

Mercedes Benz Factory Düsseldorf

Germany



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Application Report >> Industrial Positioning Systems >> ARATEC® – The Positioning Solution System

Increased Throughput at Vehicle Body Warehouse

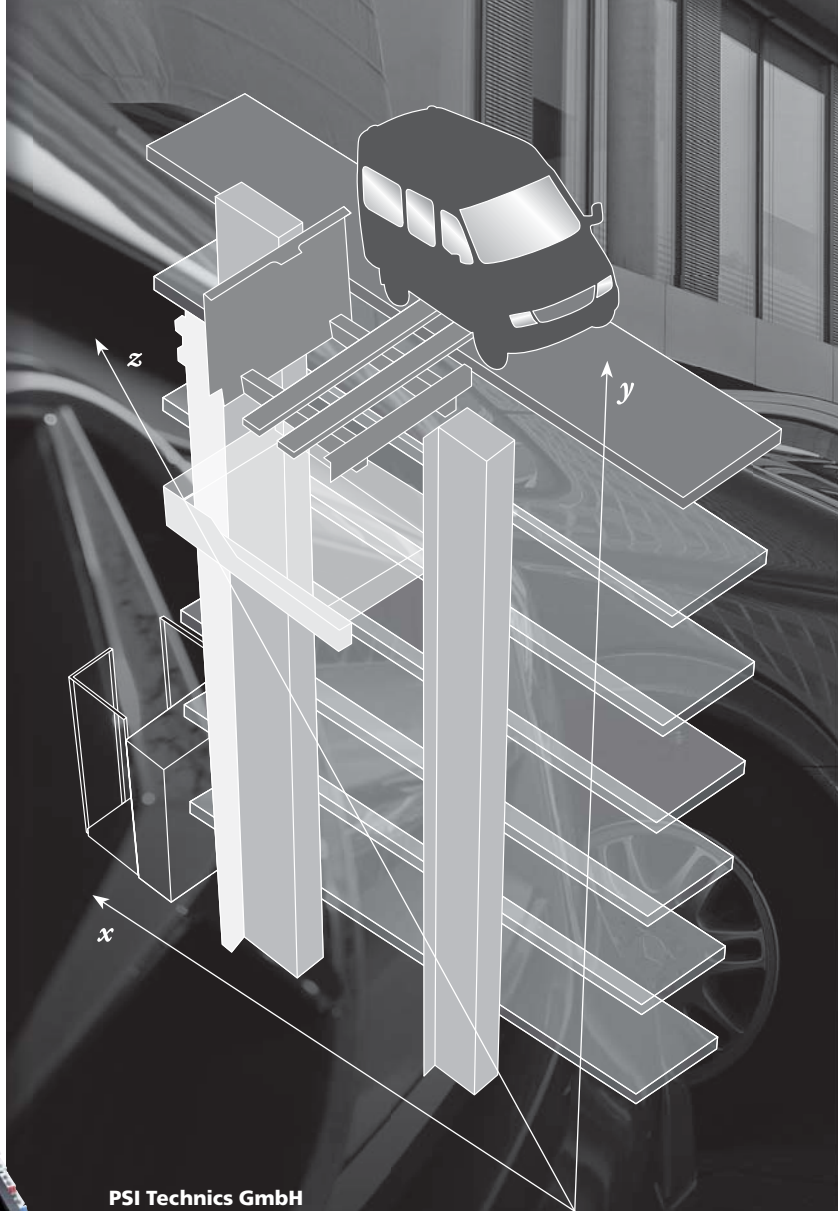
The Challenge

- >> Modernizing the positioning systems at the vehicle body warehouse at the Mercedes Benz factory in Düsseldorf, Germany.
- >> Since the previously installed ICS5000L system had been discontinued and spare part availability for this system is extremely limited, Daimler AG was looking for a new, long-term solution that would not require changes to existing controls or drives.
- >> Requirements: high reliability, fast installation and a supplier with prior installation references in automotive logistics.

The Solution

- >> Retrofitting and commissioning of the first stacker crane with PSI Technics' ARATEC® Positioning Solution System within a single day.
- >> Using the FLP6000EOS Energy Optimizing Software to achieve an optimum travel profile that reduces wear and optimizes energy consumption.
- >> The interface of the ARATEC® Positioning Solution System is 100% compatible with the previously installed ICS5000L.
- >> Optimized logistics control improves the utilization and extends the life span of the installation.
- >> ARATEC® substantially improved warehouse throughput by 15%, while the system's optimized travel profile simultaneously reduces machine wear and tear.
- >> The ARATEC® solution was retrofitted within the existing application with no need to replace other system hardware or software components, such as drives, PLCs or programming.
- >> Should Daimler later decide to upgrade hardware or software, no new hardware or services from PSI Technics will be required. A simple 10-minute commissioning is all that is needed.

ARATEC® ensures
fast commissioning



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Project Brief

Description

Modernization and optimization of a positioning system used in a vehicle body warehouse
Stacker crane lifting height: 77 ft (23.5 m)
Traveling distance: 95.14 ft (29 m)
 v_x max = 1344 mm/s (264.43ft/min; 80.6 m/min)
 v_y max = 602 mm/s (118.43 ft/min; 36.1 m/min)

Customer

Mercedes Benz factory in Düsseldorf, Germany

Industry

Automotive

Project Scope

- >> Modernization of the existing ICS5000L system and commissioning of PSI Technics' ARATEC® Positioning Solution System with FLP6000EOS Energy Optimizing Software that reduces energy consumption by up to 15% by synchronizing the arrival of the X and Y axes at the desired position.
- >> Distance meters (SICK DME5000-111)
- >> Communication protocol: Modbus RTU
- >> Now, only 7 ARATEC® positioning units are needed for the stacker cranes' 14 axes instead of the previously required 14 ICS5000 units
- >> The system automatically learns station positions during characterization.

Project Duration

September 2009 to February 2011 (several modernization phases for a total of 9 stacker cranes)

The first stacker crane was retrofitted within a single day, retrofitting the remaining stacker cranes was only a matter of hours during production-free periods, the schedule of which was determined by the customer.



Mercedes Benz Factory, Düsseldorf, Germany

„Prior to modernization spare parts for the old system were increasingly difficult to obtain and warehouse productivity no longer met the Daimler AG's high standards.



Thanks to PSI Technics' ARATEC® Positioning Solution System warehouse positioning operations are faster and more reliable than ever.

Another important modernization requirement was to guarantee the availability of the existing warehouse until at least 2018 – an additional aspect in favor of PSI Technics' ARATEC® Positioning Solution System. The system seamlessly integrates into the existing warehouse infrastructure.

In addition, the FLP6000EOS software reduces facility wear and benefits the energy budget. The solution ensured that Daimler AG's clearly formulated initial requirements for the modernization process were more than met."

PSI Technics offers intelligent and efficient solutions that improve productivity and quality in the following fields: Factory automation, industrial positioning systems, industrial image processing, thermal protection of sensors, EMC analyses, temperature/humidity monitoring and analysis, safety engineering as well as R&D for energy efficiency and energy management.

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Pictures courtesy of: PSI Technics, Daimler AG Stuttgart

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