



Navigine

INDOOR LOCATION SERVICES FOR FACTORIES

CURRENT TRENDS*

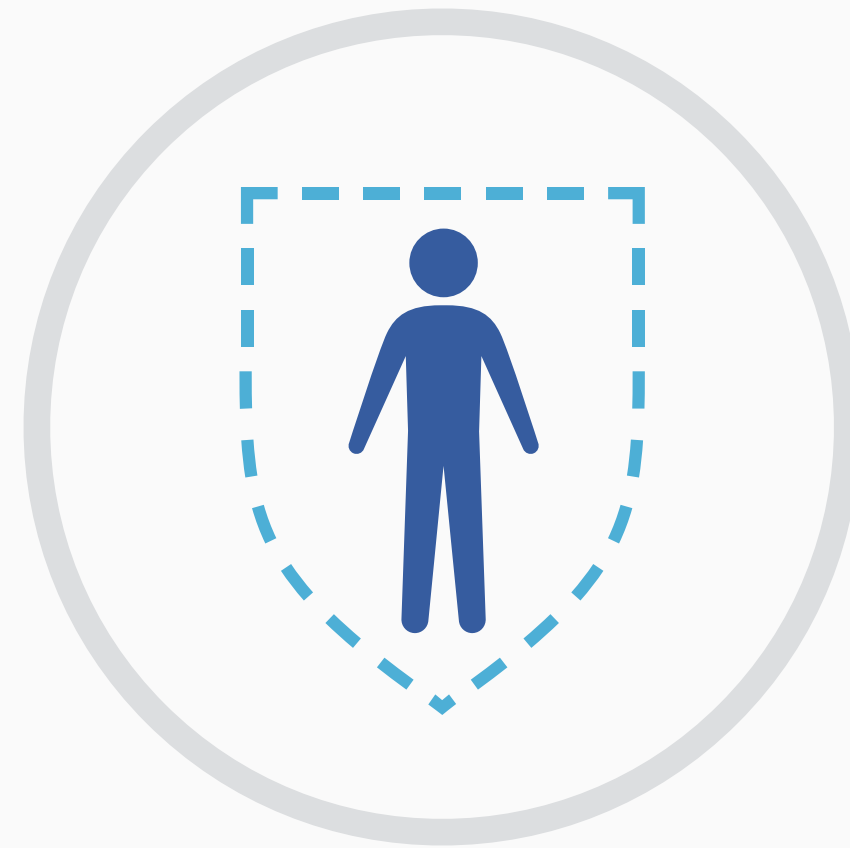
- 2015 can become a tough year for manufacturing companies around the world: volatile market prices, financial & political risks, increasing competition from new market entrants – all put a strong pressure on the industry
- In order to succeed under such conditions manufacturing companies need to focus even more on operational excellence & cost efficiency
- One of the key success factors will be an ability to innovate and automate processes - the strongest innovation opportunities are currently in focusing on real time data acquisition and analysis as well as robotisation
- Another important success factor will be the ability to identify and minimise risks as well as comply with the growing manufacturing safety requirements

*According to various expert interviews and Deloitte report

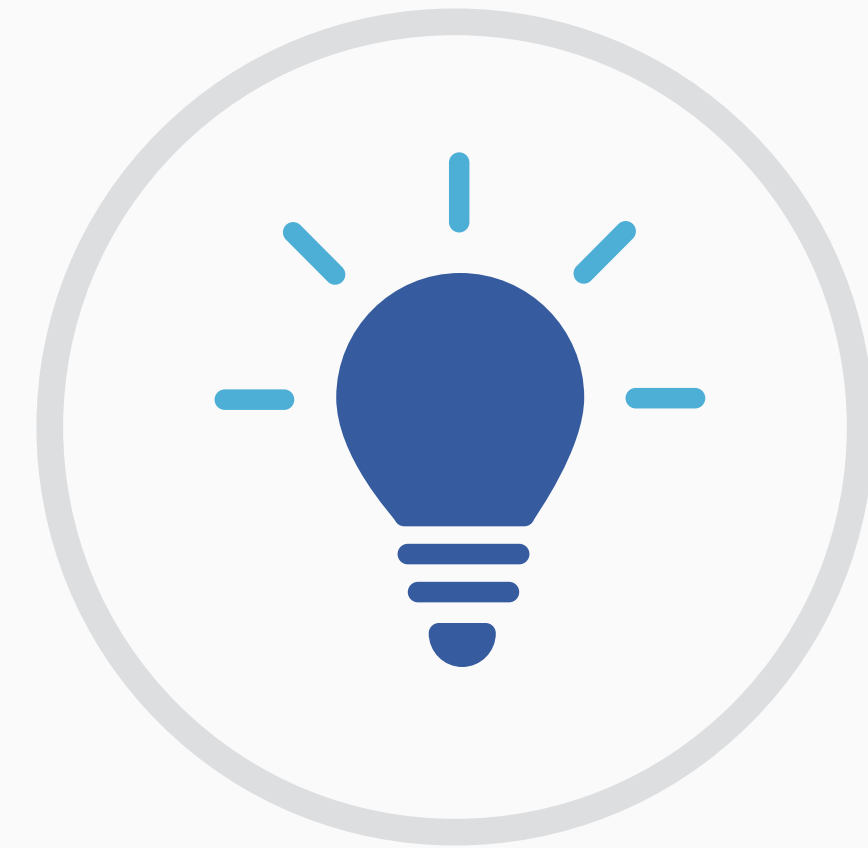
OUR PROPOSAL



Real-time control and optimisation of work processes



Staff discipline and safety improvement, minimisation of production risks



Facility positioned as one of the most advanced and innovative for customers and distributors

Install monitoring system



based on Navigine platform

OUR ADVANTAGES



High accuracy of navigation solution inside buildings (up to 1 meter)



High level of system security



Simple system integration with external services and easy support



Quick roll out of navigation and tracking services in any building

NAVIGINE SOLUTIONS FOR MANUFACTURERS



Solution for staff, product, material, component or equipment **tracking**

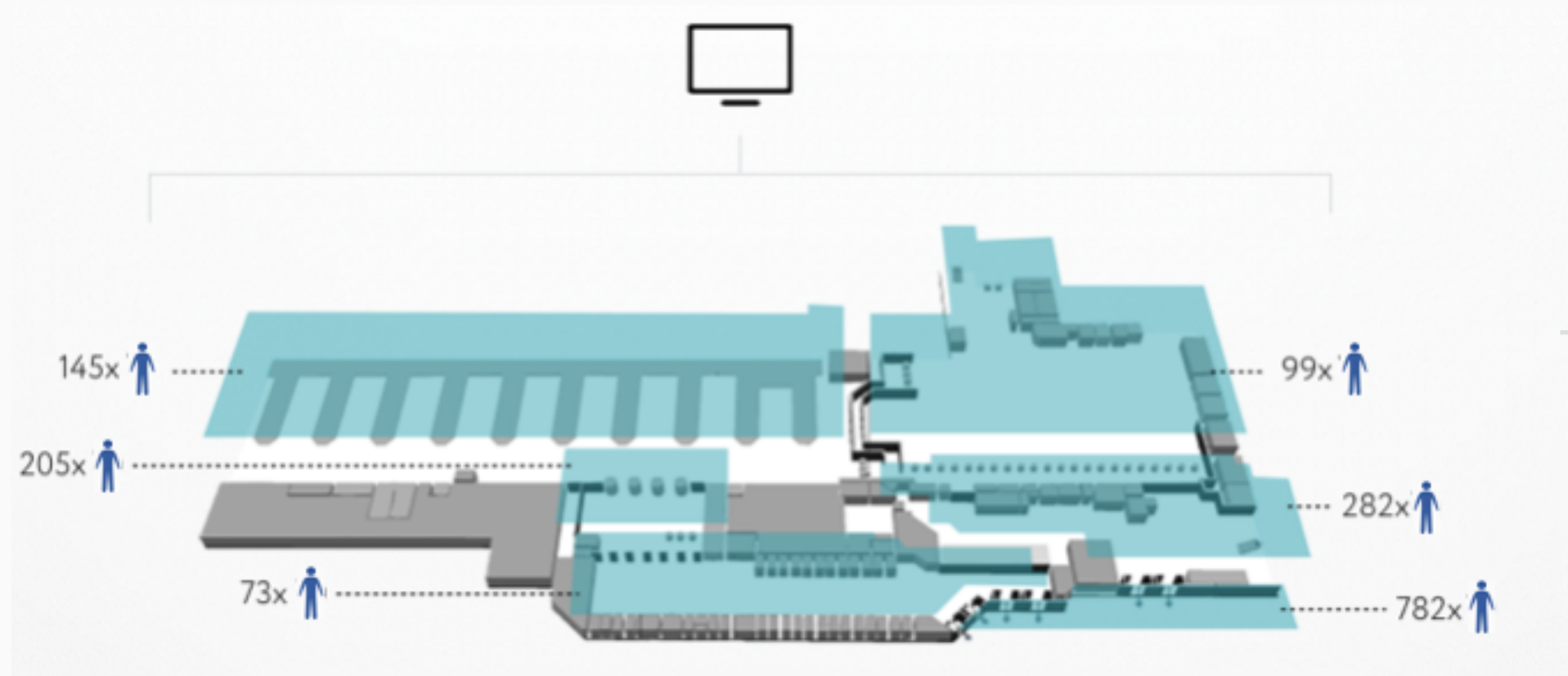


Solution for staff, product, material, component or equipment **control**

TRACKING SOLUTION



KEY FUNCTIONS



FOR STAFF

- Control of staff presence at workplace, their schedule and working hours compliance
- Safety: control of access to restricted areas and identification of access violation cases from the side of illegal intruders
- Immediate detecting of manufacturing process violations
- Real-time tracking and analysis of shift results, report creation

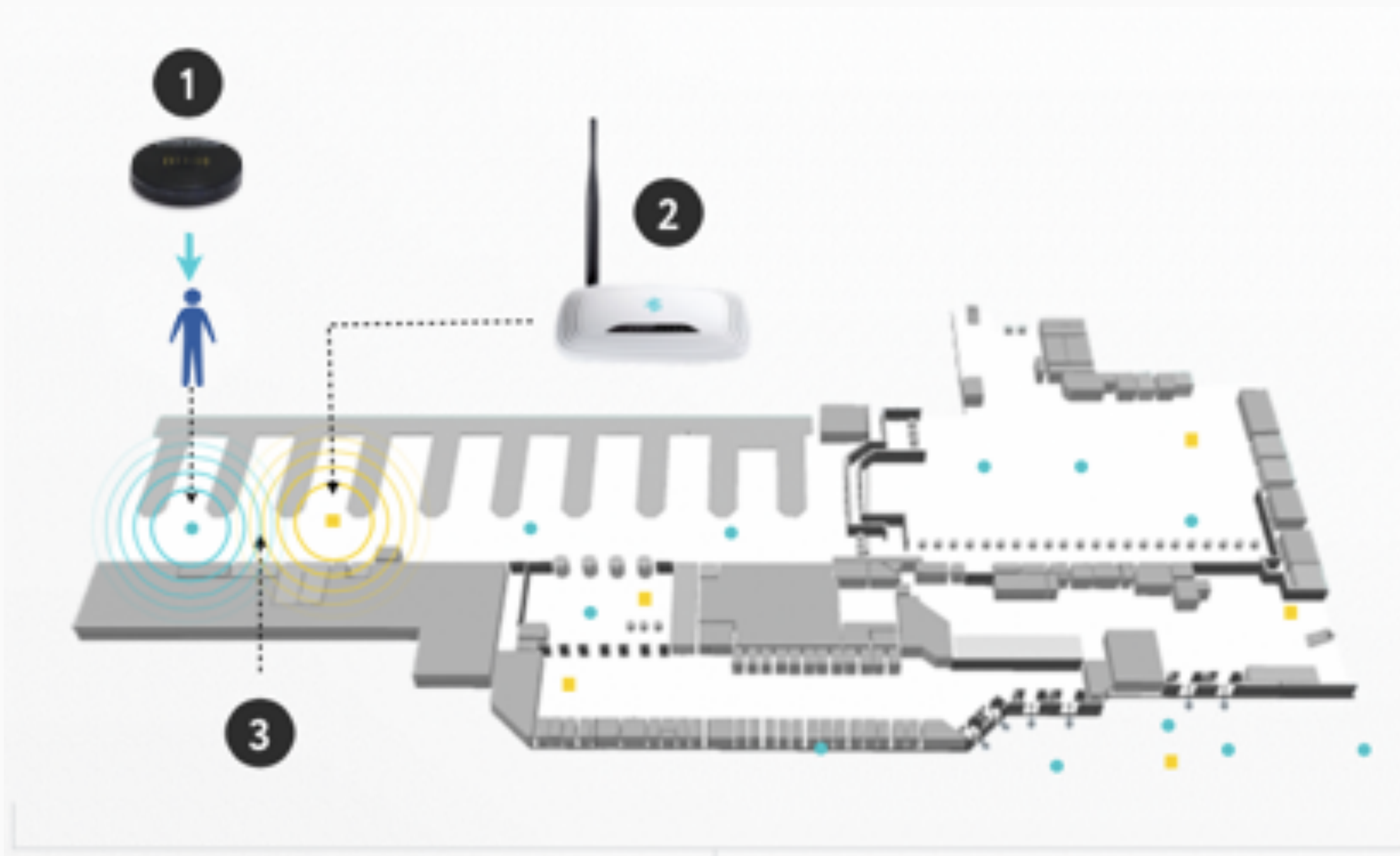
FOR PRODUCTS, MATERIALS, COMPONENTS

- Exact positioning of any product/material/component
- Increased safety of any product/material/component
- Cargo traffic analytics
- Automatisatation and optimisation of warehouse operations (faster cargo location & delivery)
- Separation and tracking of specific products

FOR EQUIPMENT

- Real-time equipment tracking
- Protection against unauthorised access
- Equipment trajectory optimisation

HOW DOES IT WORK?



1

Bluetooth Low Energy (BLE) beacons or bracelets with ~50 meter functioning radius are placed on staff, equipment, products and components

2

BLE trackers are installed throughout the manufacturing facility

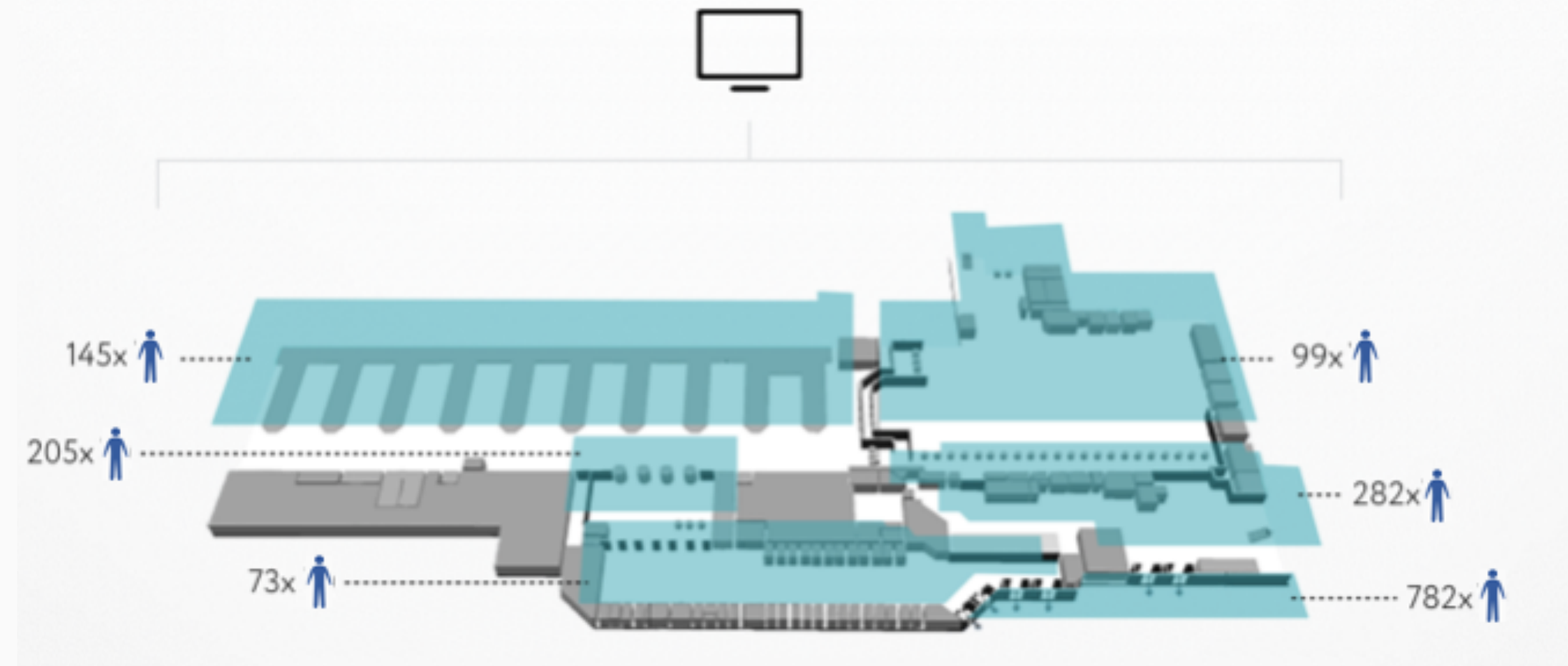
3

Data gathered on the trackers is sent to the server

4

Information on staff, product and equipment motions is displayed in a special web interface

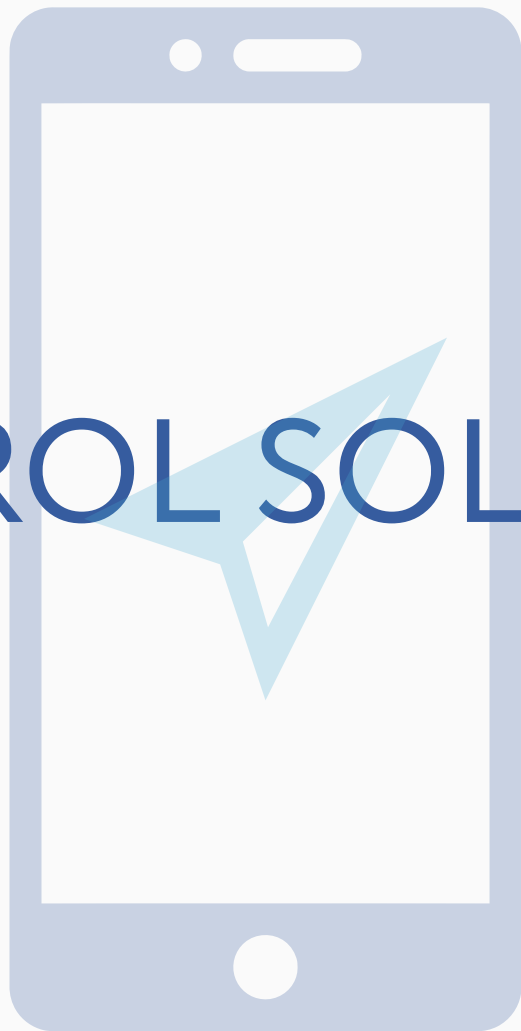
WEB INTERFACE



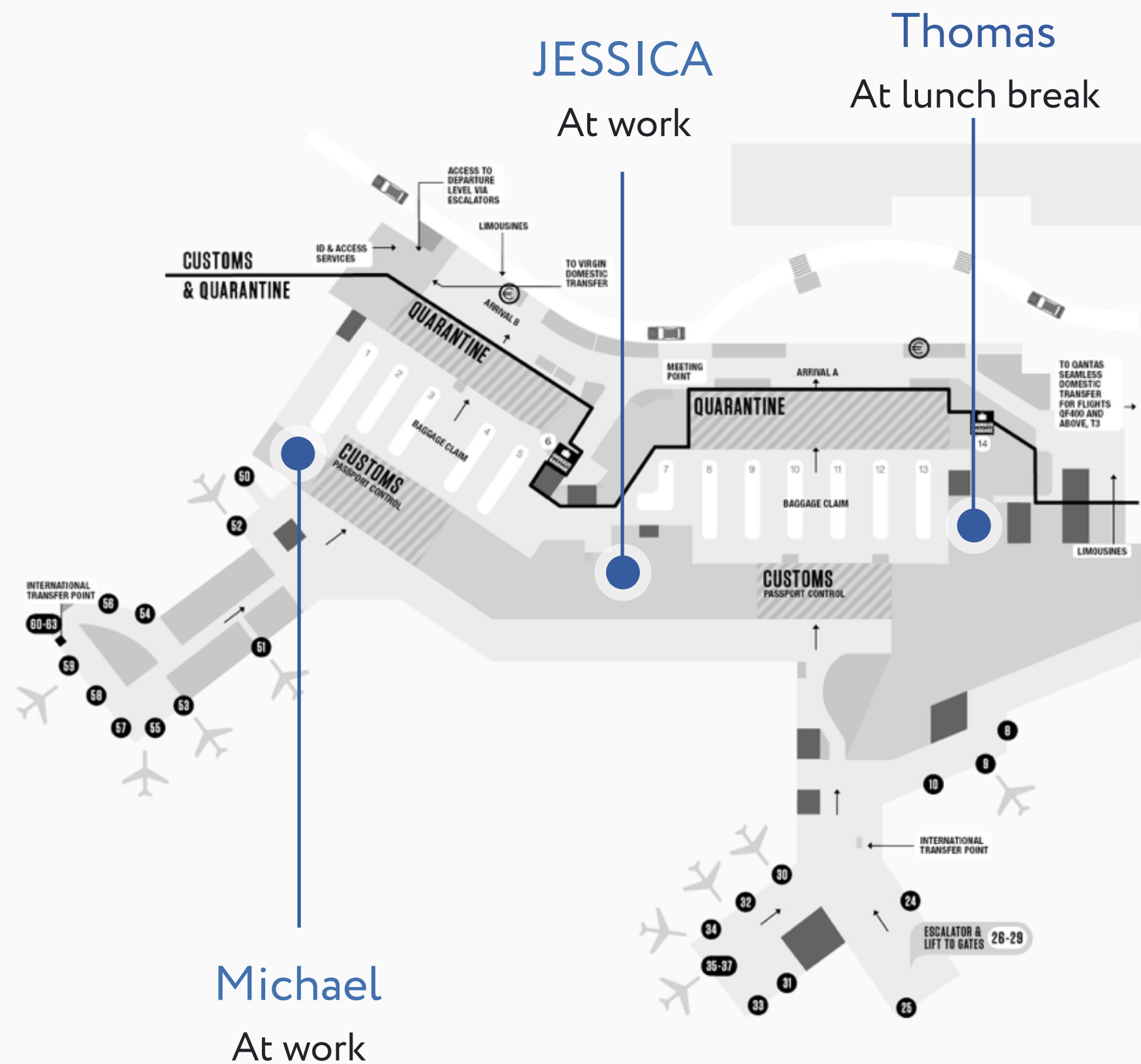
FLEXIBLE USER INTERFACE ALLOWS:

- Tracking of staff, products, components, equipment in real time
- Signalling of unexpected situations, production risks
- Creation and customisation of analytical reports by time, tracked object or key process
- Demonstration of manufacturing facility innovation and automation level to potential customers and distributors

CONTROL SOLUTION



KEY FUNCTIONS*



FOR STAFF

- Real-time staff control
- Real-time correction of daily tasks
- Immediate reaction on manufacturing process and safety protocol violations
- Efficient emergency management
- Simplified communication between staff members

FOR PRODUCTS, MATERIALS, COMPONENTS

- Real-time correction of delivery route for a product/component
- Remote cargo control
- Remote delivery instruction dispatch

FOR EQUIPMENT

- Remote equipment control
- Real-time equipment management

*In addition to tracking

HOW DOES IT WORK?



1

Staff or equipment are supplied with mobile devices with Bluetooth Low Energy (BLE) protocol support

2

BLE beacons are installed throughout the manufacturing facility

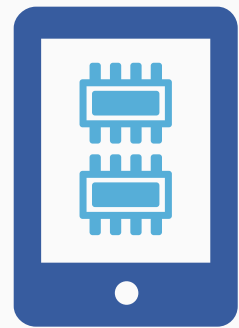
3

Device's location is shown on its screen, all information is sent to a single terminal

4

Control is performed from the terminal, mobile devices can receive commands from the controller

NAVIGINE SOLUTIONS ARE HIGHLY RELIABLE



Equipment is dust and water proof, it is also neutral to rapid temperature changes and power surges



All power supply units and communication channels are backed up to allow for seamless service operation



Record and storage of all information are performed at customers' server



We have experience in integration of our solution with industrial collector safety system "Vector"

NAVIGINE SERVICE BENEFITS

TRACKING SOLUTION

- Increased production process efficiency, process optimisation
- Increased staff discipline and safety protocol, production process protocol compliance
- Reduced production risks
- Increased speed of product and component location (search) and their safety
- Decreased logistics costs
- Increased time served by equipment, reduced amount of money needed for repairs
- Minimal efforts necessary for integration with other automation systems and complexes

CONTROL SOLUTION

- Real-time remote staff, product, component, cargo and equipment management (increased management efficiency, reduced reaction time, reduced share of manual labor)
- Immediate and efficient management of emergency situations or production process violations
- Increased efficiency of staff communications
- Reduced time needed to complete standard tasks



ABOUT NAVIGINE

BASIC HARDWARE TECHNOLOGIES



Bluetooth LE iBeacon
compatible beacons



Wi-Fi/BLE trackers based
on generic hardware

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

ABOUT NAVIGINE

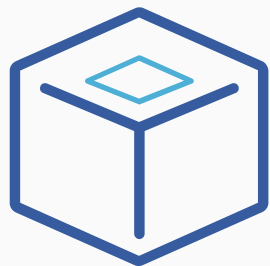


Navigine

- was founded in 2011 by 2 PhDs in Physics & Maths from Moscow State University
- Delaware corporation Navigine Inc. established in 2014



3+ years of R&D in indoor positioning services



2 key products

- Platform for mobile apps with indoor navigation, marketing and analytics functions
- Platform for staff, vehicles and assets tracking inside large buildings



30+ locations where Navigine services are rolled out



30+ partners are integrating and reselling Navigine solutions

SELECTED CASES ON NAVIGINE PLATFORM



Vehicle tracking inside quarries
for diamond mining leader Alrosa



Staff tracking and access control
for Moscow Metro



Baggage cart tracking and monitoring
for Dubai Airport



Mobile app with navigation and
push notifications for
Sheremetyevo airport



Service for motion analytics of
SAP Forum 2015 visitors



Development of continuous outdoor-
indoor navigation system for vehicles
tracking with GLONASS agency

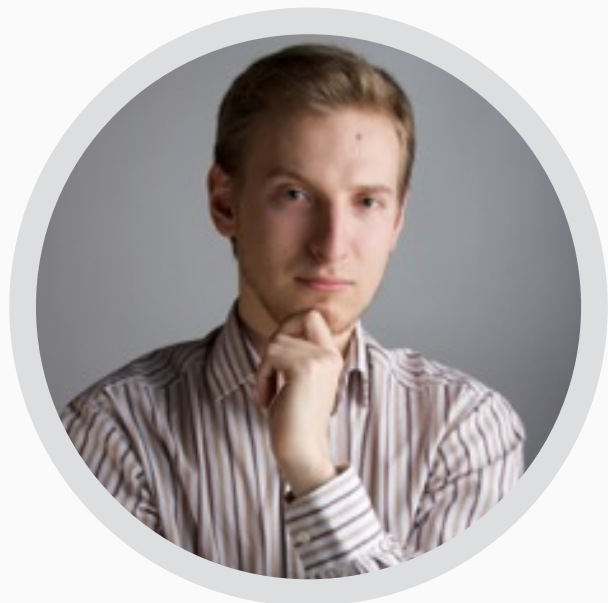
OUR TEAM



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10+ scientific articles
7+ years of experience in special
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PhD in Physics and Maths at
Moscow State University
MA Economics at New Economic School
8+ years of experience in international
consulting, business development of IT
companies, founder of several startups



Ilya Bubelo – CMO
Marketing/Advertising Management
specialist at Saint-Petersburg
Graduate School of Management
8+ years of experience with B2B IT startups
at different international markets



7 more full time employees in R&D,
development and marketing

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