

## SUCCESS STORY



## Effizient production supply on the right track

At twelve locations throughout Germany, DB Fahrzeuginstandhaltung GmbH ensures that rail vehicles are repaired on time. In order to make the workshop transports required for this more transparent and efficient, the cloud-based version of the SYNCROTESS transport control system is used as the central controller.

## DB Fahrzeuginstandhaltung GmbH

### Comprehensive service.

### Diverse solutions.

### Special performance.

As a full service provider for rail vehicles, DB Fahrzeuginstandhaltung GmbH offers optimal solutions for the maintenance and repair of rail vehicle fleets. Its head headquarter and 12 maintenance depots in Germany work together as a network of specialists to coordinate a range of tasks.

[www.db-fzi.com/fahrzeuginstandhaltung-en](http://www.db-fzi.com/fahrzeuginstandhaltung-en)

## High demands on production logistics

The approximately 7,860 employees are responsible for the heavy maintenance of train sets, locomotives, and passenger and freight cars for Deutsche Bahn, as well as for external customers. They also recondition around 198,000 brake components and 58,000 wheelsets for its customer every year. Rail tracks are laid in the workshops and stands are available on which trains ranging from ICE to diesel locomotives are jacked up for a wide variety of maintenance activities.

The production halls are regularly rebuilt and modernized so that the flow of material does not remain constant. Material depots are regularly relocated, and the accessible routes are also constantly changing. But for ten transport orders alone, there are already over 3.6 million different sequences for executing them. In practice, however, hundreds of internal transports take place per workshop, per day. With this volume - as well as the dynamics - it is impossible to maintain a complete overview of the entire transport chain and to determine optimal sequences for the orders that take into account priorities, short routes, and the minimization of empty trips without centralized control.

Intending to establish trouble-free processes for internal transport, the company has therefore chosen the premium version of INFORM's cloud-based transport control system, SYNCROTESS, as its future standard system for order processing.



## Optimized for internal transport

"In the past, each DB Fahrzeuginstandhaltung site used its own systems and heterogeneous solutions for booking transport orders," says Lasse Paulsen, senior consultant, warehouse & logistics at DB Fahrzeuginstandhaltung. "As a result, we had poor transparency concerning the number of transports and the utilization of our forklift fleets. Also, improved functionality should be easy to implement." In addition to greater transparency and efficiency, the aim was to reduce costs for training and forklift leasing through optimized transport logistics.

For the company's customers, the decisive factors include short workshop stop-overs and turnaround times. Both are supported by optimized logistics. "Logistics and production are separate departments at our company. In the past, production employees also had to take care of urgent transport," says Paulsen. "The whole process is now smoother and more reliable. We have achieved higher material availability, but at the same time we have been able to reduce our fleet size of internal transport resources, as well as unladen and orientation trips, by at least 30 percent." This means that in many workshops, transport is now located entirely in the logistics department, while production employees can concentrate fully on their value-adding tasks on the vehicle.

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## Algorithmically operating transport control system

Transport orders usually arise randomly but still have to be executed in a time-critical manner. This often requires different conveyors to transport a specific load or to travel a specific route. In order to make a good decision, in addition to these technical features, many other variables must be known: loading capacities, speeds, the availability of load carriers, or the earliest and latest possible dates for delivery of an item. The location of certain materials at any given time is also important for control.

A transport control system based on intelligent decision-making algorithms can centrally "keep an eye" on all these factors. It can evaluate the situation in real time, calculate an optimized transport sequence, and assign the orders for this to the most suitable conveyor. "Lack of transparency about forklifts, materials, or other resources is a common reason for using a transport control system," says Matthias Wurst, head of business development, industrial logistics at INFORM. "But transparency is not everything. Intelligent optimization algorithms can, on an ad hoc basis, derive from specific situations which conveyors should carry out which order next so that, as a whole, the entire order network is optimally served. For example, it detects impending capacity bottlenecks and adjusts for them through intelligent control."

The system uses the master data of the respective workshop. Transport routes and stations within a company site are simply created as a route network in a tool based on OpenStreetMap and can then be processed immediately by SYNCROTESS. Alternatively, SYNCROTESS can also be used to display workshop plans. In dynamic manufacturing environments such as DB Fahrzeuginstandhaltung's, this network can be adapted at any time. Also, the resources to be controlled, loading units to be transported, and the users of the system with their different user roles are created and entered in the master data. Routine orders and cancellation reasons for rejecting a transport can also be added there. Configuring the fully functional system from the cloud then takes just a few hours.



**Lasse Paulsen,**  
Senior Consultant Warehouse & Logistics  
at DB Fahrzeuginstandhaltung

## Fokus in simple operation

To create a transport order, production employees enter it in a web interface. The system then immediately includes the order in the optimization, taking into account all other orders. Likewise, drivers can create orders themselves if, for example, they discover material along the way that has not yet been processed. The next order is communicated to the drivers via a mobile device that they carry with them. The order can then be confirmed and completed in the same app. This was particularly easy to implement at DB Fahrzeuginstandhaltung, as employees were already equipped with suitable devices as part of a company-wide project.

The workshop in Cottbus made the initial start after the company took advantage of the opportunity to test SYNCROTESS free of charge for four weeks. This was followed by the sites at Kassel, Dessau, and Neumünster. Together, around 5,000 transports per month are already handled there via SYNCROTESS and delivered in an optimized order. Implementation has also begun at the Nuremberg, Fulda, and Bremen workshops, and Paderborn and Krefeld will soon be connected. The transport control system is intended to work as a company-wide new standard for internal transport. "The more flexible manufacturing is with its daily demands, the more complex and relevant logistics is to its success," Wurst says. "With stable processes, we want to help ensure that logistics departments don't just put out fires, but contribute to on-time and speedy delivery for production."

"We were convinced by the very simple implementation, the easy-to-use system, and the uncomplicated processing," sums up Paulsen. "The added value of the centralized digitized control system was also quickly recognized by the workforce, resulting in a very high acceptance of the new system."

## Results

- Smooth processes and higher efficiency for the internal transport
- Complete overview of the entire transport chain
- Optimal order sequence and minimization of empty runs
- Reduction of training and forklift leasing costs

**If you would like to know more, we look forward to hearing from you:**

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