

INDUSTRY 4.0

Campus Tracking

HOW CAN TELEFÓNICA TECH HELP?

Accurate real-time positioning of assets and people to improve safety and increase operational efficiency.

In the area of traceability and location of assets and people, **companies face significant challenges:**

- › Difficulty locating and tracking critical assets.
- › Time wasted searching for assets in large facilities.
- › Inefficiencies in workflows and operational processes.
- › Lack of measures to ensure safety in the workplace.

More than 2.3 million workers worldwide suffer occupational accidents or illnesses every year, **highlighting the need for solutions that ensure safe environments.**

To address these challenges, Telefonica Tech offers a comprehensive **solution (end-to-end)** that provides, among other functionalities, the precise **location of assets and people with a high degree of reliability and precision.**

WHO IS THIS SERVICE FOR?

Companies in any sector where it is necessary to locate people, wristbands, barcode readers, sensors, smartphones, such as factories, warehouses, logistics and distribution centers, ports, construction, mining, among others.

OUR VALUE PROPOSITION

Our service

The **RTLS (Real Time Location System)** solution is an advanced tracking and tracing system that provides precise (sub-metric) and real-time (frequency <1 second) positioning **of people, assets and devices**.

This solution offers a **complete view of production processes**, facilitating the tracking of assets, equipment, tools, and the location of employees. It is **designed to answer three key questions**:

- › How do they move?
- › Where are they?
- › What has been the pattern of their movements?

Solution components:

- › **Locators**: Distributed throughout the tracking area to guarantee complete coverage.
- › **Location devices (tags)**: Placed on the assets, people or objects that need to be tracked. These devices connect to the locators using BLE (Bluetooth Low Energy) technology using the AoA (Angle of Arrival) location method.
- › **Server and Software**: All the information collected by the locators is transmitted to a server where the locations are processed, and accurate data is generated for analysis.

What does it allow you to do?

The solution makes it easy to identify precisely when, where and why problems arise in real-time, allowing you to optimize processes immediately. This translates into increased security, efficiency, and productivity in multiple industries.

- › **Location of people**:
 - **Improved safety and productivity**: The RTLS system allows tracking of personnel, contractors, visitors and other people in industrial environments.
 - **Simple and non-intrusive use**: Tags are attached to PPE or other equipment, while strategically placed locators communicate with them without the need for an additional connection.
- › **Asset tracking**:
 - **Increased operational efficiency**: The ability to track assets such as components, machinery, vehicles or pallets optimizes process quality and reinforces safety and security.
 - **Flexible compatibility**: Assets can be equipped with dedicated tags or take advantage of integrated Bluetooth properties to connect with trackers strategically placed throughout the facility.

BUSINESS MODEL

Our **comprehensive solution** includes everything necessary to guarantee efficient deployment and optimal operation:

- › **Hardware**: Wide variety of compatible tag models, specifically designed for industrial environments and adapted to diverse operational needs.
- › **Software**: Full licenses guaranteeing access to all functionalities. Ongoing technical support and maintenance to ensure operability.

- › **Services**: Visit, technical project, installation, calibration and implementation, training, and production start-up.

In addition to the deployment of complete projects with an end-to-end scope, we offer the possibility of carrying out **proofs-of-concept (POCs)** in controlled environments. This allows our customers to evaluate the technology in their own environment before large-scale implementation.

Benefits

A secure workplace

Knowing the exact location of all people and machines in real-time has a powerful impact on the ability to prevent and respond to emergency situations:

- › **Emergency prevention:** Reduced risk of accidents and injuries.
- › **Efficient response:** Faster emergency response times.

More efficient processes

The solution allows for the identification and elimination of inefficiencies through the tracking and monitoring of all resources in a production process:

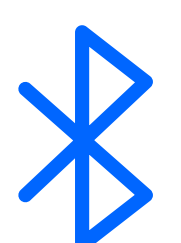
- › **Reduction of search time:** Quick location of assets, vehicles and employees.
- › **Automated management:** Automated inventory and route optimization.
- › **Flow optimization:** Improvement in workflows and resolution of bottlenecks.
- › **Smart distribution:** More balanced staffing levels and workloads.

Substantial cost savings

The control and planning enabled by RTLS has a significant impact on cost reduction:

- › **Less waste:** Increased production and efficiency.
- › **Optimized maintenance:** Reduction of costs associated with maintenance and insurance.
- › **Reduced downtime:** Fewer interruptions to equipment and machinery.
- › **Protection of inventory:** Reduction of losses, theft or damage to goods.
- › **Efficiency in audits:** Automated processes that reduce audit and labor costs.

Telefónica Tech's differential value

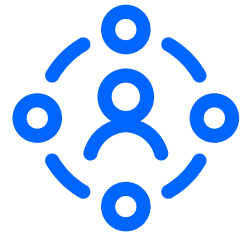


Bluetooth Direction Finding: We offer significant advantages over other localization methods available on the market:

- › **High precision:** Sub-meter location with exceptional reliability.
- › **Real time:** Updates with frequencies of up to several Hz.
- › **Energy efficiency:** Low battery consumption thanks to BLE technology.
- › **Open ecosystem:** Compatible with a wide range of tags and smartphones.
- › **Scalability:** Possibility of integrating thousands of tags in the same ecosystem.

- › **Security:** High level of protection against potential threats.
- › **Resilience:** High resistance to interference.
- › **Versatility:** Precise location in both indoor and outdoor environments.
- › **Low maintenance:** Requires minimal maintenance.
- › **Easy integration:** Compatible with backend systems such as WMS and ERP.
- › **Profitability:** High ROI for companies.

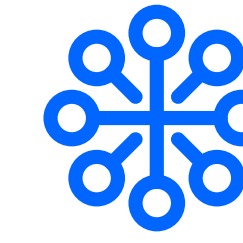
Telefónica Tech's differential value



Integrated services from end-to-end: We have a NOC (Network Operations Center) that centralizes and manages all the services offered, guaranteeing continuous and personalized attention to our customers.



Validated and reliable solutions: Telefónica has an open IoT laboratory, TheThinX, where our partners can certify and validate new solutions in real network conditions. No solution reaches the market without having been previously validated in this environment.



Telefónica ecosystem: The integration of our solutions within the Telefónica ecosystem allows us to respond quickly to new business opportunities and adapt nimbly to the needs of our customers.

EQUIPMENT, TEAMS AND ACHIEVEMENTS

Our teams

› Local and global capabilities

- An over 100-strong team of dedicated people geographically distributed across Telefónica Tech regions.
- **+30** product development experts.
- **+50** pre-sales, bid management and business development experts.
- **+20** operations, maintenance, and service management experts.

› Regional focus

- **Europe:** +20 sales and business development experts.
- **LATAM:** +15 sales and business development experts.
- **Global:** +5 sales and business development experts.

Achievements

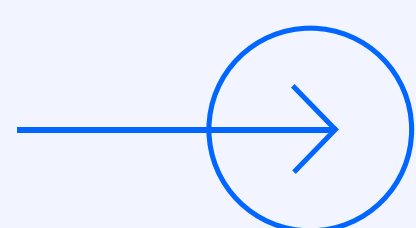
Telefónica has more than 350 million users managed and supported on its cellular networks worldwide and is internationally recognized by customers and analysts.

- › Industry IoT network leader (IDC & Analysys Manson).
- › Gartner Magic Quadrant leader for IoT for the 11th consecutive time.
- › Private LTE/5G Provider Champion (Kaleido Intelligence).
- › GSMA Smart Manufacturing Chairman.

RELATED SERVICES

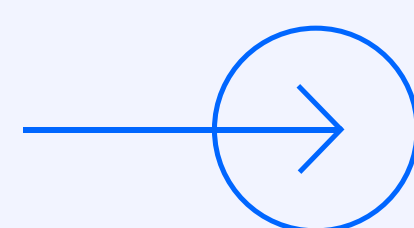
RFID for Retail

We offer a solution that uses advanced methods to acquire, process, and analyze real-world image data. This enables the extraction of quantitative or qualitative parameters, which can be transmitted to PLC systems, databases, or ERPs. The information is used in real-time for continuous decision-making, such as guiding robots or AMRs, optimizing production processes, and improving operational accuracy.



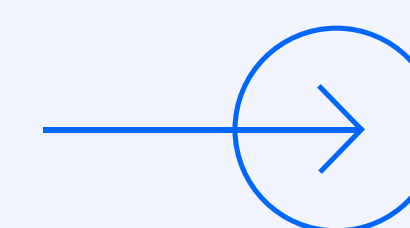
Industrial Management Software

It is a comprehensive solution that optimizes efficiency in end-to-end manufacturing processes. It offers management of APS/SCM planning, DCS/SCADA/MES production, QMS quality, SGA logistics, and GMAO maintenance.



Asset Tracking

Our industrial network ensures the continuity of your business's critical operations, providing flexibility and mobility in processes to quickly adapt to production demands. It also enables real-time responses with minimal latency, tailored to the criticality of each business activity.



Contact us to start the digital transformation of your organization.

