TM Development Highlights

TM Product Management
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# SAP TM - On premise Roadmap

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<td>• SCE platform on HANA</td>
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<td>• Single File Handling</td>
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<td>• Customs &amp; security filing</td>
<td>• Customer Order Entry for LSPs</td>
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<td>• Charge Mgmt.</td>
<td>• Bulk Transportation Enhancements (TM)</td>
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<td>Supply Chain Convergence</td>
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<td>• Combined Linehaul Parcel Shipment</td>
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*Planning only - subject to change*
Transportation Management 9.4 (1/10)

World-Class & Real-time

Transit Warehouse

- Reversal Processes after EWM integration
- Late Cancellation of Freight Documents
- Propagation of changes from forwarding order to freight units
- Self Delivery Process
- Local split functionality (EWM – TM Integration)
- Dangerous Goods Handling in Transit Warehouse
- Seals
- Air Cargo Security
Transit Warehousing - Overview

SAP TM

Planned (system based) Cargo Flow

Shipper
Tokyo
BU Origin
Tokyo
Gateway / CFS
Airport / Seaport
Narita
Gateway / CFS
Airport / Seaport
Los Angeles
Gateway / CFS
BU Destination
San Diego
Consignee
Tucson

Pick-Up
Feeding Pre-Carriage
Transfer
Main-Carriage
Transfer
De-Feeding On-Carriage
Delivery

SAP eWM

TW
Tokyo
GTW
Narita
GTW
Los Angeles
TW
San Diego

Physical Cargo Flow
Seals in 9.4
Scope

Transit Warehousing

- Seal Data Communication on TM - EWM
- Seal # Field Length CHAR10 → 15
- Party Role for (Un)sealing
- TM: Seals for Vehicle Resources
- EWM 9.3: Seals in TM only (for containers)
- Seals for TU Containers, TUs, HU Containers
- Seals in FO UI and (Un)loading Preparation UI

Planned for TW 9.4
Subject to change
Seals in 9.4
UI-Changes

Seals in Transit Warehousing (new):

- Freight Order UI
- Loading/Unloading Preparation UI
- ‘Seals exist’ displayed in list
- Popup to display or change seals (table)
- Seals get send to TM and update Freight Order

Seal # field length CHAR 15
Sealing date/time/party role
Unsealing date/time/party role
Settings for Default Party Role

Planned for TW 9.4
Subject to change
Scope in 9.4
ACS in Transit Warehousing

1. Cargo made safe by air carrier
   - Shipper
   - Freight Forwarder
   - Air Carrier

2. Cargo made safe by freight forwarder
   - Shipper
   - Freight Forwarder
   - Air Carrier

3. Cargo made safe by shipper
   - Shipper
   - Freight Forwarder
   - Air Carrier

Supported in EWM 9.3
New in EWM 9.4
ACS infos at transit HU level in EWM

Not Secure
Secure
Some Options for Warehouse Layout

Whole warehouse = secure (→ mix)

- Mixed doors
- Mixed storage areas

Strict separation

- Non-secure doors
- Screening area
- Secure area

Some mixed areas

- Mixed doors
- Mixed storage areas

Storage Type Customizing

<table>
<thead>
<tr>
<th>Storage Type</th>
<th>Description</th>
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<tr>
<td>1</td>
<td>Fix.Val. Short Descript.</td>
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<tr>
<td>1</td>
<td>Not Secure</td>
</tr>
<tr>
<td>1</td>
<td>Secure and Not Secure</td>
</tr>
<tr>
<td>2</td>
<td>Secure</td>
</tr>
</tbody>
</table>

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Confidential
Checks in the Warehouse

Assign & Dock at door

Non-secure door

Secure door

Mixed door

Warning: ACS lost

Error!

o.k.

Receiving & Putaway

Non-secure area

Secure area

Warning: ACS lost

Error!

Loading

Target ACS

Error!

ACS too low
Inbound Processes

1. Receive unsecure cargo
   - Non-secure area
   - No target ACS
   - Putaway to non-secure area (no flight booked)

2. Receive unsecure cargo and screen it
   - Screen
   - Secure area
   - Target ACS
   - Screen + putaway to secure area (flight already booked)

3. Receive secure cargo and keep it secure
   - Screen
   - Secure area
   - Target ACS
   - Putaway to secure area (flight already booked)
   - Screen if ACS too low (SCO → SPX)

4a. Receive secure cargo and drop ACS info
   - Non-secure area
   - BAadI sets no target ACS
   - Putaway to non-secure area (e.g. receive from airport)

4b. Receive secure cargo and keep it secure
   - Secure area
   - BAadI sets target ACS
   - Putaway to secure area (e.g. receive from shipper)

Same information in LDAP request
Outbound Process (Export Gateway)

1. Ship secure cargo

2. Screen non-secure cargo before loading onto ULD (or TU)
Self Delivery Process

- If a truck arrives unexpectedly and no (EWM) Freight Order exists for this truck, the receiving clerk creates a new (self-delivery) freight order in TM to document the unexpected arrival of the truck.

- The trucker hands over the bill of lading or CMR to the receiving clerk containing the information about the shipments/cargo that is supposed to be unloaded. The receiving clerk captures this information in the self-delivery freight order (or assigns the corresponding forwarding orders if already exist).

```
TM

FO 40005000
3 PAL

Create or Assign Forwarding Order

FWO 110003090
3 PAL
FU 400048523
3 PAL

Can be done later during office hours

EWM

FO for receiving
3 PAL
```
Self Delivery Process

- Only a few data needs to be captured

- Afterwards the process in Transit Warehouse is steered in the same manner as for expected cargo
Changes in Forwarding Order are propagated to subsequent freight unit, freight order till cargo receipt

- **Initial Order from Customer**
  - FWO 110003090
    - 2 PAL
    - 200 KG
  - FU 400048523
    - 2 PAL
    - 200 KG
  - FO 40005000
    - 2 PAL
    - 200 KG

- **Update from Customer**
  - FWO 110003090
    - 3 PAL
    - 300 KG
  - FU 400048523
    - 3 PAL
    - 300 KG
  - FO 40005000
    - 3 PAL
    - 300 KG

- **Goods Receipt on actuals**
Support EWM Reversal Process

- Reverse Arrival from Checkpoint
- Reverse Receiving / Loading Completed (Update of Receiving / Loading Completed)
- Reverse Departure from Checkpoint
Local item split functionality

- Single items within a document (e.g. freight order) need to be split onto several transportation units e.g. Truck and Trailer Scenario.

- The local item split can be triggered from TM side in the freight order cargo management UI.

- In a transit warehouse outbound process the cargo split can also be triggered by EWM when HU’s are splitted on different available TU’s.
Local item split - inbound
Local item split - outbound

Forwarding Order
- Palett item 2 EA

Freight Unit
- Palett item 2 EA
  - EWM HU1
  - EWM HU2

Freight Order
- TU1 (Active Vehicle)
  - Palett item 2 EA
    - EWM HU1
  - TU2 (PVR/TUR)
    - Palett item 1 EA
      - EWM HU2
Dangerous Goods Handling

- **FWO without DG item, EWM detects that this item is DG**
  - On TM site a DG record should be created. DG information must be enhanced by necessary data input on TM site

- **FWO with DG item, EWM detects that it is no DG**
  - Since the leading system concerning DG maintenance is TM. Deletion of DG information should not be performed on TM site automatically

- **FWO with DG item, EWM detects that DG has to be update**
  - On TM site an additional DG record should be created. Existing DG records will not be deleted via messages from EWM. In this case eventually incorrect DG information should be deleted manually and the correct DG information should be maintained on TM site

- **Repeated LDAP Notification for the same TM Document**
  - Inserts/Deletes/Updates of DG records which have been created via LDAP notification are allowed as long as DG record has not been maintained on TM side
Dangerous Goods Handling in Transit Warehouse

- DG data can be entered during receiving process in warehouse
- DG data send to TM to update the record
- DG Data to be completed in TM
World-Class & Real-time

**TM – EWM Integration**
- Enhancements in Inbound Process for Shipper
- Enhancements in Outbound Process for Shipper
Inbound Process in EWM 9.1

TM
- Planning
- RQ

EWM
- Arrival at Checkpoint + Reversal
- Goods Receipt Completed + Reverse/Re-post
- Departure from Checkpoint + Reversal

No updates from TM (LDAP request):
- Unique LDAP request

No LDAP notification from EWM:
- TM informed via ERP delivery update only
Updates in Inbound Process

Updates from TM (LDAP request):
- Until arrival at checkpoint
- Changes to AVR/PVR
- Changes to delivery (item) assignments

Changes from EWM (LDAP notification):
- Notify arrival at checkpoint + reversal
- Notify departure from checkpoint
- **Reverse departure not allowed**
- Missing delivery item
- Changed delivery item quantity
- Addt. delivery item assignment in EWM (TPT=C)
Outbound Process in EWM 9.1

No Updates from TM (LDAP request):
- Unique LDAP Request

Unique LDAP notification at check-out:
- Reverse departure not allowed
- Missing delivery item
- Changed delivery item quantity
- Additional delivery item assign in EWM (TPT=C)
Updates in Outbound Process

Updates from TM (LDAP request):
- Changes to AVR/PVR until arrival
- Changes to delivery (item) assignments until loading completion (after that: XI message error)
- XI message error if assignment deleted for item that is already (partially) loaded

Changes from EWM (LDAP notification):
- Notify arrival at checkpoint + reversal
- **No notification of loading completed**
- Notify depart. from checkpoint
- **Reverse departure not allowed**
- Missing delivery item
- Changed delivery item quantity
- Addt. delivery item assignment in EWM (TPT=C)
Transportation Management 9.4 (3/10)

World-Class & Real-time

Planning and Optimization

- Manual Driver Planning
- Enhancements for Manual Planning
- Automatic Planning
- Package Building
Manual Driver Planning – Scenario Overview

<table>
<thead>
<tr>
<th>Assignment type</th>
<th>Freight Order</th>
<th>Stage</th>
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<tbody>
<tr>
<td><strong>Single Driver</strong></td>
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<tr>
<td>- Driver d1</td>
<td><img src="image1" alt="Diagram" /></td>
<td><img src="image2" alt="Diagram" /></td>
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<tr>
<td></td>
<td>80%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Driver Team (2)</strong></td>
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<td></td>
</tr>
<tr>
<td>- Driver d1 &amp; d2</td>
<td><img src="image3" alt="Diagram" /></td>
<td><img src="image4" alt="Diagram" /></td>
</tr>
<tr>
<td></td>
<td>15%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>No Driver</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- No driver assignment</td>
<td><img src="image5" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>We have not yet met any customer needing this.</td>
</tr>
</tbody>
</table>
Planning
Profiles & selection criteria allow selection of drivers (with context determination)
Cockpit (incl. Gantt chart) shows drivers in list & hierarchy
Define number of required drivers (single, team, none)
Define assignment type (freight order vs. stage)
Assign / un-assign driver to / from freight order (stages)

Truck resource has one default driver
Each new freight order for the truck inherits the default driver
Changing the default driver does not change freight
Manual Driver Planning – Selected Features (2/2)

Properties of driver
Offered qualifications
Home location → select for planning, sort & filter in cockpit
Org unit → select for planning, sort & filter in cockpit
Last planned location & availability time → sort & filter in cockpit
Absences (e.g. sickness, vacation) → shown in Gantt chart
Calendar for non-working times → shown in Gantt chart
Manual Planning – Map (1/2)

Map customizing
Define labels, tooltips, colors, icons
Show demands as source / destination / arc
(can be switched in planning session)

Page layout
Refers to map customizing and defines buttons

Planning
Create capacity document for selected demands & resources
Insert stop into capacity document stage
Un-assign stops from capacity documents
Optimize one freight order with vehicle scheduling & routing optimizer
Manual Planning – Map (2/2)

Interplay with lists / trees / Gantt chart:
- Push selected objects automatically to map
- Action column to show / hide object on map
- Show map color legend in any list

Miscellaneous:
- Auto-focus on selected documents on map
- Cluster demands geographically (depending on zoom level)
- Display aggregated information (total weight, …) for selected objects
Manual Planning – Gantt Chart (1/5)

**Rail planning**

Show rail freight order, railcar unit, locomotive resource and railcar resource

Planning with drag & drop
Manual Planning – Gantt Chart (2/5)

**Schedule-based planning**

- Context menu to assign schedule
- Define schedule search criteria
- Choose schedule departure
Manual Planning – Gantt Chart (3/5)

Schedule-based planning
Context menu to assign schedule
Define schedule search criteria
Choose schedule departure
Manual Planning – Gantt Chart (4/5)

Schedule-based planning
Context menu to assign schedule
Define schedule search criteria
Choose schedule departure
Warning management
One new warning type (incorrect driver assignment)
Multiple warnings icon
Context menu to solve warnings
Manual Planning – Usability Improvements

Undo button

Automatic accept of carrier selection optimizer result

Quick multiple copies of one capacity document

Manual planning
Create multiple capacity documents for selected resource and demands
Create multiple capacity documents, one per selected demand

Efficient maintenance
Edit dates & times, carrier, resource, means of transport in capacity document lists and hierarchies
Mass maintenance of one date & time for selected capacity documents

Hyperlinks for all objects in the cockpit

Quick views for all objects in the cockpit

All master data and documents

Customer is able to enhance / change content of quick views

Show distance & duration in freight unit list / hierarchy

Show aggregated information for selected documents in one list / hierarchy

E.g. total weight and volume, etc.

Week day as separate field

Enable selection, filtering, etc.
Automatic Planning – Vehicle Scheduling and Routing Optimizer

**Pickup and delivery stop limit**
Planning cost settings define the number of pickup stops and the number of delivery stops.

**Minimum load utilization**
Planning cost settings define the percentage (e.g. 70%).
At least one load dimension has to meet the percentage.
You can control whether freight documents below the percentage are kept or deleted after the optimizer run.

**Fixed cost per used vehicle instance**
Minimize number of required resources (in addition to the number of freight documents).
Package Building – Overview

Freestyle mixed package building
Consolidate any product quantities until volume limit is reached
Package can consist of complete layers with freestyle packed products on top of it

Additional constraints
Height limit for mixed packages (i.e. don't use the height defined for full product packages)
Limit on number of products on a mixed package
Limit on number of products in a mixed layer
Product must not be contained in a mixed layer
Package Building – Examples (Side View)

- **Product layer (one product)**: Complete product package
- **Mixed layer, flat (multiple products)**: Mixed package (layered)
- **Mixed layer, non-flat (multiple products)**: Mixed package (layered)  
- **Freestyle packed (multiple products)**: Mixed package (layered + freestyle)  
- **Mixed layer, non-flat (multiple products)**: Mixed package (layered)  

Mixes of layers and products are also shown:
- Mixed layer, flat (multiple products)
- Mixed layer, non-flat (multiple products)
- Freestyle packed (multiple products)
Transportation Management 9.4 (4/10)

World-Class & Real-time

Load Consolidation
- Enhancements to Load Consolidation
Load Consolidation in SAP TM

Set of Freight Units (Transportation Demand):
- Volume, weight, other load dimensions
- e.g. pallets, boxes

Alternative Resource Types:
- Max. volume, max. weight, other load dimensions
- e.g. vehicle resources, containers
Load Consolidation offers:

- Optimizer-based, automated assignment of a given set of freight units to resource types
- Determination of the number of resources to be ordered / to be used
- Focus on planning the main route where no routing decision has to be made
Load Consolidation supports:

- **Alternative resource types (e.g. 20ft, 40ft, 40ft High Cube Container)**
  - Limitation of the maximal number of available instances possible

- **Minimization of total costs**
  - Based on defined fixed cost for usage of one resource type instance

- **Capacity Check based on given load dimensions (e.g. weight and volume)**
Scenario (continued)

Load Consolidation supports:

- Incompatibility Freight Unit ↔ Resource Type (e.g. temperature condition)
- Incompatibility Freight Unit ↔ Freight Unit (e.g. dangerous goods)
Scenario (continued)

Load Consolidation offers:

- **Detailed Capacity Check**
  - Considering detailed pallet dimensions and loading space
  - Considering stackability of pallets
  - Providing an exact load plan (as in SAP TM Load Planning)
Scenario (continued)

Based on the freight documents created by Load Consolidation, in the next planning step the TM Optimizer will

- Focus on routing decision
- Assign the containers to vehicles, bookings etc.
Load Consolidation Process Flow

Freight Units

Main Hub A  Main Hub B

Load Consolidation

Container Types

Container Unit Documents

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Load Consolidation Process Flow

Forwarding Order / Delivery-Based / Order-Based Transportation Requirement

Freight Unit Building (Package Builder)

Freight Units

Load Consolidation

Freight Order / Trailer Unit / Container Unit

Transportation Planning (Manual or Optimizer)

Freight Order / Trailer Unit / Booking

Assignment to resource types

Assignment to actual resources & routing
World-Class & Real-time

TM Collaboration Portal

- Freight Order for Confirmation
- Subsequent Carrier Invoices
- Credit Memo Creation
- Multiple Invoicing Carriers
- Freight Agreement Award Confirmation
- Freight Agreement Rate Changes
- Multi Term Search (search field in TM Portal)
Freight Order for Confirmation

Create freight order in TM and assign Carrier

Carriers see this freight order in their work list and can confirm or reject this freight order
Subsequent Carrier Invoices

Carriers see this freight order in their work list for invoice submission. They can create a carrier invoice for either all proposed charge items, or for a subset of them. Once the created carrier invoice is accepted by the shipper and submitted to ERP for invoice creation, the carrier may create another carrier invoice for the non-invoiced charge items, or for additional ones.

Calculate Charges in freight order and transfer the freight settlement document to ERP for accruals.
Credit Memo Creation

Carriers see this freight order in their work list for invoice submission and create invoice(s) for this freight order.

Carriers find accepted carrier invoices in their work list. They can select an accepted carrier invoice and create a credit memo to cancel it. Once this has been accepted by the shipper, they can create a new invoice for the freight order, and view created credit memos in their work list.

Shipper (NWBC)

Calculate Charges in freight order and transfer the freight settlement document to ERP for accruals.

Carrier (Collaboration Portal)
## Multiple Invoicing Carriers

Shipper (NWBC)

Create freight order in TM and assign multiple carriers: one as the main carrier and additional ones as Additional Agreement Parties.

Carrier (Collaboration Portal)

All carriers see this freight order in their work lists. Only their share of charges are displayed to each of them, and they may create invoices only for their own relevant share of charges.

### Freight Order Management Portal FO 8100001

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<th>Destination Location</th>
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<td>Coca-Cola Co., 601 Peachtree Street NW, Atlanta, GA 30308-1852, United States</td>
<td>September 12, 2016</td>
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<td>October 18, 2016</td>
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<td>February 18, 2017</td>
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Freight Agreement Award Confirmation

Create Freight Agreement RFQ in TM and publish it to carriers.

Carriers find this Freight Agreement RFQ in their work lists. They can download the bid structure, provide their response data and upload this with their response.

Once the shipper has awarded this response, the carriers see their RFQs for award confirmation in their work list. They can view the awarded business shares and can confirm or reject the proposed capacities. Once this is completed, the shipper creates a Freight Agreement based on the carrier’s confirmation.
Freight Agreement Rate Changes

Carriers can request rate changes for an existing freight agreement. If the shipper agrees, the carriers may submit changed rates through the collaboration portal. Once the shipper has agreed to the changes, the carriers can view the updated version of the freight agreement in their work list.
World-Class & Real-time

Profitability per Forwarding Order

- Plan vs. Expected Cost
  FWO Profitability calculation via Batch to enable profitability calculation based with every change in the execution which Is relevant for freight cost or revenue update changes
- Enhanced Logic to capture the Profitability for–Export/Import FWO, Service Order Costs, Drayage Order Costs
- Cost Distribution in TM Service Order
World-Class & Real-time

Strategic Freight Procurement

- Possibility of Freight Agreement updating with the same rate tables with a new validity record (instead of a new rate table)
- Enable the post award process prior to contract - sending of awards to carriers for confirmation
  - Follow up process post carrier acceptance/rejection
- Rate change impact
- Collaboration Portal Integration for Award Confirmation
Transportation Management 9.4 (8/10)

**World-Class & Real-time**

**Collected TM Enhancements**

- Search Engine for TM
NWBC Search Bar used for Quick Search

You can find all the information about your business here.

- Home
- Forwarding Order Management
- ERP Logistics Integration
- Freight Order Management
- Planning
- Forwarding Agreement Management
TM Search

- Search for an ID of your TM document
- Search for secondary ID’s, e.g. Buyer’s Reference Number for Forwarding Orders
- Document Flow is displayed in the result list
Transportation Management 9.4 (9/10)

World-Class & Real-time

SAP TM – Descartes GLN Integration

- Air and Ocean Freight Booking incl. Execution
  Send booking request to carrier and receive booking confirmation
  Booking cancellation
  Execution messages to carrier (electronic Air Waybill; shipping instructions for ocean)
<table>
<thead>
<tr>
<th>Positioning of SAP and Descartes solutions</th>
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<tr>
<th>Customs Declarations &amp; Security Filings</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP TM Export/Import Forwarding Order integrated with Descartes GLN</td>
</tr>
<tr>
<td>using Descartes customs and security filing solutions via GLN</td>
</tr>
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<tr>
<th>Exchange Booking &amp; Execution status with carrier</th>
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<td>SAP TM Freight Booking integrated with Descartes GLN</td>
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<th>Export Compliance (sanctioned parties/embargo list)</th>
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<tbody>
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<td>SAP TM Forwarding Quotation/Order integrated with SAP GTS (Sanctioned parties/embargo content available from Descartes)</td>
</tr>
<tr>
<td>SAP TM Freight Order/Booking integrated with SAP GTS (Sanctioned parties/embargo content available from Descartes)</td>
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</table>
Real-time analytics for SAP Transportation Management

- Realtime Analytics based on Core Data Service (CDS) views which are fully integrated into TM backend application (later in 2016)
- SAP HANA Live for TM 2.0 (TM 9.3 upwards)
  Changes to the data structure after refactoring has been adjusted for Analytics
- New SAP Smart Business Content for TM planned in Q1 / 2016 (Analytical Fiori Apps)
- Prototype based on new Overview Pages (OVP) technology
SAP HANA Live for Transportation Management

**Description**
- Supports the transportation manager in the identification and valuation of his operational business and provides cost and revenue based information in real time.

**Capabilities**
- Real-time analysis of forwarding and freight orders as well as ERP order and delivery based transportation requests, costs, revenues, utilization, discrepancies and dangerous goods and other important key figures
- Drill-down and insight-to-action capabilities
- Collaboration via e-mail and SAP JAM
- Virtual data model providing a harmonized data access to transportation management analytical data

**Key performance indicators**
- Transportation Cost
- Transportation Cost by Volume
- Transportation Cost by Weight
- Transportation Cost by Weight and Distance
- Transportation Revenue
- Transportation Profit
- Transportation Requirements
- Forwarding Orders
- Freight Orders
- Transportation Discrepancies
- Average Utilization
- Average Vehicle Resource Utilization
- Dangerous Goods
- Transported Volume
- Transported Weight
SAP HANA Live for Event Management

Description
• SAP Smart Business for event management is a collection providing an overview of the most important key performance indicators for a transportation manager. It allows the transportation manager to monitor the operational transportation business based on the latest reported events.

Capabilities
• Delays of deliveries or freight orders in transit or those that arrived at customer sites with an overdue proof of delivery (POD)
• Different On-Time Performance measures, reflecting sensitive spots in your supply chain
• Average cycle times (time between the actual event dates and times of: when picking begins and the last event POD)
• Reporting completeness and compliance – what percentage of transports were reported and how accurate were those reports?

Key performance indicators
• Avg. Cycle Time Delayed Deliveries POD
• Avg. Cycle Time of Deliveries
• Average Delay Time (POD)
• Delayed Deliveries (in Transit)
• Delayed Deliveries (POD)
• Delayed Deliveries (Total)
• ReportingCompleteness
• Reporting Compliance

On-Time Performance
• On-Time Performance Departure
• On-Time Performance Arrival
• On-Time Performance POD
• Delayed Freight Orders In Transit
• Average Delay Time
SAP TM: Analytics mit HANA
SAP TM: Analytics mit HANA
World-Class & Real-time

SAP Yard Logistics (FBS Solution)

- In Cooperation with TM Custom Development
- Yard Logistics is integrated with SAP TM
SCE – Platform with SAP Yard Logistics

SAP Enterprise Resource Planning
- Customer Orders
- Outbound Deliveries

SAP Transportation Management
SAP Extended Warehouse Management

SAP Yard Logistics

Supply Chain Execution Platform

End-to-end, integrated logistics fulfilment platform with transportation planning, yard management and warehouse execution via interfaces between SAP TM, SAP YL and SAP EWM
Requirements of our customers for a Yard Management system are

- Visibility
- Planning, execution and settlement in one central system
- Flexibility and standalone capabilities
- Integration in existing business processes
- Technical integration capabilities (mobile device, RFID, scales, barriers, other systems, etc.)
- Easy and intuitive User Interfaces

SAP’s answer:

SAP Yard Logistics
SAP Yard Logistics

Main Capabilities

- In the first release the solution will focus on truck and rail yard processes.
- Due to the flexible SAP Yard Logistics architecture it can be adopted to fit to further yard types (e.g. container yards) within implementation projects.
SAP Yard Logistics
Mobile Transaction for Task Execution

Yard Task 94 (Active)
10:23 AM Start Time

Movement

Source Location: DEPOT-0002
Destination Location: DEPOT-0002

Move the Truck
Be careful, contains Hydrochloric acid (HCL)

TRANSPORTATION UNITS

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRUCK_3006_99</td>
<td>Truck for special DG movements</td>
</tr>
</tbody>
</table>
SAP Yard Logistics Demo

Yard RAIL, Yard Cockpit, GeoMap View

Yard Overview

[Map Image with various streets and locations]
Transportation Management 9.4 (10/10)

World-Class & Real-time

SAP Transportation Resource Planning (FBS Solution)

- In Cooperation with TM Custom Development
- Transportation Resource Planning is integrated with SAP TM
- Delivers support to provide the right resource at the right time and right location to fulfill the customer demand at a minimal cost
SAP Transportation Resource Planning

Delivers support to provide the right resource at the right time and right location to fulfill the customer demand at a minimal cost.

– Increase the visibility of transportation resources
– Determine supply and demand of empty transportation resources incl. forecasts
– Take decisions to avoid or optimize repositionings based on calculated provisioning and return locations
– Balance the stock of empty resources
– Trigger plan execution in the transportation management system
– Monitor resource related KPIs
Relevant business processes
Transportation Resource Lifecycle

- Railcar Availability Check
- Move Empty Railcar to Demand
- Move Full Railcar to Yard
- Move Full Railcar From Yard to Train Service
- Move Full Railcar on Rail track
- Move Full Railcar to Shuttle Train Service

Empty Flow
- Procure/Lease & On-hire Railcar
- Off Hire Railcar
- Balance (Reposition) Railcar
- Maintain and Repair Railcar

Loaded Railcar Flow
- Move Empty Railcar to Yard Depot/Demand
- Move Full Railcar to Yard
- Move Full Railcar to Customer Yard
- Move Full Railcar from Yard to Train Service
- Move Full Railcar on Rail track
- Move Full Railcar to Shuttle Train Service

Relevant business processes
Transportation Resource Lifecycle

- Loaded Railcar Flow
- Empty Flow
- Procure/Lease & On-hire Railcar
- Off Hire Railcar
- Balance (Reposition) Railcar
- Maintain and Repair Railcar
- Move Empty Railcar to Demand
- Move Full Railcar to Yard
- Move Full Railcar From Yard to Train Service
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- Move Full Railcar on Rail track
- Move Full Railcar to Shuttle Train Service
Process flows and screen views
Landing Page SAP Transport Resscorce Planning

SAP Transportation Resource Planning

Tile 1: Stock
Location: SGSNDPST
Legend: Stock Data
- Available
- Min. Safety Stock
- Max. Safety Stock

Tile 2: Supply and Demand
Location: SGSNDPST
Legend: Supply and Demand
- Supply
- Demand
- Confidence Range

Tile 3: Alerts
- 2 alerts
- ADM_RH_PLAN_SG_01 (RULE_GROUP_YN)
- SGSNDPST
- 27.03.2015 17:00:20
- IDRATE_REC_ON_IDLE_RATE
- 31.71% to 42.32%

Tile 4: KPIS
- 28.03.2015 22:00:00 to 14.04.2015 10:58:01
- Location: 50
- Resource: 2087 (General Purp)
- IDRATE_REC_ON_IDLE_RATE
- 31.71% to 42.32%
Process flows and screen views
Supply and Demand
Resource Balancing & Simulation
Plan Execution and get updates

Process flows and screen views
Supplementary Services for Railways (SSR)

- In Cooperation with TM Custom Development
- Transportation Resource Planning is integrated with SAP TM
- Many services related to railcar movements, storage, documentation, and safety may result in the assessment of charges
- Determined based on the rules defined in tariffs within a product catalog as general terms
- Exceptions can be defined in customer specific contracts
- Along with events reported by various applications or business processes
- **Simple** SSR Type which results in a flat charge for a specific activity such as cleaning or inspection of a car with an invoice issued for each service typically manually reported
- **Complex** which involves a sequence of activities that take place over a period of time with billing for multiple services on a periodic basis including charges that may be offset by credits. The activities can be reported manually and for mass processing automated from external sources.
The solution with SAP
Event capturing

1. Event

Introduction
SAP Yard Logistics
SAP Transport Resource Planning
Summary
Join Us

Supplementary Services
The solution with SAP
Event capturing & automated processing

1. Event

2. SAP EM
   Event Management
   - Single/Multi Event
   - Process Event
   - Create TM Order

3. SAP TM
   Transportation Management
   - Simple Rating of Revenue Order
   - Grouping
   - Invoice Request

4. SAP ERP
   - Hybris Billing incl VAT
   - Financial Posting
   - Invoice Creation
   - Disputes (in CRM)

5. Join Us
The solution with SAP Correction Screen automated generated for CRM triggered disputes

1. Event

**SAP EM**
- Event Management
- Single/Multi Event
- Process Event
- Create TM Order

**SAP TM**
- Transportation Management
- Simple Rating of Revenue Order
- Grouping
- Invoice Request

**SAP ERP**
- Hybris Billing incl VAT
- Financial Posting
- Invoice Creation
- Disputes (in CRM)

5. Event Entry

6. Supplementary Services
You´re welcome

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