



Pozyx real-time location solutions for smart industries

HANNOVER MESSE 2022

TAGS

50K+

CUSTOMERS

3000+

COUNTRIES

80+



Do you recognize these challenges?

You lack an overview of process flow efficiency

You lose valuable time looking for parts, tools, WIP, expedite or rework orders

Your space is limited, so your work floor needs higher efficiency

Your workflows need to be dynamic to handle changes

You still depend heavily on a paper trail and hand scanning

You don't know how long each step in the production process takes

Your total production costs are hard to calculate

Your lead times are difficult to track and estimate

The Power of Real-Time Positioning

What if you could?



Track

- ✓ People, assets, tools equipment, vehicles
- ✓ In real-time
- ✓ Worldwide map, zoom in to indoor 10cm accuracy



Measure

- ✓ Location-based events
- ✓ Time budgets
- ✓ Operational efficiency
- ✓ Workforce efficiency



Improve

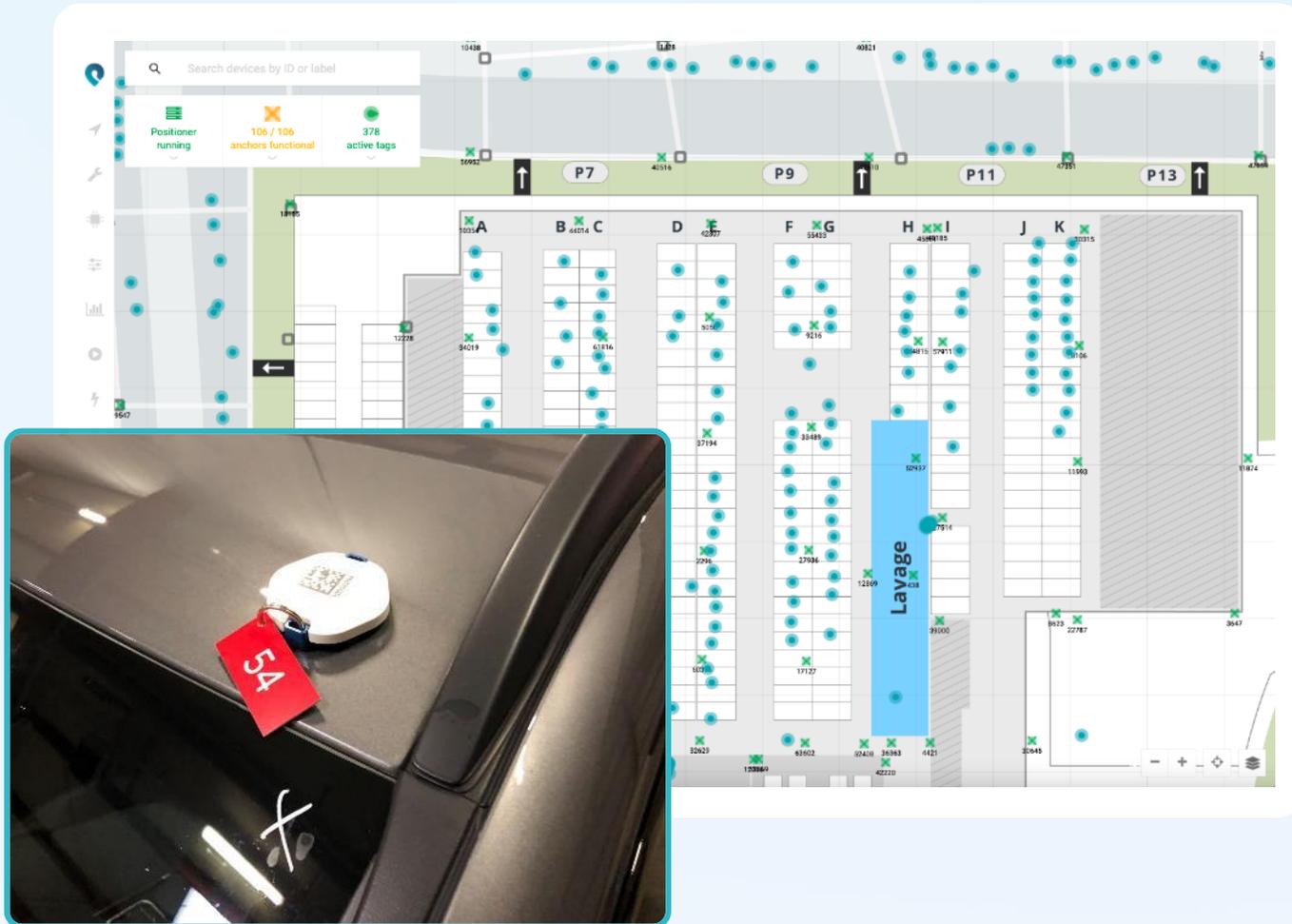
- ✓ Real-time asset visibility
- ✓ Location analytics
- ✓ Location-based automation
- ✓ Space utilization



Open Data

- ✓ API's available
- ✓ Seamless integration
- ✓ Combine Pozyx data with your ERP, MES, WMS

Business case WIP tracking



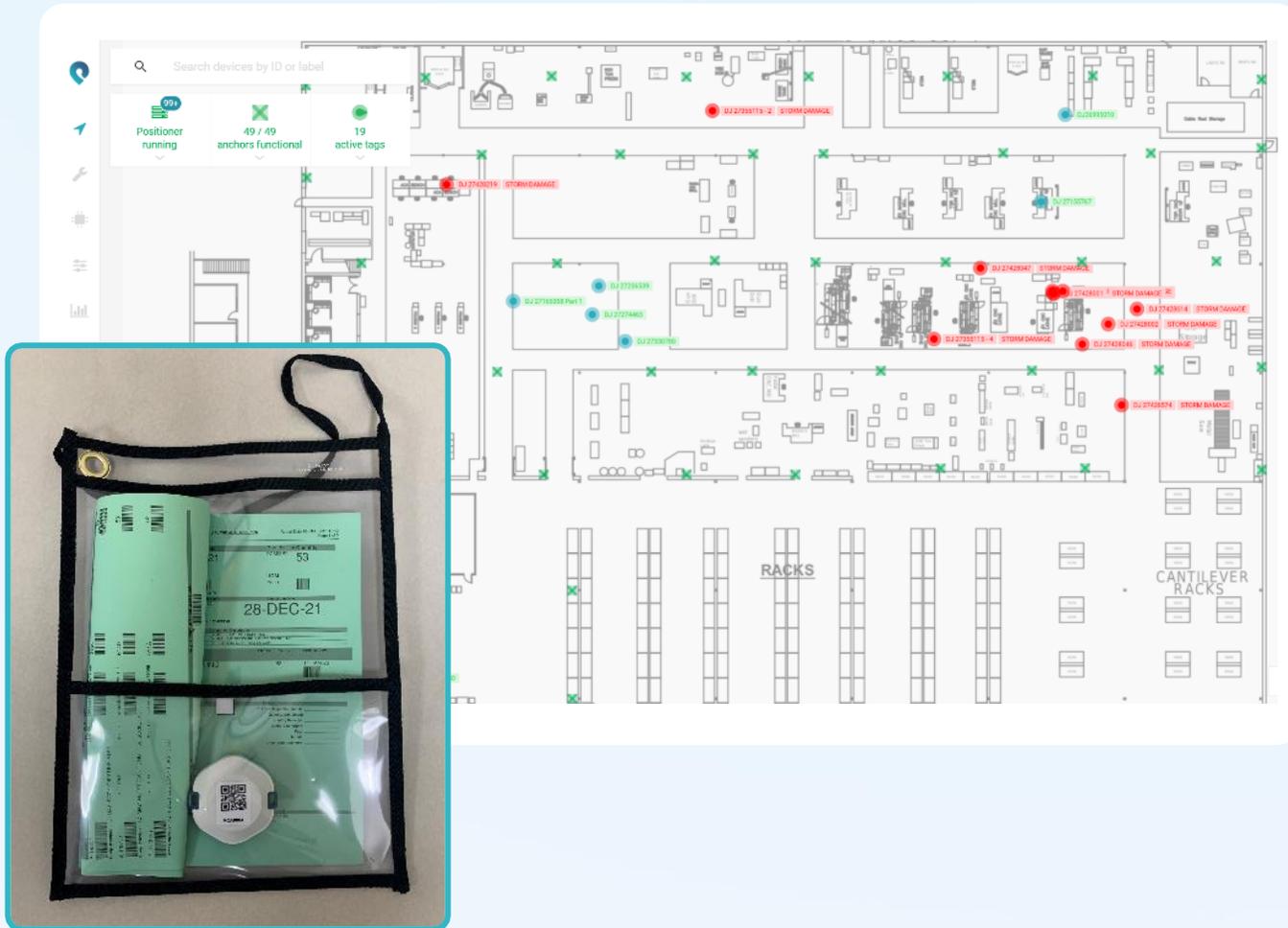
Problem

In automotive, cars with production defects are parked around the production facility. Lots of time is spent tracking and identifying the cars.

Pozyx

- ✓ Tracking cars indoor, outdoor & multi-level
- ✓ Accurate up to parking space
- ✓ Easily search vehicle by defect, model, status
- ✓ Saving multiple FTEs
- ✓ Optimized space utilization

Business case Order tracking



Problem

In a discrete manufacturing plant producing make-to-order, priority orders are not delivered on time, yet the customer pays for expedited orders. No visibility is available to take action. The facilities span 13,200sqm plant in a challenging environment (metalworking).

Pozyx

- ✓ Tracking expedited orders in every stage of production or assembly
- ✓ Location-based kanban-style dashboard for the production manager
- ✓ Significant reduction of expedited freight shipping costs
- ✓ Visibility on activity and buffer time for increased efficiency

Business case Workforce monitoring



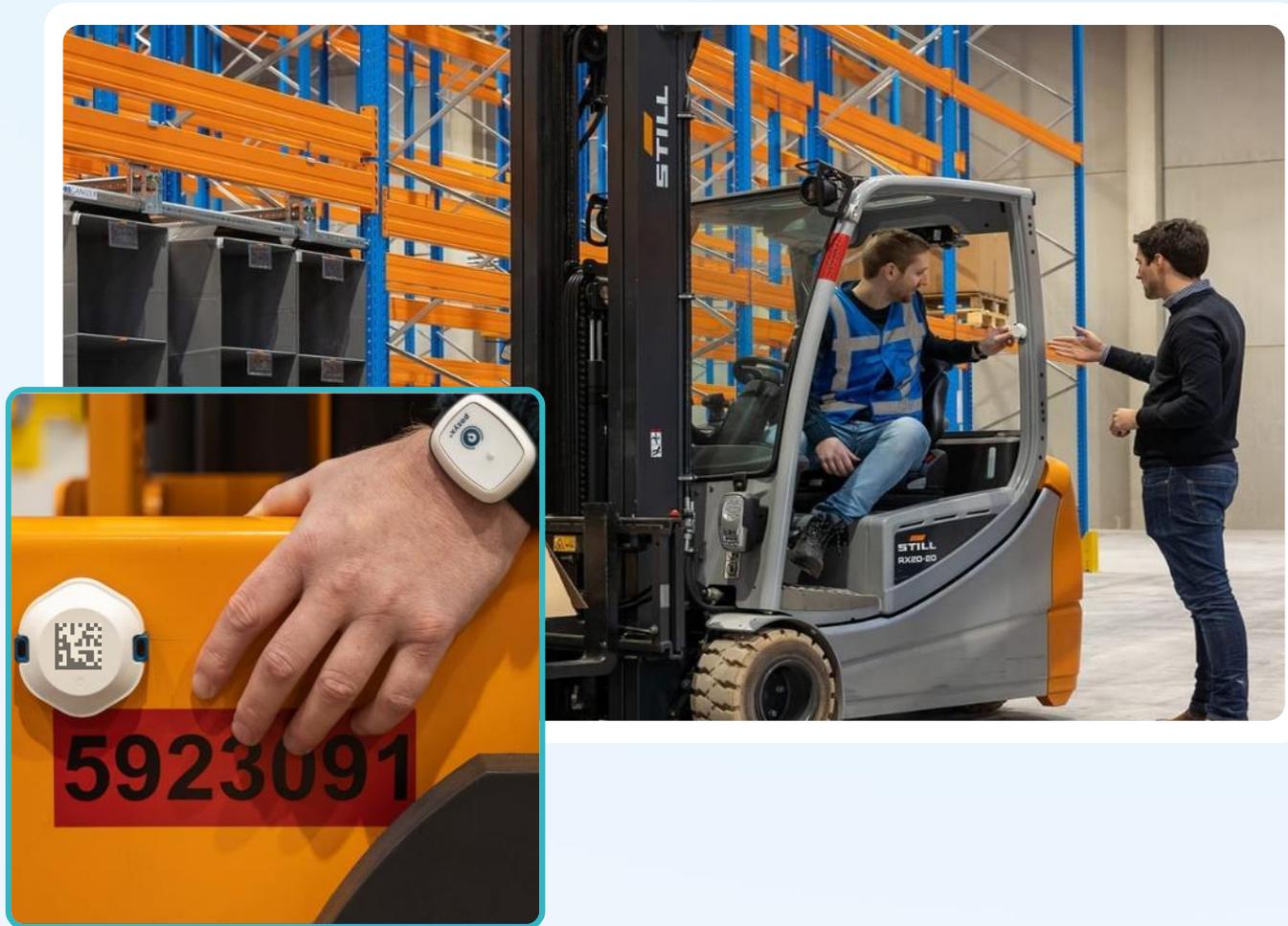
Problem

In a food processing company, most of the work relies on manual labor. Yet, it is unclear how much time is actually spent, reducing cost calculation and price-setting to inaccurate guesswork.

Pozyx

- ✓ Tracking operator activity and efficiency based on work-station geo-fencing
- ✓ Time budgets show how much time was spent at each workstation, for each bin
- ✓ Automated time registration
- ✓ Performance-based remuneration for seasonal workers based on location data
- ✓ Optimized and dynamic work shifts

Business case Warehouse & inventory control



Problem

In a warehouse and logistics company, goods and pallets are often misplaced or lost. Much time is lost tracking and identifying these goods, which results in excess stock holding and time lost.

Pozyx

- ✓ Accurate real-time stock information
- ✓ Elimination of cycle counting and lost material searches, reduction of (excess) stock holding
- ✓ Material flow and handling route visibility, improving journey routing capabilities
- ✓ Elimination of annual physical inventory
- ✓ Real time tracking of racks and returnable packaging, on-site and off-site
- ✓ Optimized facility footprint, layout & space utilization
- ✓ Safety application to avoid human/forklift collisions

Business case Global tracking of returnable packaging



Problem

Re-usable packaging, pallets and racks travel between production, OEMs, customers and suppliers. Even though they are labeled as returnable, packaging easily gets lost and large amounts of money go to waste.

Pozyx

- ✓ Real time tracking and identification of containers, racks and returnable packaging, on-site and off-site, with the customer, supplier or anywhere on the road
- ✓ Elimination of lost packaging search actions
- ✓ Reduction of returnable packages quantities
- ✓ Elimination of excess packaging material production and cost
- ✓ Management of circular logistics for sustainable re-usable multi-trip packaging

Who needs Pozyx?

Who is it for?

Rob, Operator

PROBLEM STATEMENT

Rob performs a lot of repetitive actions that add no value. He needs to repeatedly scan, for every order step in the process. And he needs to find the correct working instructions and specifications in the work folder that also contains a lot of other information irrelevant to Rob.

- ✓ Automated scanning based on geofence location
- ✓ Guided paperless Standard Operating Procedures
 - ✓ Work instructions
 - ✓ QA checks
 - ✓ Conformity checks
- ✓ Priority picking instructions



Who is it for?

Jess, Process Engineer

PROBLEM STATEMENT

Jess knows that the theoretical production process never matches the actual process and that her presence has an impact on operator productivity. In the worst case, unions might decide to stop working under Jess' stopwatch. With Pozyx she gains insights into how the factory runs in reality, without being on the floor and keeping a close eye on the workers.

- ✓ Easier, more accurate time studies, without manual data collection
- ✓ Pinpoint process deviates and analytics
- ✓ Real-time KPIs from dashboards
- ✓ Historic data lake for analytics
- ✓ Manage cost and time constraints



Who is it for?

Chuck, Production Manager

PROBLEM STATEMENT

Chuck is responsible for smooth production and on-time delivery. He has to balance resources, train workers to perform their tasks, and deal with the dynamics of shifting priorities of expedite orders. Chuck spends most of his day on the production floor, checking which product is where and estimating if the orders will still be delivered on time. Chuck decides in QA follow-up and keeps a close eye on buffer volume and buffer time.

- ✓ WIP monitoring in real-time kanban-style dashboards
- ✓ Valuable insights on rework & expedite orders
- ✓ Business triggers launch notifications, alarms
- ✓ Automated and fool-proof quality validation



Products

Product Offering

Pozyx provides its Pozyx Platform, hardware & services for tracking and identifying all industry assets indoor & outdoor in manufacturing and logistics based on the open, multi-technology omlox standard



Pozyx Enterprise UWB RTLS

Pozyx tags send out an UWB signal to update their position



POZYX TAG



POZYX ANCHOR NETWORK

A PoE switch manages power supply to the anchors and connects the anchors with the gateway



PoE SWITCH



POZYX POSITIONING GATEWAY

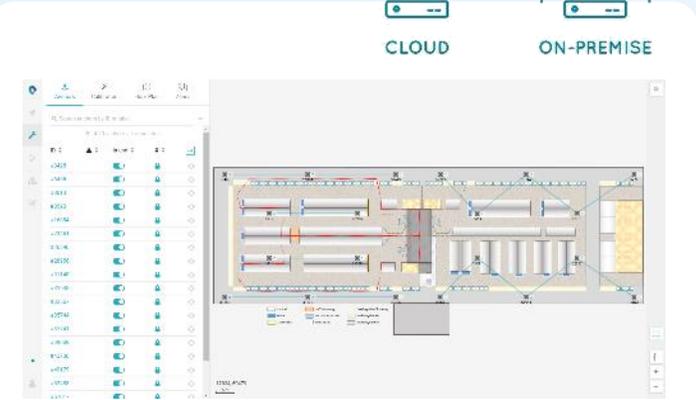
A network of Pozyx anchors picks up the signals and forwards them through ethernet

MQTT and REST APIs to connect the data
omlox-compatible to connect with an omlox hub



CLOUD

ON-PREMISE



RTLS Management

Easy setup and maintenance

- ✔ Setup system (floorplan, anchor connectivity, configuration,..)
- ✔ Device management
- ✔ System diagnostics & validation

Enterprise UWB RTLS Solution Hardware

Tags



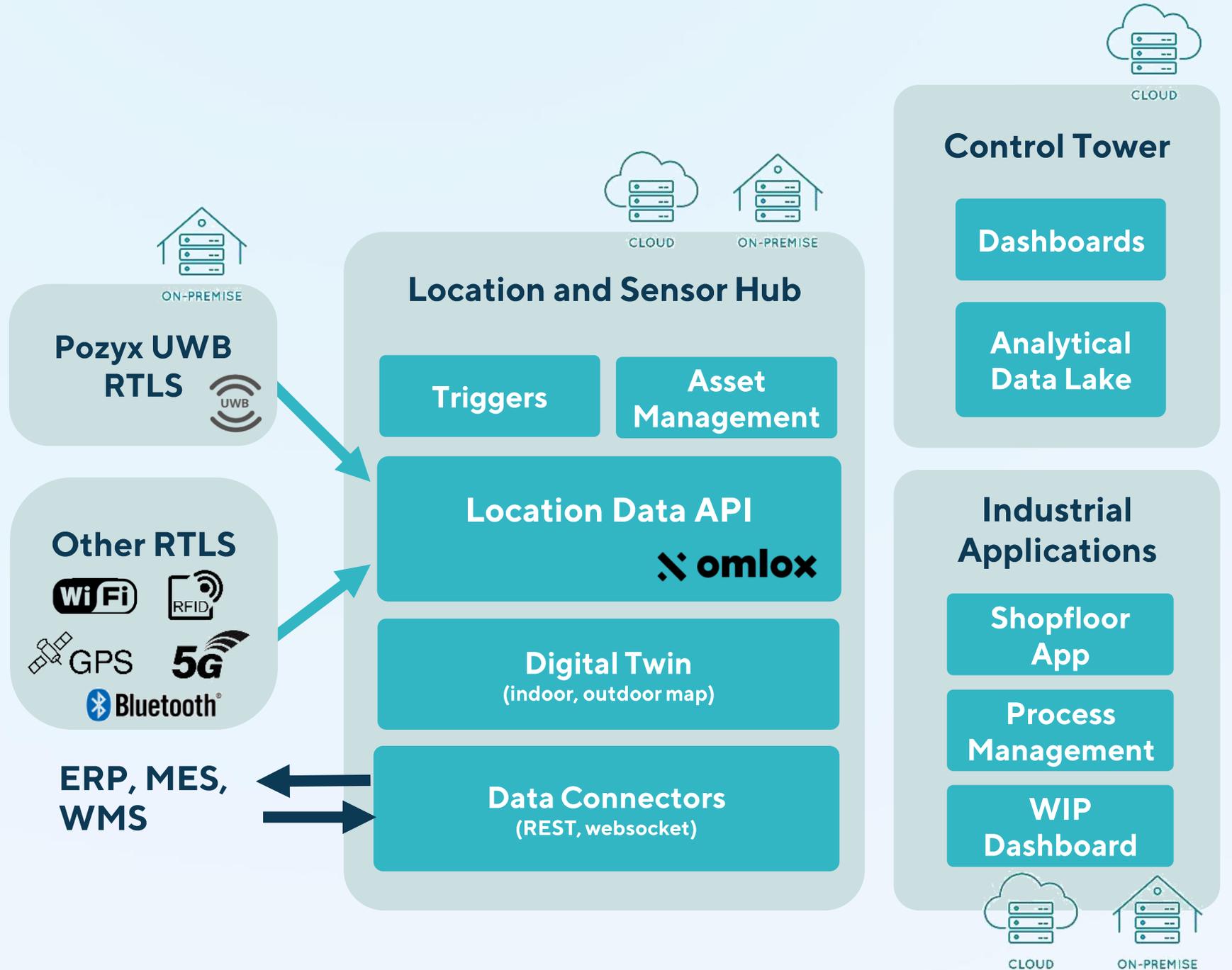
Anchors



Local Gateway



Pozyx Platform



Pozyx Location & Sensor Hub

The main dashboard features a dark blue vertical sidebar on the left with icons for home, search, menu, tracking, calendar, lightning bolt, bar chart, and settings. The main content area is organized into three sections:

- Top Row:** Search, Trackables, Set up tracking, eKanban, and Dashboards.
- Environment Management:** Triggers, Map Configuration, and Object Configurator.
- System Management:** Settings and User Management.

A language selector for "English" is located in the top right corner of the dashboard area.

The "Omlox zone management" interface includes a top navigation bar with "GeoFences", "Static equipment", "Map management", and "Omlox zone management". A "+ Create zone" button is prominently displayed. Below the button is a list of zones, each with a "j > level" header and a "Lorem ipsum dolor sit amet, consectetur." description. Each zone entry has edit and delete icons. To the right is a map showing a residential area with buildings, a lake, and roads labeled "HIDDEN LAKE CIR", "SPARTANGREEN BLVD", and "TYGER RI".

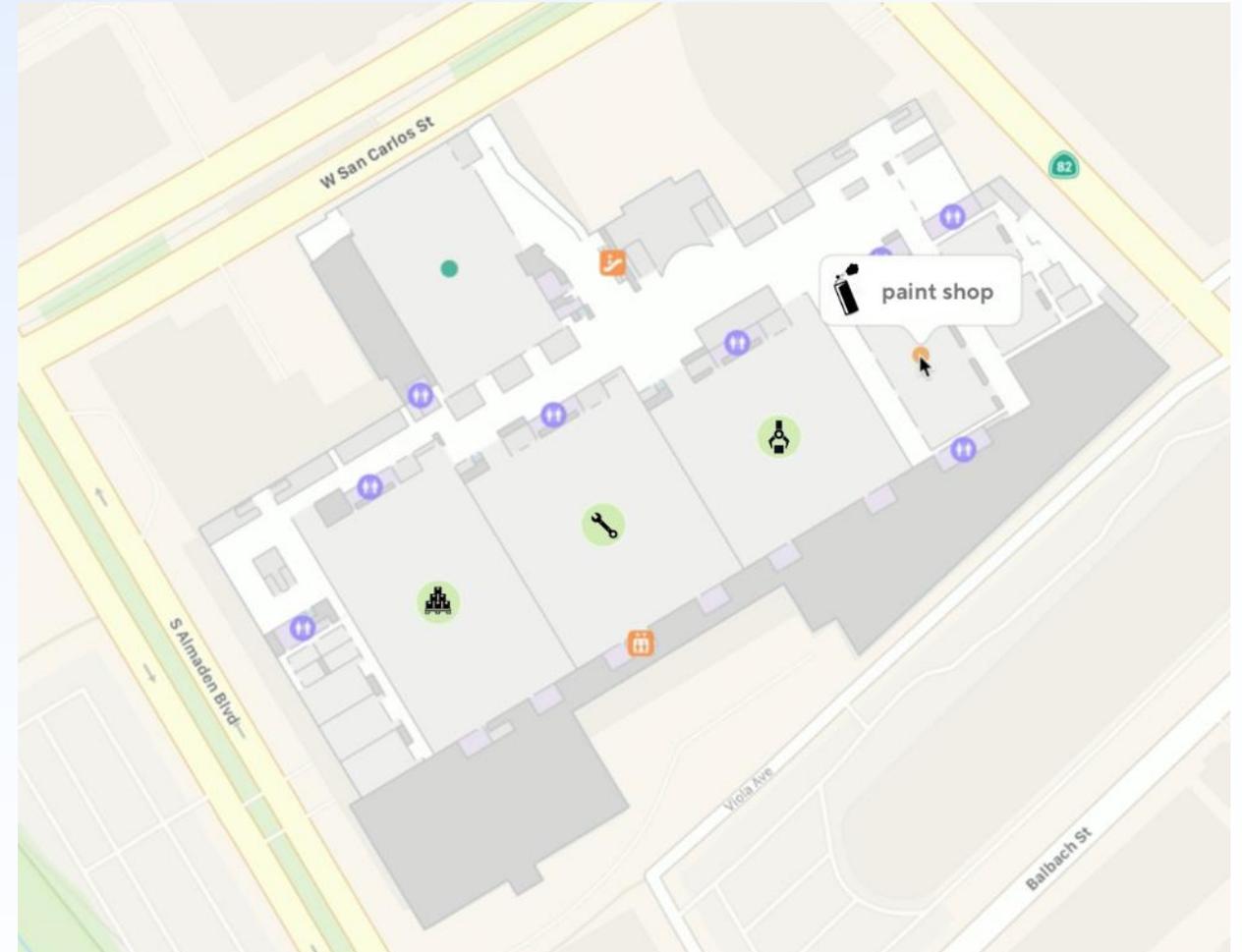
Pozyx Location & Sensor Hub – Digital Twin

TECHNOLOGY

Mapping

Maps represent a digital twin and are key in interpreting location information

- ✓ Combined indoor and outdoor map
- ✓ Interactive maps (zoom, rotate, search)
- ✓ Multi-floor support
- ✓ Support for IMDF vector-map format and image floorplans (backward compatibility)
- ✓ Outdoor maps based on OpenStreetMap
- ✓ Map editing
 - ✓ Geofences
 - ✓ Machines (shop floor layout)
- ✓ Configuration of coordinate systems, the omlox zones



Pozyx Location & Sensor Hub – Asset Management

TECHNOLOGY

Object configurator

- ✓ Configuration of different assets in the facility
- ✓ Different type of objects: forklift, goods, pallet, order, person, tool, ...
- ✓ The object holds additional context through metadata
- ✓ Ability to create custom objects with custom fields
- ✓ Fetch object properties from APIs
- ✓ Trigger events based on property changes



Moving object

- Location
- Asset name
- Asset origin
- Next step
- Temperature
- ...

ERP,
MES,
WMS

Pozyx Industrial Applications – Shopfloor Apps

TECHNOLOGY

Object linking

Links a location tracker to the underlying moving object

- ✓ Manual linking
- ✓ Scan-based linking
- ✓ Trigger based linking (object ID provided through API)
- ✓ Trigger-based unlinking (placing a tag in a bin to unlink)



Pozyx Industrial Applications – Shopfloor Apps

TECHNOLOGY

Object linking

Operator app for linking and unlinking of trackables on a handheld device.

Use of support equipment

- ✓ Barcode scanner
- ✓ NFC scanner



CONCEPT
Expected Aug 22

process step

scan window

order ID

manual entry

scan/confirm/delete button

A screenshot of the LINKING app interface on a handheld device. The screen is titled "LINKING" and features a large "+" sign in the center, indicating a scan window. Below this, there is a section for "order ID" with the text "AB-0123154" and a "3" to its right. Underneath are four empty rectangular input fields. At the bottom, there is a "manual entry" section with a QR code icon and "...". A prominent black "SCAN" button is at the bottom left, and a home icon is at the bottom right.

amount of linked trackables
trackable no 1

trackable no n
last scanned item

to home screen

Pozyx Location & Sensor Hub – Digital Twin

TECHNOLOGY

Object tracking

List all objects/assets and filter by

- ✓ Type
- ✓ Property (e.g. all assets with color yellow)
- ✓ Metric (e.g. all objects that haven't moved in one week)

View asset information

- ✓ Current metadata and identification
- ✓ Calculated metrics (e.g. distance travelled, OEE, activity percentage, ...)
- ✓ Latest location
- ✓ View movement history on the map
- ✓ View historical events triggered
- ✓ View underlying tracker information

The screenshot displays the Pozyx digital twin interface for product SN7365938275. The interface is divided into several sections:

- Product Details:** A table showing product information.

| | |
|-----------------------|--------------|
| Product Serial Number | SN7365938275 |
| Order ID | ORD000364 |
| Customer ID | ARCLRMTL |
| Specification X | 1000mm |
| Specification Y | 735522 |
- Location:** A table showing the current location and geofence.

| | |
|------------------------|--|
| Current Zone | Pozyx Office, Vrijdagmarkt 10/201, 9000 Gent |
| Current Geofence | Operations |
| Latest location update | 15:42:36 24 March 2022 |
- Timebudget:** A horizontal bar chart showing the time budget for different activities: Shipping (orange), Operations (blue), and Hardware (purple).
- Geofence History:** A table showing the history of geofence events.

| Geofence Name | Enter time | Exit time | Duration |
|---------------|---------------------|---------------------|-------------|
| Operations | 08:25:25 24/03/2022 | 14:31:12 24/03/2022 | 06h 05m 43s |
| Shipping | 15:25:25 23/03/2022 | 08:20:21 24/03/2022 | 16h 51m 01s |

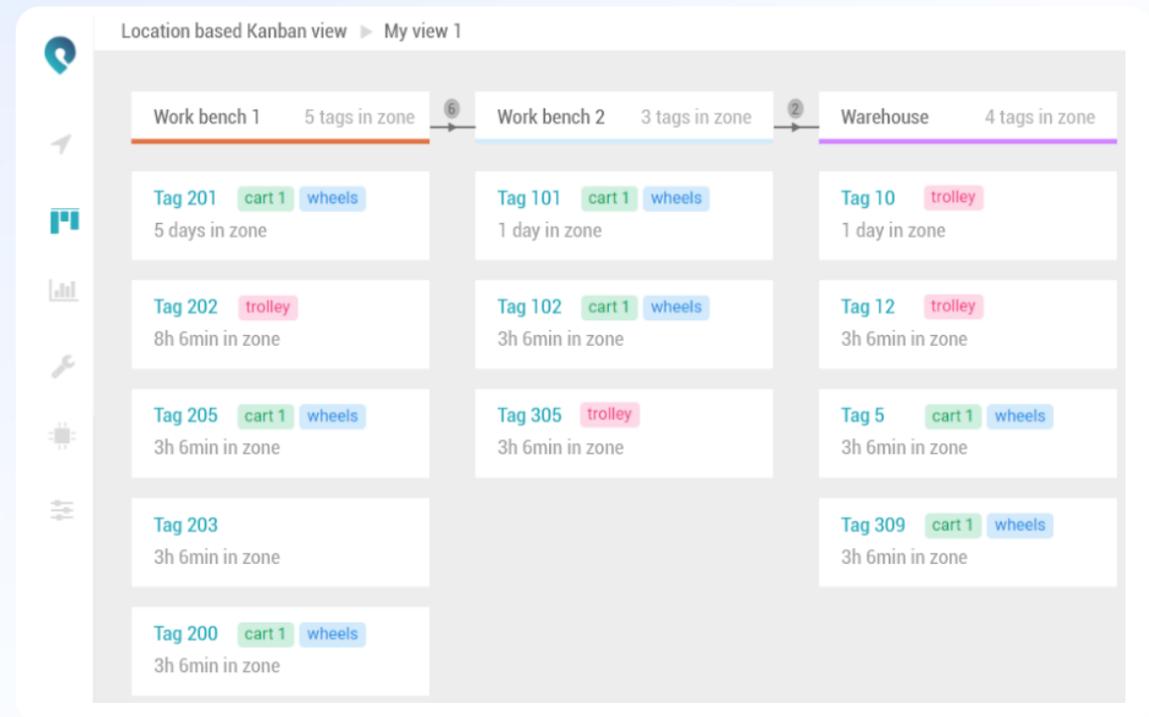
The interface also includes a map showing the current location of the asset in Gent, Belgium, near the Pozyx office. The map shows the Leie river and surrounding streets like Vrijdagmarkt and Delekastraat. Other landmarks like Chent River, Huis van Alijn, and Chulo Restaurant are also visible.

TECHNOLOGY

WIP Dashboard

Location based WIP visibility – kanban-style dashboard

- ✓ Process steps based on geofences
- ✓ Dashboard view reflects the state of each order in the process based on location
- ✓ Easy to filter on any metadata, metric or property



Pozyx Location & Sensor Hub – Triggers

TECHNOLOGY

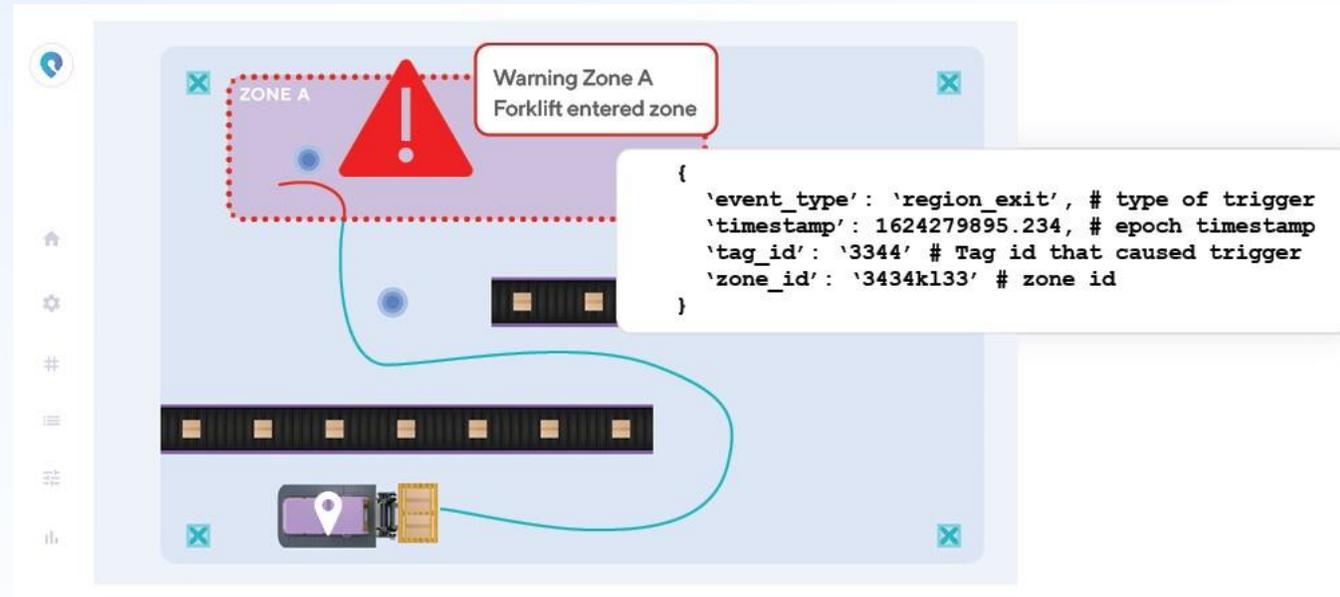
Triggers

Configure triggers based on a changed context of an object

- ✓ Positioning triggers
- ✓ Business zone triggers
- ✓ Movement-based triggers
- ✓ Sensor triggers

Easily interface with the triggers (future)

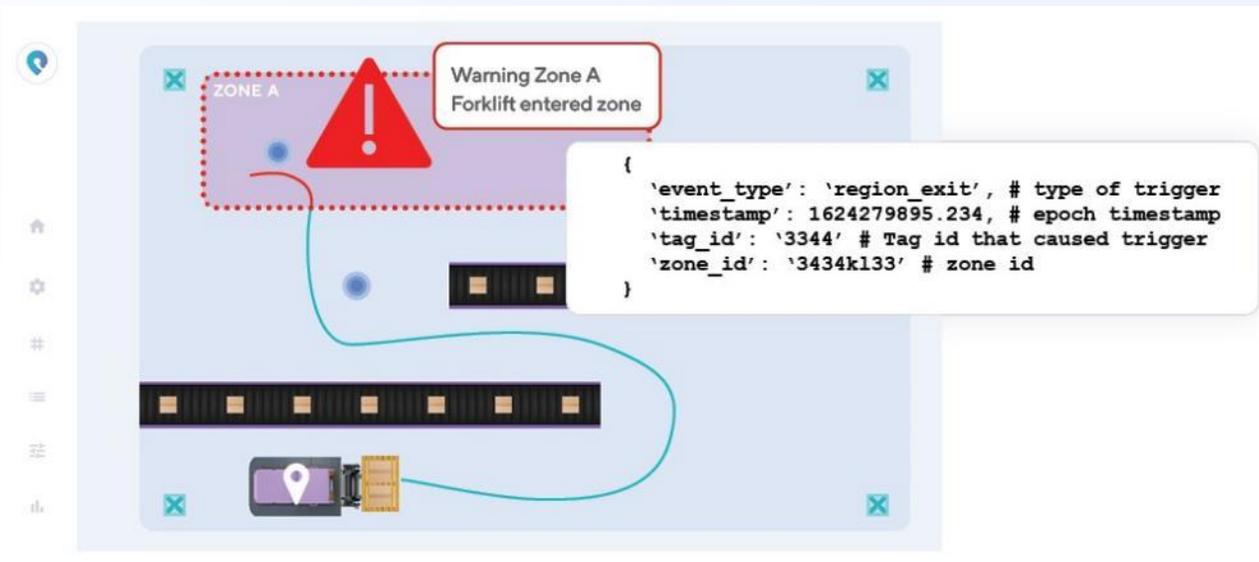
- ✓ Trough MQTT
- ✓ Webhook



Pozyx Location & Sensor Hub – Triggers

TECHNOLOGY

Triggers



POSITIONING TRIGGERS

- Asset enters or exits a zone

BUSINESS ZONE TRIGGERS

- X assets or less than X assets in a zone
- Zone remains empty for X seconds
- Asset longer than X seconds in a zone
- Tag leaves zone before X seconds
- Tag is not moving in a zone for over X seconds
- X tags are active in same zone

MOVEMENT-BASED TRIGGERS

- Tag is inactive for X seconds
- X tags are within Y meters of each other (collision event)
- Average speed over X seconds is higher than Y km/h

SENSOR TRIGGERS

- User presses a tag button
- Tag battery level is below X%
- Other sensor criteria are met [future]

Pozyx Control Tower Analytical Data Lake

TECHNOLOGY

Analytical Data Lake

The Data Lake stores historical object data

- ✓ Location data, originating from different location technologies
 - ✓ UWB, RFID, Bluetooth, 5G, GPS, WiFi, ...
- ✓ Triggered events (both omlox primary and Pozyx secondary triggers)
- ✓ Sensor data
- ✓ Object metadata

- ✓ Data is stored in an efficient time-series database and/or GIS database



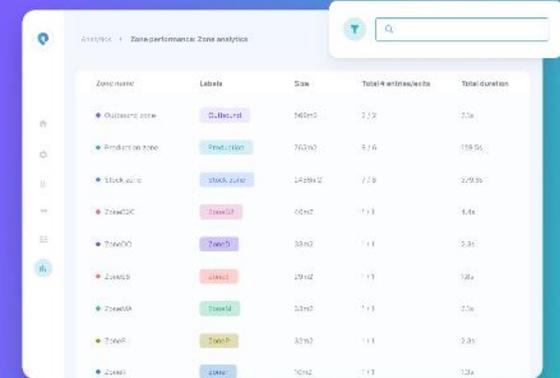
Pozyx Control Tower – Dashboards

TECHNOLOGY

Analytical Dashboards

The data lake stores historical object data for fine-grained insights

- ✓ Easily create custom reports for valuable insights
- ✓ Easily create dashboards
 - ✓ Heatmaps, time budgets, spaghetti charts and zone analytics based on algorithms
- ✓ Ability to filter on location, tag type, metadata
- ✓ Link with data from the data lake or other sources: Excel, database, APIs, ...
- ✓ Embedded analytics from external dashboard providers: Microsoft Power BI, Tableau, Cumul.io, Looker, ...



TECHNOLOGY

Key Pozyx features

Reliable

Reliable and accurate real-time tracking and identification

Robust

Robust and optimized for demanding industrial environments and harsh circumstances

Scalable

Scalable to support small environments as well as global operations with many thousands of tags

Interfaceable

Open architecture, flexible interfaces & integration protocols for ERP, MES and WMS

Pozyx

Pozyx **company**

Pozyx is a worldwide provider of global & multi-technology RTLS with offices in Belgium and US

Belgian spin-off providing industrial hardware, platform and software solutions enabling location-based services and insights in manufacturing and logistics.

Gartner[®]

NICHE PLAYER
2021 MAGIC QUADRANT
FOR INDOOR LOCATION SERVICES



Pozyx is proud to bring operational excellence
to companies worldwide

THALES

HITACHI

Bonduelle

ArcelorMittal

VDL Nedcar



colruyt

AB InBev

Alcon

La Lorraine
Baking passion



Let's keep in touch

 www.pozyx.io

 sales@pozyx.io



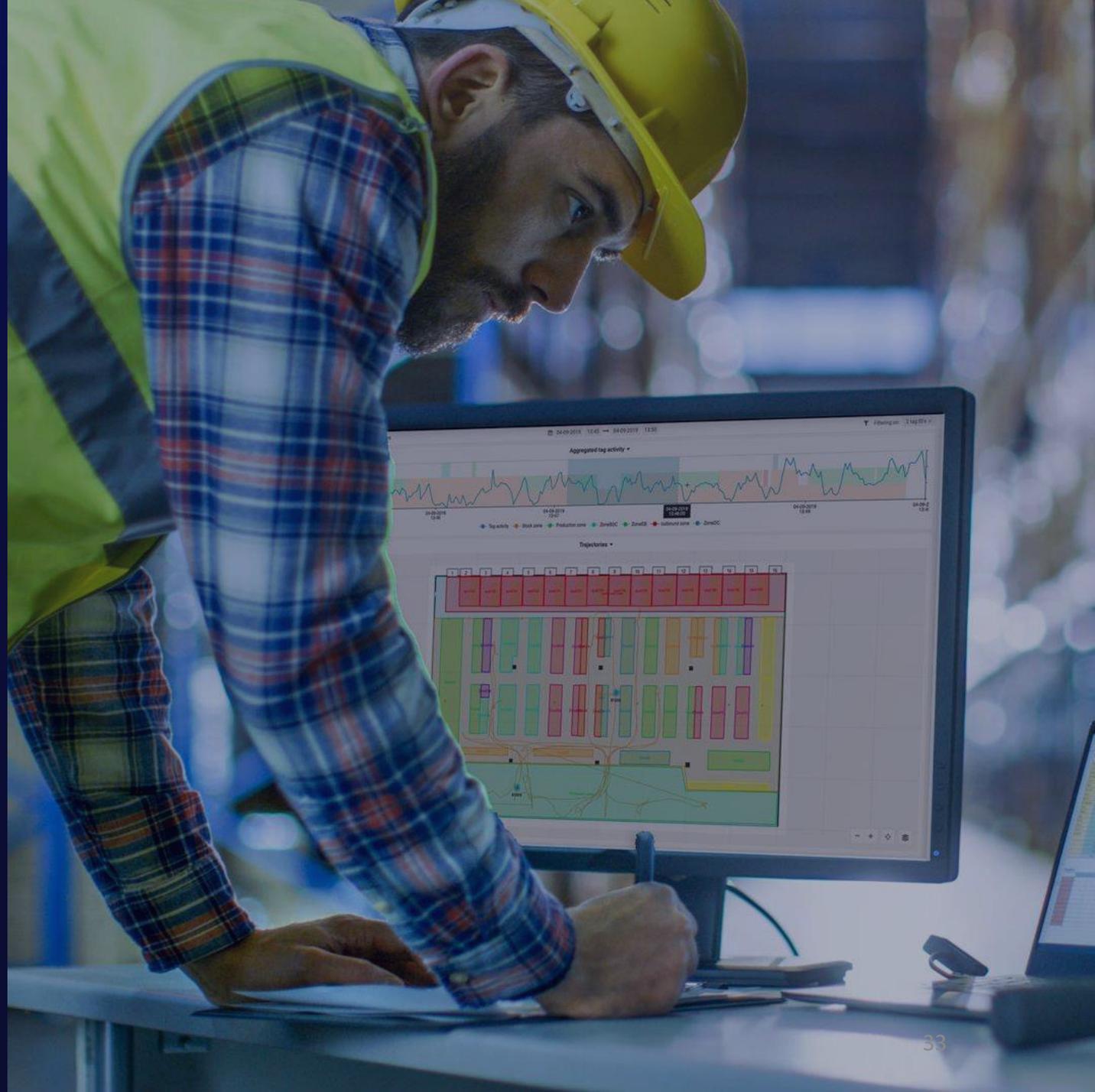
@pozyx



@pozyxlabs

 HQ in Ghent, Belgium

 US office in Greenville, South Carolina





ON-PREMISE

Pozyx UWB
RTLS



Other RTLS

WiFi



GPS

5G

Bluetooth

ERP, MES,
WMS

CLOUD ON-PREMISE

Location and Sensor Hub

Triggers

Asset Management

Location Data API

omlox

Digital Twin
(indoor, outdoor map)

Data Connectors
(REST, websocket)

CLOUD

Control Tower

Dashboards

Analytical Data Lake

Industrial Applications

Shopfloor App

Process Management

WIP Dashboard

CLOUD ON-PREMISE