

KDD030 - SAP Transportation Management version

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Issue

Syensqo is transitioning to SAP S/4 HANA system. In S/4 HANA there the Shipment document is no longer available. This functionality is replaced by SAP Transportation Management (TM). With this new module the concept of managing transportation needs to be redesigned.

SAP TM comes in two variants: Basic Shipping and Advanced TM. Here Basic Shipping is a reduced scope version of Advanced TM. A decision needs to be made which version is most suitable for Syensqo.

Recommendation

Advanced TM has the best fitting capabilities to support Syensqo processes. Especially with the additional compliance checks that are available it is advised to implement Advanced TM.

In the document below there is an extract of all functions that are available in Advanced TM that are not available in Basic Shipping. The key features that are most beneficial for Syensqo are:

- Sales Order based integration - Option to start transportation planning once the Sales Order is created (instead only once the delivery has been created);
- Dangerous Goods integration - Usage of DG Data, compliance check, blocking of transportation orders and for example 1000 Points Rule;
- Incompatibilities in planning - This is required to build in compliance rules. For example, two types of material are not allowed to be shipped together;
- Transportation Units - This are used for Container Units. Special fields for container units will be available. Also, charge calculation based on Container Units is often required;
- Automatic Carrier Selection - allows the system to rank available carriers and can also automatically select the most preferred carrier;
- Integration with GTS - Updates from GTS for sanctioned party lists during the transportation process.

Background & Context

Overview and Background

To phase out LE-TRA, SAP S/4HANA introduced since its 1709 release what was known before as "Basic Shipping", now simply Transportation Management.

Basic Shipping/Transportation Management is a reduced scope version of Advanced Transportation Management and does not require an additional license. It is worth to mention that Basic Shipping/Transportation Management is a subset of functionality of the full scope version Advanced Transportation Management and share the same configuration nodes and master data objects.

Differences between Basic Shipping and Advanced TM

SAP has provided a comprehensive overview of functions that are available in Advanced TM that are not available in Basic Shipping. Below overview of most important differences for Syensqo with consultancy notes.

Full list:

[basic TM vs. Advanced TM_consultancy notes.xlsx](#)

Color coding in Excel: Red = most important | Green = important | Yellow = not as important

Area	Feature in S/4 TM (full)	Definition	Consultancy Notes
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1 Basic Functions	Sustainability	This function can be used to calculate the emissions quantity and fuel consumption for a freight order. You can also define other sustainability factors for a transportation mode or means of transportation.	Useful for Syensqo as it supports reports on CO2 emissions.
3 Order Management	Order based Freight Units	Sales order Purchase Order Stock Transfer order Returns based Freight Units As well as MM or SD Scheduling Agreements based Freight Units	This is for early planning of transportation, which is an opportunity for Syensqo. This function was requested during workshops.
4 Planning	Incompatibilities	Incompatibilities in Planning	This function is useful for preventing certain combinations of Dangerous Goods. It can also be used to apply other business rules during Transportation Planning, e.g. reefer containers for certain materials.
	Transportation Units	Transportation Units Rail-, Trailer-, Container-, Package Unit etc. where a separate capacity document can be created	Very useful. Especially in container consolidation and charge calculation for Ocean Freight. For charge calculation the calculation base will be the container.
	Automatic Carrier Selection	Automatic Carrier Selection Carrier Ranking Lists (with more than one carrier)	Carrier selection is very useful and often used. Especially carrier ranking based on actual costs is popular.
5 Freight Execution and Monitoring	Dangerous Goods Integration into Product Compliance classic TM specific example methods	TM specific Check methods (examples) for Dangerous Goods such as: 1000 Points Rule Shipper's Declaration Especially the usage of DG_ADR Data in the Freight Objects	Dangerous Goods integration is essential for Syensqo to make sure transportation is compliant with local regulations.
	Dangerous Goods Integration into Product Compliance - NEW functionality	The new product compliance integration into Transportation Management, e.g. functions like: <ul style="list-style-type: none"> • Checking of all compliance-relevant products to determine whether road, rail, sea and air cargo transport processing is allowed as it pertains to dangerous goods regulations • Blocking of transportation demands and freight orders /freight bookings if no compliant transport is possible • Process support, if dangerous goods assessments are missing, the dangerous goods expert is automatically informed • Dangerous goods status field on item and header level for identifying items with dangerous goods issues • Dangerous goods information in electronic messages of transportation management 	Dangerous Goods integration is essential for Syensqo to make sure transportation is compliant with local regulations.
9 Integration	Integration with GTS	The global trade functions in Transportation Management (TM) help you to meet the requirements for transporting customs-relevant goods.	Can be important for Syensqo. When an embargo is placed or customer is blacklisted, then Freight Orders can be blocked for execution. Without direct integration with GTS, then all integration is through the delivery.

Assumptions

- ERP Shipments are no longer available in S/4 HANA and the shipment object will be replaced by SAP TM objects; Freight Order and Freight Booking.
- In regions where there is currently no TMS system (Asia, LATAM), users will start using SAP TM as a TMS solution.
- When possible the system should help check the transportation planning results based on certain business rules. E.g. certain products are to be loaded in reefer containers.
- For transportation of containers over road or sea, charges are calculated per container.
- There will be direct integration between SAP TM and GTS for embargo checks.
- Early transportation planning (planning after Sales Order creation) will be part of project scope.
- CO2 reporting will be scoped as part of the S/4 HANA solution.

Impacts

Infrastructure

Advanced TM will need an optimiser server.

Licensing

While the "Basic Shipping" functionality is included in the license for S/4HANA, the use of Advanced TM attract an additional license.

Warehouse Management

The TM version chosen will affect the integration options with Warehouse Management. With the use of Basic EWM with Advanced TM there is no direct integration.

To be able to support tracking of deliveries that need to be loaded in one Freight Order, it is likely necessary that the system will need an enhanced reference field to be built, so that users in EWM can monitor which Deliveries belong to which Freight Order. All other updates are expected to flow through the LE Delivery. At the time of writing, it is understood that this enhancement can be implemented using custom development without the need to modify SAP-delivered code.

For more information on this topic, please see [KDD014 - Future-proof Warehouse Operations](#).

Business Rules

Integration profile between Sales Order / Purchase Order / Delivery / Transportation Management with the use of Shipping Condition and Route to be determined during detailed design. That will determine when transportation planning can start from the Sales Order.

Transportation Charges: If there are external TMS systems that are in the process, then transportation charges have to be updated to the TM Freight Order / Freight Booking. When there is no TMS system in use, then transportation charges have to be maintained on the Freight Order / Freight Booking. Please also refer to [KDD048 - Way Forward with BluJay](#) and [KDD062 - Integration with Transportation Providers](#).

Dangerous Goods master data has to be complete. If DG master data is incomplete then transportation planning and execution will be blocked.

Incompatibilities: Constraints for transportation planning that can be covered with incompatibilities will be collected during detail design.

Sanctioned Party: When a sold-to party or ship-to party becomes part of the sanctioned party list then goods in transit (have left the warehouse, but is not delivered yet at incoterm location) need to be blocked from further processing. This would be for subsequent documents that have not been executed yet. It then needs to be decided where goods need to be shipped to. Further details on the design of the process to be decided during detail design.

Evaluation

The decision on the TM Licence has considerable impact on the approach of the module.

With Basic TM the focus will be on replacing the Shipment functions and integrating the new system into the existing landscape. Existing TMS and other systems cannot be considered for replacement.









For functions like container planning, container based charge calculation, optimizer planning, certain Dangerous Goods integration, and other missing features, manual work-arounds need to be designed, or custom enhancements probably need to be built.










With Advanced TM there are more options to have a solution that will fit the business needs. After building the backbone of the TM solution (replacing existing functionality + implementing essential features) there is the opportunity to explore more Advanced functions. That can be within this project, or after the initial implementation.

With Advanced TM there will be more room for considering the replacement of existing TMS solutions, or to make TMS functions available for regions that currently don't have a TMS solution.

First implementing Basic TM and later transitioning to Advanced TM is not a great idea, because that would result in a redesign, or development on top of a solution that was based on Basic TM.

Due to big differences between Basic TM and Advanced TM, most clients opt to implement Advanced TM. There are strong arguments that this will also be the case for Syensqo. For a future-proof solution Advanced TM has clear benefits.

	Option A: Basic Shipping	Option B: Advanced TM
Costs	 No additional license costs	 License Costs  Optimiser server required
Integration	 Integration only from Delivery	 Integration with Sales Order is possible
Optimisation	 No option for automated planning	 Automated planning is possible  Consolidation of deliveries into a Container Unit

Compliance	<ul style="list-style-type: none">  No Dangerous Goods compliance checks  No direct integration with GTS for Freight Order (GTS integration through delivery only) 	<ul style="list-style-type: none">  Integration with Dangerous Goods with automated blocks  Integration with GTS  Incompatibilities in planning for validation checks of planning result (additional business rules can be applied)
Subcontracting	<ul style="list-style-type: none">  Manual carrier selection only 	<ul style="list-style-type: none">  Automated subcontracting is possible
Charge Calculation	<ul style="list-style-type: none">  Limited options for charge calculation 	<ul style="list-style-type: none">  Charge calculation with calculation base container is available

See also

[SAP Note 3065464](#) - Definition: Basic Shipping vs basic Transportation Management vs advanced Transportation Management

Information provided by SAP is also attached to this document.

File	Modified
File FOR APPROVAL - KDD 030 Transportation Management System.eml	Sept 11, 2024 by FALL-ext, Cheikh
Microsoft Excel Spreadsheet basic TM vs. Advanced TM_consultancy notes.xlsx	Aug 21, 2024 by VAN OS-ext, Nico
PDF File Transportation Management vs. Advanced TM - 2021.pdf	Aug 13, 2024 by WENNINGER-ext, Sascha
PDF File basic TM vs. Advanced TM 28.02.2024.pdf	Aug 13, 2024 by WENNINGER-ext, Sascha

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Change log

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[Go to Page History](#)

Workflow history

Title	Last Updated By	Updated	Status
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Workflow history

This view shows the 5 most recent entries. The complete workflow log is available from the 'Document Activity' menu item.

Sept 11, 2024	Actor	Type	Activity	Version
Approved	 FALL-ext, Cheikh	State	changed state to Approved at 8:37 am	v35
Pending SteerCo Review	 FALL-ext, Cheikh	State	gave <i>Final Approval</i> approval at 8:37 am	
		State	changed expiry date to '25 Sept, 2024 08:37 am' at 8:37 am	
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Pending Stakeholder Review	 FALL-ext, Cheikh	State	gave <i>Stakeholder Review</i> approval at 8:37 am	
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