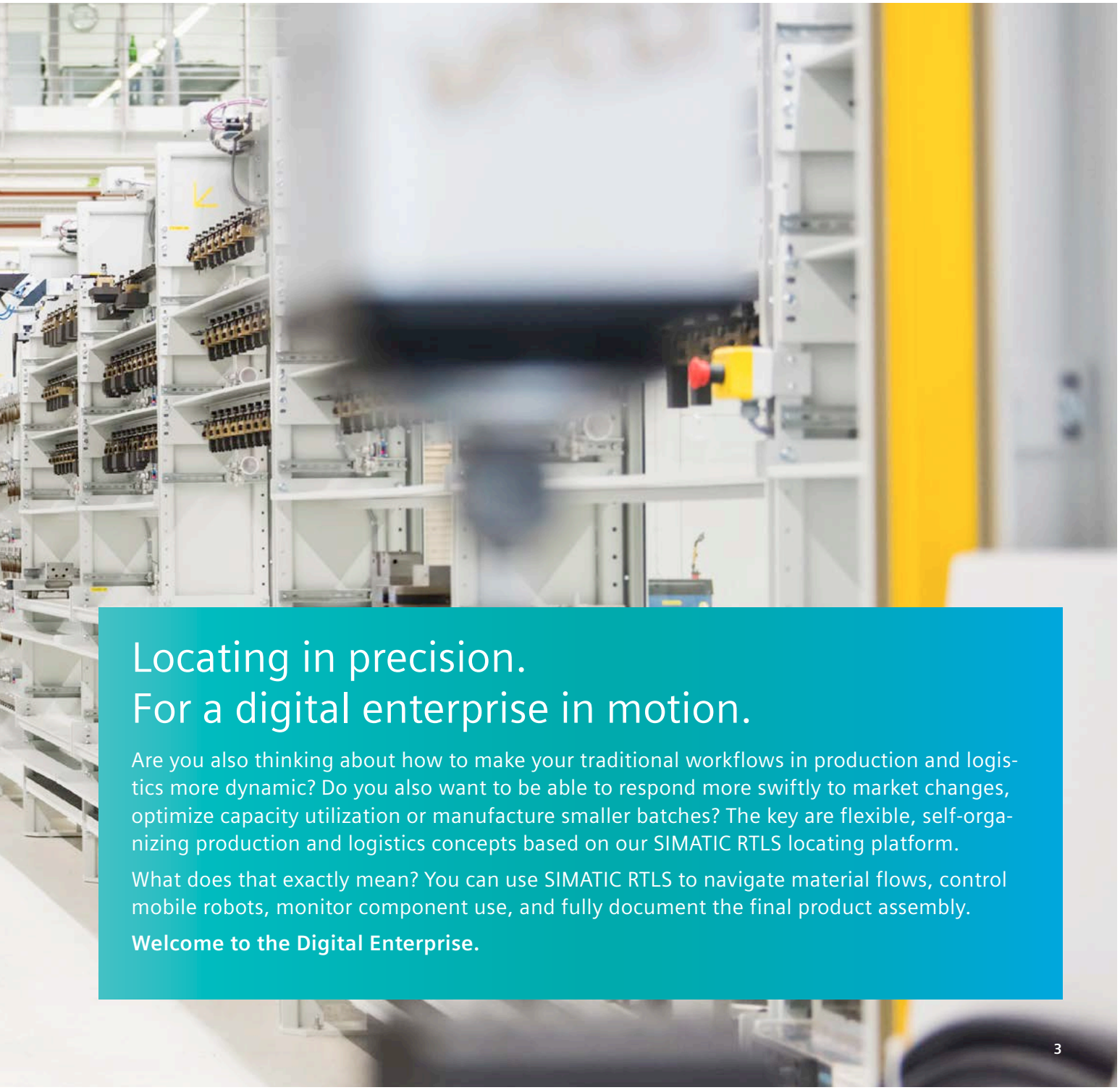

SIEMENS
Ingenuity for life
OBJECT TRANSPORTED
LEVEL 4
GROUNDSPEED
0;28 m/s
Mobilize production.
Maximize flexibility.
SIMATIC RTLS, the locating platform for your digital enterprise
siemens.com/rtls



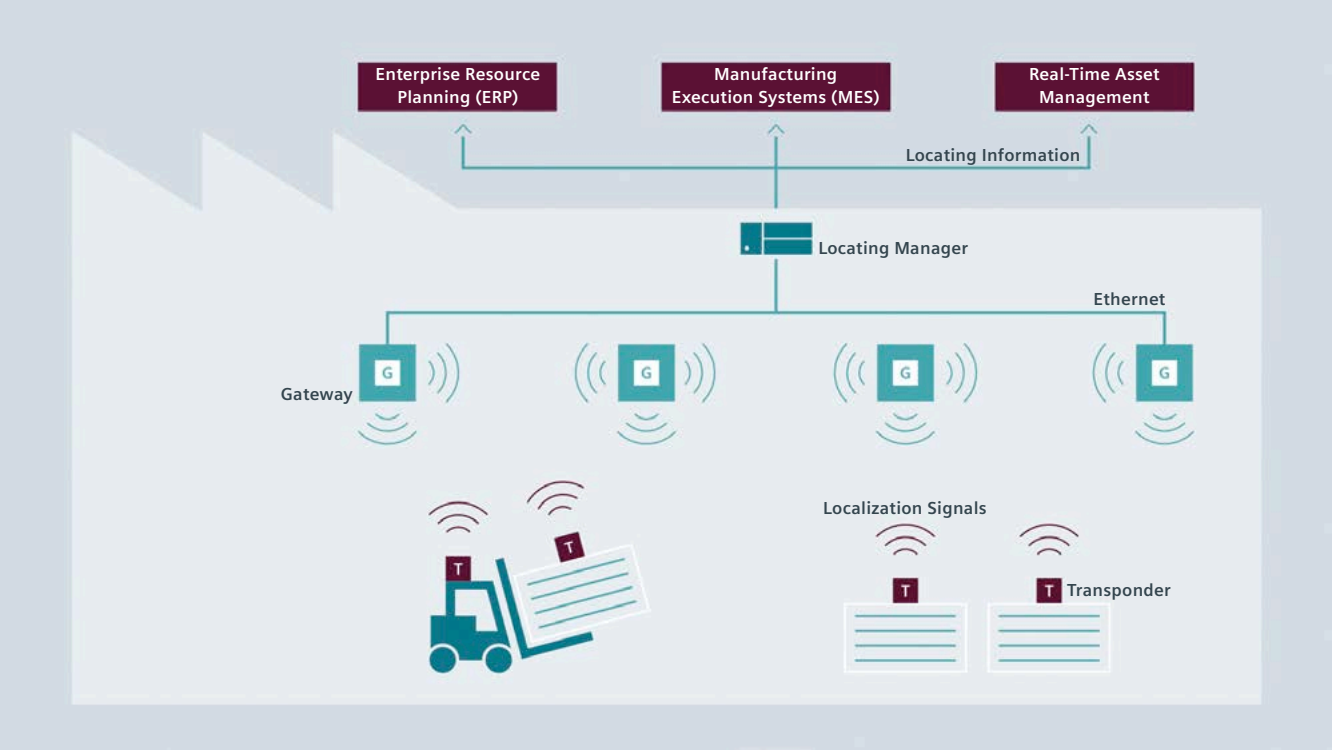
Locating in precision.
For a digital enterprise in motion.

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 bundled by gateways and picked up by a higher-level system. The calculated position is then provided to intelligent automation systems and manufacturing units. In real time. Dynamic. Precise.

Locating accuracy 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

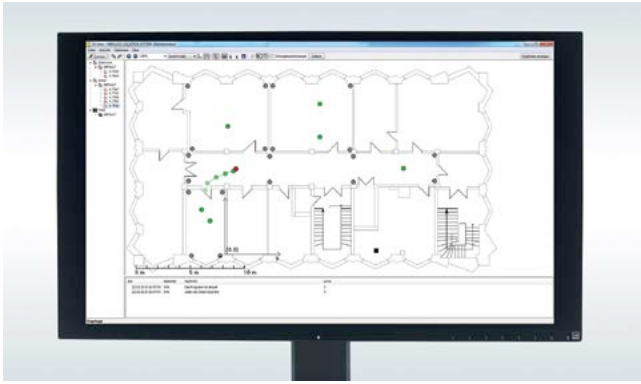
SIMATIC RTLS is extremely easy to install, and capable of adapting in stages to increasing demands. Extra units can be added to the individual components at any time – right up to a company-wide infrastructure. With no additional configuration cost at all. This aspect makes the technology attractive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

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.

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.



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.

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

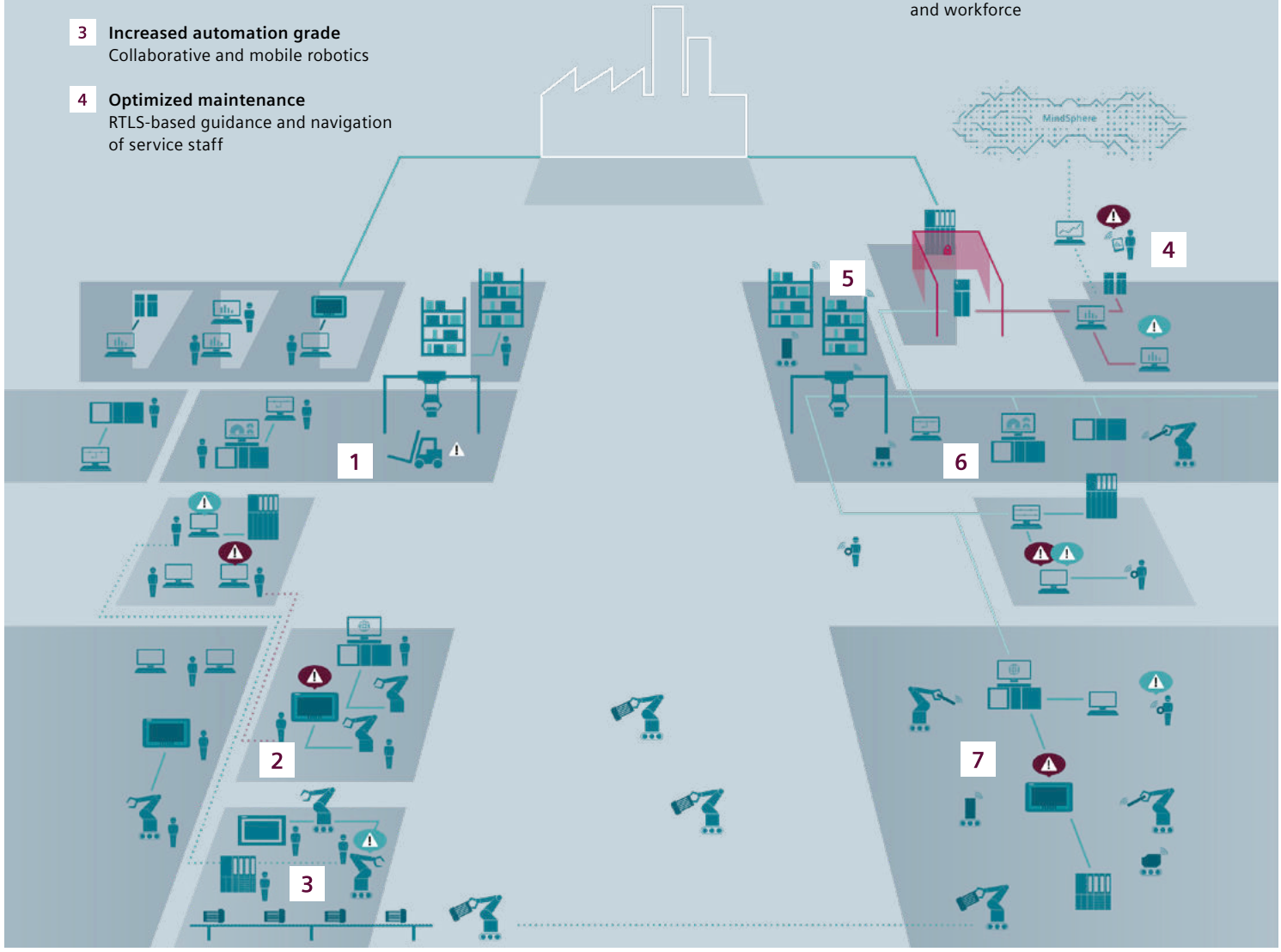
3 **Increased automation grade**
Collaborative and mobile robotics

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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Published by
Siemens AG

Digital Industries
Process Automation
Östliche Rheinbrückenstrasse 50
76187 Karlsruhe, Germany

For the U.S. published by
Siemens Industry Inc.

100 Technology Drive
Alpharetta, GA 30005
United States

Article-No. DIPA-B10114-00-7600
Dispo 06353
WS 03200.0
Printed in Germany

Security notes
In order to protect plants, systems, machines, and networks against cyber threats, it is critical to implement (and continuously maintain) a comprehensive industrial security concept that reflects the very latest technology. The products and solutions from Siemens are just one element of this type of concept. You can find additional information about industrial security at: **siemens.com/industrialsecurity.**