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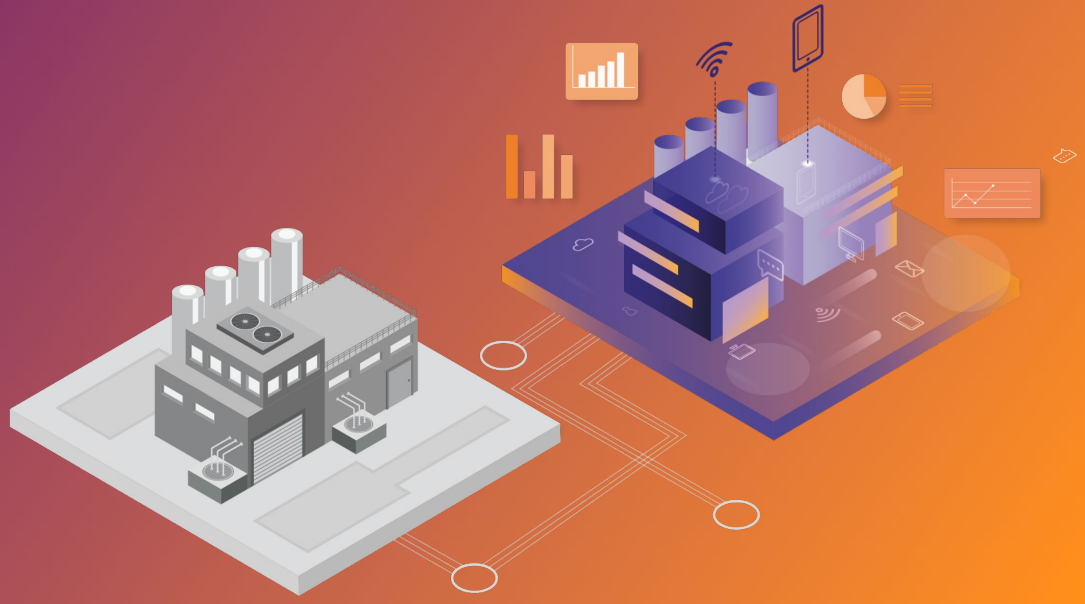
Your twin factory.
But the smarter one.

ThinkIN E-Kanban

Version: 1.0



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TEAM

We are an international team, highly competent and agile, with solid expertise in data usage and management. Our ability to quickly adapt to challenges and innovate within the Industry 4.0 framework enables us to deliver top-tier solutions for companies looking to thrive in an increasingly digital and data-driven world.

MISSION

Our mission is to increase productivity in production processes by implementing advanced monitoring and tracking systems for the resources involved, leveraging a combination of localization and sensor technologies.

VISION

Our vision is to leverage technology to enhance production, elevate quality, optimize efficiency, and increase flexibility for companies transitioning toward Industry 5.0, within an increasingly interconnected and data-driven environment.

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65K+ TRACKED ASSETS

10+ COUNTRIES

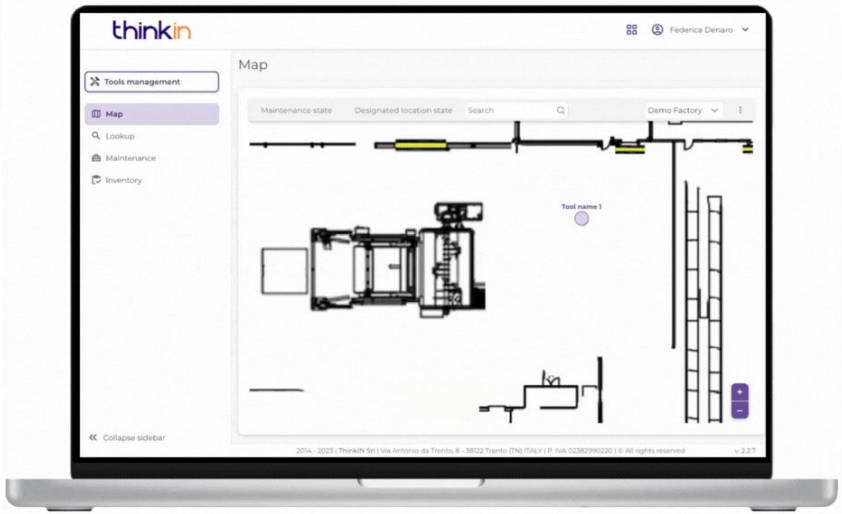
10+ YEARS OF EXPERIENCE

100+ INSTALLATIONS

Our solution

Your twin factory.
But the smarter one.

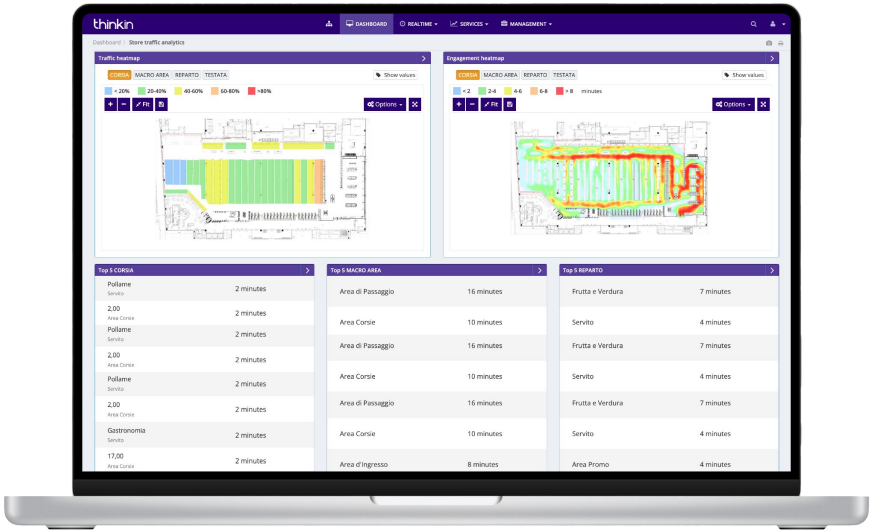
By leveraging IoT technology and location data, ThinkIN helps digitally recreate the factory, monitor production in real-time and provide advanced analytics that help you stand out at the decision-making table.



Benefits

THE BENEFITS:

- Monitor the manufacturing process and tools
- Identify bottlenecks and inefficiencies,
- Be more sustainable
- Reduce waste
- Predict maintenance more accurately
- Improve worker safety



ThinkIN Building Blocks

1. RTLS System

- Real-time localization systems based various technologies: Ultra Wide Band (UWB), BLE AoA, BLE RSSI
- Various antennas and TAGs
- Variable localisation accuracy, from 50 cm to 5 meters.

2. Digital Displays and Sensors

- Sensor to collect data from the the field (e.g., temperature, humidity, level, contact, presence, light, etc.)
- Actuators for interactions with operators: buttons, digital displays, other.

3. AutoID

- Identification support based on different technologies: Active and passive RFID, Barcodes, QR Codes, NFC
- Integration over mobile unit (e.g., forklifts), mobile devices, other.

4. ThinkIN Service Platform

- Real time services for visualising Digital Twins and business processes (e.g., 2D interactive maps, presence, etc,)
- Integration with legacy IT systems (e.g., MES, ERP, WMS, other)
- Business intelligence and analytics

e-Kanban: problem/solution/benefits

The e-Kanban service is used to digitize the management of line-side supply, reducing the time spent on reorder activities and ensuring an optimal flow of line-side supply, both from warehouse and external suppliers.

PROBLEM

- Delays in managing line-side Kanbans.
- Waste of resources to monitor the status of various Kanbans.
- Non-optimal planning of logistic trains (e.g. tugger trains) to ensure material availability.
- Difficulty in coordinating different supply activities.

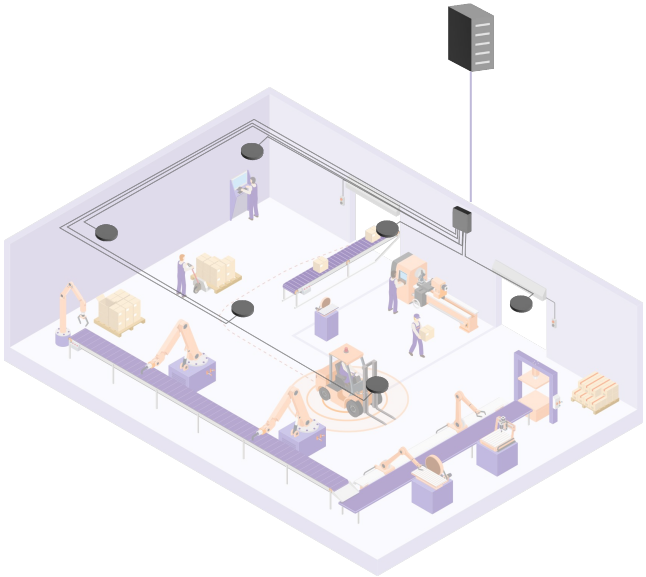
SOLUTION

- Digital management of line-side material Kanbans.
- Mobile application to easily and immediately manage reorders.
- Integration with digital displays for visual feedback and reorder via button.
- Backoffice application to manage different reorder flows.

BENEFITS

- Better operational efficiency through automation and error reduction.
- Optimization of resources required for line-side supply.
- Real-time visibility, detailed reporting and analysis.
- Scalability compared to traditional systems and greater flexibility.

How it works



1 **Locate** and **track** assets using various **Real Time Location Systems (RTLS)** and **IoT technologies,** creating a **Digital Twin** of shop floor operations.

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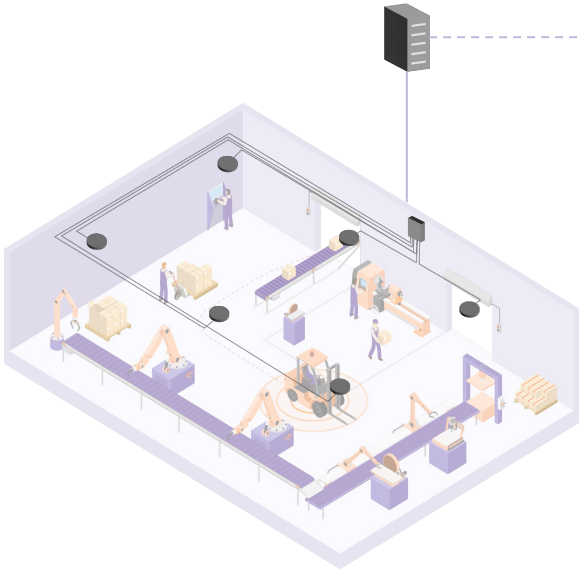
2 **ThinkIN platform** to process **location data streams at scale,** using **AI** and **big data analytics tools.**

3 **Real-time digital services** to monitor and digitally control manufacturing processes.

4 **Business intelligence** to measure production processes, and derive actionable insights for process optimisation.

E-Kanban: how it works



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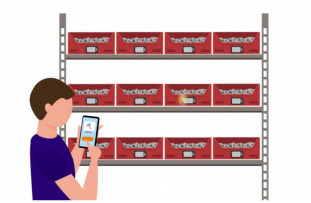
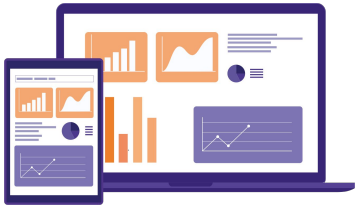
2 We monitor the status of each Kanban and reorder requests in real time through the ThinkIN cloud platform. The data is stored and analyzed using AI and big data analytics.





1 We install digital displays at each material location along the line, and/or paper labels integrated with the e-Kanban service.

3 We provide real-time services for the operational management of Kanbans by field operators.

4 We offer a web backoffice for managing reorder requests and consumption analytics.

Digital Displays: One Display, Many Features

Buttons to Support Automatic Reordering

When pressed, it triggers the automatic reordering of the part displayed on the digital screen. **Specific workflows can be configured,** including tasks for forklift missions, for example.

Buttons for Interacting with Field Operators

The buttons can be used **to confirm operations or tasks on parts/WIP** displayed on the digital screen. This feature enables process automation, action confirmation, quality control, and triggers calls to action.

LEDs to Support Pick-by-Light Scenarios

LEDs to visually guide operators to sought products or semi-finished goods.

Different colors can be used to indicate various operations.

Digital Displays for Providing Dynamic Information

Digital Displays for dynamically **showing product information, availability, and other relevant details.**

Content can be fully customized and automated. A QR code can provide access to additional information or external systems (e.g., ERP, WMS, MES).

E-Kanban: use cases and scenarios

Use case 1: Reorder via mobile application

The service allows digitizing reorder activities through a simple mobile application installed on operator devices (e.g. mobile scanners).

Use case 2: Reorder via digital displays

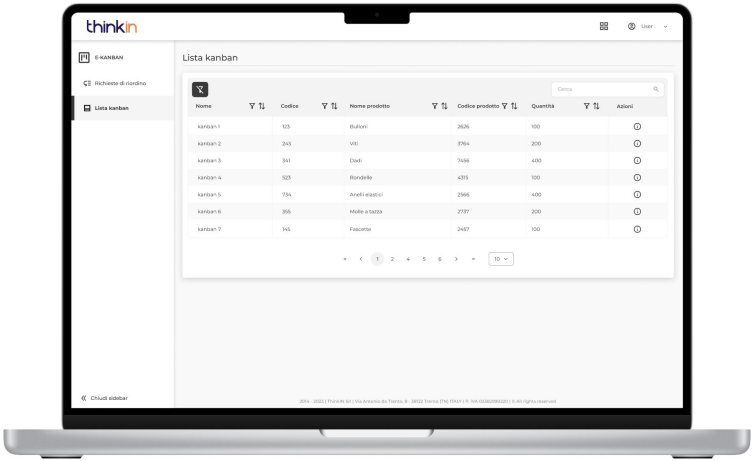
The service allows managing reorder activities through a digital display installed at each Kanban. The display shows reference details, reorder status (including any delays) and allows reordering via a button.

Use case 3: Reorder flow management

The service allows managing different reorder flows (e.g. towards warehouse, external suppliers or external warehouse), with dedicated users and actions for each flow.

Use case 4: Line-side supply planning

By tracking reorder management times, it is possible to identify areas for improvement and optimization to ensure maximum material availability at the line-side and optimize replenishment activities.



E-Kanban with digital displays

1

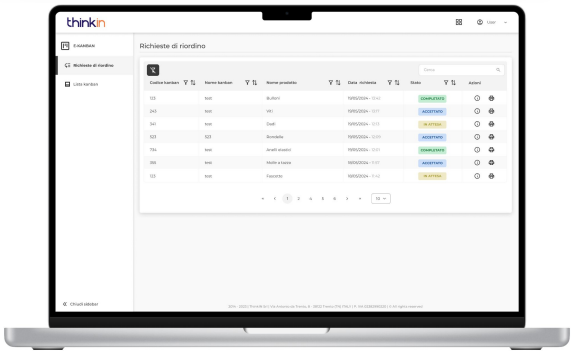
A digital display is applied to each Kanban present in production or in the internal supermarket. The display shows the details of the material and the status of any ongoing reorders, reporting in real time any delays or points of concern for production.

2

Through a button it is possible to request the reorder of a specific component. The system confirms the acceptance of the request via the LED and the information on the display shows the updated status of the request and any warnings (e.g. delay).

3

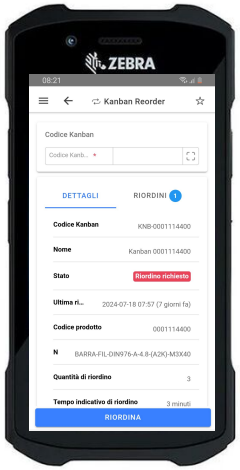
Through a backoffice application it is possible to manage requests and optimize all recovery activities and missions. The application integrates with existing management systems (e.g. ERP) while guaranteeing the possibility of managing different types of Kanban in an integrated way.



E-Kanban with mobile app

1

A paper label is applied to each Kanban present in production. The label shows the Kanban details (code, reorder quantity, etc.) and a QR code.

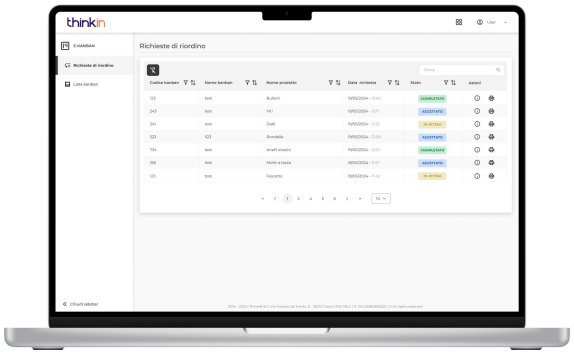


2

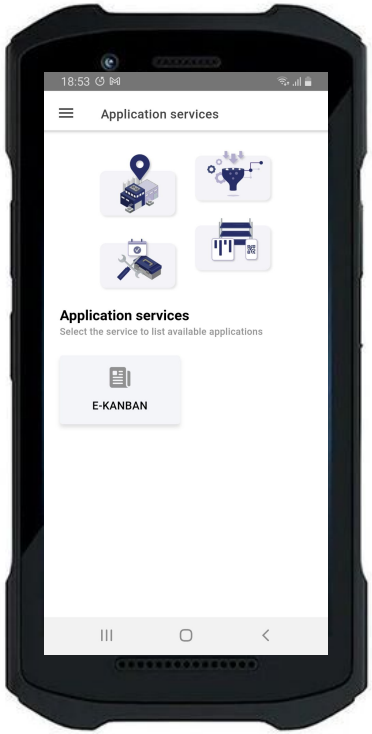
Through a mobile application, it is possible to scan the QR code on the Kanban and view its status (e.g. any reorders in progress), as well as command a reorder.

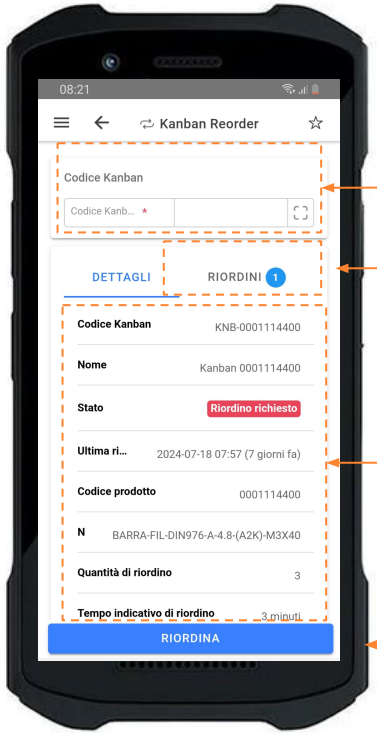
3

Through a backoffice application it is possible to manage requests and optimize all recovery activities and missions.



E-Kanban: mobile app





QR Code Reader for Kanban Identification

Ongoing Reorder Requests

Kanban Details

- Name
- Product Code
- Reorder Quantity
- Reorder Time
- Reorder Status
- Last Request Date

Reorder Request Button

1 Access the ThinkIN Location Assistant mobile app and select the e-Kanban service.

2 Select the reorder function, scan the Kanban code of interest, and you can both view Kanban details and initiate reorders.

Backoffice: gestione richieste

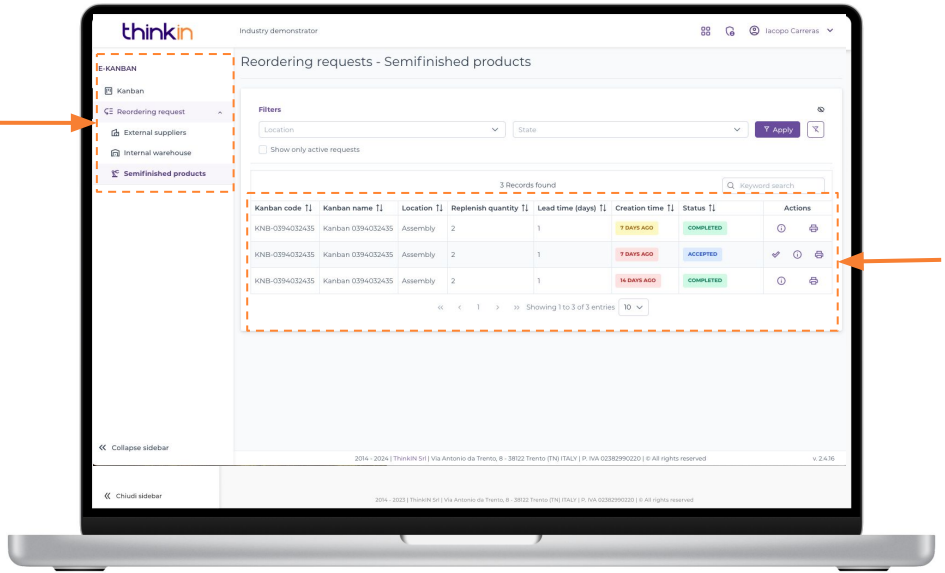
Through a Backoffice application accessible from the Web it is possible to manage the system, starting from the configuration of the individual Kanbans, to the management of individual reorder requests, up to an intelligence service for an in-depth analysis of the processing times of individual requests .

Kanban configuration and management by flow type:

- Towards internal warehouse
- Towards external suppliers
- Towards production with Maker order logic

Different Kanban information is provided for each type.

Limited access to individual Kanban types can be configured.



You can view the real-time status of reorder requests.

Requests are sorted by Kanban type, processing status, request date and priority.

Each request displays Kanban information, including the location of the Kanban.

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Grazie per l’attenzione

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