



ORBIS Transport Control System (TSS)

**A forklift routing system
that can speed up internal transport**



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ORBIS TSS is a **forklift routing system that is fully integrated into SAP**. It supports workers by automatically allocating tasks in the logistics center. ORBIS TSS improves the internal transport activities of the entire forklift fleet by:

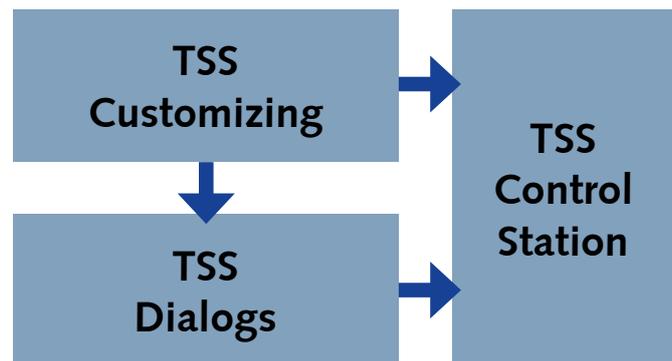
- ♦ optimizing routes
- ♦ reducing unladen journeys
- ♦ automating route control
- ♦ minimizing errors
- ♦ increasing process reliability with continuous documentation

In addition to **transport control**, the logistical processes in the company can be controlled and optimized. Processes are monitored via barcode identification. The following processes can be mapped:

- ♦ incoming goods and stock replenishment
- ♦ filling the picking stations
- ♦ simplifying replenishment
- ♦ transport to dispatch/loading zone

The three components of ORBIS TSS

The central component is the integrated **TSS Customizing**. This is where all the data needed for processes, routes, workers, and resources are stored. The **TSS Dialogs** component contains tried-and-tested mobile forklift dialogs for processing the daily load. The third component, **TSS Control Station**, enables external control and monitoring of the transport jobs.



The functionalities at a glance

ORBIS TSS integrates the route planning of the entire forklift fleet and takes all journeys into account. The solution is integrated into SAP and the rules can be configured individually. The customizing includes:

- ◆ processes
- ◆ zones
- ◆ routes
- ◆ workers/worker attributes
- ◆ resources (vehicles)/resource attributes

The dialog function enables:

- ◆ mobile and paperless processing of transport jobs via forklift terminals
- ◆ usage of templates
- ◆ feedback from transport resources directly to the system

ORBIS TSS also offers the following features:

Trailer materials planning and trailer management

The trailer materials planning and trailer management allow the target and the status (empty/full, unloading/loading) of individual trailers to be managed. To plan internal factory traffic, individual trailers are allocated specific targets and are loaded, unloaded, and transported by means of mobile TSS functions. The integrated trailer management makes it possible to view the status and content of the trailer at the TSS Control Station at any time.

Transport orders

Transport orders are used to reserve/order resources for specific times and targets for non-process activities (such as planned journeys for the disposal of waste or empty containers). Transport orders are also displayed in the order queue of the corresponding resources.

Diagram of milk runs/tugger trains

ORBIS TSS includes integrated tugger train control. The tugger trains are made up of a towing vehicle with a flexible number of trolleys that cover predefined paths. The paths can be compiled on the basis of static or event-based routes. The TSS includes trolley management, similar to the trailer management. Accordingly, the routing system can be used to manage the current location, the loading status, and the current content of the trolley.

Alert functions

ORBIS TSS is used to inform the workers of critical functions automatically. For example, a required resource change resulting from an altered job situation is displayed to the worker directly in the mobile TSS dialog. The TSS Control Station also displays critical situations such as jobs that cannot be executed.



TSS Customizing

TSS Customizing allows all parameters relevant for the master data and basis administration to be stored at SAP warehouse number level. The urgency of a job allocation for a worker is determined on the basis of a calculated "sort value." The basic parameters for this calculation are as follows:

- ◆ priority of the business process
- ◆ distance
- ◆ time (scheduling date/time)

To enable the calculation to be customized to perfectly suit your needs, ORBIS TSS provides the following parameters:

- ◆ business process
- ◆ customizing of the topology by means of
 - warehouse types/spaces
 - zones
 - distances
- ◆ resources/resource properties
- ◆ workers/worker attributes

EXIT
 BACK
 MAP
 KIEPAS

TO overview

Next TO

| | | | | | | |
|--------|-----|-------|----------|------|------------|----|
| S-Type | 800 | S-Bin | WE-ZONE | SU | 1100003702 | OK |
| D-Type | FB1 | D-Bin | 01-06-04 | Qty. | 25 ST | |

| | Activity | T-Zone | S-Type | S-Bin | Dest-Zone | Dest-Type | Dest-Bin | T-Type | T-Bin | Sort value |
|--|----------|--------|--------|---------|-----------|-----------|----------|--------|---------|------------|
| | ✓ | WE | 800 | WE-ZONE | FBE | FB1 | 01-06-04 | UEB | FB1-E01 | 044 |
| | ✓ | WE | 800 | WE-ZONE | FBE | FB1 | 01-06-05 | UEB | FB1-E01 | 044 |
| | ✓ | BL | UEB | UEB_012 | BL | 012 | B002 | 012 | B002 | 044 |

SU

Transportation Trailer

By sight

Info

Trailer

Wednesday, May 11, 2016
10:26:51 F

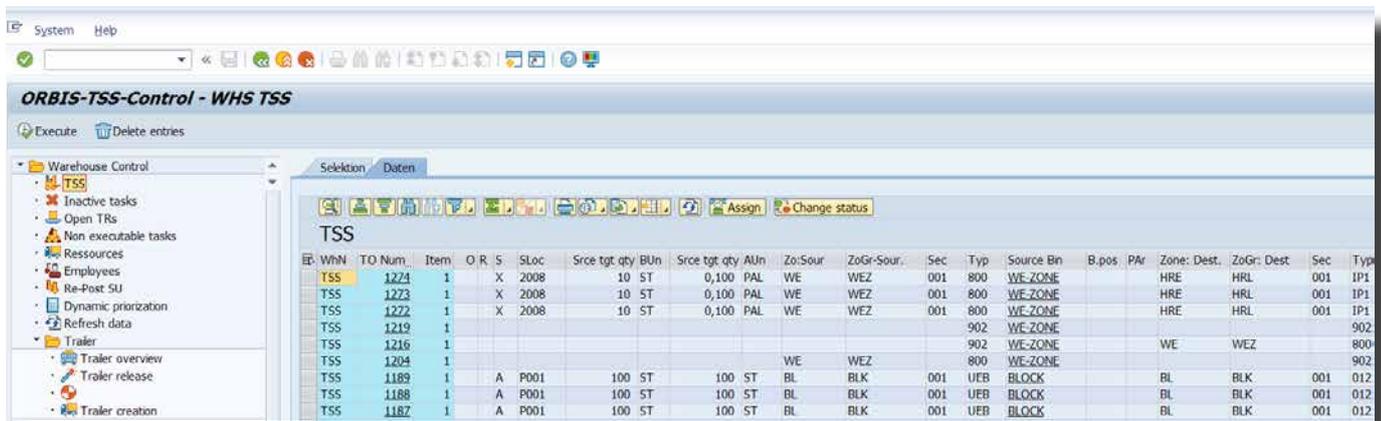
TSS Control Station

The TSS Control Station is used to monitor and allocate all TSS-related processes. The main tasks involved are as follows:

- ◆ display and possible allocation of the current transport jobs
 - per zone
 - per resource

- ◆ display of jobs that cannot be carried out
- ◆ display of resource and worker status
- ◆ display of loading status and position of individual trailers/trolleys
- ◆ display of tugger trains

It is also possible to use TSS Customizing to add extra selected transactions to the warehouse control station.



ORBIS TSS Control Station

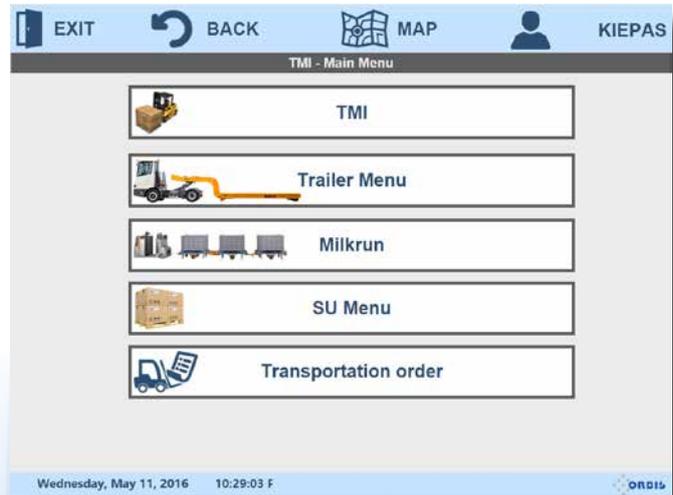
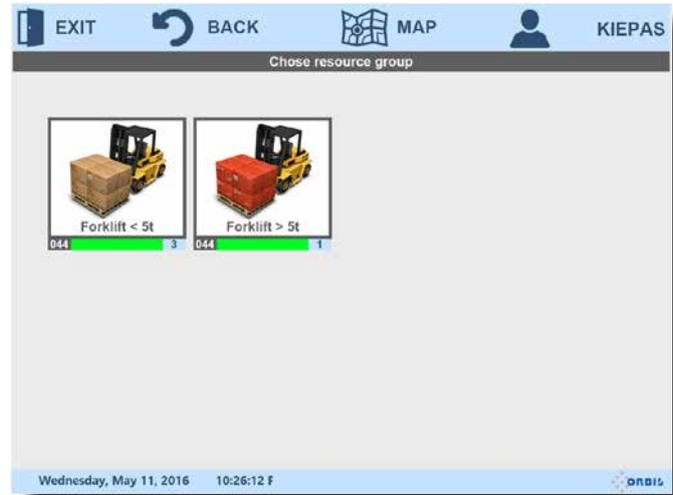
| ID | Description | Pos | Sup.ID | Dpro Nr | Transaction Code | Act. |
|----|------------------------|-----|--------|---------|--------------------|-------------------------------------|
| 1 | TSS | 1 | 0 | 1100 | | <input checked="" type="checkbox"/> |
| 2 | Open TRs | 3 | 0 | 1200 | | <input checked="" type="checkbox"/> |
| 3 | Non executable tasks | 4 | 0 | 1300 | | <input checked="" type="checkbox"/> |
| 4 | Ressources | 5 | 0 | 1400 | | <input checked="" type="checkbox"/> |
| 5 | Employees | 6 | 0 | 1500 | | <input checked="" type="checkbox"/> |
| 6 | Re-Post SU | 7 | 0 | | /ORBIS/TSS_LENb | <input checked="" type="checkbox"/> |
| 7 | Dynamic prioritization | 8 | 0 | | /ORBIS/TSS_DPRO | <input checked="" type="checkbox"/> |
| 8 | Refresh data | 9 | 0 | | /ORBIS/TSS_UPDATE | <input checked="" type="checkbox"/> |
| 9 | Inactive tasks | 2 | 0 | 1600 | | <input checked="" type="checkbox"/> |
| 50 | Trailer | 50 | 0 | | | <input checked="" type="checkbox"/> |
| 51 | Trailer overview | 51 | 50 | | /ORBIS/TSS_TSHOW | <input checked="" type="checkbox"/> |
| 52 | Trailer release | 52 | 50 | | /ORBIS/TSS_TFREIG | <input checked="" type="checkbox"/> |
| 53 | | 53 | 50 | | /ORBIS/TSS_TSAMMEL | <input checked="" type="checkbox"/> |
| 56 | Trailer creation | 54 | 50 | | /ORBIS/TSS_TERZ | <input checked="" type="checkbox"/> |

Customizable TSS Control Station

TSS Dialogs

The example cases represent tried-and-tested mobile forklift dialogs that can be used to execute individual jobs. Specifically, this includes:

- ◆ menu functions
- ◆ workload monitor
- ◆ acceptance and confirmation of transport jobs
- ◆ tugger train
- ◆ trailer materials planning and loading
- ◆ adding of new transport orders
- ◆ info transactions



Example cases

Logistics/distribution center

Possible requirements

- ◆ Coping with higher turnover rates with the same number of industrial trucks, or less
- ◆ Diagram of multi-layer process chains within the logistics center

Implementation with ORBIS TSS

- ◆ Jobs processed in optimum sequence on basis of set priority/weighting (sort value)
- ◆ Stored resource attributes and route authorizations taken into account in allocation of transport jobs
→ This prevents unsuitable resources from being requested (e.g. pallet truck ordered for high rack)

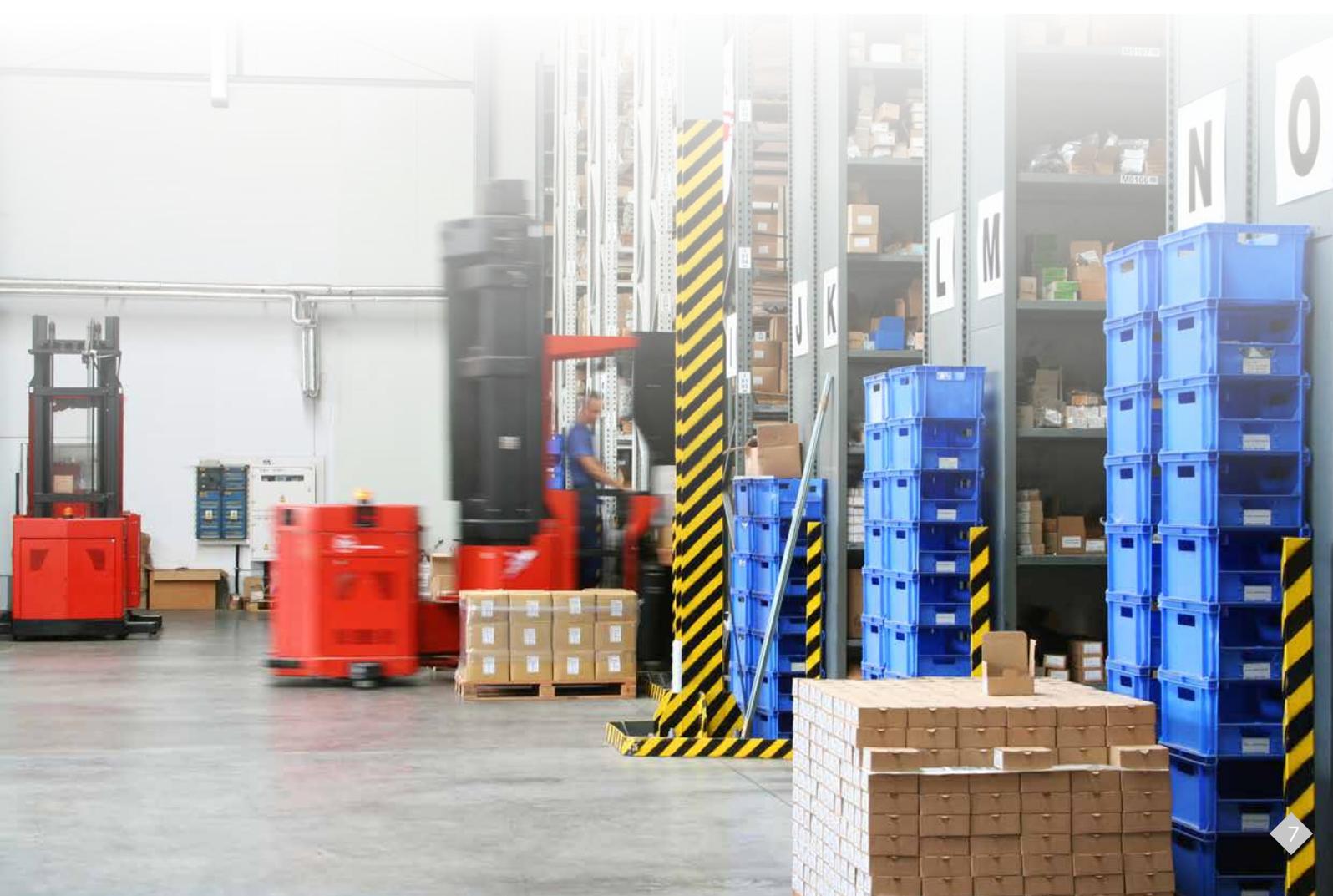
Transport within the company

Possible requirements

- ◆ It should be possible for processes within the company to be displayed and monitored in a transparent way.
- ◆ It is also important for the solution to be extendable, for example in the case of a global rollout.

Implementation with ORBIS TSS

- ◆ Integration of processes from various systems
 - SAP
 - MES systems
 - external systems
 - manual journeys
- ◆ Ensuring that processes are fully transparent and traceable
- ◆ Material position can be accessed at all times
- ◆ Diagram of multi-layer process chains between individual halls/buildings
- ◆ Possibility of a global rollout



About us



ORBIS is a software and business consultancy company that operates on an international level. ORBIS advises and supports international companies in questions ranging from their IT strategy and optimization of business processes to system selection, system implementation and system integration. To do so, ORBIS makes use of the solutions provided by the market leaders SAP and Microsoft.

Our core competencies cover classic Enterprise Resource Planning (ERP), SAP S/4HANA, Supply Chain Management (SCM), Logistics Execution (EWM/LES), Manufacturing Execution Systems (MES), Variant Management, Customer Relationship Management (CRM) on-premise and cloud, Business Intelligence (BI, EPM and Data Warehousing) and Product Lifecycle Management (PLM). As a reliable business partner, ORBIS can support its customers in the rollouts of ERP solutions and processes worldwide. Our service portfolio is rounded off with our own products for Smart Manufacturing, Business Intelligence, MES, Product Costing, Variant Management and numerous SAP add-ons. ORBIS uses its experience in CRM and its close collaborations with Microsoft to create a variety of sector-specific templates and best practices for Microsoft Dynamics CRM such as SAP integration.

Over 1,500 successfully completed client projects bear witness to our business consultancy expertise and many years of experience in automotive supply, building supplier, electrical and electronic industries, machine and plant engineering, logistics, metal, consumer products industries, retail and pharmaceuticals.

ORBIS' long-standing customer base includes Bosch, Eberspächer, Edscha, Hager Group, Heineken Switzerland, Hörmann KG, hülsta, HYDAC INTERNATIONAL, Jungheinrich, KSB, KUKA Roboter, Magna, Melitta, Modine, Paul Hartmann, Pilz, Rittal, Schott, SCHUNK, Villeroy & Boch, WAGO Kontakttechnik and the ZF Group.

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