



## DAIMLER

# AUTOMOTIVE GIANT DRIVES KANBAN PROCESS WITH SAP® SOFTWARE AND WINS RFID AWARD

### QUICK FACTS

“The RFID-based kanban process controls the replenishment of transmission production automatically.”

**Frank Peters;** Head of Shared Services Solutions for Applications and Process Design for SAP NetWeaver, SAP Basis Infrastructures, and RFID; Daimler AG

#### Company

- Name: Daimler AG
- Location: Stuttgart-Untertürkheim, Germany
- Industry: Automotive
- Products and services: Passenger cars, off-road vehicles, sports cars, minivans, and pickup trucks
- Revenue: €151.6 billion
- Employees: 271,486
- Web site: [www.daimler.com](http://www.daimler.com)

#### Challenges and Opportunities

- Automate kanban card processing
- Provide transparent information about warehouse inventory

#### Objectives

- Optimize the supply-to-production process
- Establish replenishment control for transmission production

#### SAP® Solutions and Services

SAP® solutions for RFID

#### Implementation Highlight

Transition from a manual, card-based kanban process to a fully automated process driven by radio-frequency identification (RFID) through the use of the SAP Auto-ID Infrastructure offering seamlessly integrated with the SAP ERP application

#### Why SAP

- Successful pilot projects
- Scalable, future-proof standard software
- Ability to map different auto-ID-based business processes
- High potential for integration

#### Benefits

- Minimized the number of time-consuming inventories in the supermarket and assembly line
- Improved quality through tracking
- Mapped inventory in the system to reflect the organizational and physical reality
- Reduced time required to perform identification and eliminated process weaknesses

#### Existing Environment

SAP ERP

#### Third-Party Integration

- Database: Oracle
- Hardware: Sun
- Operating system: Sun Solaris

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SAP Customer Success Story  
Automotive

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SAP®

“The SAP software automatically posts the movements of the 750 different types of material between the two storage areas. As soon as the level of a material in the supermarket falls below the minimum inventory level, the system automatically informs the third-party suppliers and orders the replenishments.”

**Frank Peters**; Head of Shared Services Solutions for Applications and Process Design for SAP NetWeaver, SAP Basis Infrastructures, and RFID; Daimler AG

## Warm-Up Phase for RFID Technology

Daimler AG, the international automotive manufacturer based in Stuttgart, Germany, has over 509 acres of production facilities and warehouses at its main plant. Countless parts are moved every day from warehouses to production facilities where they are processed, resulting in a constant shift in inventory levels.

Before Daimler implemented radio-frequency identification (RFID) technology, its supply-to-production operations were controlled by a manual kanban process that had proven its effectiveness over many years. Parts were placed into transport containers, which were labeled with a kanban card. When all the parts were removed from the container, a production employee took the kanban card and placed it in a spe-

cial mailbox. Empty containers were removed. A logistics employee collected the cards from the mailbox on regular rounds through the facility, filled replacement containers with the depleted goods from the supermarket, re-attached the cards, and delivered the newly filled containers to complete the cycle.

However, this method made it extremely difficult for production and logistics to determine current inventory levels. This was due to the fact that the supermarket, the assembly buffer zone, and the production line were all represented in the SAP® software as a single storage area. There was no way to determine which parts were still in the supermarket and which ones had been taken to assembly, for example. As a result, regular inventories and time-consuming manual counts were necessary.

## Pilot Project Approaching the Finish Line

Through its pilot project, Daimler became the first automotive manufacturer to combine kanban with RFID technology. “The idea behind the project was to set up RFID gates that forklifts and electronically controlled vehicles pass through,” says Joachim Fath of the power train transmission production process. In the spring of 2006, the OEM performed a three-month feasibility study under realistic production conditions. After another preparatory phase, Daimler went live with the RFID-based transport process on November 20, 2006.

So how does the process work? An RFID tag is placed on the back of each kanban card, which is in turn attached to a container. The tags are read each time they pass through the gate between the supermarket and the assembly area. The data is transferred through the SAP Auto-ID Infrastructure offering to the back-end software. “The SAP software automatically posts the movements of the 750 different types of material between the two storage areas. As soon as the level of a material in the supermarket falls below the minimum inventory level, the system automatically informs the third-party suppliers and orders the replenishments,” says Frank Peters, who is responsible for shared services solutions



for applications and process design for the SAP NetWeaver® technology platform, SAP basis infrastructures, and RFID at Daimler. “The RFID-based kanban process controls the replenishment of transmission production auto-

of containers that were moved through the factory that day, which in turn indicates the number and type of objects moved. If an RFID gate ever fails, an emergency process using a mobile gate takes over.

“SAP solutions for RFID have proven their benefit in the logistics process, so we have decided to use them in other departments as well to optimize those business processes.”

**Frank Peters;** Head of Shared Services Solutions for Applications and Process Design for SAP NetWeaver, SAP Basis Infrastructures, and RFID; Daimler AG

matically.” In the new system, inventory levels can be accurately tracked for each of the factory’s different storage areas and organizational units. Precise information about the location of the items within the organization and within the manufacturing process can be called up at any time.

Another benefit of the closed RFID kanban cycle is that the RFID tags on the back of the kanban cards only have to be procured and initialized once. Each time the RFID gate reads an RFID tag, the tag is assigned a tracking number so that each cycle of a kanban card – from supermarket to production line and back – can be tracked for quality management across all systems. The software identifies over 800 cycles a day, which corresponds to the number

### Crossing the Finish Line

After SAP’s project and device management partner successfully integrated the cutting-edge RFID technology, it quickly became apparent that other areas of Daimler would benefit from the technology, for example, premium parts and high-security parts. “SAP solutions for RFID have proven their benefit in the logistics process, so we have decided to use them in other departments as well to optimize those business processes,” says Peters.

The project’s success was confirmed at the EURO ID 2007 trade fair, where host IBC EUROFORUM GmbH and sponsor AIM presented the European Auto ID Award 2007. Daimler took the honors in the RFID category.

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