Mobilize production.
Maximize visibility.

SIMATIC RTLS, the locating platform for your digital enterprise
usa.siemens.com/rtls

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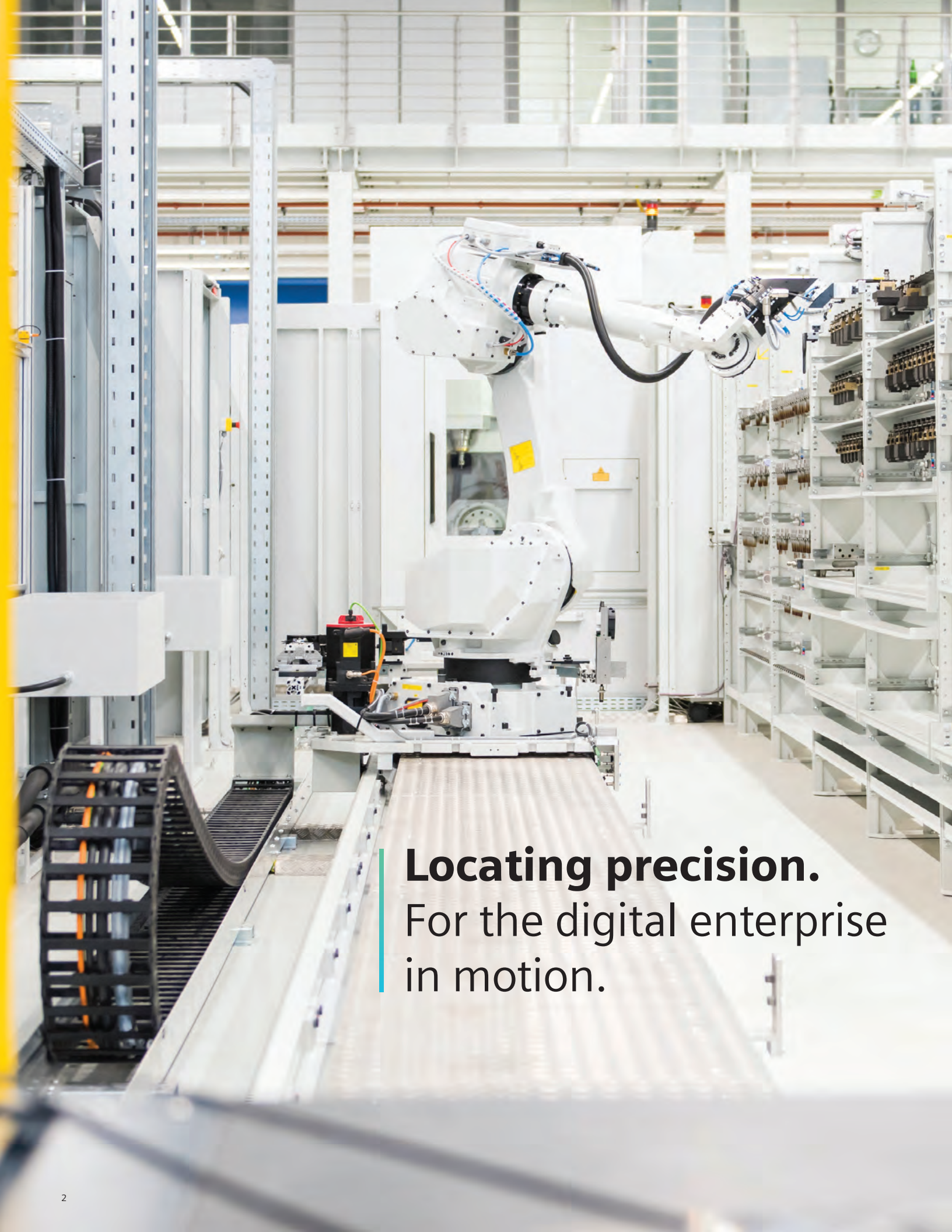
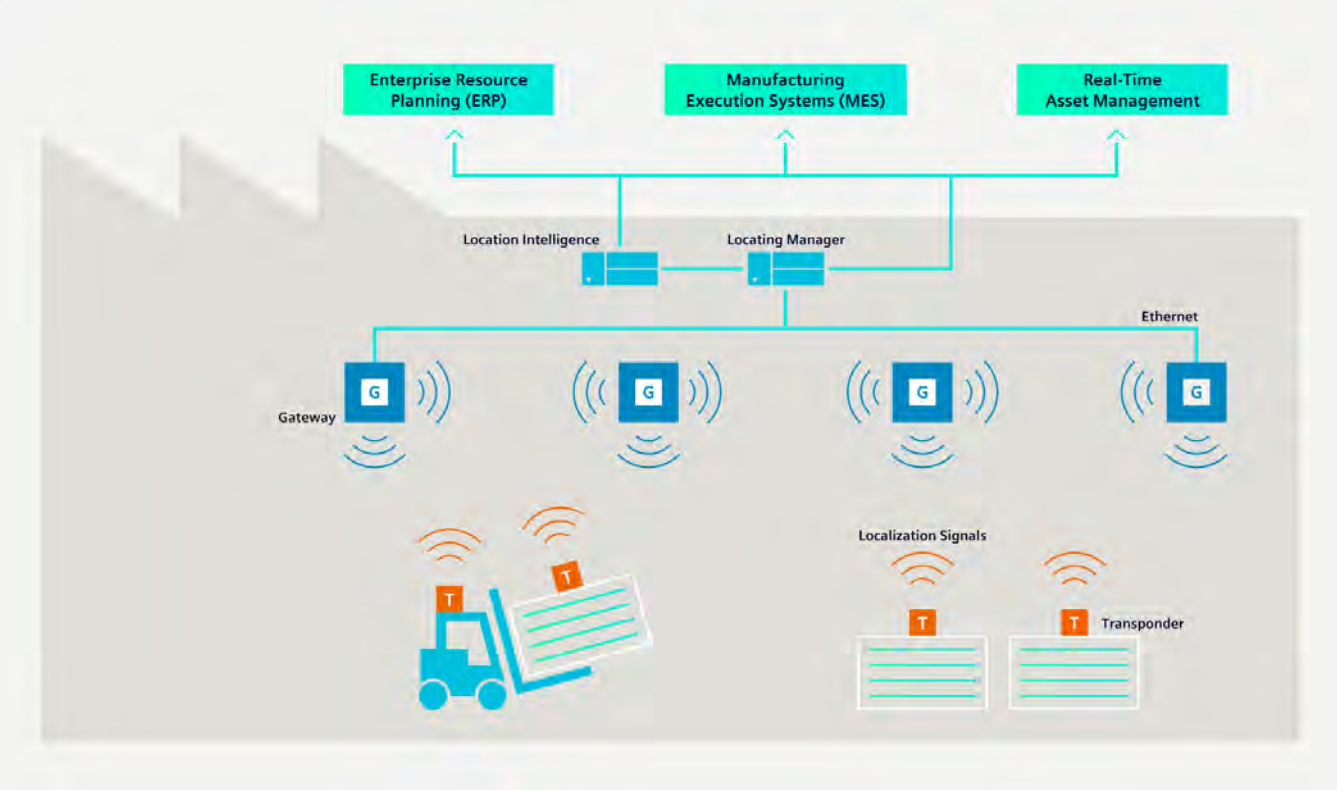


Locating precision.
For the digital enterprise
in motion.

Seamless locating on the entire company premises.



Are you thinking about making your production and logistics workflows more dynamic? Do you want to be able to respond faster to market changes, use your capacity better, or manufacture in smaller batches? If so, your keys to these advantages are more flexible and self-organizing production and logistics models using the Siemens SIMATIC RTLS locating platform. It can locate objects and personnel to within inches almost instantly, so you can always know where everything and everyone is at all times, even in motion. Welcome to the Digital Enterprise. Until now.

SIMATIC RTLS (Real-Time Locating System) is a key component in the digital infrastructure for the factory of the future. For intelligent systems like mobile robots, automated guided vehicles (AGVs) and state-of-the-art automation software to be able to focus and respond autonomously, they need to know at any time what's where, and when. The SIMATIC RTLS locating platform achieves this accurately and reliably. It locates objects with accuracy measured in inches and makes the positioning details available to higher-level systems in real time.

SIMATIC RTLS thus makes a precise digital twin of all processes possible – from delivery to further processing and final assembly. The relevant objects, e.g. workpieces, tools, AGVs or robots, are therefore fitted with a transponder. The transponder signals are picked up by a higher-level system, which calculates their position and provides the information to the intelligent automation systems and manufacturing units. In real time. Dynamic. And with precision.

RTLS and the Digital Enterprise.

1 **RTLS empowers the Digital Twin**
increase planning quality and reduce non-conformance costs

2 **Supervision and documentation**
RTLS maps the 3D model from digital twin with real environment

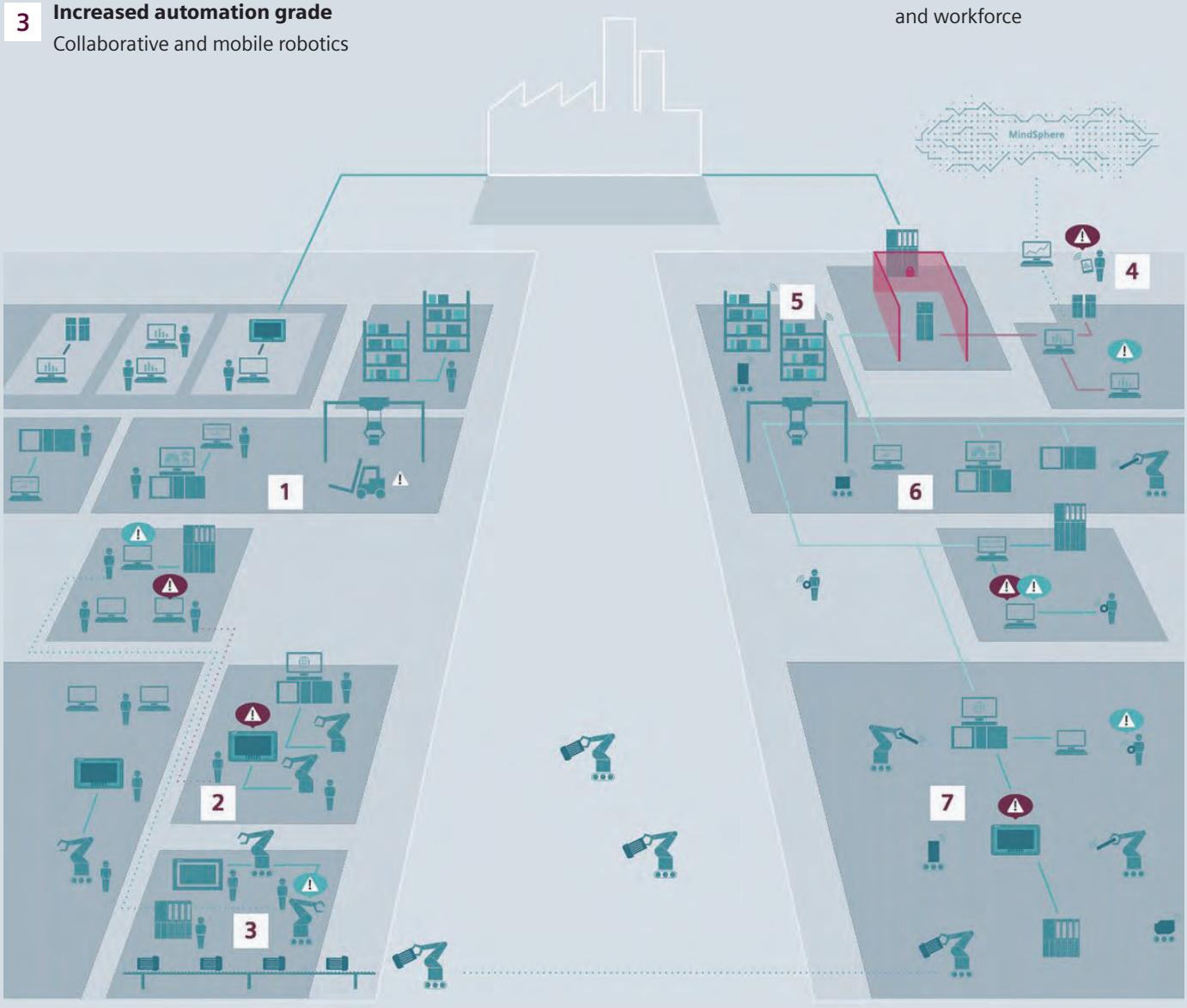
3 **Increased automation grade**
Collaborative and mobile robotics

4 **Optimized maintenance**
RTLS-based guidance and navigation of service staff

5 **Advanced logistics concepts**
AGV routing or control of picking processes

6 **Continuous monitoring of goods**
Combine process data and position to reduce waste

7 **Breakup of traditional assembly lines**
Increased flexibility and utilization thru free-flow of material, goods and workforce



3D locating accurate down to inches

SIMATIC RTLS uses ultra-wideband (UWB) wireless technology. It features a wide frequency range (3–7 GHz) with a channel spacing of 500 MHz or more to transmit its transponder signals. This keeps it from interfering with industrial 802.11 Wi-Fi wireless communications that typically use 2.4 and 5 GHz frequencies. The result is extremely precise and fast object and personnel location updates with accuracies to within 12 inches.

Quick, simple installation

SIMATIC RTLS solutions are quick and simple to install, plus they can easily expand as demands grow. Transponders and other RTLS devices can be added at any time – scaling up to a plant-wide RTLS infrastructure – with no additional configuration cost or time. This deployment flexibility and scalability make RTLS technology especially attractive for any company taking its first steps toward becoming a Digital Enterprise.

Transponders

Transponders are fitted to workpieces, robots, vehicles, etc. and transmit a wireless signal at defined intervals. They can also be equipped with data interfaces, and transmit location details directly to the local control system or make them accessible for higher-level systems.

Gateways

Gateways are fix reference points in the local infrastructure for real-time locating with an accuracy measured in centimeters. They record the transponder signals and give them a fixed position stamp. The positioning data is bundled and transmitted to the locating server.

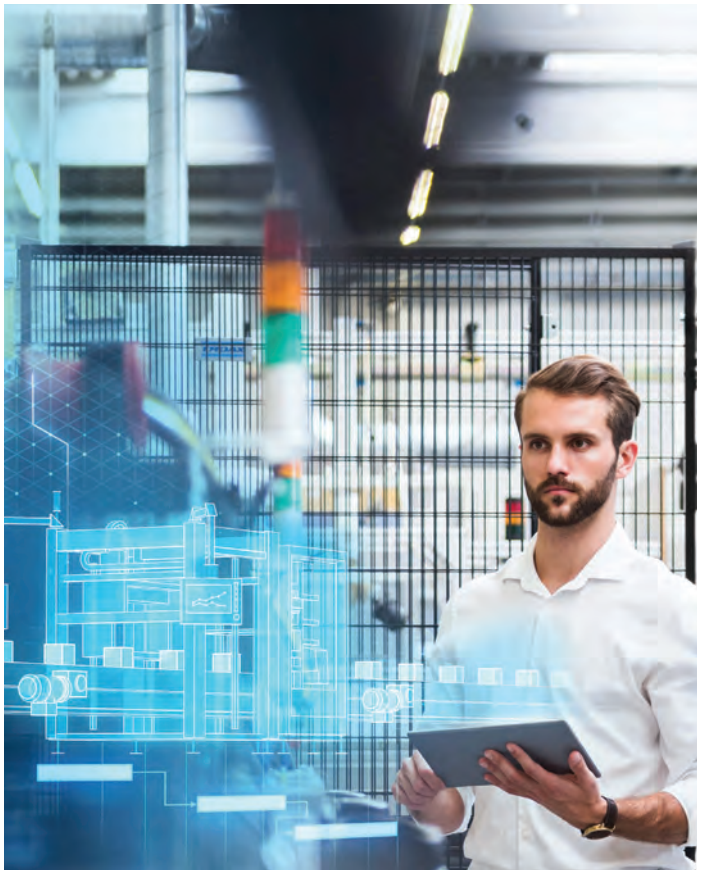
Locating Manager

The Locating Manager is a software application on the locating server that calculates the real-time position of the individual transponders and passes the details on to the higher-level systems via defined interfaces and configurable rules.

Essential milestone on the path to smart production.

SIMATIC RTLS – technology that can unleash Industry 4.0 benefits

- Improved visibility, via the continuous monitoring of goods that combines process and position data to reduce waste and improve traceability
- Better container utilization, to ensure their location, availability, and accurate assignment
- Reduced costs, with more efficient processes and less extra work
- Improved productivity, by reducing or eliminating inefficient process steps
- Better quality, with fewer potential errors in material handling
- Optimized maintenance, with RTLS-based guidance for service technicians
- Superior logistics concepts, via AGV or forklift routing and enhanced control of picking processes
- Improved documentation, by mapping actual location data of physical objects and personnel in motion against a workflow's engineered designs



In smart factories of the future, mobile production vehicles, such as AGVs and robots, will have to operate synchronously around workers, fixed machines, and material-handling conveyance systems.

That's why the location of these production assets – and, for life safety, personnel – will be critically relevant and highly dynamic variables. In other words, knowing where everything and everyone is in the factory at all times is essential for self-organizing and highly efficient workflows.

SIMATIC RTLS ensures that information on the precise location of these production resources is always available to higher-level intelligent systems. These could be manufacturing execution systems or enterprise resource planning systems, whether on-premise or hosted in cloud-based platforms, such as Siemens MindSphere, the open IoT operating system. These systems can then issue commands for target systems like mobile robots, PLCs or AGVs to keep production moving, efficiently and safely.

SIMATIC RTLS is the locating platform for the dynamic, self-organizing processes that will distinguish smart factories of the future and the Digital Enterprises behind them.

SIMATIC RTLS: Get started today

Siemens is your trusted partner when it comes to end-to-end solutions for your Digital Enterprise. We have decades of expertise with innovative technologies for industrial applications in production and logistics.

Siemens SIMATIC RTLS solutions include all components and services for customized locating solutions. We look forward to designing an RTLS solution that can suit your requirements. And you can be sure that our service experts will plan, execute, and document every step of the project, from design through commissioning to employee training.

SIMATIC RTLS. Mobilizing production. Maximizing visibility.

Contact our locating experts: **SiemensCI.us@siemens.com**

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Order No.: FSBR-RT01-0122

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