SIEMENS
Ingenuity for life
OBJECT TRANSPORTED
LEVEL 4
GROUNDSPEED
0;28 m/s
Mobilize production.
Maximize flexibility.
SIMATIC RTLS, the locating platform for your digital enterprise
siemens.com/simatic-rtls

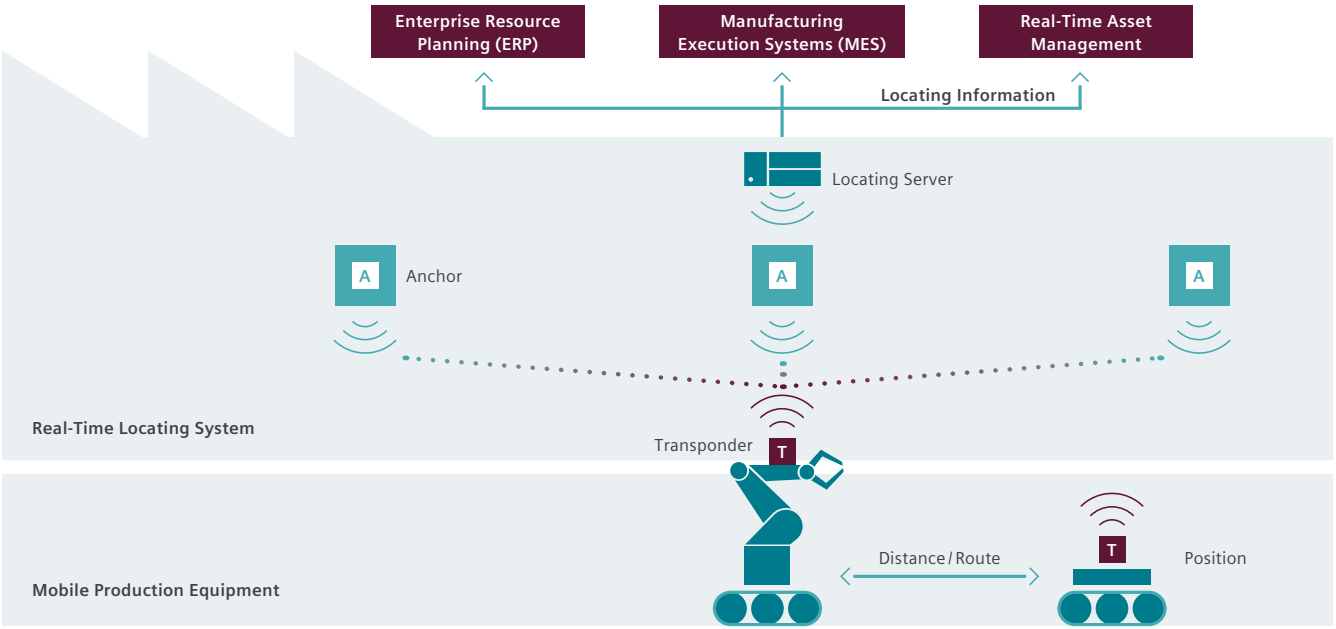
Locating in precision.
For a digital enterprise in motion.

Are you also thinking about how to make your traditional workflows in production and logistics more dynamic? Do you also want to be able to respond more swiftly to market changes, optimize capacity utilization or manufacture smaller batches? The key are flexible, self-organizing production and logistics concepts based on our SIMATIC RTLS locating platform.

What does that exactly mean? You can use SIMATIC RTLS to navigate material flows, control mobile robots, monitor component use, and fully document the final product assembly.

Welcome to the Digital Enterprise.

Seamless locating on the entire company premises



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 centimeters 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.

3D locating accurate down to centimeters

SIMATIC RTLS draws on the benefits of ultra-wideband technology (UWB). For local wireless communication an extremely wide frequency range (3 – 7 GHz) with a bandwidth of at least 500 MHz is used to transmit weak wireless signals. This prevents the risk of interference with other systems. The result is extremely precise object location with accuracy down to ten centimeters.

Easy installation

And: SIMATIC RTLS is extremely easy to install, and capable of adapting in stages to increasing demands. Extra units can be added to the individual components at any time – right up to a company-wide infrastructure. With no additional configuration cost at all. This aspect makes the technology attractive for companies too that are taking their first steps toward a Digital Enterprise. The elements on the next page cover the entire location infrastructure.

Transponders

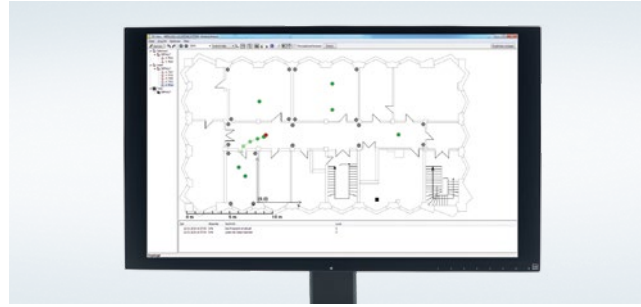
Transponders are fitted to workpieces, robots, vehicles, etc. and transmit a wireless signal at defined intervals. They can also be equipped with data interfaces, and transmit location details directly to the local control system or make additional sensor data available to higher-level systems.

Anchors

Anchors record the transponder signals, give them a fixed position and time stamp, and pass on the bundled data. With at least three mutually synchronized anchors, the transponder can be located in 3D with accuracy measured in centimeters.

Gateways

Gateways bundle all the recorded data and transmit it to the higher-level locating server. Gateways can also be used as an anchor at the same time.



Locating Manager

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

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

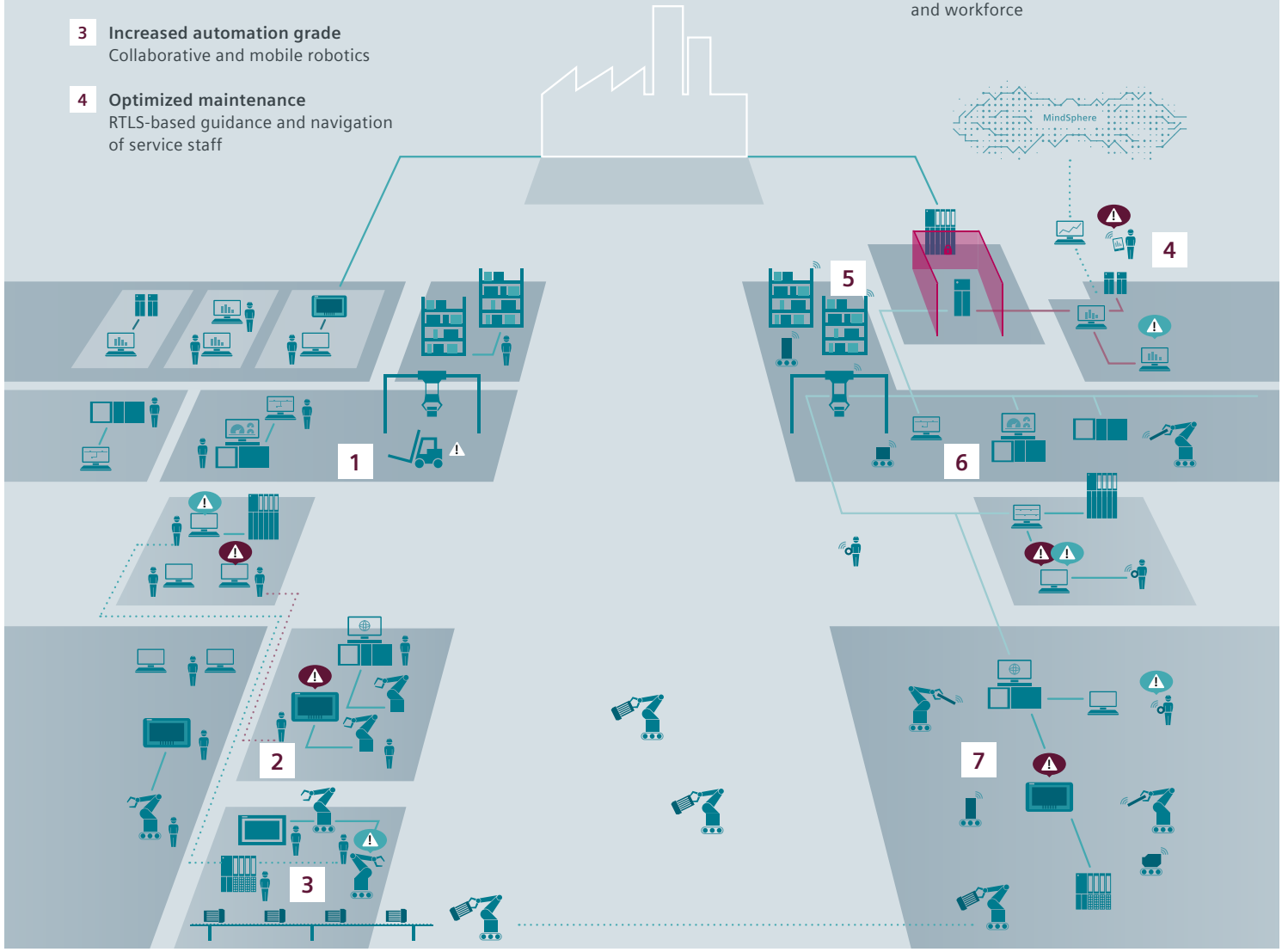
3 **Increased automation grade**
Collaborative and mobile robotics

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 through free flow of material, goods, and workforce



Essential milestone on the path to smart production

SIMATIC RTLS – technology that drives Industrie 4.0

Flexible solution for locating applications thanks to industrial scalability

High future proof thanks to expandability to new applications or operating areas

Smooth solution implementation thanks to comprehensive Siemens expertise

Flexible integration into various IT systems and even cloud-based applications

Accuracy and reliability in industrial environments thanks to robust design

In the smart factories of the future, various production materials like AGVs and mobile robots will work together with humans, machines, and systems. The location of a machine or robot will be a relevant variable in this regard. Knowing where they are in the factory is therefore essential for a self-directed, highly efficient workflow.

SIMATIC RTLS makes sure that information on the precise location of the production resources is available to all higher-level intelligent systems. That is the only way that Manufacturing Execution Systems (MES) or cloud-based applications, e.g. in MindSphere, the open IoT operating system, will be able to trigger dynamic commands for target systems like mobile robots, programmable logic controllers (PLC) or AGVs, for example. There can be no doubt: SIMATIC RTLS is the locating platform for dynamic, self-organizing processes.

The first address for digitizing your business

Siemens is your trusted partner when it comes to end-to-end solutions for your Digital Enterprise. We have many years of expertise with innovative technologies for industrial applications in production and logistics. SIMATIC RTLS from Siemens includes all components and services for customized locating solutions. We are looking forward to design a solution that will perfectly suit your requirements.

And you can be sure that our service experts plan, execute and document every step of the project with precision: from design through commissioning to employee training.

Talk to our locating experts:
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