



# Navigine

GEOLOCATION PLATFORM FOR DIGITAL TRANSFORMATION

# NAVIGINE AT A GLANCE

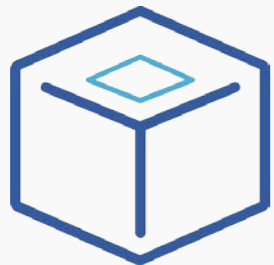


— Navigine founded by PhDs and former top management consultants

- Headquarter in New York
- Offices in Berlin and Moscow



— 7+ years of R&D in indoor positioning services, international patent



— 2 key products

- Mobile SDK to integrate indoor navigation, marketing and analytics functions into any app
- Software system for quick deployment of asset and vehicles tracking inside large building

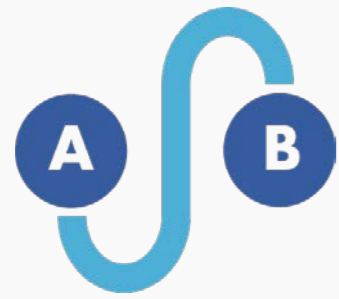


— 30+ mobile and web applications based on Navigine platform



— 500+ locations with Navigine installations

# PRODUCT 1: MOBILE PLATFORM



## Navigine Indoor

Mobile SDK for IOS/Android that gives real-time turn-by-turn navigation and routing on indoor map



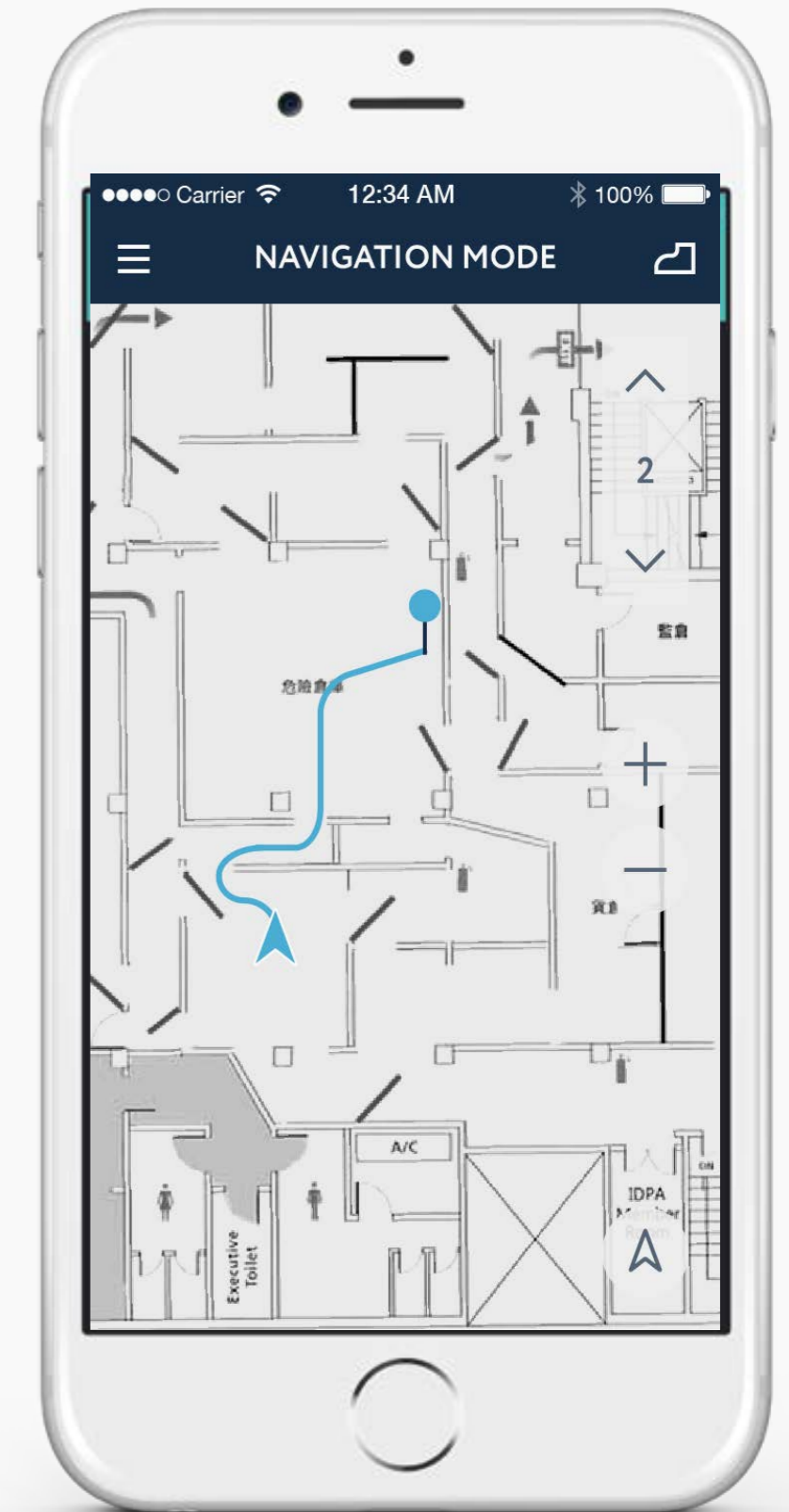
## Navigine Marketing

Platform to create and manage location based push notification campaigns in mobile apps



## Location Analytics

BI system to analyze mobile app users motions on indoor map via heat maps and multiple statistical reports



# PRODUCT 2: TRACKING PLATFORM



## Traffic Monitoring

Web-service/API for monitoring of number and dwell time of tracked objects visits at given point



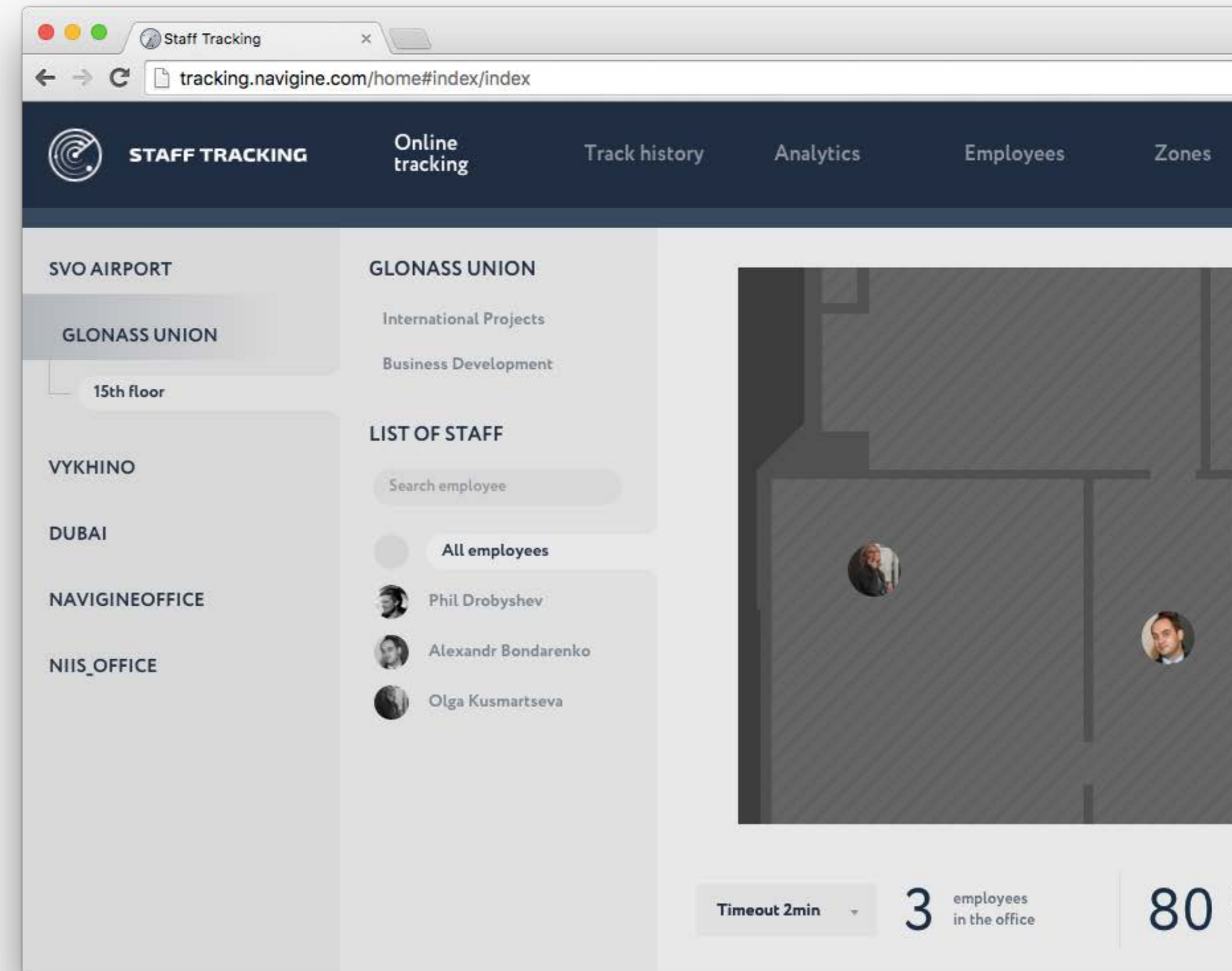
## Zone Tracking

Web-service/API for monitoring of current number of tracked objects in each zone of a venue



## Motion Tracking

Web-service/API for monitoring of tracked objects motion on indoor map in real-time



# NAVIGINE SOLUTIONS ECOSYSTEM

MOBILE PLATFORM

TRACKING PLATFORM



**Navigine**

RETAIL

TRANSPORTATION

AUTOMOTIVE

INDUSTRIAL ENTERPRISES

LOGISTICS

# SOLUTIONS FOR RETAIL

MOBILE APPLICATION FOR  
CUSTOMER NAVIGATION

TRAFFIC GENERATION FROM  
SHOPPING MALLS

OFFLINE CONVERSION FOR  
MOBILE & ONLINE ADS

MOBILE PROXIMITY  
MARKETING CAMPAIGNS

SMARTCART INNOVATIVE  
SHOPPING SOLUTION

O2O RETARGETING OF MOBILE  
& ONLINE ADS

# SOLUTIONS FOR TRANSPORTATION

MOBILE APPLICATION FOR  
PASSENGER NAVIGATION  
AND COMMUNICATION

CORPORATE MOBILE APP FOR  
STAFF NAVIGATION AND  
SCHEDULING

OFFLINE CONVERSION TO  
POINTS OF SALES FOR  
MOBILE & ONLINE ADS

PASSENGER TRAFFIC REAL-  
TIME ANALYTICS  
AND HEAT MAPS

ASSET AND VEHICLES  
TRACKING INSIDE DEPOTS  
AND TUNNELS

MONETIZATION OF AUDIENCE  
OF MOBILE APP FOR  
PASSENGERS

# SOLUTIONS FOR AUTOMOTIVE

PROXIMITY BASED INTERACTION VIA MOBILE APPLICATION

REAL-TIME CAR POSITION TRACKING INSIDE CAR REPAIR SERVICE CENTERS

CORPORATE MOBILE APP FOR STAFF NAVIGATION AND SCHEDULING

ASSET AND VEHICLES TRACKING FOR MANUFACTURING SITES



# SOLUTIONS FOR LOGISTICS

PROXIMITY BASED INTERACTION VIA  
MOBILE APPLICATION

AUGMENTATION OF OUTDOOR TRACKING  
VIA MOBILE DEVICES

CORPORATE MOBILE APP FOR STAFF  
NAVIGATION AND SCHEDULING

ASSET AND VEHICLES TRACKING FOR  
LOGISTIC HUBS AND WAREHOUSES

# SOLUTIONS FOR DIGITAL

MOBILE SDK FOR PRECISE  
WAYFINDING

PROXIMITY MARKETING &  
LOCATION ANALYTICS

SMARTCART INNOVATIVE  
SHOPPING SOLUTION

OFFLINE CONVERSION FROM  
ONLINE ADS

O2O RETARGETING OF MOBILE  
& ONLINE ADS

SPECIAL PROJECTS WITH  
LOCATION SOLUTIONS

# RETAIL - MOBILE PLATFORM

Solution: Smartcart solution for innovative shopping experience with wayfinding

## Parameters:

- 87+ supermarkets in Finland are covered with BLE-based indoor navigation (1-3 meter accuracy)
- 30-60 shopping carts per store are equipped with Smartcart tablets providing directions to customers

## Features powered by Navigine:

- Indoor positioning for tablets inside stores
- Directions for customers to items from shopping lists
- Location based promo campaigns and in-store offers
- Analytics collection on customers foot traffic

## Results:

- 85% of customers are happy to use Smartcarts
- Customers who liked Smartcart are the ones who spend most money in-store on average
- On average 25% of adds are seen, 13% considered to ought and 5% bought the product
- 84% of users where going to use Smartcart again
- 6% average check growth



# TRANSPORTATION - MOBILE PLATFORM

Solution: Mobile application for the largest public railway system in Europe with ticket purchase and indoor navigation through train stations

## Parameters:

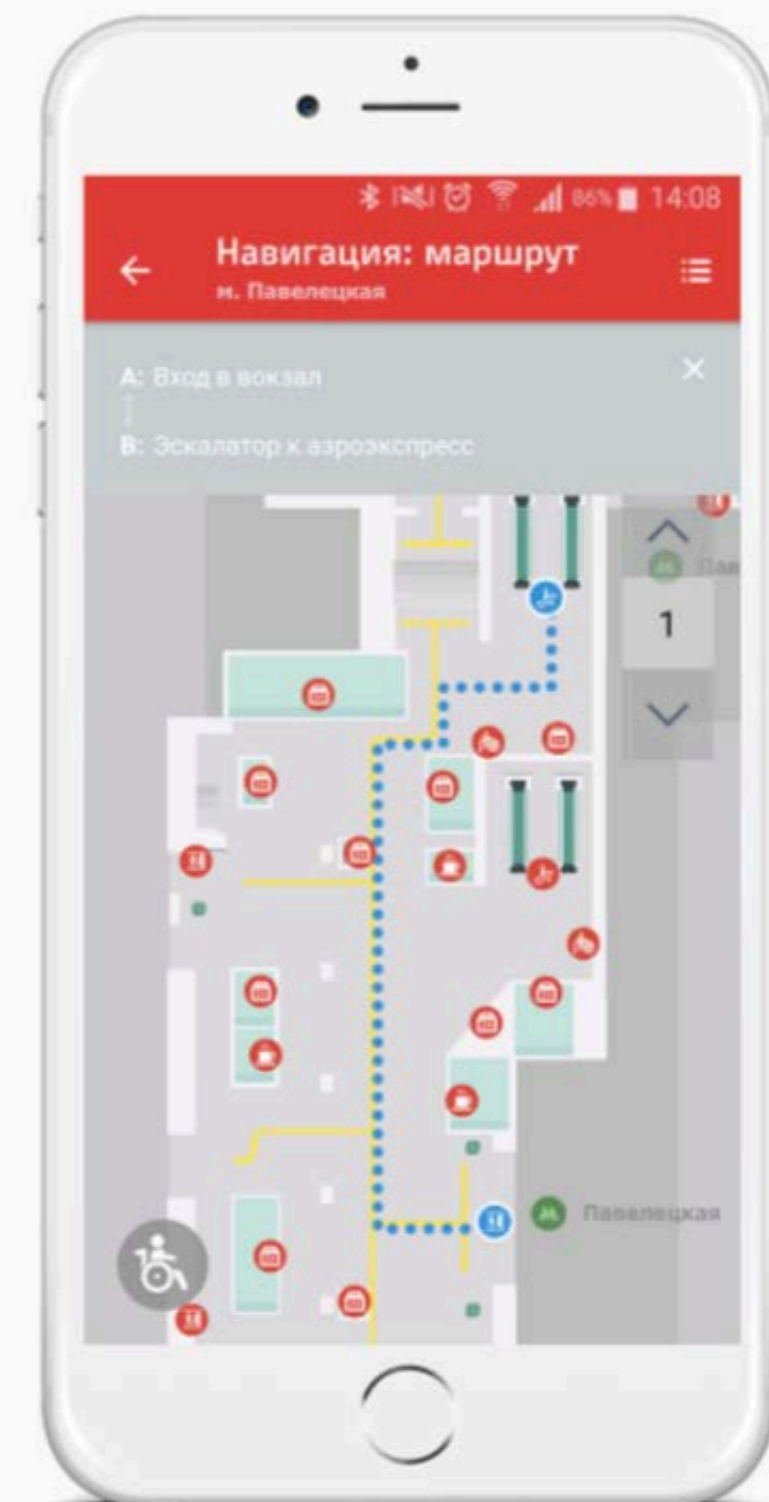
- 5M+ total install base of the mobile app
- 31 stations are covered by indoor navigation - 5K beacons under management

## Features powered by Navigine:

- Wayfinding and useful information for commuters such as schedule of trains with tracks location and ticket purchase function
- Real-time and aggregated passenger traffic analytics
- Additional marketing channels and revenue stream from hubs tenants

## Results

- Significant improvement of passenger experience especially for international travelers
- Advanced foot traffic statistics to analyze and manage bottlenecks
- Beacon infrastructure monetization via third-party providers



# Chip maker

## precise IMU based navigation for autonomous cars

Solution: Navigation algorithms for autonomous navigation

### Parameters:

- 1 deg/hour tactical grade MEMS IMU
- GPS (initialize), ODO, IMU data fusion

### Features powered by Navigine:

- Kalman filter based aided realtime navigation
- Device design
- Evaluation testbed

### Results:

- • 10 m circle error after 10 min of driving without map matching (realtime mode)



# AUTOMOTIVE/LOGISTICS - TRACKING PLATFORM

Solution: Real-time car position tracking inside car repair service centre for a major premium brand

## Parameters:

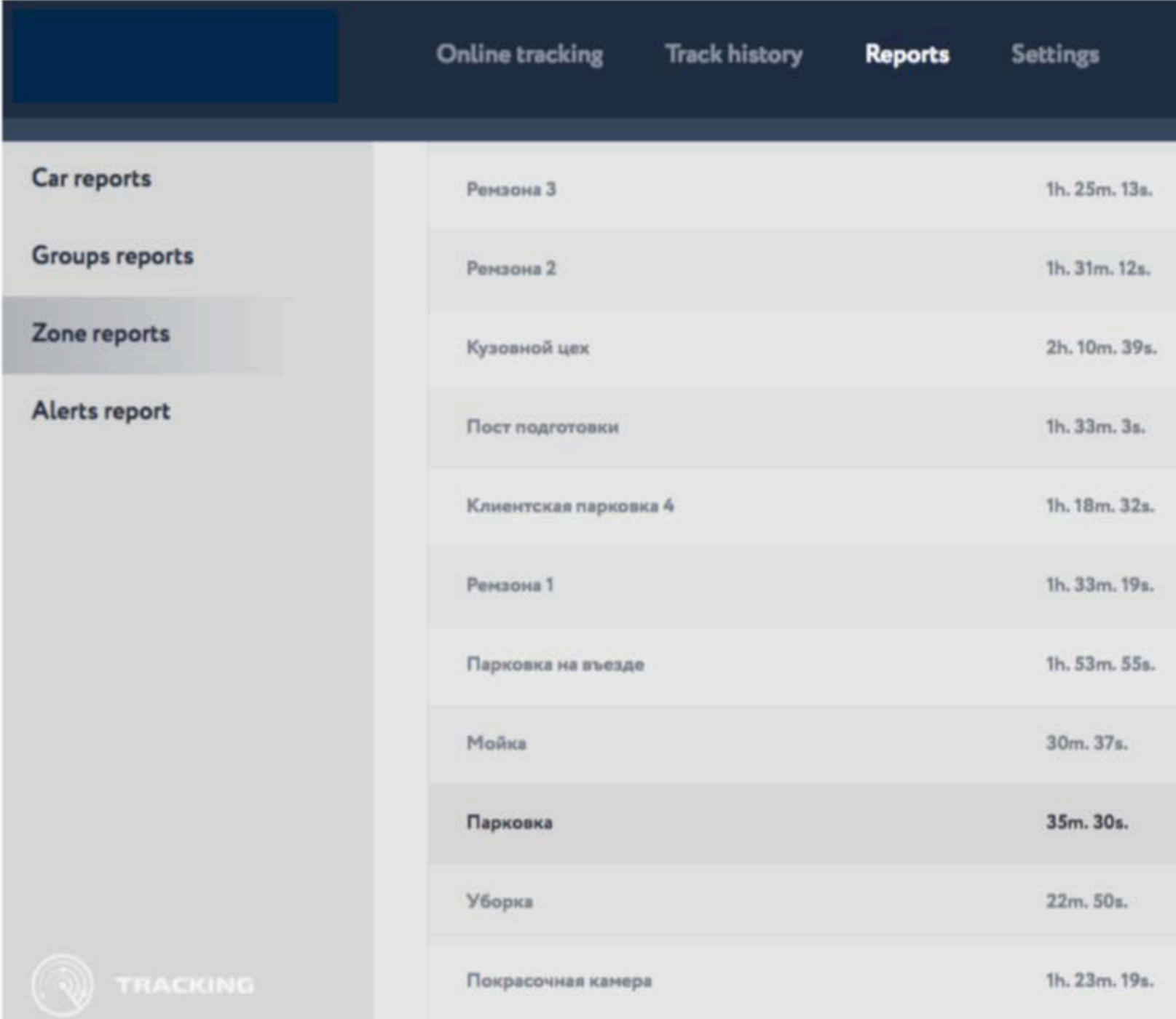
- 5K sq. m. total area with 200 parking slots and 10 working zones
- 33 IoT gateways deployed to track up to 150 branded BLE tags

## Features powered by Navigine:

- Real-time car location tracking on a floor plan
- Collection of historical movement for all cars
- Alerts for management on expiring service terms and anomalies
- Location reports by cars, time, zones, events

## Results:

- Business intelligence tool to notify managers on expiring service terms and to track centre operation performance in real-time
- Reduction of time on standard operations - up to 30%
- Saving due to increased number of orders delivered in time



	Online tracking	Track history	Reports	Settings
Car reports			Ремзона 3	1h. 25m. 13s.
Groups reports			Ремзона 2	1h. 31m. 12s.
Zone reports			Кузовной цех	2h. 10m. 39s.
Alerts report			Пост подготовки	1h. 33m. 3s.
			Клиентская парковка 4	1h. 18m. 32s.
			Ремзона 1	1h. 33m. 19s.
			Парковка на въезде	1h. 53m. 55s.
			Мойка	30m. 37s.
			<b>Парковка</b>	<b>35m. 30s.</b>
			Уборка	22m. 50s.
			Покрасочная камера	1h. 23m. 19s.

# Indoor navigation geodata collection MAU 50M

Solution: SDK for mobile application for the large mobile app ecosystem

## Parameters:

- 50M+ total install base of the mobile apps
- Wi-Fi, BLE, IoT support

## Features powered by Navigine:

- Navigation and Wayfinding
- Real-time foot traffic analytics
- Offline visits - who visits offline store after watching online ad

## Results:

- Significant improvement of indoor geodata collection
- Customers loyalty
- Analytic on retail store visits

# Production case staff navigation inside power plants

Solution: SDK for mobile application for staff navigation at the power plants / electricity station

## Parameters:

- 20k sq m, multiple floor harsh RF environment
- Wi-Fi, BLE, IoT navigation inside smartphone

## Features powered by Navigine:

- Navigation and Wayfinding
- Real-time tracking
- Task scheduling

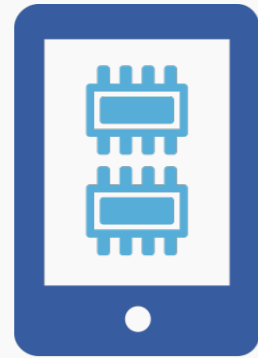
## Results:

- Safety level improvement
- Incident reaction time decreased





# TECHNOLOGY: INDOOR NAVIGATION



Build-in sensors  
(gyroscopes,  
accelerometers,  
compass, barometer)



Bluetooth/Wi-Fi  
fingerprinting  
and magnetic  
fields



Odometry data  
(velocity, steps,  
motion model)



Map details

Fast roll out -  
up to  
50000 m<sup>2</sup>/  
man-day



SLAM algorithm  
to improve  
accuracy through  
crowdsourcing

Up to 1 meter due to proprietary algorithms - at mobile devices

# TECHNOLOGY: INDOOR TRACKING



Equip staff, vehicles and other assets with Bluetooth LE/Ultra Wide Band (UWB) tags or bracelets with action range up to 50 meters



Deploy BLE/UWB trackers inside building to track the position of tags and bracelets in real time



Collect, transmit and display tags and bracelets position on the map in web interface

Up to 0.2 meters accuracy - for tags based solution

## BASIC HARDWARE TECHNOLOGIES



Bluetooth Low Energy (BLE) Apple's iBeacon & Google's Eddystone compatible beacons



Wi-Fi/BLE/Ultra Wide Band trackers based on generic or specialized hardware

**Our software products** use well-known, reliable and affordable technologies

# ALEXEY PANYOV

CEO

[alexey.panyov@navigine.com](mailto:alexey.panyov@navigine.com)

skype: alexey.panev

[www.navigine.com](http://www.navigine.com)



Navigine