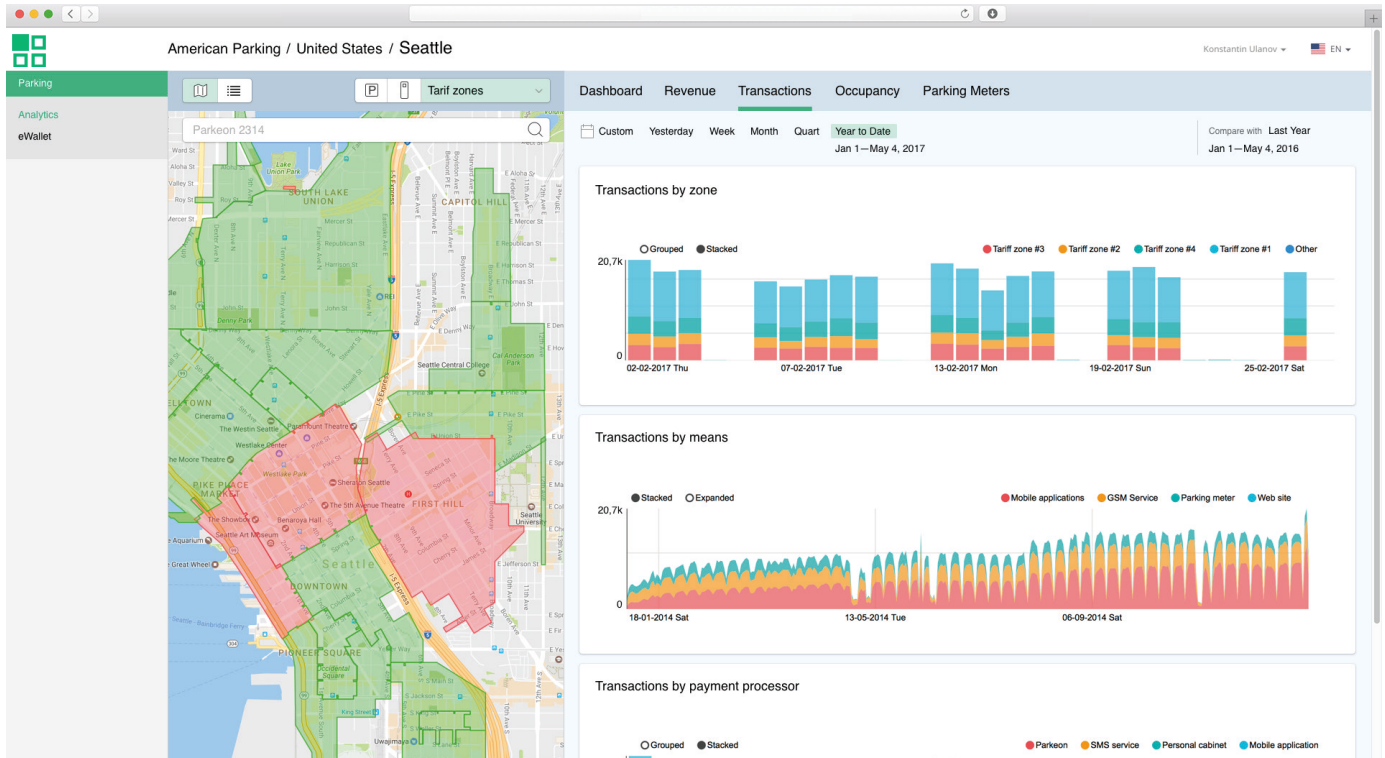
Parking occupancy across the hierarchy, starting with the level of all parking objects of the operator and through the level of a single parking space

Analytics

- Occupancy trend data for any level of data representation hierarchy
- Analytics of the loss of profit due to low occupancy or low rates in the case of full occupancy, history and forecast for future periods of time
- Analytics of the parking turnaround

DASHBOARDS AND ANALYTICS

Transactions



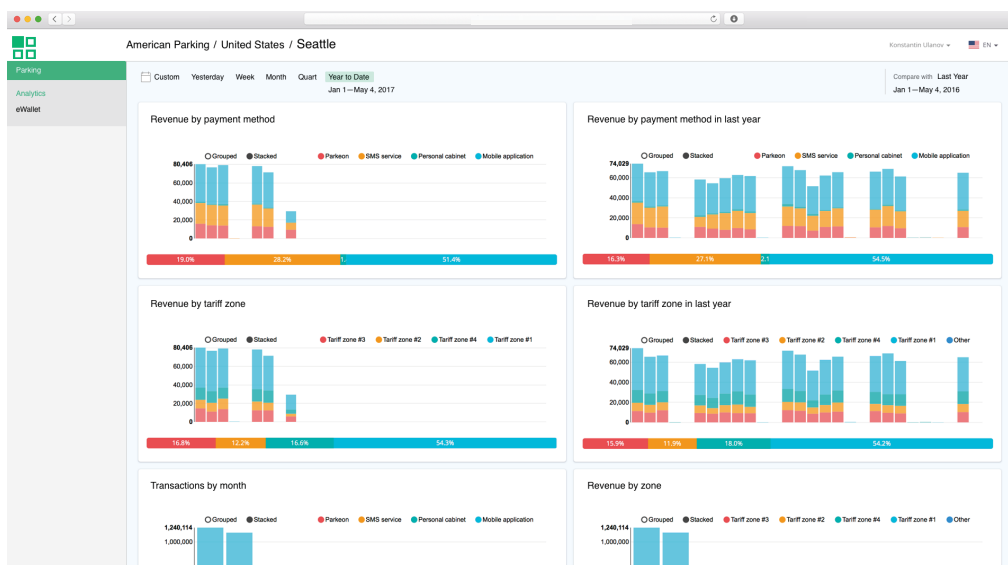
Reports

- The number of parking sessions by periods of time,
- The number of parking sessions by payment channels: parking meters, mobile applications, web site,
- The number of parking sessions by payment means: cash, bank cards, e-money,
- The number of issued permits and purchased subscriptions.

Analytics

- Distribution of the duration of parking sessions.
- Distribution of the number of parking sessions on the time axis, with peaks visualized.

DASHBOARDS AND ANALYTICS



E-Wallet

Reports

- By type of payment channel: parking meter, mobile application, GSM service, web,
- payment channel: ParkMobile, PassportParking, PayByPhone, White Label app, etc.,
- payment processor: PayPal, Stripe, WorldPay, Citi Bank, etc.,
- payment means: cash, bank cards, e-money, etc.,
- payment system: VISA, MasterCard, UnionPay, American Exspress, PayPal e-money, CityCard, ePass, etc.

Analytics

- Average funds added, including the trend data for that average during the selected period of time
- Distribution of the funds added (in the band of values)
- Balances of users' e-wallets, including the trend data for those balances
- Average balance of a user's e-wallet, including the trend data for that average
- Ratio of the sum paid for parking sessions to the e-wallet balance (e-wallet usage coefficient) for the selected period and city in total and the trend data for this coefficient
- E-wallet funding frequency (ratio of the average number of funding transactions during the selected period to the average number of users) and the trend data for this coefficient

TELEMATICS CONNECTED VEHICLE DEVICE



Control over parking lots

- Identification of vehicles violating parking rules, including illegally occupying special places reserved for the disabled
- Ability to control how organizations, taxis, and car sharing companies pay parking fees

Control over transport operators

- License verification
- Identification of expired licenses
- Identification of unlicensed taxi service providers
- Monitoring of public and corporate transport technical condition

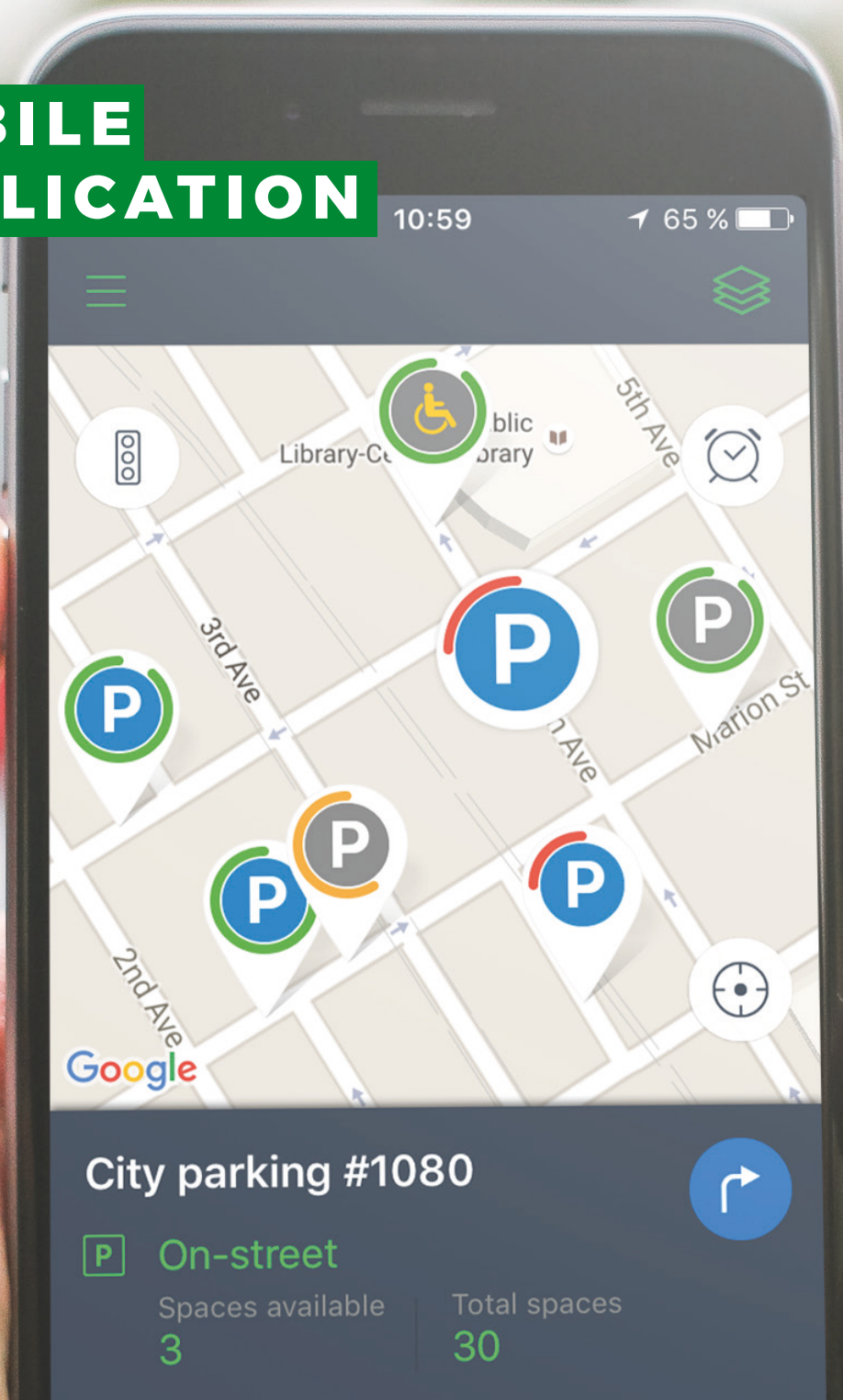
Traffic management

- Average traffic flow speed measuring
- Traffic speed monitoring, online notifications about speed fluctuations
- Identification of city locations with high accident risk
- Adaptive traffic light control

User service

- Automatic payment for parking
- Automatic toll payment (roads, tunnels, bridges)
- Automatic congestion charge payment
- Towing notifications

MOBILE APPLICATION



The Park.RP mobile app is an integral part of CITY.RP platform. It is a key interface between the end user and the parking administrator as it allows the user to find parking, navigate there, pay for the exact amount of time needed, extend the parking session when needed and much more. Since Park.RP mobile app is a part of the platform, any update or change applied at platform by the parking administrator becomes available for the end user in real time. This could include tariff or parking rules changes, new parking zones, new city infrastructure objects, or other events.

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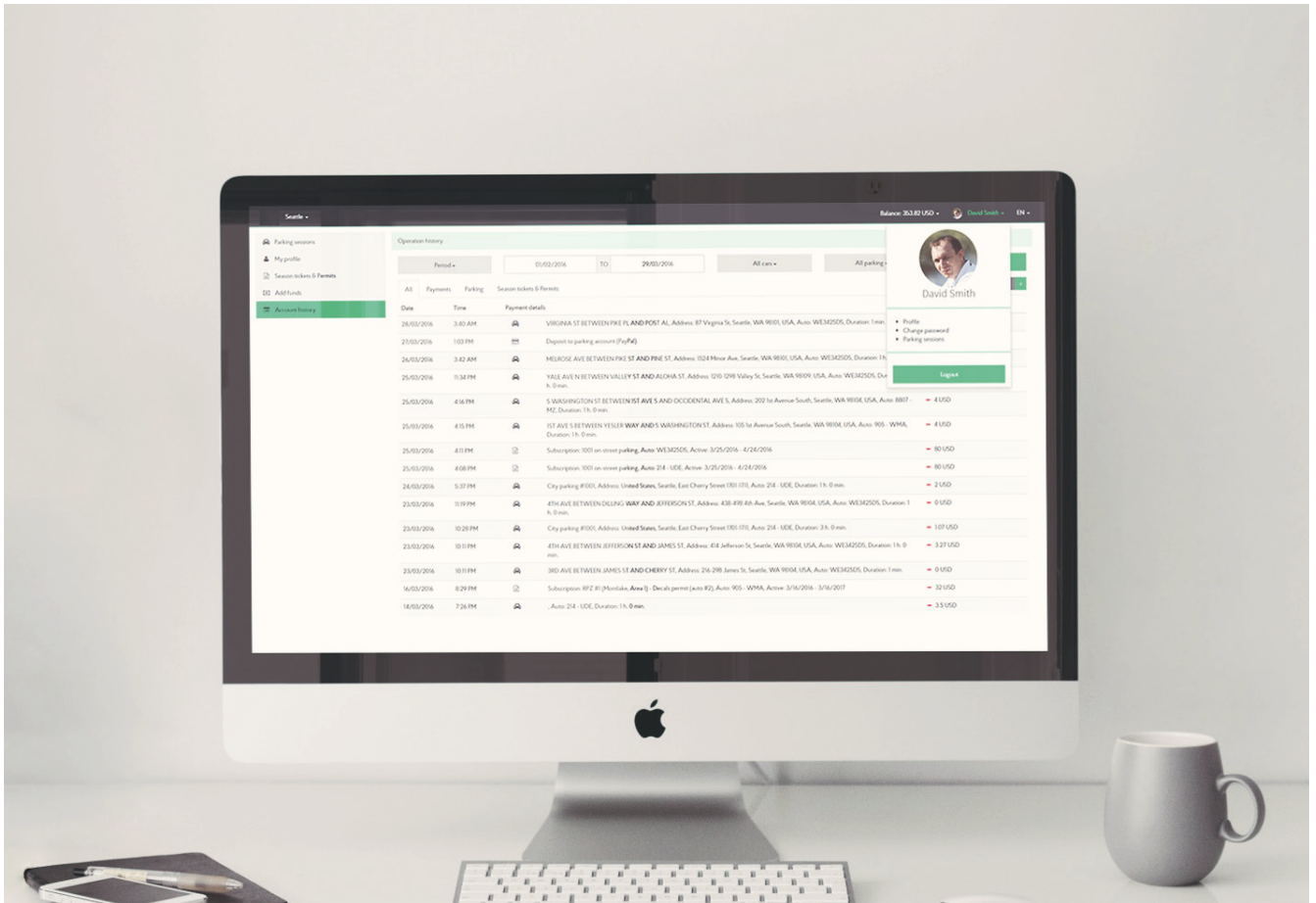
Park.CITY MOBILE APP PROVIDES UNPARALLELED USER EXPERIENCE



Cutting edge mobile app

- Assign an unlimited number of cars to one e-wallet
- Start, stop, or extend parking sessions in either on-street or off-street parking
- Real time notifications about parking sessions
- Recharge e-wallet
- Monitor available parking space availability in real time
- Navigate to the parking with real-time traffic
- Filter parking results based on parking duration, loyalty programs, etc.
- Pay for any city infrastructure object or service assigned to the platform, including EV charging, transit, bike rental, or car sharing
- Manage personal account and e-wallet
- Monitor payment and parking history

CUSTOMER WEB ACCOUNT



About

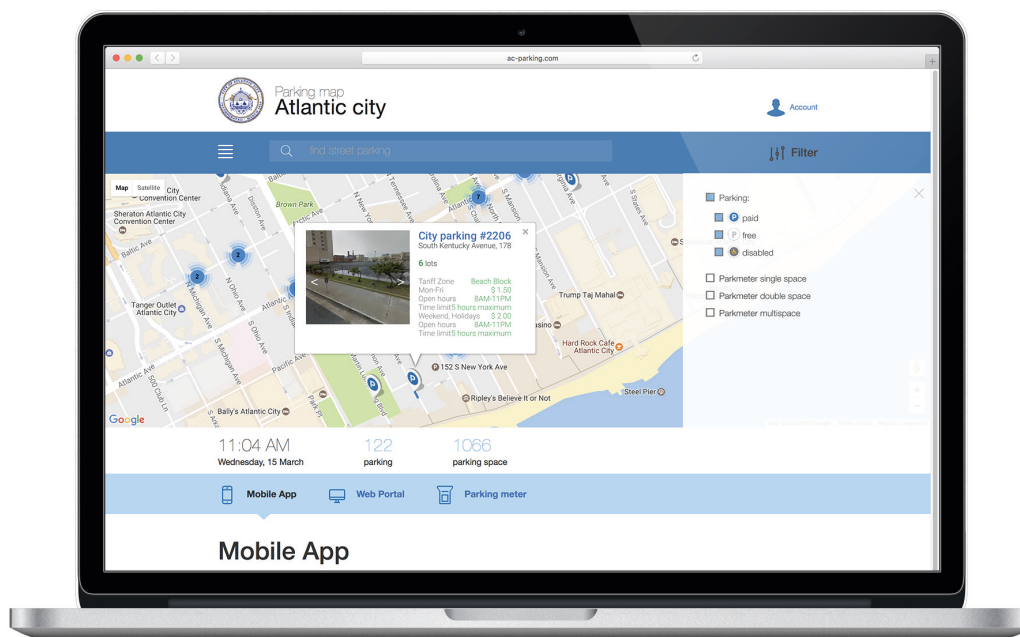
The Customer web account is powerful extension of the mobile app functionality for a web based interface.

Since all data is processed in Park.CITY.RP platform, end users get even more flexibility in payment options: start parking sessions via the mobile application and stop or extend them via the web portal (and vice versa).

Features

- Create a personal profile, with the ability to set the default vehicle, add your family's or co-workers' cars, and have the ability to pay for any of them
- Start, stop or extend parking sessions
- Recharge e-wallet
- Purchase and renew parking permits
- Access the history of payments, parking sessions, permits, and subscriptions, as well as loyalty programs, available on-line

CUSTOMER WEB PORTAL



Customer web portal is an important part of seamless communication between the city and citizens.

Park.CITY.RP customer web portal is a proven way to increase customer loyalty. Serving as a virtual parking map, the customer web portal provides direct access to user's personal account and detailed customer information about:

- Parking zones and spaces (with filtering out paid or free zones enabled)
- Parking spaces for persons with disabilities
- Location of parking meters
- Parking prices for each space
- Permitted duration of parking
- Working hours
- Payment methods

The customer web portal is completely customizable: upload your logo, set your color scheme, and choose your layout to brand Park.CITY.RP web portal to match your corporate website and branding:

- Brand and customize all skins to reflect city image
- Customize what items on the map users see when they navigate the site and give them drill-down access to the information they consider most important
- Refer customers to your portal to easily ask questions, search for answers, find Facebook page, and more
- Reduce support calls by enabling customers to submit questions via a live chat
- Promote important news (special events and so on) in the single place without paying

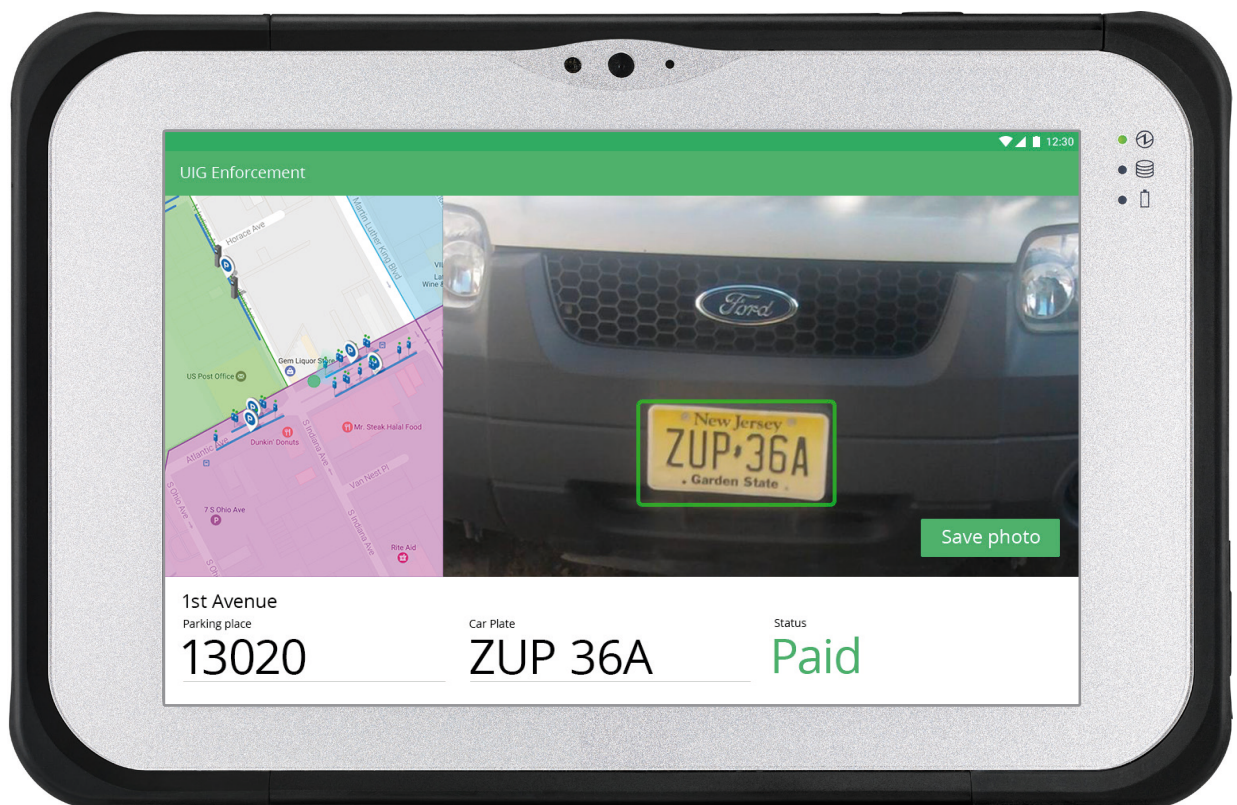
ENFORCEMENT PLATFORM

Park.CITY.RP enforcement module utilizes GPS to get to input time and location data.

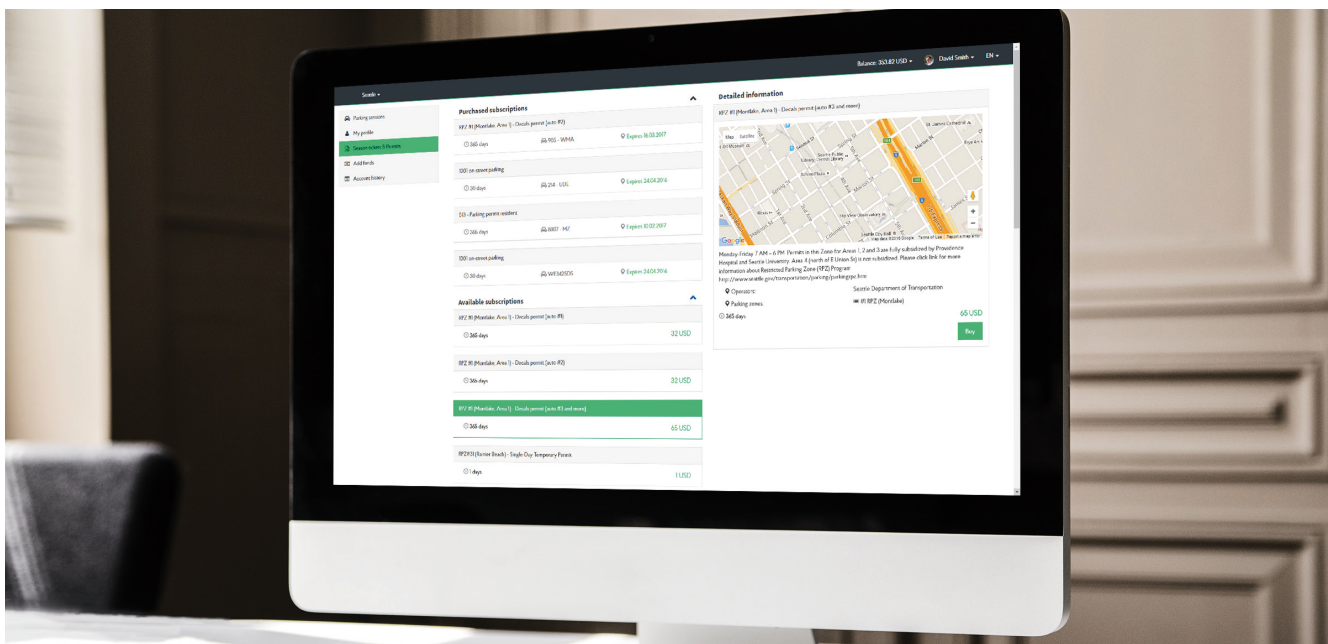
By just taking a picture through Park.CITY.RP enforcement app or by input of the number of the parking space or license plate, one can retrieve car information from the central database and entered into the Park.CITY.RP enforcement input table.

Parking inspector can retrieve car information, time, and location (detailed to the parking zone, streets, or separate parking spaces) to issue parking tickets. A Bluetooth networking module in tablet PCs enables printing illegal parking tickets through a mobile printer.

Illegal parking information is automatically synced with the central database with no more manual synchronization.



PERMIT MANAGER



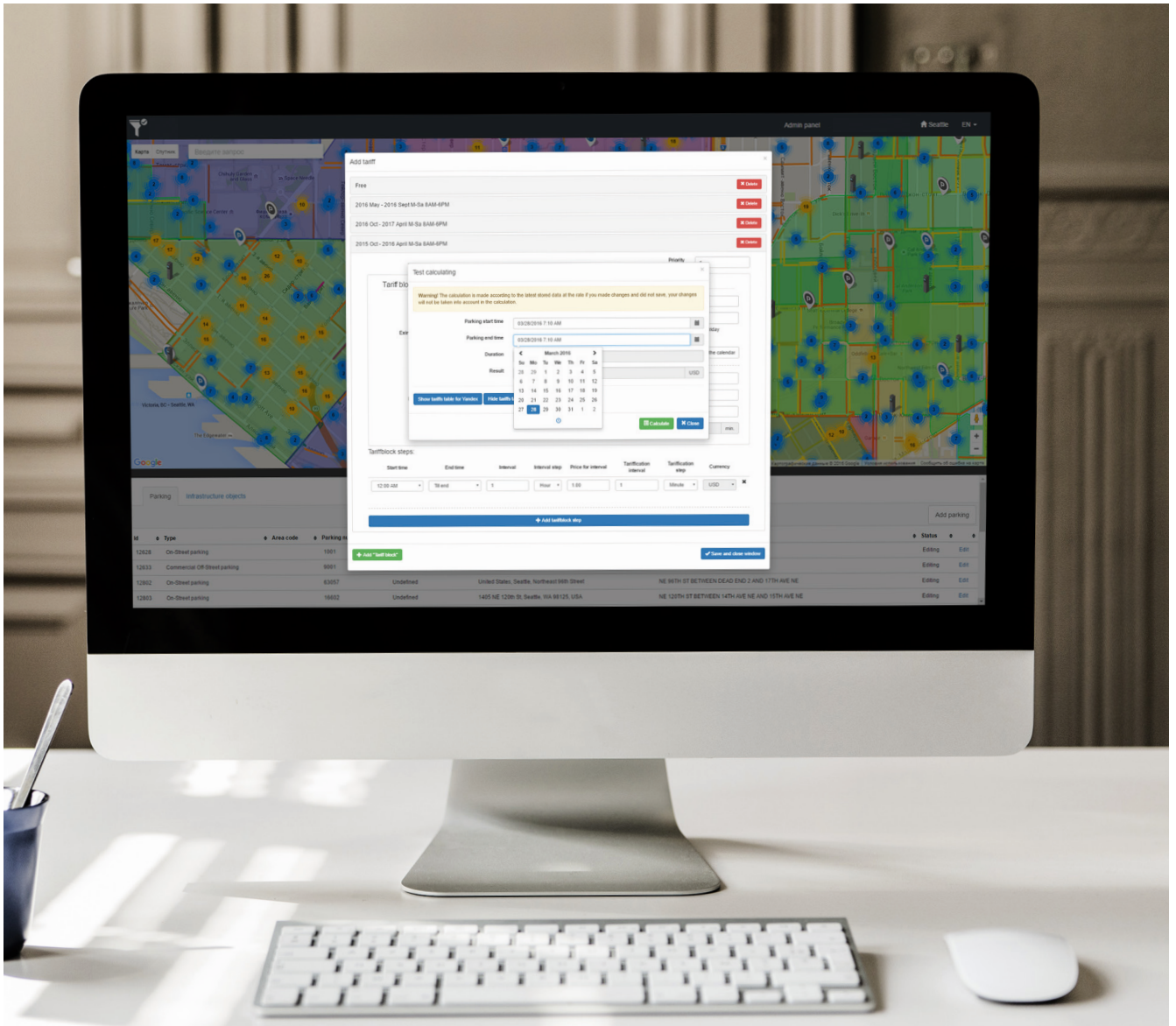
About

Permit Management is one of the most complex tasks for any parking authority or operator. Moving submission and approval processes on-line is a tech solution and when connected to an enforcement solution, it is even more complex. Park.CITY.RP platform bridges these gaps with one permit management module, an integral part of the SMART-TECH's parking management solution.

Permit manager brings simplicity to the process

- It takes just a few minutes to create a new permit or subscription item. Once saved on Park.CITY.RP platform, it becomes available in the Permit and Subscription menu of the Customer Web Portal
- Creation of permissions and subscriptions is flexible: by parking area, zone or space with any duration or recurrence
- It's easy to submit permit requests or purchase season subscriptions at the Customer Web Portal insures a great user experience
- Real time data is available on-line, backed up with powerful analytics
- Permits database communicates with the chosen enforcement solution and confirms paid or unpaid status to the parking manager

TARIFF MANAGER



Overview

The Tariff Manager is a core element of Park.CITY.RP platform that manages the parking tariff policy for the entire parking eco-system: various brands of parking meters and mobile payment platforms. Tariff Manager has unlimited flexibility to create, configure and modify parking rates with reference to any parking object and time.

Tariff Manager supports all types of tariff rules communications, including best in class protocol of the central billing. Park.CITY mobile app is incorporated into the central billing, while other mobile payment applications and parking meters can be integrated via API with Park.CITY.RP platform.

TARIFF MANAGER BENEFITS

Key features and benefits

- Flexible billing interval: per minute, 15-minute, 30-minute, 45-minute, etc.
- Return of unused funds to the e-wallet when a parking session is interrupted
- Differentiated tariffs for parking areas, zones and spaces
- Progressive and regressive tariffs
- Prepaid tariff support for Park.CITY mobile app
- Built-in internal controls maintain system integrity

Value proposition



Scalability

Comprehensive tariff management in one place



Real time pricing

The ability to update rates throughout the parking system online



Flexibility

Various tariff policies for the city



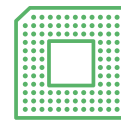
Payment channel integration

All payment channels are also in one place (any vendor's parking meters, mobile applications, pay by text, etc.)



Cost effectiveness

Saves expensive hardware launches by eliminating or greatly reducing the need for expensive hardware



Future proofing

No need to worry about expensive updates of hardware. All updates done in real time and at no cost

BENEFITS FOR THE PARKING AUTHORITY

Any type of target audience



Residents



Disabled



Tourists and other groups

Routine information flow

- Tariff changes (applicable for parking zones, tariff zones, streets, parking places)
- Road-rules changes

Promo notification

- New discount and privileges for the new customers segment or transport
- New loyalty parking programs with dedicated vendors and organizations

Control over emergency alerts

- Construction in parking zones
- Tariff changes at events
- Alarm and emergency situations on the city streets

Supported browsers



BENEFITS FOR PARKING OPERATORS & FOR END USERS

Parking operators



On-street



Off-street



Universities



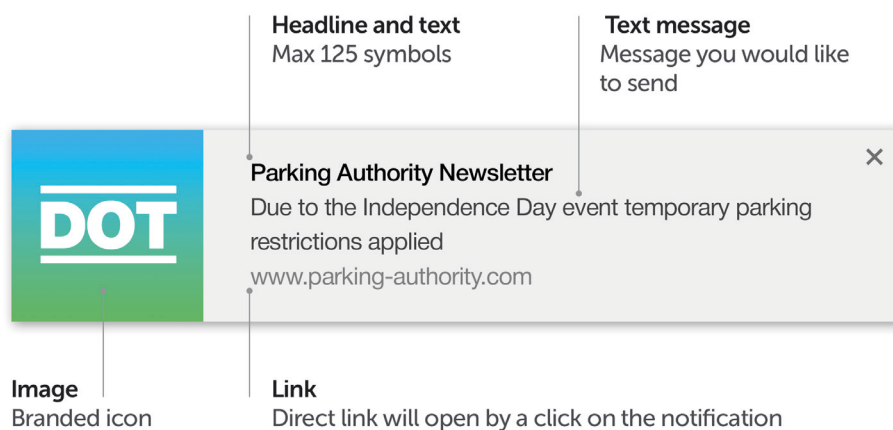
Airports

Service changes for parking operators

- Working hours
- Pricing
- Benefits and discounts
- Promo action and events
- Loyalty program
- New services
- Daily news (reconstruction, opened new objects, closed old objects)

Users

- Taxi service
- Residents
- Disabled
- Freight service
- And any other groups



CUTTING-EDGE MARKETING COMMUNICATION PLATFORM

Overview

This is a customer collaboration tool that enables broad marketing communications in cost-effective way. Push notifications are the most advanced and efficient instrument to drive marcom. We offer highly-scalable targeting tools: geo-location based, tag based, or trigger based.



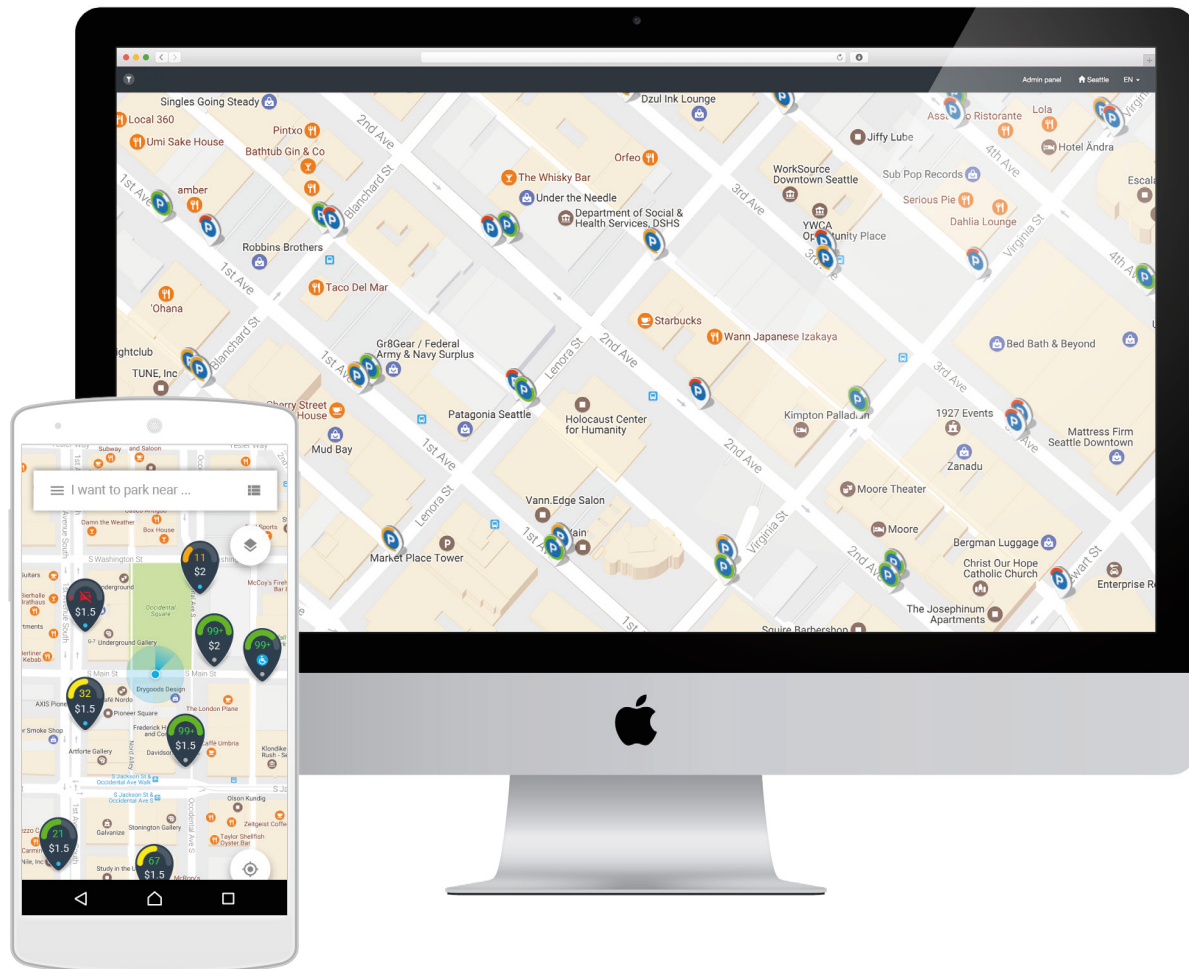
The way it works

- We generate a Smart Code for the client's web-site. Installation takes just a few minutes
- A Smart Code will start to collect subscribers immediately and pop-up opt-in box for every visitor
- Each user accepted subscription is recorded in the database
- In order to run broad marketing campaigns via push notifications, the client just types a new message in the personal area of the web portal or via an API
- All set! End user will receive a push notification on top of all windows opened

For any types of information

- Link on the website
- Text block
- Link in the mobile application
- Pictures

WIRELESS SENSOR INTEGRATION



Park.CITY.RP platform allows integrating different parking sensing solutions into a single scalable system that allowed for different data sources to connect in a plug&play mode, being scalable and mainly based on software engineering techniques.

This system would:

- Offer drivers real-time assistance to find available parking spaces near them
- Know the occupation ratios for taking decisions about parking space vehicle occupancy
- Provide useful information for disabled people who typically require more time to find free parking spaces.

SMART-TECH AND NEDAP PRODUCTS INTEGRATION



The MOOV VMC (Vehicle Management Controller)

- Management of vehicle access gates
- Integrated access control
- Integrated barrier and traffic light control
- Web based remote management
- Detailed comprehensive log

Sensit products



Sensit IR



Sensit flush mount



Sensit surface mount

MACE PRODUCTS INTEGRATION WITH Park.CITY.RP PLATFORM



MACE Reader MM



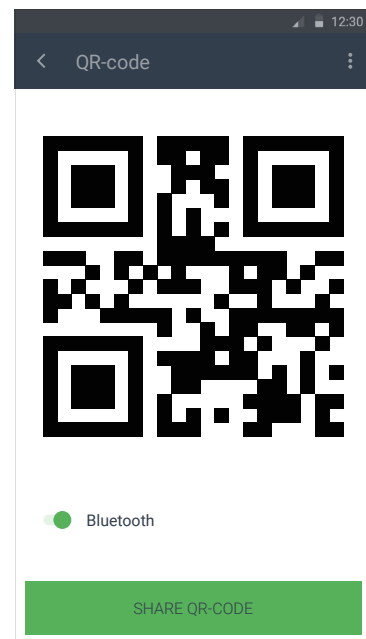
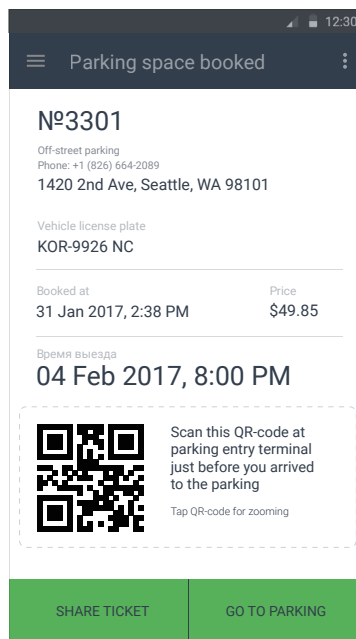
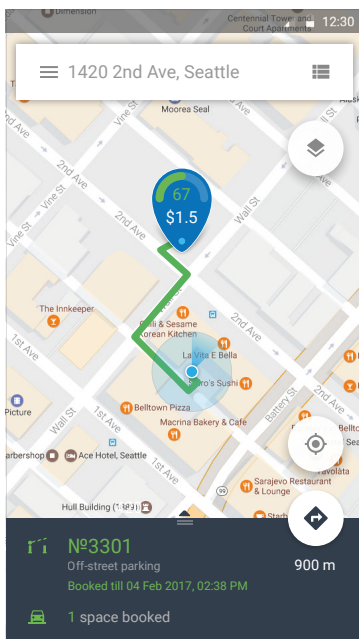
MACE Reader MM QR



SDK Module

API / SDK MACE products integration with SMART-TECH's platform and Park.CITY mobile app

- Booking off-street parking through QR-code and Bluetooth
- Payment through Park.CITY Mobile App (including subscriptions and permissions)
- Digital entrance and exit



UPASS PRODUCTS INTEGRATION

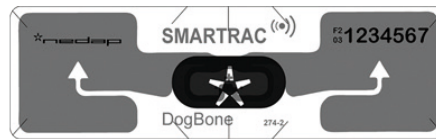
uPASS Reach



UHF Windshield Tag



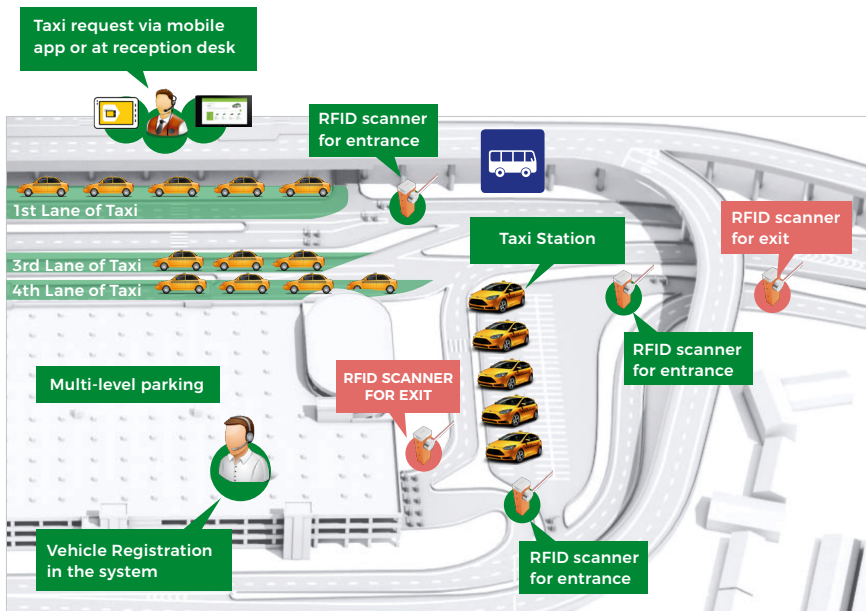
UHF Exterior Tag



Integration Upass Products with Park.CITY.RP Platform

- Transit through off-street parking, airport, station
- Transit for taxis, corporate vehicles, buses

Sheremetevo project



More than
50 000
number of taxis

Yandex.Taxi & SMART-TECH

Access Management for Taxi on the airport territory and on the 1st lane air terminal

Permit Management for taxis, buses and corporate transport based on RFID technologies

Taxi request on the 3rd and 4th lanes via Yandex.Taxi mobile app

Payment via app

Payment for parking spaces in the Sheremetevo Airport via SMART-TECH's payment gateway

Technology
Partners



