



# Unleash the power of real-time location solutions

[pozyx.io](https://pozyx.io)

## Industry 4.0 RTLS Solutions • Use cases • Inspiration



**Pozyx indoor RTLS UWB solutions**  
**Track any asset in industry in real-time**

**Accurate • Effective • Simple**



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“ Pozyx clearly invests heavily in both their products and the support of their products. Their approach to providing remote support and training enables us to share knowledge across our global team and enables us to scale our offering globally.

Chris Hocking  
CEO OxTS



“ I am glad to be able to offer Pozyx's indoor positioning solutions to our customers. The quality of their UWB technology make it a robust and reliable solution and is a valuable complement to our offering of outdoor positioning systems.

Torbjörn Persson  
CEO Provinn



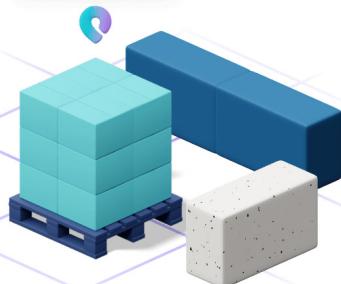
“ Pozyx helps our clients optimize not only their space, but also the time needed for their operational tasks in dealerships; the UWB technology which they specialize in is key for the precision and reliability we need for fulfilling our client's needs.

Ashmat Parwany  
Software Engineer



**POZYX IS PROUD TO BRING  
INDUSTRIAL INNOVATION TO COMPANIES WORLDWIDE**





## ABOUT POZYX

# Hyperaccurate indoor positioning for smart industry solutions

Pozyx delivers real-time location systems (RTLS) for indoor tracking based on UWB (ultra-wideband) technology to position people and assets with unprecedented accuracy.

With the use of ultra-wideband (UWB) technology, smart algorithms and machine learning, Pozyx achieves a much higher accuracy compared to traditional positioning systems like WiFi, Bluetooth, RFID or GPS.

Designed and developed for the most demanding industrial environments, the Pozyx solution is robust, built to perform and user-friendly.

Pozyx has sold over 4000 kits, shipped to over 80 countries, in a diverse group of solutions, markets and industries. The large scale Pozyx Enterprise deployments bring proven effectiveness and production flow optimization to global industry players.



**Accurate. Effective. Simple.**

## POZYX RTLS SOLUTIONS

Pozyx designs its own hardware and invests heavily in the development of algorithms to make solutions more stable and robust in industrial environments. Pozyx has also developed software that makes it easy to install and maintain any set-up, and has a complimentary set of APIs to guarantee easy and fast integration with enterprise software suites. Pozyx prides itself for its customer-centric approach, listening, anticipating and accomodating to customer requirements in a flexible way.



## UWB FOR ACCURATE INDOOR LOCALIZATION

Ultra-wideband is a wireless radio technology specifically designed and developed for accurate localization.

Through its very large bandwidth of over 500MHz, it can achieve a positioning accuracy of below 10cm, even in the most challenging environments.

Apart from that, UWB delivers:

- Low-power
- Signals penetrate objects & thin walls
- Low-cost
- Small form factor
- No radio interference

Benefits that make UWB the winning technology for indoor localization!

## UWB IS HERE TO STAY

About 5 years ago, UWB was still a niche technology only adopted by a few pioneering companies. Today, UWB is present in smartphones, smart watches, electric vehicles and various smartphone gadgets. Electronics giants such as Apple and Samsung have made a clear statement that UWB is the main driving technology for location awareness of their devices.

UWB's rollout and increased adoption is due to wider chipset availability, adoption across multiple segments, and the formation of a healthy UWB ecosystem across the entire supply chain. According to ABI Research forecasts there will be 300 million UWB device shipments in 2021.

Andrew Zignani - ABI Research

# Track anything in manufacturing

## Ultra accurate



### LABOR & WORK EFFICIENCY

Optimize efficiency & increase safety.

#### **Ultra effective.**

Accurately measure & monitor operator efficiency to define realistic and efficient production times and to analyze labor cost. Increase critical operator safety with precise real-time employee indoor location tracking and situational awareness tools. Create dynamic safety zones and Trigger alerts for moving assets and for protecting people. Define geofence zones to restrict access, to trace presence and track behavior.

### WIP & MATERIAL FLOWS

Follow every asset in production flow.

#### **Ultra reliable.**

Pinpoint, monitor and surveil items, assets, vehicles and people on the shop floor. Ensure efficiency, accuracy, and traceability throughout the entire manufacturing or assembly process for optimized cycle time, enhanced OEE and increased OOE.

### EQUIPMENT TRACKING

Pinpoint lost equipment & restrict use.

#### **Ultra compliant.**

Track tools and equipment and never search for lost items again. Restrict the use of tools or equipment to trained operators only and increase safety.

### WAREHOUSE OPTIMIZATION

Track all warehouse assets.

#### **Ultra fluent.**

Stop wasting man-hours searching for pallets, machines, tools or goods. Obtain full real-time yard management to improve operational efficiency. Use a strong inventory control tool, part of the EWM (extended warehouse management) system for utmost inventory performance.

### ACCESS CONTROL & SAFETY

Keep sites safe and protected.

#### **Ultra secure.**

Combine smart automation with ease of use for safe, secure and easy to access facilities. Define restricted zones to avoid entrance of unauthorized personnel or visitors. Install indoor geofences and curfews. Automatically manage and automate doors, lights and HVAC systems based on occupancy.

### LEAN MANUFACTURING

Smarten quality & improve output.

#### **Ultra boosted.**

Eliminate the 8 wastes of lean and optimize production time, material and labor. Create eKanban boards to improve production, assembly and logistics flows. Practice value stream mapping, initiate SMED methods and deliver to Kaizen principles.

# Pozyx Industry 4.0 solutions



# Pozyx RTLS accurately tracks labor efficiency & labor cost

## Ultra effective



### LABOR & WORK EFFICIENCY

Optimizing labor force and improving operator effectiveness (OOE) can have a spectacular impact on production efficiency and provides valuable insights on labor cost.

The Pozyx real-time location system tracks operators during the full production or assembly cycle. Know where people are, where they lose time and what the cost impact is.

Enforce work processes and standards for safety and health-related processes, effectuate risk mitigation and legal compliance.

### DATA DRIVEN RELIABILITY

Collect real-time productivity data to streamline labor efficiency.

The Pozyx RTLS collects, tracks and reports on employee activities on the shop floor. It tracks how much time operators spend in a workstation to provide exact input on labor cost for every single production or assembly order.

Dynamically assign staff, reduce cost of labor and create an efficient work environment.

#### Labor productivity

- Optimize work shifts
- Calculate workstation efficiency
- Automate time sheet registration
- Register real-time roll count
- Find employees faster
- Improve processes and workflows
- Increase workforce efficiency

#### Labor cost insights

- Find the most effective workflow, based on real numbers
- Scale up more efficiently
- Pinpoint bottlenecks
- Calculate workstation efficiency
- Make objective staffing and HR decisions

#### Dynamic work force

- Assign tasks more efficiently & minimize production time
- Discover productivity issues & add people to speed up production flows
- Understand delays & optimize processes
- Identify operator requirements during peak times or seasonal production

# Pozyx RTLS optimizes WIP & enhances material flows Ultra reliable



## Track orders & material flows

- Eliminate manual scanning
- Easily locate (prioritized) orders
- Manage buffers more efficiently
- Reduce the number of load carriers
- Increase material turnover
- Provide real-time order status to customers

## Quality validation & checks

- Verify correct order location in workstations & buffers
- Spot LIFO or FIFO buffer order violations
- Scrutinize orders or parts passing storage time limits
- Trace orders that skip a process step or that are in the wrong sequence
- Avoid product with quality defects from re-entering production cycles

## Efficiency checks

- Avoid WIP buffers overflowing
- Alert on parts buffers running low
- Warn on empty workstations
- Pinpoint outlier cycle/takt times
- Monitor idle time between processing steps

## WIP & MATERIAL FLOWS

WIP levels is one of the critical KPIs for manufacturing companies.

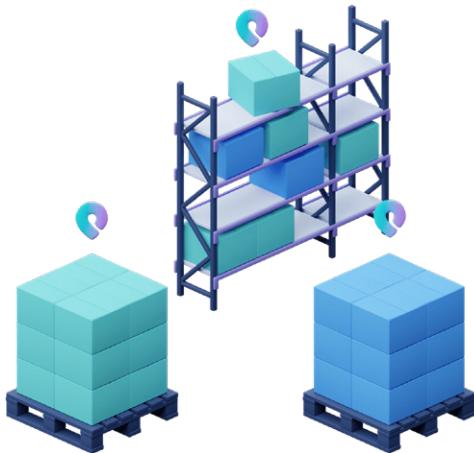
Pozyx has developed its WIP tracking solution that collects location data, analyzes xyz-datastreams and generates triggers and alerts for increased operational efficiency.

The Pozyx RTLS provides visibility and transparency on job orders during the production process which are critical to measure efficiency, enhance cycle time or takt time, increase operator efficiency (OOE) and overall equipment effectiveness (OEE).

Especially in MTO (make to order) or QRM (quick response manufacturing) environments, real-time efficiency data can optimize cost calculations and eliminate variability in operations.

## INCREASE QUALITY & EFFICIENCY

The Pozyx RTLS ensures efficiency, accuracy, and traceability throughout the entire manufacturing or assembly process. It automates and foolproofs the quality validation process and activities across all phases of the production cycle.



# Maintain inventory accuracy & improve goods movement flows

## Ultra fluent



### WAREHOUSE EFFICIENCY

Warehouse sites are some of the most challenging environments for indoor positioning systems (IPS). They are complex by nature due to their size and demanding due to the number of processes and assets that govern them. Pozyx provides ease of use, robustness and flawless integration capabilities to provide warehouse applications with vital real-time asset, equipment and people tracking data that create process flow insights and translate into real business value.

Losing track of pallets, carriers or goods means losing time and money. The Trigger-based system provides a detailed overview of pallets and goods movements to enhance process workflows and to resolve bottlenecks.

### RISK ANALYSIS & INCREASED SAFETY

Industrial robots and forklifts are high safety-risk assets in warehouses, tracking their interactions helps to reduce collision risks. The Pozyx warehouse orchestration system is based on real-time location data and brings efficiency and safety to the overall business.

#### Inventory control

- Know the exact location of goods, pallets and assets and save time
- Eliminate manual scanning
- Achieve & maintain inventory accuracy
- Reduce laborious and expensive physical inventory audits

#### Labor productivity & safety

- Calculate & increase warehouse operator efficiency
- Automate time registration
- Create safety applications to avoid human/robot/forklift collisions
- Monitor driver behaviour, identify high traffic & risk areas, apply automated speed control

#### Warehouse optimization

- Optimize facility footprint & layout
- Analyze goods handling routes & promote process efficiency
- Deliver cost savings by improving journey routing capabilities
- Use accurate real-time stock information to reduce (excess) stock holding needs

# Track equipment movements & increase efficiency & usability

## Ultra compliant



### Tracking all equipment

- Easily find all moving or missing equipment on the floor
- Track a limited number of critical pieces of equipment or all assets & tools on the floor
- Scan how items move & generate heat maps to optimize production

### Full equipment visibility

- Track the what, where and when of forklifts, tugger trains & pallets
- Pinpoint motion of moving elements like production batches and orders in real-time to analyze WIP
- Automate flows & create closed-loop processes to improve efficiency

### Dynamic shop floor

- Restrict the use of tools or equipment to trained operators only
- Never search for lost tools or equipment and avoid theft
- Dynamically assign workforce according to requirements during production peak times
- Real-time asset visibility to avoid bottle necks or idle time

### EQUIPMENT TRACKING

Pozyx RTLS provides real-time visibility on different kinds of equipment with precise information on location, how they move, when they moved, and when they remain static.

Start the RTLS journey with tracking a limited number of critical equipment and scale as needed to include all tools, forklifts, tugger trains and people. Get the full overview of production floor activities and improve efficiency of equipment and production flows.

### NEVER LOSE TRACK

The Pozyx RTLS collects, tracks and reports on any piece of equipment on the floor. See the real-time location of vehicles and tools and never search for misplaced items. Check efficiency to see how forklifts or tugger trains move. Ensure that operators only use the tools allowed at specified workstations. Track location of items to avoid loss.

Ensure a safer and more secure work environment by alerting operators when forklifts or equipment move.



Lean transformation in manufacturing strives to create a culture of continuous improvement, eliminating waste and reducing costs. Control over production processes and real-time insights on product flows are the building blocks of lean optimization. Pozyx's RTLS tracks and analyzes moving assets, people, and WIP to discover issues that relate to the 8 wastes of lean manufacturing.

## HOW POZYX RTLS ADDRESSES THE 8 WASTES IN LEAN MANUFACTURING



### DEFECTS

Detect faulty assets and deviations from the target product state and prevent re-introduction of defective goods in the production cycle.



### INVENTORY

Locate inventory to prevent lost positions, resulting in excess stock, inventory build-up, increased storage space and higher cash flow.



### OVER PRODUCTION

Keep track of WIP to avoid goods lost, stop re-orders, avoiding increased costs and excess inventory.



### MOTION

Introduce charts tracking for operator, vehicle or robot movements and indicate how motion flows can be improved.



### WAITING

Measure waiting time of WIP or individual orders to gather accurate data and identify improvements in the production flow to avoid wait time and down time.



### OVER PROCESSING

Keep track of orders in real time and provide accurate individual work instructions in MTO environments to avoid unnecessary manufacturing process components.



### TRANSPORTATION

Map distance traveled by goods, orders, and operators and detect improvement opportunities to reduce operational costs.



### UNUSED TALENT

Automate location data collection to reduce efforts in manual time studies by industrial engineers, creating more time for analyzing & improving processes.

# The effective way to reduce waste, boost profits & achieve operational excellence

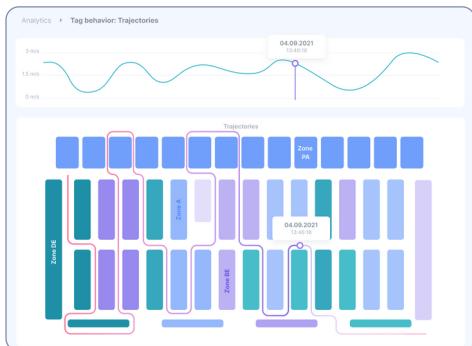
## Ultra lean



### LEAN MANUFACTURING MADE PAINLESS

The lean manufacturing system aims to maximize product value while minimizing waste without sacrificing productivity.

Using the Pozyx RTLS in lean manufacturing provides accurate real-time location data of assets in the production flow, as input for value stream mapping, adhering to the Kaizen methodology and applying Six Sigma and SMED (Single Minute Exchange of Dies & Quick Changeover) techniques.



- Pinpoint the exact location of materials and products throughout the whole production process
- Obtain transparency on materials, reduce asset loss and avoid goods lost
- Collect actionable data for quality control and efficiency checks
- Plot process mapping to fuel performance metrics

#### Map asset performance

- Unlock asset performance data to raise OEE (overall equipment effectiveness)
- Measure asset and process idle time, reduce downtime risks
- Analyze and fix inconsistent and inefficient workflows
- Avoid inefficient wastes in motion & transportation

#### Real-time asset visibility

- Spot bottlenecks and prevent disruptions
- Minimize downtime, setup and changeover time
- Correct missing goods issues and manage inventory more effectively, avoid unnecessary WIP & decrease excess stock
- Optimize inventory management, avoid manual audits

#### Efficiency checks

- Analyze policy performance and compliance levels
- Make quick decisions based on real-time data and maximize uptime
- Track movement and stock in processes, at batch and at item level
- Introduce eKanban WIP control



# UWB positioning guarantees workfloor security & safety

## Ultra secure



### SAFETY & SECURITY

Location-based Triggers create a safe and secure production environment.

The Pozyx RTLS tracks the entry, presence and exit of people, equipment and vehicles on pre-defined digital indoor maps.

### ACCESS CONTROL

The system restricts staff from accessing certain spaces and sends real-time notifications on attempted breaches to detect trespassers or unauthorized personnel.

It provides detailed employee time tracking information to automate operator clocking and enables managers to remotely check who is on-site to adapt teams according to changing production staffing requirements.

### SAFE ZONES

The real-time accurate tracking of moving equipment and vehicles like forklifts monitors traffic, feeds the collision avoidance mechanism, creates safe zones and alerts personnel to avoid accidents.

#### Safety & security

- Track any person or moving asset on the floor to improve security procedures
- Gather insights to enhance safety policies
- Enforce access right schemes
- Maximize collision avoidance

#### Geofencing

- Use indoor mapping to visualize floor plans in real-time
- Roll-out geofencing to track employee and asset movements
- Trigger automatic alerts or warnings when people or vehicles enter or exit predefined critical or restricted areas
- Shut down equipment if operated by non-qualified operators

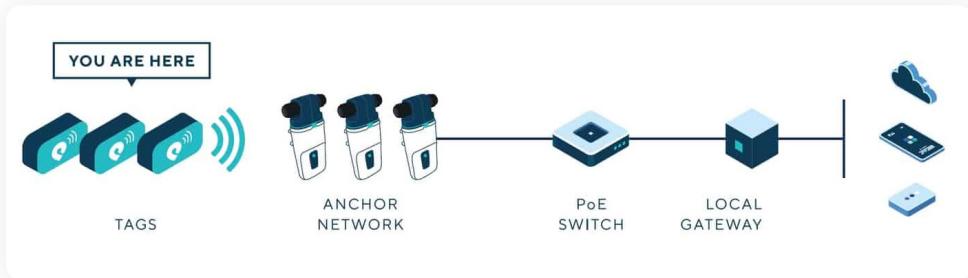
#### Access control

- Restrict or grant access rights based on floor mapping areas with decimeter accurate precision
- Keep people out of restricted zones and check on-site activities
- Automatic gate or door unlocking for a convenient hands-free experience

# Pozyx RTLS

## How it works

### Ultra scalable



#### POZYX RTLS PLATFORM

The Pozyx real-time location system (RTLS) is built and designed with scalability for large, permanent and industrial deployments in mind.

The Pozyx Enterprise system can position thousands of tags to cover large production or assembly areas with 10 to 30 cm accuracy.

The Enterprise hardware supports a wide range of settings that allow finetuning and custom optimizations to fit with any system and cover any indoor surface. Update rate, operating range, battery life and additional sensor readouts can be adjusted and configured to fit the target application.

#### UNIQUE SYSTEM ARCHITECTURE

The Enterprise system utilizes a local processing server (called the gateway) which connects to all Pozyx anchors over Ethernet.

The gateway performs the wireless synchronization between the anchors, manages the scheduling and computes the position of all the tags. All data is made available from the gateway through the MQTT interface or through Pozyx's open API.

The gateway also monitors the system and provides alerts when it is malfunctioning. Errors and warnings are pushed to the management software which can be deployed in the cloud or locally on the gateway.

The system supports TDOA-based positioning and is designed with small tags and long battery-life in mind.

The tags simply have to transmit a short packet which can contain custom data payloads. The complexity is therefore kept at the gateway and anchor level. This has additional benefits as it keeps the total cost of ownership within bounds.

#### Pozyx superior RTLS

- Easy to set up and install - works out of the box
- Easy to maintain
- Scalable to any scope - start with tracking a limited number of critical assets and scale as needed to include all people, tools, vehicles and equipment on the floor



# Integration in industrial environments

## Ultra flexible

### INTEGRATION & CONNECTIONS

It doesn't matter if Pozyx customers are using a classical automation pyramid, or have interconnections between all system components, the Pozyx RTLS system can easily plug into the different parts, at all layer levels, through its easy to use and flexible APIs.

It easily connects directly to PLCs and quickly delivers the data where it needs to be.

Pozyx supports MQTT, OPC UA, Modbus, plain TCP/UDP and most other industrial network protocols.

With the use of Pozyx Triggers, no huge amounts of data have to be processed, only specific events in the process are handled, which makes integration easy and flexible. The Pozyx system provides its analytics views in its own dashboards, independent from any other system. However, all the data is exposed over the Pozyx API to allow deep integration where required.

To connect with installed ERP, WMS, or MES systems, a thin middleware layer may be needed depending on the specific implementation.

### POZYX RTLS INTEGRATION IN THE INDUSTRIAL AUTOMATION PYRAMID



# Tags & Anchors for any size industrial RTLS solution

## Ultra robust



### POZYX ANCHORS

Anchors create the backbone of the infrastructure of the Pozyx RTLS. They provide robust UWB positioning for both small or large surface projects and scale with the needs of a growing project to support even the largest permanent installations to track thousands of assets. Anchors are easy to install and built to perform in the toughest and most challenging environments.

### TOUGH, FLEXIBLE & SMART

Pozyx has 2 types of anchors, perfect for every RTLS need. The Enterprise Anchor and the Industrial Enterprise Anchor, an industrial grade anchor with IP66/67 enclosure to resist water and chemicals.

### POZYX TAGS

Tags track and position any moving or static asset or person on the shop floor, in real-time with high accuracy. The state-of-the-art UWB technology, delivers precise positioning data, accurate up to 10 cm. Start small and work with a couple of prototyping tags to validate positioning ideas quickly. Or scale to thousands of tags for enterprise use. The Pozyx RTLS was designed with scalability in mind.

The result? The power of positioning to improve manufacturing processes, increase operator efficiency, optimize business flows, or create safer work environments.

### 3 TAGS FOR EVERY RTLS SOLUTION



#### WEARABLE TAG

Basic tag with long battery life & several wearing options (clip, lanyard, wristband) to fit any indoor RTLS.



#### INDUSTRIAL TAG

Built for demanding industrial settings. Track any asset - pallets, forklifts, vehicles, tools - on the floor.



#### DEVELOPER TAG

Ideal for research and prototyping of new RTLS projects.



# Location based Triggers put RTLS tracking to work Ultra alert



## TRIGGERS LAUNCH EVENTS

Pozyx Triggers generate events that launch whenever a condition (based on the location awareness of assets) is fulfilled and convert these into automatically generated actions such as alerts, notifications, or status updates.

The Trigger feature removes manual programming from RTLS solutions and simplifies the implementation of value stream mapping, safety policies, quality validations and efficiency checks.

## TRIGGERS IN ACTION

Triggers funnel xyz-data streams and narrow down the vast data influx to create operations-relevant events.

The Triggers are launched from geo-location conditions of RTLS tracked assets, such as when a tagged asset enters, exits or remains in a specific zone. The generated events can be defined as alerts (push messages, emails, warning lights), as actions (emergency stop, turn equipment off) or as real-time process automation input.

The Pozyx Trigger mechanism is fully configurable and easily integrates with other systems and operations.

Within an industrial context, Triggers can interact with PLCs and existing manufacturing environments, at SCADA level or in MES and ERP systems.

## EASY TO IMPLEMENT - NO CODING

Pozyx offers a wide variety of Triggers to capture business logic in production environments. Their configuration is easy and can be defined on individual tags, groups of tags or based on specific zones or geofences.

The Triggers are Omlox compliant and combine accurate location data with additional in/out fence information. Fence and Tigger configuration is easy and flexible and offers a broad range of integration options.

## GROWS WITH PROJECT NEEDS

The system is designed for scalability from a small number of critical assets to tracking thousands of tags over multiple fences over several multi-level operations floors.

# Pozyx management software in control Ultra powerful

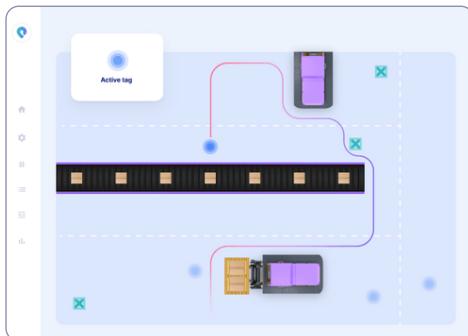


## FROM START TO FINISH

Pozyx offers its RTLS with a set of easy-to-install and easy-to-use software.

## POSITIONING

Real-time visualization based on easy-to-use parameter configuration.



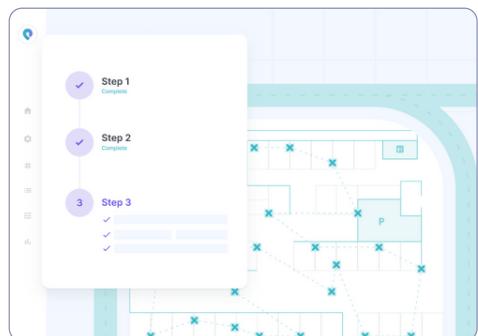
## SYSTEM MANAGEMENT

Full management of anchors and tags, system alerts, user profiles.

Devices > Anchors				
ID	Chain info	Coordinates	Labels	In use
#4464	Chain 1, Hop 1	26601, 101086, -907	level-1	<input checked="" type="checkbox"/>
#4698	Chain 1, Hop 2	68437, 102092, -960	level-2	<input checked="" type="checkbox"/>
#1776	Chain 1, Hop 3	54778, 107856, -817	level-2	<input checked="" type="checkbox"/>
#5299	Chain 1, Hop 4	37854, 52092, 2573	level-2	<input checked="" type="checkbox"/>
#6619	Chain 2, Hop 1	38426, 44209, -896	level-1	<input checked="" type="checkbox"/>
#8320	Chain 2, Hop 2	54778, 107856, -817	level-2	<input checked="" type="checkbox"/>
#8858	Chain 2, Hop 3	54778, 107856, -817	level-2	<input checked="" type="checkbox"/>
#8424	Chain 2, Hop 4	54778, 107856, -817	level-2	<input checked="" type="checkbox"/>

## SET-UP

Anchor planning and validation tools with auto calibration and fence configurator.



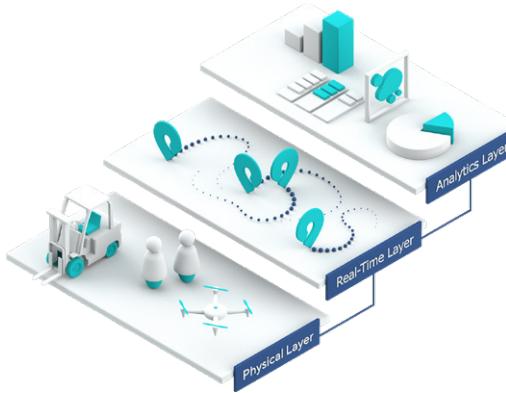
## INTEGRATION

Open API and broad offering of integration protocols for a painless and flawless integration project.

Pozyx System API	
Tags	Get info, configuration, and health indicators of Pozyx tags
<code>GET</code>	<code>Tags</code> Get all tags
<code>GET</code>	<code>Tags(tagID)</code> Get a single tag
System	Get info, configuration, and health indicators of the Pozyx system
<code>GET</code>	<code>alerts</code> Get the alerts
<code>GET</code>	<code>system</code> Get the system information
<code>GET</code>	<code>topology</code> Get the WiFi topology
Zones	Configuration of the user defined zones
<code>DELETE</code>	<code>zones</code> Delete all zones
<code>GET</code>	<code>zones</code> Gets zone information
<code>PUT</code>	<code>zones</code> Updates a zone configuration or creates a new one

# Analytics drive RTLS to success

## Ultra sharp

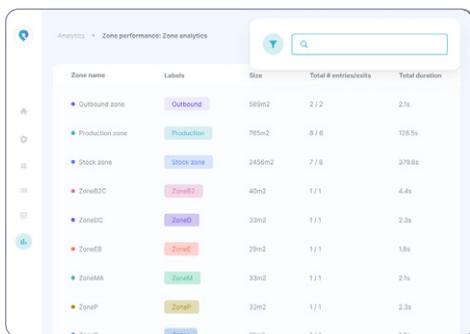


### DO MORE WITH X, Y & Z

The core of the Pozyx RTLS carries strong analytics mechanisms under the hood. Its features translate XYZ data streams into actionable data and provides interactive analytics tools with flexible data filtering options and data export features for use outside the RTLS. It provides a fully featured toolbox to explore positioning data through multiple interactive views.

### ZONE ANALYTICS

Define zones and automatically collect detailed insights on time spent in each zone, both aggregated and split out by tracked object. See how much time is spent in each zone, and find irregularities in object behavior.



### HEATMAPS

Know where tags move on an aggregate base. Heatmaps provide a powerful way to see how tracked objects move. They can be used to analyze behavior, find hotspots, find bottlenecks and more.



### SPAGHETTI CHARTS

Figure out the flow of movements within any industry space and obtain a visual representation of the trajectories of tracked objects linked to their speed and zone presence at any point in time.



# RTLS case stories that made the difference

## Ultra beneficial

### BONDUELLE IMPROVED WAREHOUSE EFFICIENCY BY 3%

#### SMALL MISTAKES COST MONEY

Bonduelle's freshly packed salad factory in Italy depends on moving hundreds of loads of fresh vegetables as quickly as possible. With over 1400 pallet operations per day, errors in misplacing a pallet in the 3000 m<sup>2</sup> warehouse quickly add up. The company experienced significant time loss when pallets were lost and needed to be retrieved. Since time is crucial when working with ultra fresh foods, sometimes with less than 30 minutes between customer order to truck departure, Bonduelle wanted to be sure that pallets were stored exactly where they needed to be, requiring real-time positions of forklifts at storage confirmation in the WMS (Warehouse Management System). With turnaround times of less than 24 hours, speed and precision are vital and there is no time to look for lost pallets or bins.

#### UWB ADVANTAGES ARE KEY

Bonduelle first experimented with other positioning technologies to identify pallets with better precision but discovered several disadvantages. Some systems take up too long to install. Others required holes to be drilled in the ground, which limits the flexibility of a dynamic warehouse. What's more, many of the lettuce bins are so small that a 15 cm error in position could be the difference between the right load and the wrong one.



With an accuracy of 10 cm, a user-friendly installation, and an proven implementation procedure, Bonduelle had found the key to unlock warehouse efficiency in Pozyx's RTLS solution.

#### UWB ACCURACY IMPROVES EFFICIENCY BY 3%

After implementing the Pozyx solution, Bonduelle saw a 3% increase in its warehouse efficiency. The system's pinpoint accuracy drastically reduced the number of misplaced pallets and bins. The company now has a real-time overview of where assets are, saving both time and money.

Bonduelle has already implemented the system in other warehouses and in a next step wants to track the flow of raw materials and use real-time location to keep people safe in extremely cold working environments.

For Bonduelle, the Pozyx solution is a recipe for warehouse efficiency success.

Visit [pozyx.io](https://pozyx.io) for more case stories.



# Location-based Trigger use cases

## Ultra automated



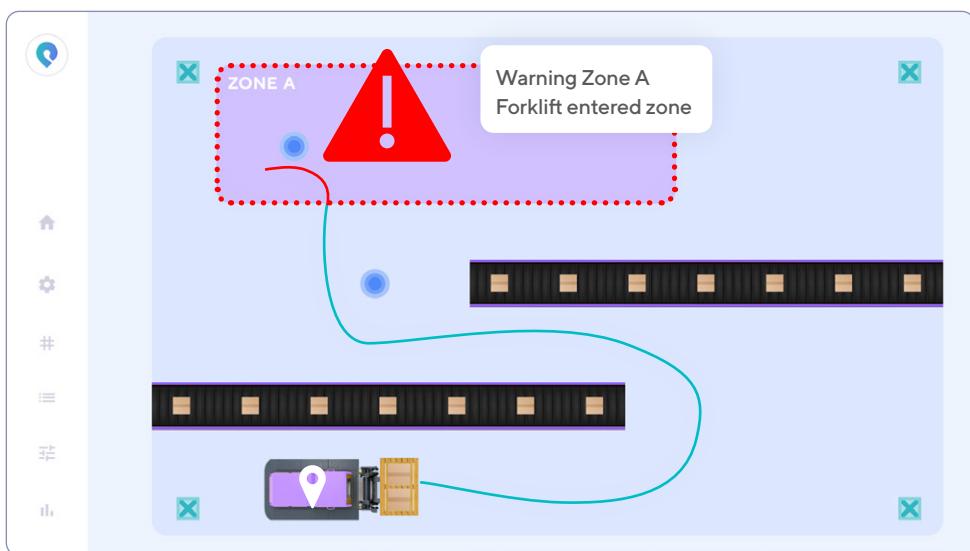
### INDUSTRY TRIGGER USE CASES

The Pozyx Trigger feature enables the launch of automatic Trigger actions at the occurrence of events when people or assets and goods move, leave or remain into a specified zone. The business logic behind Trigger definitions generates alerts that translate into actions or warnings.

The Trigger feature removes manual programming from the Pozyx RTLS solution and simplifies the implementation of goods and value stream mapping, safety policies, quality validations and efficiency checks in manufacturing environments.

### GEO-LOCATION TRIGGERS

The Trigger use cases are fully configurable and can be defined as a simple asset moving in or out of a pre-defined geofence, triggering an event. The asset can be any object with a tag: a forklift, a person, a tugger train, a bin or a pallet. The geofence can easily be drawn anywhere on the virtual floorplan and marks the trigger fence zone. Next, the actual Trigger can be defined to create an event, whenever an asset (group of asset types or individual asset) enters or leaves the zone. The event can be a warning light, a text message, an email, an alert in a dashboard, or powering off a machine.



## POZYX RTLS TRIGGER CODE

```
{  
    'event_type': 'region_exit', # type of trigger  
    'timestamp': 1624279895.234, # epoch timestamp  
    'tag_id': '3344' # Tag id that caused trigger  
    'zone_id': '3434k133' # zone id  
}
```

### ENDLESS POSSIBILITIES

The scenarios to configure use cases generate an almost endless list of opportunities to optimize production floor activity flows. Pozyx has a wide set of highly configurable triggers to capture all business logic.

The basic building blocks contain event trigger logic based on 4 activities of tagged assets, or a combination of all 4 to create more complex trigger events in smart industry settings.

### 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 standing still 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%

### BUILD YOUR OWN

With the Triggers defined, the use case comes to live by adding events.

Events initiate the alert management system and generate warnings and notifications whenever any of the trigger conditions are met.

### TRIGGER → EVENT EXAMPLES

Tracking people to avoid unauthorized zone access

→ Sends alert to security service

Rule-setting allow specific tools only to be used on pre-defined zones, by qualified operators

→ Disables tool and notifies manager

Measuring the time certain goods are in certain zones, pinpoints bottlenecks

→ Sends notification to industrial engineer to optimize process flows

Registering zone occupancy, no activity was detected for over 5 minutes

→ Automatically turn off lights and machinery

Tracking goods or forgotten orders that have not moved for over a month

→ Creates WIP warning with location information

Tracking people around hazardous installations or machinery for collision risk detection

→ Fire red lights warnings and buzzer

## DON'T TAKE OUR WORD FOR IT

Pozyx has been selected in **Gartner's 2021 Magic Quadrant for Indoor Location Services** as a niche player for sub-meter accurate indoor location services. With a stunning 4.8-star rating in Gartner's Peer Insights, our customers have confirmed the Pozyx superior accuracy, ease of use, flexibility and scalability. Pozyx is indeed honored and proud with these excellent results and reviews.



**Gartner  
peerinsights™**

**Pozyx Rating 4.8**



"Pozyx, amazing value. Good experience, good quality hardware, software & documentation. Solid system performance. Really improved our manufacturing logistics efficiency."

"If you think about implementing UWB, start working with the great company Pozyx is."

"Best RTLS out there today!"

"Great location service. Working with Pozyx was a very fast and agile process. The support was very good by people who know what they are doing. We managed to deliver our targets on time. The Pozyx support and integration possibilities are by far the best in the industry."

"The highest accuracy of the location data combined with an outstanding support."

## POZYX, GLOBAL PLAYER - AT YOUR SERVICE

Pozyx, headquartered in Ghent, Belgium, is an internationally recognized scale-up and continues to develop its vast portfolio of algorithms, hardware offering, analytics solutions and applications for indoor RTLS based on UWB technology.

## TRUSTED PARTNER ECO-SYSTEM

Pozyx has built an ecosystem of certified and authorized partners, a selection of trusted companies that each have their expertise and proven skills in specific industries and geographies. This ecosystem of global partners know the Pozyx products through and through, they have a trained staff and have experience to implement Pozyx RTLS projects and use cases.

With its recently launched office in the US and a mature partner network, Pozyx is poised to continue its steady growth pace to keep serving customers in over 80 countries.



# Pozyx Enterprise

## Kits ideal for

### project validation

### Ultra valuable



#### READY TO GIVE IT A TRY?

The Enterprise kits are the ultimate UWB RTLS validation packages.

They contain everything needed to be up and running with indoor positioning in record time, and provide a low cost intro to kickstart any RTLS project.

The kits come in two options: the Enterprise Kit or the Enterprise Lite Kit. The kits are scalable to unlimited area sizes and their content can be re-used in future large-scale Enterprise deployments.

More info in the Pozyx store:

[store.pozyx.io](https://store.pozyx.io)

#### POZYX RTLS IN A NUTSHELL & TECHNICAL SPECIFICATIONS

- Accurately position tags within 10-30 cm
- Supports variable update rates up to 75Hz and more
- Provides up to 2000 position updates per second (server limitations apply)
- Performs real-time TDOA positioning
- Supports low-power tags with up to 5 years of battery life
- Supports an unlimited number of anchors per server
- Supports multiple gateways per deployment
- Connects up to 8 anchors in a chain with PoE+
- Time-synchronized through NTP
- Supports rapid integration with other software through MQTT
- Pozyx management software for quick deployment and easy maintenance
- Creates actionable analytics with location-based Trigger events
- Pozyx analytics software for automated heatmaps, spaghetti charts and zone analytics



## Get in touch

[pozyx.io](https://pozyx.io)

Contact Pozyx for your Industry 4.0 demo  
and find out how RTLS can smarten  
your use case and industry application



**Pozyx indoor RTLS UWB solutions**  
**Track any asset in industry in real-time**

**Accurate • Effective • Simple**