Transportation Management in SAP S/4HANA vs. LE-TRA





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Comparing processes of LE-TRA and basic Transportation Management

How do LE-TRA processes work in basic Transportation Management?

Legend

- **LE-TRA** stands for the transportation component in Logistic Execution module
- basic Transportation Management stands for the basic functionalities within SAP S/4HANA Transportation Management module
- **The words in yellow** means planning only subject to change.
- The words in blue means that basic Transportation Management has the advantages over LE-TRA.

Overview of the processes



- Basic Settings
- Transportation Planning
- Shipment Execution
- Monitoring Shipments
- Shipment Cost Processing
- Interfaces
- Miscellaneous



Basic Settings



Enterprise Structure



- A Company Code is a legal entity & independent accounting unit.
- Sales Organization distributes goods & services.
- Purchase Organization is responsible for external procurement.
- Warehouse Number, Shipping Point and Transportation Planning Point are organizational units in Logistics Execution.

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- In S/4 TM, the organizational structure can be based on the structure of a connected S/4 ERP system:
 - Corporate Organization
 - Company Organization
 - Sales Organization, Office and Group
 - Purchase Organization and Group
 - Planning and Execution Organization and Group
- S/4 TM maps its own Org. Units with S/4 ERP Org. Units through the field "BSG Org. Unit."
- Plant and Shipping Point are created as Locations in S/4 TM

Transportation Planning Point

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Loading Start:	03. 08. 2015	14:30	28. 07. 2015	15:32	~	Loading Start			
Loading End:	03. 08. 2015	15:00	28. 07. 2015	15:32	~	Loading End			
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Shipment End:		00:00	28.07.2015	15:35	~	Shipment End			

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• The transportation planning point is an organizational unit, which consists of a group of employees responsible for organizing transportation activities.

Edit Refresh Copy Mult	iple Copies Check	\sim Follow Up \sim Scheduling	Subcontracting Create	Service Order •••	Display Settings 🔞 🗸 💿
General Information			Carrier:	2713	LO_CA SCAC:
Document Type:	ZRFO Road Frei	ght Order	Executing Carrier:	්	SCAC:
Description:	Road Freight Order		Communication Party:	්	
Transportation Mode:	01	Road	Service Level – Carrier:	්	
Schedule:			Total Distance:		KM
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Account Number with Carrier:					
Source			Destination		
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- Planning and Execution Organization is responsible for transportation planning.
- Purchasing Organization is responsible for procuring the necessary services from the carriers.
- Derived from Purchasing Organization, Company Code is enabled on Freight Documents relevant for subcontracting (in release 2020).

Transportation Relevance

LE-TRA

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- Shipments do not need to be planned for all deliveries.
- The delivery type, the delivery item category, and the route in the delivery uses transportation relevance to control whether a shipment can be created or not.

basic Transportation Management

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Ship Point	Del. type	Shp. Cond.	Control Key	TM No.	Log. Int. Profile	Control Key Description								
0001	LF		9222		DHP2									
0001	LF02	01	0053		Q001	Integrate Outbound Delivery								
0001	MTLF		0053		DHPO	Integrate Outbound Delivery								
0001	NL		FL_0			Outbound Delivery to TM								
0001	OMD1		0053		OMS1	Integrate Outbound Delivery								
0001	OMD3		0053		OMS3	Integrate Outbound Delivery								
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 Activation of S/4 TM integration for deliveries is controlled by the combination of Shipping Point, Delivery type and Shipping Condition.

Non-stock Material

LE-TRA

 Delivery with non-stock material can be planned in the LE-TRA Shipment.

- Freight Unit will not be created for the non-stock material in the standard system.
- Use BAdI /SCMTMS/BADI_LOGINT_CHG_TTRQ to change the standard logic and set transportation relevance for non-stock items.

Information Relevant for Transportation

LE-TRA

- Mode of Transport
- Shipping Type
- Transportation Connection Point
- Shipping Conditions
- Transportation Groups
- Route and Route Determination by Transportation Zone / Shipping Condition / Transportation Group / Weight Group
- Route Schedule
- Material Freight Groups
- Freight Code Sets and Freight Codes

- Transportation Mode (TM specific)
- Transportation Mode Category
- Location
- Shipping Conditions
- Transportation Groups
- No specific Route object, route definition via Transportation Lane, Default Route
- Road Carrier Schedule
- Material freight groups / Product Freight Groups(SCM Basis)
- Freight Code Sets and Freight Codes (SCM Basis)

LE-TRA: Route

- A route is the journey to be covered between a departure point and a destination point. A route can be defined in great detail and consists of individual stages, but it can also be a quite general description or even simple a destination area.
- A route can contain many pieces of information that are important for the shipment, such as distance, transportation lead time, travel duration, shipping type, service agent, and so on.
- Route determination:
- The system determines the route for each order item.
- The route can be adopted from the order item or redetermined in the outbound delivery.
- In the shipment, a different route can be entered. This route does not have to be identical to one of the routes in the deliveries. It is also possible to transfer the route from the deliveries to the shipment (if it is the same for all deliveries).







Route Determination

basic Transportation Management: Default Route

- A default route defines a location sequence for a given source and destination, which can be locations or zones.
- For a transport from a source to a destination, the default route serves as a template guiding the transportation through the network. For example, for the intermodal transports, default routes can predefine the sequence of transhipment locations.
- In the default route, you can specify the transportation mode, carrier, and so on, for each transportation stage.
- During freight unit building, freight unit stages can be automatically generated based on a default route. Then the freight unit stages are created according to the default route's location sequence.

Default Route Data						Administrative Data							
Default Route:	ST-DR001						Chan	ged By: LIC	210				
Description:							Chan	ged On: 08	.05.2020 13:1	13:04			
Valid From:	01.05.2020		00:00:00	UTC+8			Crea	ated By: LIC	210				
Valid To:	31.12.2020		00:00:00	UTC+8			Crea	ted On: 08	.05.2020 13:1	12:33			
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02 (Pre-Carriage)

04 (On-Carriage)

03 (Main Carriage) Q-OCEANCARRIE Q-CAR01

Shipping Point ST1 / Haupst... 01

Customer 002 / 366 East Na

22112 Hamburg

201023 Shanghai

10 SP STR1

20 OPORTHAM

40 ST-CUST002

30 QPORTSH

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Default Route defined in S/4 TM

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	Stage 2	03 (Main Carriage)	03	QPORTHAM			Hamburg		00:00:00	CET		00:00:00	CET	QPORTSH	ł
	Stage 3	04 (On-Carriage)	01	QPORTSH			Shanghai		00:00:00	UTC+8		00:00:00	UTC+8	ST-CUST	02
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Default Route applied in the Freight Unit

basic Transportation Management: Transportation Lanes

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- Transportation lanes describe the reachability of locations within the transportation network. A valid transportation lane indicates that the destination can be directly reached from the source with certain means of transport and certain carriers.
- A transportation lane can be maintained between:
- Two locations
- A location and a transportation zone
- Two transportation zones
- A transportation zone itself
- Information assigned to a transportation Lane:
- Start location and destination location
- Means of transport
- Carrier per means of transport



Partner Determination

LE-TRA

Pa	artner Func	tio	ns in Proc	edure				
	Part.Det.Pro	oc P	artn. Funct.	Name	Not Modifia	uble Man	dat. Funct	
	TR	C	CR	Forwarding Agent	\checkmark		\checkmark	
	TR	1	ΓF	Freight service agt				
	TR	1	Ľ	Loading supervisor				
	TR	I	`R	Cleaning firm (T.)				
	TR	Pa	artner Det	ermination Procedure Assi	gnment			
			ShipmentTyp	e Name	Part	Name		
			0001	Indiv.Shipmt - Road	TR	Shipmer	nt header	gen.
			0002	Collct.Shipmt - Road	TR	Shipmer	nt header	gen.
			0003	Collective Shipment	TR	Shipmer	nt header	gen.
			0004	Prelim. leg by road	TR	Shipmer	nt header	gen.
			0005	Main leg by sea	TR	Shipmer	nt header	gen.
			0006	Subseq. leg by road	TR	Shipmer	nt header	gen.

• To define the rules that should be used to perform automatic partner determination.

basic Transportation Management

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	DR	Driver			Choose from List	\sim	Partner Fu	nction 🗸			
	PE	Payee			Choose from List	\sim	Partner Fu	nction 🗸			
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	РҮ	Payer			Choose from List	\sim	Partner Fu	nction 🗸			
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• To enable the system to automatically determine the business partners in different business document types.



Transportation Planning



LE-TRA: Creating Shipments

- Shipments are collections of inbound or outbound deliveries that are shipped together, according to different grouping criteria.
- Transportation-relevant information is stored for each order item, as agreements made with the customer regarding the shipment. The same data can be defined in the header of the delivery document.
- The transportation-relevant information is copied from the order to the outbound delivery header, and thus provides the split criteria for outbound deliveries.
- The transportation-relevant information can be used as selection criteria when creating shipments. The information can also be copied from the outbound deliveries to the shipment, if it is unique.
- System contains different options for creating shipments:
- Manual creation using the "create shipment" function (TA: VT01N)
- Use a collective processing run to create shipments automatically
- If the shipments are created and optimized by an external transportation planning system, you can link this to the ERP system with an interface.



Copying Transportation-Relevant Information



Options for Creating Shipments

LE-TRA: Manual Planning

- Create shipments by combining outbound <u>or</u> inbound deliveries
- Manually plan deliveries that are chosen using different selection criteria. Define selection variants to simplify the selection procedure
- Selected delivery documents are listed in the shipment screen. Manually assign shipments.
- Manual shipment creation with planning proposal:
 - Select deliveries due for transportation manually
 - Combine selected deliveries in shipments
 - Change or edit the created shipments manually before saving

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basic Transportation Management: Freight Order Creation

- Plan a Freight Order by assigning Freight Units.
 Freight Unit can either be derived from outbound <u>or</u> inbound deliveries. (No combined inbound and outbound delivery.)
- Manually plan via personal worklists (POWL).
- System default Freight Order type will be applied.
- Choose selection criteria
 via query

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16.05.2018

basic Transportation Management: Planning



Pre-defined Layout (Minimized Working Interface) of Freight Unit and Freight Order view only

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Insert additional Capacity Document into Planning Screen



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- Insert additional shipment into shipment delivery planning screen
 - Button 'Shipments' (Ctrl+F7) can select and add further shipments into the screen
 - Button 'New Shipment' can create a new shipment document

- In a Minimized Working Interface
 - 'Insert' button can add additional Freight Orders / Freight Bookings
 - 'New' button can create new Freight Orders / Freight Bookings. Freight Order type is defaulted as the definition in the Planning Profile and can be manually overwritten.

Move Deliveries

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- Move deliveries from one shipment to another via:
- Drag and drop
- Using functions in TA VT01 / VT02
- Re-sort functionality

Subject to change basic Transportation Management

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- Freight units can be moved from one freight order to another in a Minimized Working Interface via:
 - Drag Freight Units to another Freight Order
- Drag Freight Order to another Freight Order
- Select Freight Units and Freight Order, then choose 'Reassign' button

Remove Deliveries from a Shipment

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- To remove a delivery from a shipment:
- Drag and drop
- Use button 'Remove delivery from shipment'

basic Transportation Management

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• Delete the Freight Units from the Freight Order

Subsequent Delivery Split in Shipments

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- The split can be carried out in outbound deliveries
- The delivery split could also take place during loading or transportation planning. The system automatically generates further outbound deliveries for the split quantities when saving the shipment
- The delivery split can be done in S/4 ERP and trigger the required changes in S/4 TM
- The delivery split and update can also be triggered by S/4 TM based on planning changes. Partial quantities of the Freight Unit items can be manually split to create new Freight Unit. If Freight Units of a delivery are planned on different Freight Orders with respect to their first or last stage, an automatic delivery split will be triggered in S/4 ERP after relevance check.

Creating Shipment Documents for Individual Deliveries

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• To create one shipment document for each delivery

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- Set up the freight building rule to ensure 1 v.s. 1 relationship between delivery and Freight Unit
- Create multiple Freight Orders for the selected Freight Units

LE-TRA: Planning with collective processing

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Group Data

- From shipment screen select deliveries and create desired shipments based on specific rules
- Specify rules determine:
- type of shipments
- selection of deliveries
- creation of the shipments: grouping deliveries, data and options etc.
- Determine sort order of the deliveries within the shipments and consequently the itinerary (sort order through leg determination)
- Within collective processing, you can also define a transportation chain consisting of multiple shipments to be created. For example, all selected deliveries are grouped together into main leg, preliminary and subsequent leg shipments.

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	3rd run (e.g.,	create subsequent l	eg shipments)			
		Grouping criteria:	TCUST300-GRP	T customer CN Grp.	D Maintn	
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	4th run					

LE-TRA: Manual Shipment Creation with Planning Proposal

- The process is that first select the deliveries manually, then choose the planning proposal, which engages the system to automatically combine the selected deliveries in the shipment and complete them with data.
- Unlike Collective Processing, you can change or edit the created shipments manually before saving.
- The planning proposal arises from a planning profile saved in Customizing.
- The profile variants is shared for planning profile and collective processing, as the planning profile is regarded in technical terms as a variant of Collective Processing for creating shipments.



basic Transportation Management: Automatic Planning



 To create the report to adopt standard methods for the creation of Freight Orders/Freight Bookings after defining the rules how deliveries (Freight Units) are to be grouped together (either in the foreground or background). Need two options: save directly after the report run, and have an intermediate result display so that user can edit and save manually.

Automatic Leg Determination according to the Itinerary

Leg Determination Category 1

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	. Departure Walldorf/6 Wiesloch/6 Aachen/520	point 9190/DE/Sh 9168/DE/Sh 74/DE/Cust	nipping nipping	g Point B g Point A 206	Dest Viesl Aacher Koeln	Texts Du ination pch/69168/DE/ n/52074/DE/Cu /50679/DE/Cus	ration and Distance Shipping Point A Istomer 206 Stomer 205	e Status FwdAgent	Tender Forw.agent	Addit. I S Shippi 01 Truck 01 Truck 01 Truck	Data Di	ng. Goo D	ds L 1 2 3	Continuous Leg indicat Preliminary 1. Main leg Subsequent leg	Move
	. Departure Walldorf/6 Wiesloch/6 Aachen/520 Koeln/5067	point 9190/DE/Sh 9168/DE/Sh 74/DE/Cust 9/DE/Cust	nipping nipping comer 2	g Point B g Point A 206	Dest Viesl- Aacher Koeln Duess	Texts Du ination pch/69168/DE/ n/52074/DE/Cu /50679/DE/Cus eldorf/40191/	ration and Distance (Shipping Point A istomer 206 itomer 205 DB/T Customer 201	e Status FwdAgent	Tender Forw.agent	Addit. I S Shippi 01 Truck 01 Truck 01 Truck 01 Truck	Data Dr	D	ds L 1 2 3 3	Continuous Leg indicat Preliminary 1. Main leg Subsequent leg Subsequent leg	Move I I
	. Departure Walldorf/6 Wiesloch/6 Aachen/520 Koeln/5067	point 9190/DE/SH 9168/DE/SH 74/DE/Cust 9/DE/Cust	stage nipping nipping comer 2 omer 20	g Point B g Point A g Point A 206 95	Dest Viesl Aache Koeln Duess	Texts Du ination pch/69168/DE/ n/52074/DE/Cu /50679/DE/Cus eldorf/40191/	ration and Distance /Shipping Point A istomer 206 stomer 205 /DE/T Customer 201	e Status FwdAgent	Tender Forw. agent	Addit. I S Shippi 01 Truck 01 Truck 01 Truck 01 Truck	Data Dr	ng. Goo	ds L 1 2 3 3	Continuous Leg indicat Preliminary 1. Main leg Subsequent leg Subsequent leg	Move
	. Departure Walldorf/6 Wiesloch/6 Aachen/520 Koeln/5067	point 9190/DE/SH 9168/DE/SH 74/DE/Cust 9/DE/Cust	nipping nipping comer 20	s Point B Point A Point A 5	Dest Wiesl Aache Koeln Duess	Texts Du ination pch/69168/DE/ n/52074/DE/Cu 50679/DE/Cus eldorf/40191/	ration and Distance (Shipping Point A ustomer 206 tomer 205 (DE/T Customer 201	e Status FwdAgent	Tender Forw.agent	Addit. I S. Shippi 01 Truck 01 Truck 01 Truck 01 Truck	Data Dr	ng. Goo	ds L 1 2 3 3	Continuous Leg indicat Preliminary 1. Main leg Subsequent leg Subsequent leg	Move

- The goods are sequentially picked up at the shipping points and sequentially delivered to the ship-to parties.
 - The itinerary is derived from the sort sequence of the deliveries in the shipment document
 - The sequence can be changed in a dialog box
 - No intelligent route determination with geographic optimization

01 Truck 1 Preliminary 1. V Overview Ol Truck 2 Main leg Standard © IE Insert Insert

2

General Data

Create Q Freight Order 6100034872

Source Location Source Location

SP TSPA

SP TSPB

TCUST205

TCUST206

Address

Standard 😔 Insert 🗸 Merge 🗸 👼 Set to Departed 🗸 Determine Distance and Duration

Waldstraße 55 / 69168 Wiesloch

Customer 205 / Muelheim 111 / 50679 Koeln

Customer 206 / Kullenhofstrasse 66 / 52074 Aachen TCUST201

Kantstraße 31 / 69190 Walldorf

Details	Activity	Activity (Descr	Maxim Utiliza	Document	Load Plan Status	Load Status (Descr	Unload Plan Status	Unloa Status (Descr	Handli Execut Status	Handli Execut Status	Start of Activity	End of Activity
✓ ⊕ Active Vehicle 1000000			0%	6100034872							27.01.2020 00:00:00	27.01.2020 23:59:59
鼬 SP_TSPA (Waldstraße 55 / 69168 Wiesloc			0%	SP_TSPA	•	Not Pl			٠	Not Lo	27.01.2020 00:00:00	27.01.2020 00:00:00

basic Transportation Management

Destination Destination Location

Address

Kantstraße 31 / 69190 Walldorf

Customer 205 / Muelheim 111 / 5067...

Customer 206 / Kullenhofstrasse 66 /...

T Customer 201 / Henkelstrasse 66 / ...

Document Flow Charges Execution Notes

Handli., Distance Distance Net

50 KM

350 KM

50 KM

50 KM

Unit of Duration

Measure

Execut...

•

Status

Copy Multiple Copies Check V Follow Up V Scheduling V Subcontracting V Create Service Order Schedule V

Location

SP TSPB

TCUST205

TCUST206

Utilization Subcontracting

- Sequence of Freight order stages is "Defined and Linear"
 - By default, stop sequence are automatically determined according to the shortest route (via heuristic ABAP program).

Q (C) (L)

Display Settings 🔞 🗸

Depart Planned

4:00 Not Fi > 27.01.2020 18:29

00.00

00:00

1:30 Not Fi V

1:30 Not Fi V

Automatic Leg Determination for preliminary and subsequent leg



Leg Determination Category 2 & 3

LE-TRA

D	eadl.	Further Dates	Stages	Partner	Texts	Duration	and Di	istance	Status		Tender	> .	00
	S	Departure point		Destina	tion			FwdA	Forw.agent	S	Shippin	Distar	0
	₿	Wiesloch/69168/DE/Shipp	oing Point A	A Duesseld	lorf/40191/I	DE/T Customer	r 201			01	Truck		Ĵ
	₽	Wiesloch/69168/DE/Shipp	oing Point A	A Aachen/5	52074/DE/Cus	stomer 206				01	Truck		
	₽	Walldorf/69190/DE/Shipp	oing Point H	B Koeln/50	0679/DE/Cust	tomer 205				01	Truck		
													^
												<>	~
୍	2	Deliveries 🗧 🖁	E 💀 🗛	$\Theta \ominus$	Le	g Determinat	ion						

- Leg determination 2 & 3: Preliminary leg per loading point, subsequent leg per ship-to party.
- When there are several points of departure, a preliminary leg is created for each point of departure, which links the point of departure to the beginning of the main leg.
- Similarly when there are several destination points

basic Transportation Management

 Non-linear stage FO cannot be created via planning (manual and automatic)

Transportation Chain in a single shipment

Leg Determination Category 2, 3, 4



LE-TRA

	1	Shipment Route:	TR300 TR300 f	from DE to	CN							
		Shipping Type:	04 🚈 Sea					R	lout	e Schedule:		
		Service Level:	3 Groupage	~						Shp. Cond. :		
		Container ID:						S	pec	. Process.:		
		AlwdTotWgt	KG		_				Ext	ernal ID 1.		
D	ead1.	Further Da	ates Stages	Partner	Texts	Duration a	nd Distan	ce Statu	S	Tender	Addi	>
	S	Departure poin	ıt	Destinat	tion		FwdAgent	Forw.ag	s	Shippin	Distance	
	₽	Wiesloch/69168/	/DE/Shipping Point A	Hamburg/3	33221/DE/Har	nburg Port			01	Truck		
	₽	Walldorf/69190/	/DE/Shipping Point B	Hamburg/3	33221/DE/Har	nburg Port			01	Truck		
	<u>199</u>	Hamburg/33221/D	DE/Hamburg Port	Shanghai	/202001/CN/S	Shanghai Port	Q-CAR06	Q Carrier 0	04	Sea	1.600,000	
	₽	Shanghai/202001	/CN/Shanghai Port	Shanghai	/201203/CN/0	Customer 301			01	Truck		
	₽	Shanghai/202001	/CN/Shanghai Port	Beijing/	100081/CN/Cu	ustomer 302			01	Truck		

- Leg determination categories 2,3,4 can form a transportation chain to be illustrated in a single shipment.
- Limitation that the outputs (also the shipping units, texts, dates, etc.) must be defined for the whole shipment.
- Recommend to use several shipments of the separate legs to form a transportation chain.

basic Transportation Management

	< sap	Edit Q Freight	t Unit 4100	062612									Q	©	? _	8
Edi	Refresh	Follow Up \checkmark	Check [Direct Shipment \checkmark	Split/Merge	Unassign De	efault Route R	emove Unpla	nned Stages	Fixing	~	•	. Displ	ay Setting	; ©~	0
~ (General Data	Business Partr	ier Stag	Document F	low Notes	Attachn	nents Direct	Shipment O	ptions S	tatuses	Admir	nistrative Da	ta Ex	ecution	Customs	
St	andard * 🖂	È ∐ Insert ∨	Merge 🗸	💼 Route 🗸 Se	chedule 🗸 🖸 Ca	apacity Docum	ent 🗸 Set OI Sta	tus 🗸 🛛 Dete	ermine Distan	ce and Du	ration				Q	0
	Stage Des	Stage Type	Mode of Transport	Document			Source Location	City (Sou	Requested Pick-Up Date	Reque Pick-Up Time	Reque Pick-Up Time Z	Departure Date	Depart Time	Depart Time Zone	Destination Location	
	Stage 1	02 (Pre-Carriage)	01	Freight Order with Su	ubcontracting 6	100034796	ST-VEN001	Shanghai	05.05.2020	00:00:00	UTC+8	05.05.2020	00:00:00	UTC+8	QPORTSH	
~	Stage 2	03 (Main Carriage)	03	Ocean Booking 6100	0034795		OPORTSH	Shanghai	06.05.2020	00:00:00	UTC+8	06.05.2020	00:00:00	UTC+8	QPORTHAN	
	Stage 3	04 (On-Carriage)	01	Freight Order with Su	ubcontracting 6	100034797	QPORTHAM	Hamburg	12.05.2020	00:00:00	CET	12.05.2020	00:00:00	CET	SP_STR1	
S	tage 2															
	Ordered Da	ta Planning/Exec	ution Data	Assigned Requirem	ents											
		-														
	General Da	ita					Statuses/	Blocks of Exe	cution Docun	nent						
		Carrier/S	CAC:					Exe	ecution Status	Not R	elevant		Executi	on Block:	•	
		Transportation N	lode: 03	Sea				Pl	anning Status	:			Planni	ng Block:	•	
		Means of Trans	port: 0005	5 Ship				Subcont	racting Status	No Su	bcontracti	ng				

Different objects of Freight Orders / Freight Bookings for varied transportation mode, e.g. road, rail, air and ocean.

We have different modelling concept: need to create a set of FOs / FBs to represent the transportation chain, that's how S/4 TM model the multi-modal transportation.

For automatic creation of the set of documents, please refer to $\underline{slide 35}$.

Create Transportation Stages manually

LE-TRA

Dead	1.	Further Dates	Stages	Partn	er Texts	Duration and I	Distance	Status 1	Tender	Addii
	S	Departure point			Destination		FwdAgent	Forw.agent	Shp	Shippir
\checkmark	₽	Wiesloch/69168/DE/S	hipping Poi	nt A	Walldorf/66166	/DE/T Customer 001			01	Truck
୍	2	Deliveries		AΘ		Leg Determinatio	n			

- Entering stages manually in the shipment document
 - Leg
 - Load transfer point
 - Border crossing point

<	SAP	Edit Q Freight Order 6100	031095			Q (©	⑦ ↓ 8
Edit	Refresh	Copy Multiple Copies	Check V Follow	w Up \checkmark Scheduling \checkmark	Disp	lay Settings	@~ ?\
✓ G	eneral Data	Business Partner Iten	ns <u>Stages</u> L	Jtilization Subcontracti	ng Document	Flow Cha	rges 。
Sta	andard * 😔	Insert 🗸 Merge 🧹 📷 Se	t to Departed 🗸 De	termine Distance and Duration			Q 🛓 🕲
~	Stage Sour	Stage Before Selected Stage Intermediate Stop	Destination Location	Destination Location Address	Handli Dista Execut Status	ance Distance Unit of Measure	Net Duration
 Image: A start of the start of	1 SP_0	Stage After Selected Stage	e 1 QPORTHAM	22112 Hamburg	 291 	,652 KM	3:38
	Stage Details	Dates/Times Assigned F	Requirements Uti	ilization Transit Countries	Document Refer	ences	

- Freight Order stages can be maintained manually
 - Insert new stages
 - Merge the existing stages
 - Remove stages

Assignment of Deliveries to Stages

I F-TRA

Transporta Fre Walldorf/69190/DE/Shipping Point B to Wiesloch/69168/DE/Shipping Point A Deliveries in stage Delivery Sh L Re W D Name U City C R S Image: Control of the state of the	B Transporta Frm Walldorf/69190/DE/Shipping Point B to Wiesloch/69168/DE/Shipping Point A Deliveries in stage Delivery Sh., L. Re., W., D., Name U., City C., R., S. II 80043396 TSPB TPLB Customer 205 Koeln DE 05 01 C C.						Deliveries at S	Stage 000	1				
Deliveries in stage Delivery Sh., L. Re., W., D., Name U., City C., R., S. S0043396 TSPB TPLB Customer 205 Koeln DE 05 01 C C C C C C C C C C C C C C C C C C C	Deliveries in stage Delivery Sh., L., Re., W., D., Name U., City C., R., S. II S0043396 ISFB TPLB Customer 205 Koeln DE 05 01 C C C C C C C C C C C C C C C C C C C	🕽 Transporta	Frm	Walldon	rf/691	90/DE/Sł	ipping Point B		to Wiesloch/6	59168/DE/Ship	oping	Point	t A
Delivery Sh L. Re W D Name U City C R S 80043396 TSPB TPLB Customer 205 Koeln DE 05 01 C	Delivery Sh L Re W D Name U City C R S 80043396 TSPB TPLB Customer 205 Koeln DE 05 01 6 6 7 6 6	Deliveries in	stage									0	¢ ≩≣
80043396 TSPB TPLB Customer 205 Koeln DE 05 01 C	S0043396 TSPB TPLB Customer 205 Koeln DE 05 01 C	Delivery	Sh	L Re	W.	D	Name	U	City	C	R	S	000
		80043396	TSPB	TP	LB		Customer 205		Koeln	DE	05	01	1
													1
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	A 111 A Selected V 111	<>										0	
· ALL · Selected · Selected · ALL		Deliveries no	t in sta	age								0	¢ ∦≣
Deliveries not in stage	Deliveries not in stage	Delivery	Sh	L Re	W.	D	Name	U	City	R	C :	5I	000
Deliveries not in stage Delivery Sh L. Re W D Name U City R C S. I	Deliveries not in stage Delivery Sh L. Re W D Name U City R C S. I	80043397	TSPA	TP	LA		Customer 206		Aachen	05	DE	01 (Ċî
Deliveries not in stage Image: Contextual contex	Deliveries not in stage Image: Constraint of the stage Image: Constage Image: Constrage	80043395	TSPA	TP	LA		T Customer 201		Duesseldorf	05	DE	01	0
Deliveries not in stage Delivery Sh., L. Re., W., D., Name 80043397 TSPA TPLA Customer 206 Aachen 80043395 TSPA TPLA T Customer 201 Duesseldorf 05 DE 01 C	Deliveries not in stage Image: Constraint of the stage Image: Constra												

- The deliveries in a shipment may only to be assigned to a few rather than all stages of the shipment
- The system analyzes the point of departure and destination for each delivery, one after the other.
- The system then looks for the legs that connect these two locations.

basic Transportation Management

	Refresh	Сору	Multiple	Copies	Che	$ m ck$ \sim	Follow Up	p∨ s	Scheduling \smallsetminus	Sub	contra	octing •	\sim	••• Displa	ay Sett	ings 🛛 💮 🗸
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Sta	ge Details	Dates/T	imes	Assigned	Requir	rements	Utilizat	tion T	ransit Countrie	s D	Docum	ient Re	eferen	ces		
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A 注 〇	All Items Item Hie	rarchy utbound Deli	very 8004	12933	Item	Item De	scrip P	Product	Package ID	G W	G W U	G V	G V U	Loading Lo	cat	Q Unloading Lo
A 注 〇〇〇	All Items Item Hie	rarchy utbound Deli Q Freight Ur	very 8004	12933	Item	Item De	scrip P	Product	Package ID	G W 300	G W U	G V	G V U	Loading Lo	cat	Q Unloading Lo QPORTHAM

The assignment is automatically determined in the stage details of the Freight Order.

Scheduling

LE-TRA

- The system determines the LE-TRA Route for each order item
- The LE-TRA Route can be re-determined in the outbound delivery. The shipment can adopt the route from the delivery or a route can be manually entered.
- Scheduling is based on LE-TRA Route (through customizing in LE-SHIP)
- System can propose planned deadlines for individual shipment activities. They are copied from the outbound deliveries belonging to the shipment via copy routine

- The Freight Unit contains the start location derived from plant and destination location derived form consignee
- The Freight Unit contains delivery date
- During scheduling, the system considers a set of constraints, to adjust the departure and arrival dates/times in the Freight Order and determines the loading/unloading dates/times for the related Freight Units
- ABAP scheduler can be used for Freight Order scheduling in basic Transportation Management(release version 2020 onwards)

Assigning Service Agents in the Shipment Document

LE-TRA

	Shipment Type:	ZTO2 Collct.S	hipmt - Road	\sim		Trans	portP	lanPt: T	201
	Overall Status:	0 Planned		∨ 000		Ten	der S	tatus: 1	Not off
	FwdAgent:	Q-CAR01	Address	Q Carrier 01	/ East Nanjing Ro	oad / CN - 201203	Shangł	hai	
	Shipment Route:	[
	Shipping Type:	01 🖶 Truck	ζ.			Rout	e Sch	edule:	
	Service Level:	3 Groupage	\sim				Shp. (Cond. :	
	Container ID:					Spec	. Pro	cess.:	
\sim	AlwdTot.Wgt.		KG			Ext	ernal	TD 1.	<
Deadl	. Further D	ates Stage	es Partner	Texts Dur	ation and Dista	ance Status	Тег	nder	A >
S	Departure poir	ıt	Destination		FwdAgent	Forw.agent	S	Shippin	. Dist
	Walldorf/69190/	DE/Shipping P.	Wiesloch/69168/I	DE/Shipping Point	A Q-CAR01	Q Carrier 01	01	Truck	
	Wiesloch/69168/	DE/Shipping P.	Duesseldorf/4019	91/DE/T Customer	2. Q-CAR01	Q Carrier 01	01	Truck	
	Duesseldorf/401	91/DE/T Custo.	Aachen/52074/DE	/Customer 206	Q-CAR01	Q Carrier 01	01	Truck	
_ ₽	Aachen/52074/DE	E/Customer 206	Koeln/50679/DE/0	Customer 205	Q-CAR01	Q Carrier 01	01	Truck	

- Service Agents can be maintained in the shipment:
- At header level
- At stage level

Edit Refresh Copy	Multiple Copies Che	eck \checkmark Follow Up \checkmark	Scheduling 🗸	••• Displa	y Settings	ف /	∕
Total Weight:	300 KG	Trar	nsportation				
General Information			Carrier:	Q-CAR01	Q Ca	SCAC:	c
Document Type:	Q005 Q Freight Order		Executing Carrier:	6		SCAC:	ß
Description:	Q Freight Order		Communication Party:	6			
Transportation Mode:	01 Road	S	Service Level – Carrier:	6			
Schedule:			Total Distance:	291,652	KM		
Organizational Data		Gro	ss Duration/Total N :	3:38		3:38	
Purchasing Organization:	ß		First Activity:	05.12.2019 16:45	5:00 CET		
Purchasing Group:	ъ		Last Activity:	05.12.2019 20:23	3:44 CET		
Execution Organization:	G		Number of Visits:	2			
Planning and Executio :	ъ		Loading Stops:	1			
Person Responsible:	ъ		Unloading Stops:	1			
Account Number with :							

- Carrier can only be maintained at the header level of the Freight Order.
- Different Executing Carriers can be maintained at the stage level in rail Freight Order, but not possible in other types of Freight Orders. It is not a gap due to different modelling concept in S/4 TM.

Tendering for Service Agents

		LE-TRA	N		
Overall Status:	0 Planned	~ 000	Tender Status:	Not offered to forwa	arding agent 🗸 📘
FwdAgent:	Q-CAR01 Address	Q Carrier 01 / East Nanjing Road /	CN - 201203 Shanghai		
Shipment Route:					
Shipping Type:	01 🐯 Truck		Route Schedule:		
Service Level:	3 Groupage 🗸 🗸		Shp. Cond. :		
Container ID:			Spec. Process.:		
AlwdTotWgt:	KG		External ID 1:		
Deadl. Further D	ates Stages Partner	Texts Duration and Distance	Status Tender	Addit. Data Dng	g.Goods Contin>
	Not offered to forwarding a	rent	Data	26.02.2020 02.06	
Quotation	Not offered to forwarding ag	şent 🗸	Date:	26. 02. 2020 03:06	
Quotation Valid to:	Not offered to forwarding at 00:00	zent ∼	Date: EarlyPickupDate:	26. 02. 2020 03:06 00:00	
Quotation Valid to: LgthLoadingPlt:	Not offered to forwarding ap	şent 🗸	Date: EarlyPickupDate: Latest Pickup:	26. 02. 2020 03:06 00:00 00:00	
Quotation Valid to: LgthLoadingPlt: Maximum Price:	Not offered to forwarding a	gent v	Date: EarlyPickupDate: Latest Pickup: Earl. Del. Date:	26. 02. 2020 03:06 00:00 00:00 00:00	
Quotation Valid to: LgthLoadingPlt: Maximum Price:	Not offered to forwarding at 00:00 Shipment Cost Estimate	gent v	Date: EarlyPickupDate: Latest Pickup: Earl. Del. Date: Latest Del.Date:	26. 02. 2020 03:06 00:00 00:00 00:00 00:00 00:00 00:00	
Quotation Valid to: LgthLoadingPlt: Maximum Price: Reply	Not offered to forwarding a 00:00 Shipment Cost Estimate	gent v	Date: EarlyPickupDate: Latest Pickup: Earl. Del. Date: Latest Del.Date:	26. 02. 2020 03:06 00:00 00:00 00:00 00:00 00:00 00:00	
Quotation Valid to: LgthLoadingPlt: Maximum Price: Reply AccCnd/RjctRsn:	Not offered to forwarding a	gent 🗸	Date: EarlyPickupDate: Latest Pickup: Earl. Del. Date: Latest Del. Date:	26. 02. 2020 03:06 00:00 00:00 00:00 00:00 00:00 00:00	

- A created shipment can be subcontracted and offered to a service agent.
- Shippers and service agents communicate for the shipments acceptance, rejection and further information if necessary.

basic Transportation Management

econtracting Data		ages suitation	Subcont	Auto	matic Tenderi	ng r Quotation		coulon	Hotes
Carrier:	Q-CAR01	Q Carrier 01 /2012 ⁴	03 Shanghai	Senc	to Carrier	r Quotation		ant for Sub	contractir
Continuous Move ID:		7	0	Set t	o Confirmed l	by Carrier			
Partner Reference Number:				Set t	o Rejected by	Carrier			ß
Road Bill of Lading Number:		Not Drawn		Set t	o Confirmed	with Deviation	ns by Carrier		6
Standard Q 21 E1	New	sh and Save Stop	Award Quotat	tion 🗸 St	op Dates				
								Fueluatio	
Tendering/Step/Freight RFQ/	Carrier	Carrier Description	Proposed FQ	FQ Review Required	Tenderin (Descript	Respons (Descript	Code (D	(Descript	Award S (Descrip

 To use direct tendering process to send a road Freight Order directly to a specific carrier without creating a freight RFQ.
Automatic Assignment of the Service Agent

			LE	E-TF	RA					
ocessing Identif	ication Shi	pment Cst Cal	. Control A	dministr.						
Shipment Type:	ZTO1 Indiv.Shi	pmt - Road 🚿	~			TransportPlanPt	TP01	Walldorf		
Overall Status:	1 Planning com	pleted	~ •oo			Tender Status:	Not off	fered to forw	arding age. 🗸	
FwdAgent:	Q-CAR03	Address	Q Carrier 03 /	/ CN - 20	1206 Shang	ghai				
Shipment Route:	TR002 Rot	ute from DE to	CN via Sea							
Shipping Type:	01 🖶 Truck					Route Schedule:				
Service Level:	1 Load	~				Shp. Cond. :				
Container ID:						Spec. Process.	:			
AlwdTotWgt:		KG				External ID 1				
Deadl. Further I	Dates Stages	s Partner	Texts Dura	tion and I	Distance	Status Tend	ler Add	it. Data	Dng. Goods	С
	Planning		Execution							
			11. 05. 2020	17:32	~	Planning				
Check-In:		00:00		00:00		Check-In				
Loading Start:		00:00		00:00		Loading Start				
Loading End:		00:00		00:00		Loading End				

• Route can be transferred from the deliveries to the shipment (if it is the same for all deliveries). When the status is set to "planned" in the shipment document, the route and some other information, e.g. service agent, are copied.

Edit Refresh Follow Up ~ Check Direct Shipment ~ Split/Merge Unassign Default Route Remove Unplanned Stages Fixing ~ ... Display Setti

Edit Q Freight Unit 4100063722

idard 😔 🛛 🖽	│ 🖂 Insert ∨ Merge ∨	Te Rou	.te 🗸 Schedule 🗸	Capacity D	Jocument N	Set OI Status 🗸	Determine	Distance a	nd Duratio	n				٩	
Stage Description	n Stage Type	Mode of Transp	Source Location	UN/LO (Source)	IATA Code (Source)	City (Source)	Requested Pick-Up Date	Reque Pick-Up Time	Reque Pick-Up Time Z	Departure Date	Depart Time	Depart Time Zone	Destination Location		
Stage 1	03 (Main Carriage)	01	SP_STR1			Walldorf	28.05.2020	00:00:00	CET		00:00:00	CET	ST-CUST001		
		_		_											
ge 1															
Ordered Data	Assigned Requirements														
General Data															
	Carrier/SCAC: Q-C	CAR06	<mark>ව</mark> ව	Q Carrier	06 /20120	3		Schedule:							
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	Means of Transport:	6			All	<u>^</u> 2 🗸	5							(*	
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					~	Carrier taker	n over from	m pred	ecesso	r docum	ent				
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					~	Scheduling s	successfu	ıl; 2 doc	cument	s update	d				
						Messages fo	or Freight	Order 6	510003	4695 :					

basic Transportation Management

Q (?

- Via the default route, the carrier can be determined to the Freight Unit stage, and taken over to the Freight Order after Freight Units assignment in the freight order.
- S/4 TM randomly chooses one if there are multiple applicable default routes. Implicit enhancement can be done in the method VSR_ROUTE_DEF_POST of class /SCMTMS/CL_SCH_PLN to include decision parameters such as zones, shipping condition transportation group and weight.

Mass changes

No. of shipments: 100 Decessing Identificat. Act.dlines & status Plan dates Shipment Nu Shipme FwdAgent Service Ship Tran Shipment Nu Shipme FwdAgent Service Ship Tran Ship Process, Ship, De Leg Ov H Ship	Ex
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IETDA

- Mass changes enables to change the data in several shipment documents at once
- Select the shipments required according to certain criteria and make the changes at header level

basic Transportation Management

	< SAP Freight Orders	- Worklist				Q (?)	ع 🍳	3
0			Change Data of	Multiple Documents			2 ×	
Ac	Transportation Data			Carrier Data				^
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	Location:	- D		Location:	6			
	Source UN/LOCODE:			Destination UN/LOCODE:	6			
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 Select multiple Freight Orders from the POWL and apply Mass Change

Packing in the Shipment Document

LE-TRA

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All Existing HUs (Availat	ble for Packing)							© ž≘
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Material to Be Packed								0
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- The packing hierarchy, which is setup in the delivery, is continued in the shipment document.
- Delivery items packed into crates and loaded on pallets can be packed into containers and loaded on trucks in the shipment document.
- Cross delivery handling units is supported.
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 basic TM advantage over LE-TRA

<	SAP E	Edit Freight Order for PB Test 63	L00031	101									Q	Ô	?
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S	tandard 😔 注	Change Hierarchy: All Items	ges C	✓ Inse	rt: (Choos	se Item Typ ncel Packa	pe) 🗸	Insert 🗸		Create	Service Or	der Adj	ust Subitems		Q →
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		eight Unit for PB Test 4100053226			e	ΕA	280	KG	0,347	M3					
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	🗸 🛄 Packag	e Unit for PB Test 500007523			1	PAL	740	KG	0,648	M3	1,00224	M3			
	〜 黒 Pack	age 40 Euro Pallet	PKG	Package	1	PAL	740	KG	0,648	M3	1,00224	M3	STSA_TM_F	PACK01	L
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	(t)	Product 50 Something more technical			24	EA	720	KG	0,648	M3			STSA_TM_N	MAT02	

- S/4 handling units can be integrated to create the packaging information in S/4 TM (as package items).
- Further package items can be created in Freight Unit, Freight Order.
- Cross delivery package items can be supported manually.

Delivery Item Generation in the Shipment

LE-TRA

- Packaging material are mostly cost items and are managed as stock. For goods receipt from supplier and goods issue to customers, it is important to generate delivery items for the packaging materials so that these can be seen in the delivery note, posted in stock, and then invoiced as required.
- System can automatically generate separate delivery items for packaging materials that are only yet in planning for the shipment.
- Some information:
- Delivery items generated from packaging materials are not updated if there is a change to the handling unit(plant, weight, and son on).
- Generated delivery items are deleted only if the handling unit is deleted
- The generation of packing materials in deliveries already posted for goods issue is not possible.
- Any change in the HU content does not affect the generated item, even if the new contents do not have any reference to this delivery.
- For technical reasons, the delivery update can only be called up during the update of the shipment. Issuing a log is no longer possible at this point.

basic Transportation Management

 If an ASN is received with the packaging material, it is possible to automatically create the packaging material in the freight unit and in the corresponding LE inbound delivery (when the customizing is done).

Maintaining Texts in the Shipment Document

LE-TRA

	∨ 🖁 🖡 Deli	veries 🍦			More \checkmark		Exit
Overall Status:	0 Planned		\sim	000		Tender Status:	Not offere
FwdAgent:							
Shipment Route:							
Shipping Type:	01 🖶 Truck					Route Schedule:	
Service Level:	3 Groupage	\sim				Shp. Cond. :	
Container ID:						Spec. Process.:	
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basic Transportation Management

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1	v 0	verview												
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		Details				Activity	Activity (Descr	Maxim Utiliza	Document		Load L Plan S Status (Load Status (Descr	Unload Plan Status	บ ร (เ

 Texts are maintained manually at header level in the shipment document. Texts are maintained on the Notes tab page in the Freight Order.

Output Control

LE-TRA

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basic Transportation Management

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• The Logistics Execution application uses output control for printing and interfaces.

• S/4 TM uses output management to print, fax, email documents and sending information via EDI.

Dangerous Goods Check

	LE-TRA	
Shipping Type:	01 🖶 Truck	Route Schedule:
Service Level:	3 Groupage \checkmark	Shp. Cond. :
Container ID:		Spec. Process.:
AlwdTotWgt:	KG	External ID 1:
Status Tender	Addit. Data Dng. Goods Continuous Move	
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Status Tender DG Mgmt Profile: Selection Date: Dangerous Goods:	Addit. Data Dng. Goods Continuous Move	

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anda	ard 🖂	Insert 🗸	Merge 🗸	🗑 Set to	Dangerous Goods	I Duration						Q 🛓
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- The dangerous goods check applied is part of the standard dangerous goods management package in the SAP System.
- The check happens automatically or can be initialed manually.

- The system checks dangerous goods in different ways and at different process steps to ensure safety precautions are observed.
- The system also prints the required dangerous goods information if required settings is made.

Completing Transportation Planning

rocessing Identifi	cation Ship	oment Cst	Cal (Control Ad	ministr.				
Shipment Type:	ZTO2 Collct.Sh	ipmt - Roa	d 🗸				TransportPlanPt:	TP01	Walldorf
Overall Status:	1 Planning com	pleted	\sim	•00			Tender Status:	Not offer	red to forwarding a
FwdAgent:	Q-CAR01								
Shipment Route:									
Shipping Type:	01 🖶 Truck						Route Schedule:		
Service Level:	3 Groupage		\sim				Shp. Cond. :		
Container ID:							Spec. Process. :		
AlwdTotWgt:		KG					External ID 1:		
AlwdTotWgt:		KG					External ID 1:		
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- You can set the Planned status in the shipment header after completing all the necessary planning activities.
- The shipment document is then ready for shipment completion.

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Edit Refresh Copy Multiple Copies	Check \checkmark Follow Up \checkmark Scheduling \checkmark Sub-	contracting ~	Display Settings
A the least of the	Tarra and C	Create Service Order	
Attachments Statuses Blocking Inic	rmation Administrative Data Terms and Co	Schedule >	Cost Distribution
General		Set Status >	
Life Cycle Status: In Process	Changed By: LIQI0	Load Plan Status (Stop)	07:39:59 CET
Fixing Status: 🔓	Set to Ready for Transportation Execution	Execution Status >	
Fixing Status of Requirement : 🔓	Set to Not Ready for Transportation Execution	Fixing >	
	Set to In Execution	Customs >	
Subcontracting	Set to Not Started	Charges/Settlement >	
Subcontracting Status: Carrier Assigned	d Set to Departed	Cancel Document	07:39:59 CET
Confirmation Status: No Confirmation	n Yet Set to Arrived	Load Plan Status (Packaging)	07:39:58 CET
Invoicing Status: Not Invoiced	Set to Loaded	Load Plan Status (Load Planning) >	
Dispute Case Status: No Dispute	Set to Not Loaded		
Planning	Set to Unloaded		
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Load Plan Status (Load Plann: Not Planned	Load Planning: Unplanned Ite:	1	
Load Plan Status (Stop): SP_0001_02 () Not Planned		

- The status 'Ready for Transportation Execution' can be manually set in the Freight Order.
- The system runs condition check of readiness for starting transportation execution.



Shipment Execution



Activity Profiles

LE-TRA

- With the activity profile, when you set the status of a shipment document, the system executes activities and check for certain data automatically.
- Possible activities include:
- Add to the data in the dialog box for completion
- Post goods issue for the deliveries
- Calculate the shipping costs
- Create invoices for the deliveries in the shipment
- Print certain outputs

Subject to change basic Transportation Management

- Status 'Ready for Execution' can be checked via condition.
- Goods movement (GI / GR) of deliveries can be automatically triggered when a customizable expected event is set in the Freight Order.
- Automatic charge calculation can be enabled when saving the Freight Order.
- Print documents via PPF output profile with condition check.
- Might be technical feasible to check fields completion, billing creation with PPF methods.

Setting a Status

LE-TRA

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Fwd. Agent		2				
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Driver 2						
Vehicle						
Trailer						-
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 When transportation activities such as planning, checking in, and loading are finished, you can set a status

basic Transportation Management

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Confin	mation Status: N	lo Confirmation Yet		Changed By:	REUTTER	Set to Unloaded	1.05.2018	10:28:57	CET		
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Disput	e Case Status: N	lo Dispute									
Planning											
Load Plan	Status (Stop): SI	P_0001 () Not Planned									
Execution											
Exe	ecution Status: N	lot Started									
Logistical Exe	ecution Status: SI	P_0001 Not Loaded									
Transmission-to	o-EWM Status: SI	P_0001 () Not Sent									

 When transportation activities such as planning, departure/arrival, and loading/unloading are finished, you can set a status

Tracking Events

LE-TRA

Shipment Type	Indiv.Shipmt -	Road 🔫]			TransportPlanPt 0	0001 C	ity 1						
Overall Status	Loading start	-	040			Tender Status	Not offer	red to forv	varding ag.					
Fwd. Agent		9												
Shipment Route	000001 Nort	thern Route				Sequence Number								
Driver 1														
Driver 2														
Vehicle														
Deadl. Furt	her Dates St Planning	tages Part	Execution	Duration	n and D	Distance Status	Tend	er Ad	lit. Data	Dng.Go	ods	Conti	nuous Mov	/e
Trailer Deadl. Furth	her Dates St Planning	tages Part	Execution	Duration	n and D	Distance Status Planning	Tend	er Ad	lit. Data	Dng.Go	ods	Conti	nuous Mov	/e
Trailer Deadl. Furti Check-In	Planning	tages Part	Execution 24.05.2018 24.05.2018	Duration	n and D	Planning Check-In	Tend	er Ad	lit. Data	Dng.Go	oods	Conti	nuous Mov	/e
Trailer Deadl. Furti Check-In Loading Start	Planning 23.05.2018 24.05.2018	00:00 00:00	Execution 24.05.2018 24.05.2018 24.05.2018	Duration 14:09 14:11 14:11	n and D	Planning Check-In Loading Start	Tend	er Ad	dit. Data	Dng.Gc	ods }	Conti	nuous Mov	/e
Trailer Deadl. Furth Check-In Loading Start Loading End	Planning 23.05.2018 24.05.2018	00:00 00:00 00:00	Execution 24.05.2018 24.05.2018 24.05.2018	Duration 14:09 14:11 14:11 00:00	n and D	Planning Check-In Loading Start Loading End	Tend	er Ad	lit. Data	Dng.Gc	ods }	Conti	nuous Mov	/0
Trailer Deadl. Furth Check-In Loading Start Loading End Shpmt Compl.	Planning 23.05.2018 24.05.2018	00:00 00:00 00:00 00:00	Execution 24.05.2018 24.05.2018 24.05.2018	Duration 14:09 14:11 14:11 00:00 00:00	n and D	Planning Check-In Loading Start Loading End Shpmt Completion	Tend	er Ad	lit. Data	Dng.Gc	ods r	Conti	nuous Mov	/e
Trailer Deadl. Furth Check-In Loading Start Loading End Shipme Compl. Shipment Start	Planning 23.05.2018 24.05.2018	00:00 00:00 00:00 00:00 00:00	Execution 24.05.2018 24.05.2018 24.05.2018	Duration 14:09 14:11 14:11 00:00 00:00 00:00	n and D	Planning Check-In Loading Start Loading End Shipment Start	Tend	er Ad	lit. Data	Dng.Gc	oods	Conti	nuous Mov	ve

- Recording planned and actual deadlines for planning, checking, loading, shipment start, shipment end at header level of shipment
- Planned data taken from deliveries
- Actual dates are executed manually or coming from Eventhandler

8	s <	r sap			Edi	t Freigh	it Order with Sub	contracting 6100	016777		
ance	L Ed	it Refresh Cop	y Multiple Copies	Check 🗸 🛛 F	Follow Up	√ Sc	heduling V Subo	contracting ~ Crea	ate Service Order Schedule	✓ Set Status ✓	Settings $\otimes \lor$
Ger	neral Da	ata Business Part	ner Items Stage	s Utilizati	on Si	ubcontra	acting Documer	nt Flow Charges	Execution Notes	Attachments Sta	ituses
Star	ndard 🖂	Report Event In	sert Event								Q
	Statu	Event	Planned Date	Actual Event Date	Actual Event Time	Time Zone	Location	Description	Estimated Event Date	Referenced Event	Source of Exec. Information
	()	Loading Begin		28.05.20	15:00:	CET	SP_0001 SP000	01 SP0001			Recorded Directly in this D
5	()	Loading End		28.05.20	15:01:	CET	SP_0001 SP000	01 SP0001			Recorded Directly in this D
	-xecution	n Note									
			Event: Lo	ading Begin							
			Event Reason:								
			Event Reason Code:				ð				
11	✓ 1		28	.05.2018			□ 1	5:00:36	CET		
a F	vent "Lo	ading End" reported									
		0	0.0	0004 0004	0.4				000004		

- Events and actual event dates are executed manually in the Freight Order Execution tab.
- When Freight Order Execution Status is set, the related event will also be derived automatically.

Posting Goods Issues for Shipments

LE-TRA

< SAP		Outbou	nd Del:	iveries for Goods Issue		
Save as Variant.	· • 0	④	i	E Goods Issue in Background	More → Print	Exit
Production Supply						
Prodn Supply Area Order				to:		
Partner Data						
Forwarding Agent				to:		
Shipment Data						
Route Route Schedule Shipment Number Handling Unit	1061			to:	" " " " " " " " " " " " " " " " " " "	
Display Options						
Determine Number of Items: Display Fwding Agent:						
\odot						Execute

• The system can automatically selects all the deliveries belong to the shipment and then posts goods issue for them.

basic Transportation Management

Exec

ution Settings	
Execution Tracking Relevance:	3 Execution Tracking with External Event . \checkmark
Check Condition "Ready for Exec":	
Display Mode for Execution Tab:	Actual Events from TM and EM, Expected E. \checkmark
Expected Event for Goods Issue:	DEPARTURE
Expected Event for Goods Receipt:	UNLOAD_END
Last Exp. Event:	POD
Immediate Processing	080
Edit Refresh Copy Multiple Copies Cher	Follow Up Scheduley Scheduley Set Status Load Plan Status (Stop) Image: Status Image: Status Load Plan Status (Stop) Image: Status Image: St
Standard (>) Report Event Insert Event Stat Event Planned Date Actual Event	Actual Time Location Description Set to Not Started Charges/Stelement > Event Zone Set to Description Set
Loading End 08.06 Departure 08.06	Step 20 SP_STR1 - Shipping F Shipping Point ST1 Set to Antived Load Plan Status (Packaging) > 020 05:59:30 CET SP_STR1 - Shipping F Shipping Point ST1 Set to Loaded Load Plan Status (Load Planning) >
	Set to Not Loaded Set to Unloaded Set to Unloaded
Execution Note Attachments	
Even	Event: Departure

 Trigger goods movement (GI / GR) of deliveries when expected event is set in the Freight Order.



Monitoring Shipments



Shipment Information in List Form

			LE-IKA																
•	<	SAP											Shipment L	ist: Planning					
				~ 4	P		69		Ø	Ma	ass	Change	je ≣e s	7 Q Delivery	± ∓ Mo	ore 🗸	٩	, Q⁺ 🖶 I	Exi
L	.ist	level: 1		Entri	ies	3:	13	35			Vi	ew: 1							
4	⚠	Shipment	ShTy	TPPt	С	S	ST	PL	SL	L	SC	Route	Container ID	External ID 1	External ID 2	Description	s	ServcAgent	
•	00	1051	0002	0001	1	3	01			4		000001					1	EM_VENDOR1	
0	00	1060	0010	0001	2	1	01			4					20150803_01		0	AF_ZULI	
00	00	1080	0002	0001	1	3	01			4							0		
00	00	1081	0002	0001	1	3	01			4							0		
00	00	1082	0002	T001	1	3	01			4							0		
00	00	1083	0002	T002	1	3	01			4							0		
00	00	1084	0002	0001	1	3	01			4							0		
00	00	1085	0002	T001	1	3	01			4							0		
00	00	1100	0010	0001	2	1	01			4							0		
00	00	1120	0011	0001	2	1	01			4				testastrid1	testastrid1		0	AN_BP_0001	
00	00	1121	0001	0001	1	1	01			4							0	AN_BP_0001	
00	00	1150	0003	0001	1	3	05	01	01	4	01	DG01					0	HENGLIS	
00	00	1151	0011	0001	2	1	01			4		000001		AF_0000004	AF_0000004		0	AF_ZULI	

- Different list types for shipment processing:
- Transportation planning list
- Utilization list
- Free capacity list
- Tendering status list
- Check-in list
- Shipment completion list
- Change list

		Freight Orde	ers All Road	Freight Orders (20)					
	Parc	el Freight Orde	ers All Parcel	Freight Orders (0)					
	R	ail Freight Orde	ers All Rail Fr	eight Orders (28)					
Fr	eight	: Orders - All R	oad Freight	Orders					
	Show	w Quick Criteria	Maintenance]					c
	View	r: * [Standard Vi	iew] 🗸	T New D Multiple	Copies	Edit Follow Up V	eate Deliveries Scheduling	Set Status V	Status V Execution Sta
	Ren	nove Manual Blo		\sim Assign Driver	Creat	te Freight Settlement Document ~	Calculate Charges Custo	ms V Cancel Document	lass Output Mass Chan
		Document	Docum	Carrier	SC	Source Location Description	Source Location Address	First Activity	Destination Location
		6100031095	Q005	Q Carrier 01 /201203 Sha		Shipping Point 0001 1234567	Dietmar-Hopp-Allee 16 / 6	05.12.2019 16:45:00 CET	Hamburg Port
		6100030303	Q005	Q Carrier 01 /201203 Sha		Plant 001	1001 Chenhui Road / 201	03.12.2019 07:00:00 UTC+8	Shanghai Port
		6100030304	Q005	Q Carrier 05 /201206 Sha		Hamburg Port	22112 Hamburg	29.11.2019 00:00:00 CET	Customer 001
		6100028078	Q005	Q Carrier 10 /201203 Sha		Q Shipper 100	201203 Shanghai	09.07.2019 00:00:00 UTC+8	Q Consignee 01
		6100028077	Q005	Q Carrier 01 /201203 Sha		Q Shipper 100	201203 Shanghai	09.07.2019 00:00:00 UTC+8	Q Warehouse Shanghai
		6100028075	Q005			Q Warehouse Shanghai	201203 Shanghai	09.07.2019 00:00:00 UTC+8	Q CFS Shanghai
		6100028076	Q005	Q Carrier 03 /201206 Sha		Q CFS Shanghai	201203 Shanghai	10.07.2019 10:37:07 UTC+8	Q Consignee 01
		6100026680	Q005	Q Carrier 04 /100086 Beijing		Q Customer 01	666 Jinke Road / 201023	01.06.2019 09:00:00 UTC+8	Q Customer 02
		6100026679	Q005	Q Carrier 03 /201206 Sha		Q Customer 01	666 Jinke Road / 201023	01.06.2019 09:00:00 UTC+8	Q Customer 02
		6100026678	Q005	Q Carrier 01 /201203 Sha		Q Customer 01	666 Jinke Road / 201023	01.06.2019 09:00:00 UTC+8	Q Customer 02
		6100026677	0005	O Carrier 04 /100086 Reiiing		O Customer 01	666 Jinke Road / 201023	01 06 2019 09:00:00 UTC+8	O Customer 02

- Query, filtering and personalizing the Freight Orders Worklist
- Tendering Worklist
- Freight Orders can be queried via administration data of 'Changed By' and 'Changed On'.

Graphical Shipment Information



- The information of the itinerary or the transportation network for the shipment can be displayed graphically or in the list form.
- Further details can be shown for selected objects.
- This information can be called up from within the order, the delivery or the shipment.

	Euro ocean booking 610	0031003						40	0	4
Edit Refresh	Copy Other Copy Options	\checkmark Schedule \checkmark F	follow Up \checkmark Check \checkmark	Subco	ntracting	~	••• [Display Setting	s ©	~
Transportation I	Dependencies									
Predecessor Do	ocuments									
Standard ⊙									Q	<u> </u>
Document	Description	Last Activity	Delivery Address	Total Dist	Dist UoM	Maxi Utili	Carrier		Plan. a (Desc.)	nd Exe
6100031004	Freight Order with Sub	29.11.2019 03:38:44	22112 Hamburg	291,652	KM	0	Q Carrier	01 /201203		
					_					
Successor Docu	uments									
Standard 😔									Q	$\boxed{{2}}}$
Document	Description	First Activity	Pick-Up Location Address	Total Dist	Dist UoM	Maxi Utili	Carrier		Plan. a (Desc.)	nd Exe

- Predecessor and successor documents are displayed in the tab 'Transportation Dependencies' of the Freight Order.
- The list of stops for a Freight Order is displayed in the tab 'Overview'.
- 'Cross-Document Time Conflicts' can be checked in the Freight Order.

Transport Execution Monitor

LE-TRA

Overall Shipment Status Monitor 24.02.2020														
$\Sigma \lor \blacksquare \mathbf{i}$	69													
Set status:	Total	Due	00:00	02:00	04:00	06:00	08:00	10:00	12:00	14:00	16:00	18:00	20:00	22:00
Planned (Total)	135													
Check-in														
Loading start	1								1					
Loading end														
Shipment completion														
Shipment start														
Shipment end														

snow Quick Criteria Maintenance							Chang	e Query Define New Query Per	rsonalize
riew: * Basic View 3 🗸 🖓 🔂	🕼 Multiple Copies	Edit	Follow Up 🗸 🛛 C	reate Deliveries Scheduling Set Sta	itus 🗸 🛛 Load Plan Status	Execution Status	Set Manua	l Block 🗸	Export
Remove Manual Block V	Assign Driver Creat	e Freight Settle	ment Document ~	Calculate Charges Customs ~	Cancel Document Mass O	utput Mass Change	C Refresh		0
Execution Status	Document	Document	Life Cycle Stat	us Logistical Execution Status	Document Ca	urrier	SCAC	Source Location Description	So
○ ✓ (500)									
> Not Started (459)									
> In Execution (28)									
v Executed (10)									
	6100034672	ST15	In Process	ST-CUST002 Unloaded 08.05.2	020 Q	Carrier 01 /201203 Sha		Shipping Point ST1	Hai
1	6100034397	QULH	Completed	FLB1_01 Arrived 01.05.2020 12	2:32:0 ca	mier ss /25252 ca		Shipping Point 0001 1234567.	Die
	6100034389	QULH	Completed	FLB1_01 Arrived 30.04.2020 13	3:59:1 ST	SA Forwarding Agency /		Shipping Point 0001 1234567.	Die
	6100034135	ST05	In Process	SP_STR1 Unloaded 23.04.2020	0 07:2 Q	Carrier 01 /201203 Sha		Vendor 001	201
	6100034133	ST05	In Process	SP_STR1 Unloaded 23.04.2020	Q 09:0	Carrier 01 /201203 Sha		Vendor 001	20:
	6100034129	ST05	In Process	SP_ZPRH Unloaded 22.04.202	0 17: Q	Carrier 01 /201203 Sha		Vendor 001	20:
	6100033755	1000	In Process	SP_TM01 Unloaded 09.04.202	0 11:3 US	CARRIER01 /55443 US		BP Newcastle 1	42:
	6100033751	LZFO	Completed	LZ_CUST001 Unloaded 27.03.2	2020 US	CARRIER01 /55443 US		Painesville SP	Pai
	6100033668	LZFO	In Process	LZ_CUST001 Arrived 27.03.202	20 09: US	CARRIER01 /55443 US		Painesville SP	Pai
	6100033628	LZFO	Completed	LZ_CUST001 Arrived 16.03.202	0 00: US	CARRIER01 /55443 US		Painesville SP	Pai
 Ready for Transportation Execution (1) 									
	6300001665	ZPF1	In Process	SP_ZP01 Not Loaded	OF	中港股承运商1/9990		OP:长安工厂	5 😤
Not Ready for Transportation Execution (2)	2)								
	6300001692	ZPF1	In Process	SP_ZP01 Not Determined	OF	*: 中港股承运商1 /9990		OP:长安工厂	5 🗟
	6300001667	ZPF1	In Process	SP_ZP01 Not Loaded	OF	?: 中港段承运商1/9990		OP:长安工厂	5 🕸

- To monitor the processing status of shipment documents for a specified time span.
- To provides an overview of how much potential work is required based on the number of shipment documents.
- Personalization settings in the Freight Orders Worklist

Shipment Tendering Status Monitor

LE-TRA

Shipment Tendering Status Monitor		
Σ ∨ 🗗 🖬 6∂ 🖉 📿		
Tender status	Total	
Rejected by forwarding agent		
Exception triggered by forwarding agent		
New offer from shipper expired		
Accepted by forwarding agent with condit		
Accepted by forwarding agent		
Offer canceled		
Not assigned to forwarding agent	29	
New offer from shipper		
Confirmed today		

 To monitor the tendering status of shipment documents for one or more transportation planning points.

basic Transportation Management

	C SAP Tendering - Worklist					Q ©	? ↓	8
						Display Settings	@~	@∨
Road	l Freight Orders - All Freight Orders							
Sł	now Quick Criteria Maintenance				Change	Query Define New Q	uery Perso	nalize
Vi	ew: * Basic View 1	ng 🗸 🛛 Transport	ation Cockpit Create Deliveries Creat	e Freight Settlement D	ocument ~ Scheduling Set	Life Cycle 🗸	Expo	ort 🗸
	Confirm. Status	Document	Description	Carrier	Subcontr. Status	Tendering Status	Tendering	Mar
	✓ (10,000)							
	> No Confirmation Yet (9,862)							
	✓ Rejected (1)							
]	6100024734	Truck Shipment with Subcontracting	LBN_CAR002	Sent	Completed	Sabine Ha	mle
	> Confirmed (101)							
	 Confirmed with Changes (1) 							
]	500006811	Relvin's Freight order	RAJ_CAR001	Sent			
	 Document Changed After Confirmation (35) 							
]	6100034041	Freight Order with Subcontracting	TM7_CAR001	Changed After Sending			
]	6100024650	Truck Shipment with Subcontracting	LBN_CAR002	Changed After Sending			
]	6100024597	Truck Shipment with Subcontracting	LBN_CAR002	Changed After Sending			
]	6100024596	Truck Shipment with Subcontracting	LBN_CAR002	Changed After Sending			
]	6100024595	Truck Shipment with Subcontracting	LBN_CAR002	Changed After Sending			
	1	6100024588	Freight Order with Subcontracting	LBN_CAR002	Changed After Sending			

• Personalization settings in the Tendering Worklist

Transportation Information System (TIS)

LE-TRA

-				
\sim 🗂 Information S	Systems			
🚳 MCUA - TIS:	Shipment	Analysis		
🕸 MCUB - TIS:	Shipment	Analysis:	Routes	
<pre> MCUC - TIS: </pre>	Shipment	Analysis:	Means of Transport	
🕸 MCUD - TIS:	Shipment	Analysis:	Shipping	
🚯 MCUE - TIS:	Shipment	Analysis:	Stages	
🚯 MCUF - TIS:	Shipment	Analysis:	Material	

- Various analysis and statistics on shipments
- General shipment characteristics
- Shipment routes
- Means of transport
- Transportation shipping data
- Stages of shipment
- Transportation Material

basic Transportation Management

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emove Manu	al Block	k 🗸 Subcont	racting \checkmark A	ssign Driver	Create Fr	eight Settlement [Document	Calculate	e Charges	Customs	Cance	l Documer	Mass Outp	out Mass	Change	C Refresh			۲	
Source Loc	Countr	ry/Dest. Loc C	Document	Doc	Carrier	SCAC	Gross V	/e Gr. Wt	Gros	is Vol	Gross	Total Dis	stance	Dista	Source L	Source Lo	ocatio	First Activi	ty	
✓ (28)			✓ (28)					3,700 KG		56.5	M3	• • 95	5,662.489871	KM						
✓ Source	e Loc C	Country CN (7)	✓ Source L				• 1	0,950 KG	•	31.5	M3	• 63	3,378.279654	KM						
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			6100034776	ST05				1,000 KG		2.5	M3	8	8,396.232825	KM	Shanghai P	201023 5	ihanghai	26.05.202	0 21:02:50 UTC+	
			6100034775	ST05				600 KG		1.5	M3	8	8,396.232825	KM	Shanghai P	201023 S	ihanghai	25.05.202	0 21:02:50 UTC+	
			6100034774	ST05				400 KG		1	M3	8	8,396.232825	KM	Shanghai P	201023 S	ihanghai	20.05.202	0 21:02:50 UTC+	
			6100034773	ST05				200 KG		0.5	M3	8	8,396.232825	КM	Shanghai P	201023 5	ihanghai	20.05.202	0 21:02:50 UTC+	
			6100034135	ST05	Q Carrier	01/2		4,250 KG		12.5	M3		8,894.621119	КМ	Vendor 001	201203 5	ihanghai	25.04.202	0 20:56:15 UTC+	
			6100034133	ST05	Q Carrier	01/2		3,500 KG		11	M3		8,894.621119	КМ	Vendor 001	201203 5	ihanghai	24.04.202	0 20:56:15 UTC+	
			6100034130	CT05	O Corrier	01 /2		1 000 KG		25	M3	1	2 004 106116	WM.	Vendor 001	201202	hannhai			6
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• Personalization settings in the Freight Orders Worklist

Displaying Transportation Change Documents

LE-TRA

~	Shipment number	Document	Number User	Date	Time	Transaction	Language Key		
	Table Name	Table de	scription	Field Name	Field descriptio	n	Change Ind.	Old value	New value
C	0000001381	20158181	LIQIO	24. 02. 2020	15:14:03	VT02N	EN	000	
	VTTK	Shipment	Header	AEZET	Time last change	was made	U	15:12:02	15:14:03
	VTTK	Shipment	Header	ALLOWED_TWGT	Allowed total we	ight of shipm.	U	1.000 KG	1.200 KG
	VTTK	Shipment	Header	VSBED	Shipping Conditi	ons	U	01	
C	0000001381	20158190	LIQIO	24. 02. 2020	15:14:14	VT02N	EN	000	
	VTTK	Shipment	Header	AEZET	Time last change	was made	U	15:14:03	15:14:14
	VTTS	Stage of	Shipment	AEZET	Time last change	was made	U	15:12:02	15:14:14
	VTTS	Stage of	Shipment	DISTZ	Distance		U		
-	0000001001	00150101	1 1010	24.00.0000	15.17.04	1/7001	PAT	000	
_	000001381	20158191	LIQIO	24. 02. 2020	15:17:04	V102N	EN	000	15-17-04
2	VIIK	Shipment	Header	AEZEI	fime last change	was made	U	15:14:14	15:17:04
_	VIIK	Shipment	Header	SIGNI	Container ID	Start or roa.	0	00.00.0000	24.02.2020
=	VTTK	Shipment	Header	STURG	Statue for start	of loading	U U		Y
-	VTTK	Shipment	Header	STERG	Overall transnor	tation status	U	2	3
	VTTK	Shipment	Header	UALBG	Actual loading s	tart time	U	00:00:00	15:16:00
-									
E	0000001381	20158184	LIQIO	24. 02. 2020	15:17:17	VT02N	EN	000	
_	VTTK	Shipment	Header	AEZET	Time last change	was made	U	15:17:04	15:17:17
	VTTK	Shipment	Header	DALEN	Actual date for	end of loading	U	00. 00. 0000	24. 02. 2020
_	VTTK	Shipment	Header	STLAD	Status for end o	f loading	U		Х
	VTTK	Shipment	Header	STTRG	Overall transpor	tation status	U	3	4
	VTTK	Shipment	Header	UALEN	Actual loading e	nd time	U	00:00:00	15:17:00

 If an existing shipment is changed, a change document is created when those changes are save.

basic Transportation Management

	< SAP	Edit Q	Freight Order 6	1000	31095								C	2 ?	4
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~ D	ocument Refe	rences	Change Docur	nents											
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	From date:	22.02.202	.9	Syster	m Time Zone (CET)	BO Node Name:		5							
	Io date:	23.02.202	:0 📖 :	syster	n Time Zone (CET)	Field Name:		D'							
	Apply	11													
	Standard * 😔	Switch	to Preferred Time	Zone										٩ [<u>+</u> ©
	Change 🔻	Node De	escription	<u>.</u>	ID	Change Indicator	Description		New Value		Old Value	Changed By	Chang	Cha	Time.
	20158207	Chargelt	tem		Q Carrier 01 /201203	Insert (I)	KEY					Qi Li	24.02.2020	15:27:08	CET
	20158207	Items of	the Transportation	Or	1000000	Change (U)	Goods Value for O	Customs Cu	USD			Qi Li	24.02.2020	15:27:08	CET
	20158207	Items of	the Transportation	Or	1000000	Change (U)	Goods Value Curr	rency	USD (United State	s D	EUR (European	Qi Li	24.02.2020	15:27:08	CET
	20158207	Items of	the Transportation	Or	1000000	Change (U)	Goods Value			23		Qi Li	24.02.2020	15:27:08	CET
	20158207	Items of	the Transportation	Or	1000000	Change (U)	Insurable Value C	urrency	USD			Qi Li	24.02.2020	15:27:08	CET
	20158207	Items of	the Transportation	Or	1000000	Change (U)	Country Key		CN			Qi Li	24.02.2020	15:27:08	CET
	20158207	Items of	the Transportation	Or	1000000	Change (U)	Registration Num	ber	iPA332162			Qi Li	24.02.2020	15:27:08	CET
	20158207	Root			Charge Root	Change (U)	Air Waybill Printin	g	т			Qi Li	24.02.2020	15:27:08	CET
	20158207	Root			Charge Root	Change (U)	Air Waybill Settler	ment	С			Qi Li	24.02.2020	15:27:08	CET
	20158207	Root			Charge Root	Change (U)	Calculation Date	Timestamp	20.191.204.230.00	00	0	Qi Li	24.02.2020	15:27:08	CET
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 All changes made to a Freight Order can be viewed on the tab page "Change Documents"



Shipment Cost Processing



Shipment Cost Document

LE-TRA

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		2 0001	0000001390Wiesloch Duesseldorf	Q-CAR01	1. 904, 00	0, 00	CNY			CAA	26. 02. 2020		26. 02. 2020	

- Shipment Cost Document
- Create individually from front end
- Collective processing online
- Collective processing in Background

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lit Refre	sh Calculate Charge	s Check	C P	Post	Ready for Po	sting Follow Up \checkmark			••• Disp	lay Settings	Page:	Detail	ed View	~	Ø	}
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Solution	P Carrier TM WDF1 /225	0 Cen 🕀				QUL Freight Order (1PU p	e									
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	0															

- Freight Settlement Document
 - Create individually from Freight Order
 - Create from Freight Order worklist (multi-selection)
 - Create Freight Settlement documents via background processing

Shipment Cost Type and Item Category

LE-TRA

- Shipment Cost Type
- Number ranges
- Status requirements of the shipment document for creating a shipment cost document
- Shipment cost items
- Refer to shipment header
- Refer to shipment stage

- Freight Settlement Document Type
 - Number ranges
 - Multiple FSDs can be created for one FO to split the charges.
- Charge calculation level
 - Calculation at header level
 - Calculation at stage level

Shipment Cost Calculation

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- Pricing procedure determination
- Pricing procedure
- Condition type
- Condition tables and condition records
- Scale
- Calculation base
- Multidimensional shipment rates (max. 3 scales)

- Freight Agreement determination
- Calculation Sheet (TCCS)
- Charge Type
- Rate table
- Scale
- Calculation base & resolution base
- Rate table with up to 3 scales

Consistency Check for Freight Costs

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- Check certain settings in the price determination control for consistency. A warning message will be issued if an inconsistency found:
- Check for all condition types: Do the access sequences and calculation base match? (Condition tables stored in the access sequence must not contain any fields that are not known for the calculation based used.)
- Check for all pricing procedures: Is at least one condition type entered whose calculation base is not "? (Otherwise, no shipment costs subitems can be created.)

- Consistency check during charge master data maintenance.
- Consistency check and veto for freight agreement release.

Additional Functions in Shipment Cost Calculation (1)

LE-TRA

- Shipment Comparisons
- Break Weight
- Representing Geographical Aspects
- Distances
- Location and Zones (address data & tariff zone)
- Pricing date & Settlement Dates
- Tax Countries

- Line item selection of "Compare High/Low Value"
- Break-Weight calculation method
- Different calculation bases
 - Actual Distance, Aerial Distance
 - Source/Destination Location, City, Region, Country, Postal Code, Transportation Zone, etc.
- Calculation date & Settlement date
- S/4 TM enables tax code determination and calculation in S/4 ERP via condition types for tax

Additional Functions in Shipment Cost Calculation (2)

ation (2) Planning only Subject to change basic Transportation Management

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- Bulky Goods and Minimum Weights for shipping units
- Bulkiness Factor
- Freight Codes and Freight Classes

- Calculation rule with volume and minimum value
- Calculation rule with volume and minimum value, or with condition
- Dimensional weight profile and chargeable weight
- Product freight group; Commodity code

Freight Cost Estimate

		LE-TRA	
	🖌 📴 🛃 Deliveries 🦆	🔒 🖾 🚥 More 🗸	
Processing Identifi	cation Shipment Cst Cal	Control Administr.	
Shipment Type:	ZTO2 Collct.Shipmt - Road 🗸 🗸	TransportPlanPt:	TP01 Walldorf
Overall Status:	1 Planning completed \sim	•00 Tender Status:	Not offered to forwarding agent $$
FwdAgent:	Q-CAR01 Address	Q Carrier 01 / East Nanjing Road / CN - 201203 Shanghai	
Shipment Route:			
Shipping Type:	01 💀 Truck	n	
Service Level:	3 Groupage \sim	Shipment Cost Information	<
Container ID:			
AlwdTotWgt:	KG	Net value: [8.568,00]CNY	
Deadl. Further Date	es Stages Partner T		lit. Data Dng.Goods Continuous Move
Tender Status:	Not offered to forwarding ag	<i>ଏ</i> ର ୪	3 00:00
Quotation			
Valid to:	00:00	EarlyPickupDate:	00:00
LgthLoadingPlt:		Latest Pickup:	00:00
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	Shipment Cost Estimate	Latest Del.Date:	00:00
Reply			
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• The transportation planner can execute a freight cost estimate during shipment processing.

basic Transportation Management

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 Charges are calculated in the Freight Order and displayed on the tab 'Charges'

Shipment Cost Document List: Calculation and Settlement

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basic Transportation Management

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2515	SON1	24.08.2018	ORG_FWH7		SON_CAR001	carrier ss /25252 ca			Ready for Accruals	259,80	EUR	RVARMA	Not Blocked	Consistent
2514	SON1	24.08.2018	ORG_FWH7		SON_CAR001	carrier ss /25252 ca			Ready for Accruals	259,80	EUR	RVARMA	Not Blocked	Consistent
2513	SON1	24.08.2018	ORG_FWH7		SON_CAR001	carrier ss /25252 ca			Ready for Accruals	259,80	EUR	RVARMA	Not Blocked	Consistent
2512	SON1	24.08.2018	ORG_FWH7		SON_CAR001	carrier ss /25252 ca			Ready for Accruals	259,80	EUR	RVARMA	Not Blocked	Consistent
2511	SON1	24.08.2018	ORG_FWH7		SON_CAR001	carrier ss /25252 ca			Ready for Accruals	259,80	EUR	RVARMA	Not Blocked	Consistent
2622	SON1	18.09.2018	ORG_FWH3		SON_CAR001	carrier ss /25252 ca			Accruals Posted	9,90	EUR	1065126	Not Blocked	Consistent
2692	SON1	01.10.2018	ORG_FWH3		SON_CAR001	carrier ss /25252 ca			Canceled	40.286,00	EUR	SATISHKUM	Not Blocked	Consistent
2693	SON1	01.10.2018	ORG_FWH3		SON_CAR001	carrier ss /25252 ca			Accruals Posted	40.286,00	EUR	SATISHKUM	Not Blocked	Consistent
2694	SON1	01.10.2018	ORG_FWH3		SON_CAR001	carrier ss /25252 ca			Accruals Posted	406,00	USD	SATISHKUM	Not Blocked	Consistent
2695	SON1	01.10.2018	ORG_FWH3		SON_CAR001	carrier ss /25252 ca			Accruals Posted	406,00	USD	SATISHKUM	Not Blocked	Consistent
2696	SON1	01.10.2018	ORG_FWH3		SON_CAR001	carrier ss /25252 ca			Accruals Posted	406,00	USD	SATISHKUM	Not Blocked	Consistent
2697	SON1	01.10.2018	ORG_FWH3		SON_CAR001	carrier ss /25252 ca			Accruals Posted	40.286,00	EUR	SATISHKUM	Not Blocked	Consistent
2281	SON1	22.05.2018	ORG_FWH6		SON_CAR001	carrier ss /25252 ca			Accruals Posted	30.822,00	USD	DASPRAN	Not Blocked	Consistent
2284	SON1	23.05.2018	ORG_FWH7		SON_S4CAR1	EFFICIENT TRUCKLI			Accruals Posted	15.606,00	USD	DASPRAN	Not Blocked	Consistent
2285	SON1	23.05.2018	ORG_FWH6		SON_S4CAR1	EFFICIENT TRUCKLI			Ready for Accruals	15.488,00	USD	DASPRAN	Not Blocked	Consistent

Last Refresh 28.02.2020 03:59:16 CET Refresh 🗸

- Calculation list: shipment cost documents which have not yet been completely calculated or if you still have questions regarding calculation.
- Settlement list: shipment cost documents which have note yet been completely transferred.

Freight Settlement worklist

Scales List

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basic Transportation Management

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	2994		Base Scale (>=)	WEIGHT	KG		2992			SINGHANJA	06.11.2019	SINGHANJA	06.11.2019
	AIR-MS-CR-TEST1	AIR Scale for Main Stage Carrier	Same Scale (=)	BP						ANSELMANN	29.08.2019	ANSELMANN	29.08.2019
	Q_SCALE_WEIGHT	Q Weight	Base Scale (>=)	WEIGHT	KG					LIQIO	20.06.2019	LIQI0	20.06.2019
	KK_VOLUME_SCALE	KK_VOLUME_SCALE	Same Scale (=)	VOLUME	M3					KAMBOJK	19.06.2019	KAMBOJK	19.06.2019
	OLR_TEST_SC_3	Test FWO Testfall 2/3	To Scale (<=)	QTY	PC					C5247755	18.06.2019	C5247755	18.06.2019
	KK_SCALE_WEIGHT	KK_SCALE_WEIGHT	Base Scale (>=)	WEIGHT	KG	0002				KAMBOJK	11.06.2019	KAMBOJK	11.06.2019
	OAF-SCALE-SOURC	OAF – Source Locations	Same Scale (=)	LOC						KONIECZKA	06.06.2019	KONIECZKA	06.06.2019
	OAF-SCALE-DEST-L	OAF Destination Location	Same Scale (=)	LOC						KONIECZKA	06.06.2019	KONIECZKA	06.06.2019
	AIR-MS-CR	AIR Scale for Main Stage Carrier	Same Scale (=)	BP			AIR-MS-WEIGHT			KONIECZKA	06.06.2019	KONIECZKA	06.06.2019
	AIR-MS-AIRPORT-D	AIR Destination Airport for Mai	Same Scale (=)	CTY_CD						KONIECZKA	05.06.2019	KONIECZKA	05.06.2019
	AIR-MS-AIRPORT-O	AIR Origin Airport for Mainstage	Same Scale (=)	CTY_CD						KONIECZKA	05.06.2019	KONIECZKA	05.06.2019
	AIR-MS-WEIGHT	AIR Weight Scale for Main Stage	Base Scale (>=)	WEIGHT	KG					KONIECZKA	05.06.2019	KONIECZKA	05.06.2019
	AIR-MS-CHAR-WEIG	AIR Weight Scale for Mainstag	Base Scale (>=)	WEIGHT	KG					KONIECZKA	05.06.2019	KONIECZKA	05.06.2019
	AIR-CU-PU	AIR Pickup Scale for Customer	Same Scale (=)	WEIGHT	KG					KONIECZKA	05.06.2019	KONIECZKA	05.06.2019
	OLR_TEST_SC_2	OLR_TEST_SC_2	Same Scale (=)	INCO						C5247755	05.06.2019	C5247755	06.06.2019
	OLR_TEST		To Scale (<=)	WEIGHT	KG					C5247755	05.06.2019	C5247755	05.06.2019
	2469	AQM CUSTOMIZING SCL TEM	Same Scale (=)	LOC				AQM_SCLCUST_LOC		SINGHANJA	14.05.2019	SINGHANJA	14.05.2019

• Gain an overview of which scales already exist for master data, in case these are needed.

Scales worklist

Shipment Cost Settlement with Service Agent (1)

LE-TRA

- Account Assignment
- G/L account determination in Financial Accounting
- Assignment for Cost Accounting

- Freight settlement integration with standard SAP
 S/4HANA Financial Accounting via objects mapping:
 - Assign freight settlement document information to purchasing information in MM, in order to create purchase order in purchasing
 - Assign charge type information to a service master record and an account assignment category used for posting in Financial Accounting
- Mapping for Cost Distribution:
 - Activate freight cost distribution to the order/delivery item
 - Assign charge types to condition types
 - Posting to SAP S/4HANA ERP using Settlement Management (earlier version Agency Business Document)

Shipment Cost Settlement with Service Agent (2)

LE-TRA

- Transfer to Financial Accounting
- Purchase order determination
- Creation of the service entry sheet
- Accrual establishment
- Invoice creation
- Credit memo procedure (ERS procedure)
- Manual Invoice verification

- Posting freight settlement document to S/4 ERP, freight settlement document is with status 'Accruals Posted' after S/4 ERP successfully created the PO and SES.
- Standard invoice creation in S/4 ERP
 - Self-billing (ERS procedure)
 - Manual Invoice verification

Shipment Cost as delivery cost

LE-TRA

- Delivery costs can be considered for both standard purchase orders and stock transfer orders.
- The determined shipment costs are not directly transferred to the accounting department, but are included in the MM goods receipt document and added to the respective material.

- Perform cost distribution at the level of ERP item in the freight settlement document.
- In case of inbound transportation, use S/4 ERP customizing settings to specify the type of posting as material valuation for the distributed cost.
- The distributed freight cost will flow back to your material level for the purpose of material valuation.

Transferring Shipment Costs to Accounting

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	2	0001	0000001390Wiesloch Duessel.	Q-CAR01	1. 904, 00		0,00	CNY			С	A	A	26. 02. 2020	

 Select the Transfer indicator and save the shipment cost document.

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- Posting to S/4 ERP from freight settlement document.
- Posting from freight settlement worklist.
- Transfer freight settlement documents via background processing.

Billing Shipment Costs to the Customer

LE-TRA

- To bill the customer for the actual shipment costs based on effective shipment cost calculation. The freight costs appear as additional entry in the customer billing document.
- Shipment costs that are calculated from the delivery items in the shipment cost document are assigned directly to their corresponding billing document items. Costs that are based on other factors, for example, the shipment cost items, are distributed among the billing document items according to the proportional weight of the delivery items.

- Create the Freight Settlement document out of the Freight Order with active cost distribution to the delivery items.
- If the SD billing process is enabled for the delivery items, the system takes the distributed cost from S/4 TM into account when it creates the billing document for the deliveries in SD.
- Transportation costs are now part of the billing document and can be invoiced to the customer.

Shipment Costs in the Sales Process

Currently no solution available

LE-TRA

- To have a rough idea of the shipment costs when the sales order is created, in order to give customers relevant information or to compare different transportation options.
- As in normal situations no deliveries, shipments or shipment cost documents exist at this point, simulated version of them can be "created" in the background to enable to calculate shipment costs based on these documents.


Interfaces

- 1. External Transportation Planning Systems
- 2. Transportation Planning in Cooperation with Forwarding Agents
- 3. Shipping Notification
- 4. Using Express Delivery Companies
- 5. Communication via Internet



External Transportation Planning Systems

LE-TRA

- Interface from LE-TRA to TPS
- Transmission of location master data (IDoc TPSLOC01 or TPSDLS01)
- Transfer of deliveries (IDoc TPSDLS01)
- Transfer of status values for planned shipments (IDoc TPSSHT01)
- Interface from TPS to LE-TRA
- Transfer of planned shipments (IDoc TPSSHT01)
- An exchange of error status (IDoc SYSTAT01)

- Architecture decision not to support IDoc any longer.
- S/4 TM Web Service for the Freight Units and Freight Orders
 - Exchange Transportation Demand (Freight Unit Out)
 - Receive Consolidated Load (Freight Order In)
 - The entire communication is based on the technical web service
 TransportationOrderGenericRequest_Out/_In.
- For the master data transmission, Web Service planned for Internal ID / External ID mapping, and Standard ID registration.

Transportation Planning in Cooperation with Forwarding Agents

LE-TRA

- Forwarding agent can principally work like an external TPS. The shipper transfer the deliveries to the forwarding agent; the forwarding agent groups these deliveries in his own system and then transfer the planned shipments to the shipper's system.
- Shipper sends deliveries to the forwarding agent:
- Plan/change/deallocate deliveries (IDoc TPSDLS01)
- Add/change location master data (IDoc TPSLOC01)
- Set transportation planning status (IDoc TPSSHT01)
- Status information about errors (IDoc SYSTAT01)
- Forwarding agent transmits the planned/rejected shipments and changes back to the shipper:
 - Create/change/delete shipment (IDoc TPSSHT01)
 - Status information about errors (IDoc SYSTAT01)

- Architecture decision not to support IDoc any longer.
- S/4 TM Web Service for the Freight Units and Freight Orders
 - Exchange Transportation Demand (Freight Unit Out)
 - Receive Consolidated Load (Freight Order In)
 - The communication is based on the web service *TransportationOrderGenericRequest_Out/_In.*
- For the master data transmission, Web Service planned for Internal ID / External ID mapping, and Standard ID registration.

Shipping Notification

LE-TRA

- Notification by the vendor to the recipient regarding the pending arrival of goods shipped or about to be shipped. It contains the anticipated delivery date, quantities, and details of the material (or service).
- A shipping notification can be sent in the form of an EDI message.

- Architecture decision not to support IDoc any longer.
- Advanced Shipping Notification interface
- The communication is based on the web service TransportationOrderGenericRequest_Out/_In.

Using Express Delivery Companies

Currently no solution available

LE-TRA

- To model the special requirements of express deliveries using express delivery companies, include:
- Information specific to the service agent recorded in the delivery, refers to the entire delivery or to the individual parcels.
- Printing out special labels with the required information.
- Creating the manifest / delivery list (EDI using standard IDocs and day-end closing)
- Parcel and status tracking (access information directly from the express delivery company via the Internet)

- Scenario of Courier Express Parcel in S/4 TM.
- Web service needs to be further analyzed by scenarios for the communication with the Express companies (after external transportation planning)

Communication via Internet

LE-TRA

- Tendering shipments for service agents
- Tracking information monitor
- A simple tracking for monitoring the shipment status between the shipper and the forwarding agent
- Transportation planning by the forwarding agents through the Internet
- Shipper offers deliveries to the forwarding agent through a Web interface
- Forwarding agent receives a list of deliveries
- Forwarding agent sets up shipments and transmit the planned shipments to shipper
- Shipper decides whether to accept the planned shipments or to offer the deliveries to another forwarding agent

basic Transportation Management

The following features will be available in basic Transportation Managementif they're used via Logistics Business Network (subscription license) :

- Shipment Tendering Direct Tendering
- Carrier Response to spot bids via LBN Integration
- Carrier Invoice submission and Dispute Management via Integration with LBN
- Integration to Global Track & trace
- TM Supported Invoice Verification Transactions



Miscellaneous



Multi-level goods receipt (IS-A-GR)

Selected scenarios are currently available

LE-TRA

- Goods receipt is usually based on the inbound delivery or inbound shipment in the automotive industry, when the goods are not procured using the JIT process.
- The first step in the multi-level goods receipt goods receipt process is to compare the shipping documents with the data received by EDI and make any corrections or additions. The second step involves the comparison of the packages and quantities received with the delivery notes, making any corrections, and then posting goods receipt.

basic Transportation Management

In Advanced Shipping and Receiving (delivery based FU only), you post goods movement at the warehouse unloading stop level in freight order.
The system triggers goods receipt by the warehouse. After the warehouse has successfully processed the request, the system updates the goods movement status in freight order to Completely Processed. If the posting of goods movement by the warehouse is not successful, the system displays the goods movement processing status Posting/Cancellation Failed.

LE-TRA integration with EWM

Planning only Subject to change basic Transportation Management

LE-TRA

- LE-TRA can be integrated with SAP EWM:
- IDoc communication between SAP ERP and EWM, sending and receiving SHPMNT05 and TPSSHT01
- Mapping between ERP shipment number and EWM external TU or vehicle number

Currently under investigation: It is planned to get an exception for EWM for the usage of SHPMNT05 for that specific IDOC communication.



System Modifications and Business Add-Ins

LE-TRA

- Business Add-Ins in Transportation:
- BADI for saving shipments
- BADI for checks when creating a shipment cost document
- BADI for creating a shipment cost document
- BADI for shipment cost account assignment
- BADI for checks during shipment cost processing
- BADI for transferring shipment cost items
- BADI for saving shipment cost documents
- BADI for the purchase order item determination

- There are more than 200 BADIs in different areas of S/4 TM version 2020:
 - Master Data
 - Basic Functions
 - Freight Order Management
 - Planning
 - Settlement
 - Integration



Business value of

Transportation Management compared to LE-TRA



S/4HANA Supply Chain for Transportation Management – Value



Reduced Freight spend and improved service levels

Cut down manual processes in planning

(fully automated planning, carrier selection, tendering), freight capacity procurement, freight status monitoring and freight invoice verification

- Optimized transportation planning ensuring cost and resource optimization meeting service levels and all transportation constraints – including load plan, freight consolidation and package building
- Optimized carrier selection ensures optimized carrier capacity utilization and lower costs
- Optimal freight cost negotiation and freight contracts with simulation and whatif analysis
- Reduction of expedites and overheads through real-time transportation status monitoring



E2E transportation **visibility** and **quicker data insights**

- Real-time shipment and order status visibility through integrated freight execution tracking and event reporting, map-based tracking
- Freight cost and order visibility through extensive real-time analytics

S/4HANA Supply Chain for Transportation Management – Value



Better **respond to changes**

- Through real-time status visibility and alerting
- Dynamic re-planning capabilities
- **Realtime integration with warehouse** enabling faster processing of orders



Improved **Usability** and Lower TCO

 Improved user experience, administration, and advanced planning tools (using map based planning, Gantt chart, load planning)

Thank you.

ALC:S







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