CNV-1042 TM-Transportation Lanes

Status	Approved
Owner	OMER-ext, Mohammed
Stakeholders	RAYUDU-ext, Narasimha Kumar

Purpose

The purpose of this document is to define the conversion approach to create TM-Transportation lanes in S/4 HANA TM (Transportation management).

In SAP Transportation Management (SAP TM), transportation lanes are a foundational master data object that represent the relationship between two locations, two transportation zones, or a combination of locations and transportation zones that expresses the direct reachability of the locations, or of all locations, within the transportation zones for a specific means of transport (MTr).

The data for TM-Transportation lanes in S/4 would need to be constructed in data collection template (DCT).

Conversion Scope

The scope of this document covers the approach for creating Transportation lanes in S/4HANA following the TM-Transportation lanes Master Data Design Standard.

This includes:

- Capturing and using the transportation lanes data in data collection template (DCT).
- Applying transformation logic via Syniti to conform with the S/4 HANA data model.
- Loading the transformed data into SAP S/4 HANA while ensuring data integrity.

The data from legacy system includes:

1. N/A (Manual data collection)

The data from legacy system excludes:

1. N/A (Manual data collection)

List of source systems and approximate number of records

Source	Scope	Source Approx No. of Records	Target System	Target Approx No. of Records
DCT	Creation of TM-Transportation lanes	TBD	S/4 HANA (TM)	TBD

Additional Information

Multi-language Requirement

Not Applicable.

Document Management

Not Applicable.

Legal Requirement

Not Applicable.

Special Requirements

Not Applicable.

Target Design

The complete information of the key fields that hold the transportation lanes information follows the Master Data Standard document.

The technical design of the target for this conversion approach.

Table	Field	Data Element	Field Description	Data Type	Length	Requirement	Notes
/SAPAPO/TR, /SAPAPO/TRM, /SAPAPO /TRMCARR	locfr	locfr	Start Location/Zone	CHAR	22	Mandatory	
/SAPAPO/TR, /SAPAPO/TRM, /SAPAPO /TRMCARR	locto	locto	Destination Location/Zone	CHAR	22	Mandatory	
/SAPAPO/TRM	valfr	valfr	Start date	NUM (DATE)	15	Mandatory	defaulted to date of migration/creation
/SAPAPO/TRM	valto	valto	End date	NUM (DATE)	15	Mandatory	defaulted to 31.12.9999
/SAPAPO/TRM	DIST	DIST	Transportation Distance	NUM	10,3	Mandatory	
/SAPAPO/TRM	DURAT	DURAT	Transport Duration	NUM	11	Mandatory	
/SAPAPO/TRM	ttype	ttype	Means of Transport	CHAR	10	Mandatory	
/SAPAPO/TRM	USAGE_CARRSEL	USAGE_CARRSEL	Relevant to Carrier selection	CHAR	1	Mandatory	Checkbox field. Default to X.
/SAPAPO/TRMC	stbase	stbase	Priority/Costs	CHAR	1	Mandatory	default should be D (cost*priority)
/SAPAPO/TRMC	cobase	cobase	Cost Origin	CHAR	1	Mandatory	default should be T (cost calculated by component TCM)
/SAPAPO/TRMC	cmbase	cmbase	Contin Move Type	CHAR	1	Mandatory	
/SAPAPO /TRMCARR	partner	partner	Carrier	CHAR	10	Mandatory	
/SAPAPO /TRMCARR	ttype	ttype	Means of Transport	CHAR	10	Mandatory	
/SAPAPO /TRMCARR	valfr	valfr	Start date	NUM (DATE)	15	Mandatory	defaulted to date of migration/creation
/SAPAPO /TRMCARR	valto	valto	End date	NUM (DATE)	15	Mandatory	defaulted to 31.12.9999
/SAPAPO /TRMCARR	CARRTRCOST	CARRTRCOST	Transportation Cost	NUM	15,2	Mandatory	
/SAPAPO /TRMCARR	CARRTRCOSTUNIT	CARRTRCOSTUNIT	Unit of Measure for Transportation Costs of a Product	CHAR	3	Mandatory	
/SAPAPO /TRMCARR	CARRPRIO	CARRPRIO	Priority of Transportation Service Provider	CHAR	3	Mandatory	

Data Cleansing

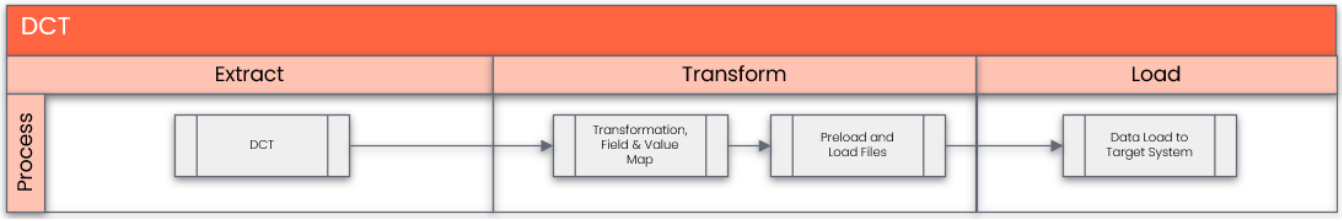
Transportation lanes data will be populated directly in the Data Collection Template (DCT).

ID	Criticality	Error Message/Report Description	Rule	Output	Source System

Conversion Process

The high-level process is represented by the diagram below:

Please note that the data may have to be loaded in multiple target systems (US instance, China instance and RoW).



Data Privacy and Sensitivity

Extraction

The data does not exist (or cannot be converted from its current state). The data is manually collected by the business directly in Syniti ADMM. This is to be conducted using DCT (Data Collection Template).

Extraction Run Sheet

Req #	Requirement Description	Team Responsible
1	Data is populated in the DCT or uploaded from downloaded Excel template	Data owner (Business)
2	If the data is uploaded to DCT in bulk via excel template, any upload errors need to be reviewed and corrected	Data owner (Business), Syniti/ Data Team
3	The data which has passed validation checks in DCT will be used for transformation/further processing	Syniti

Selection Screen

Selection Ref Screen	Parameter Name	Selection Type	Requirement	Value to be entered/set

Data Collection Template (DCT)

A Target Ready Data Collection Template will be created for the required data, except for fields that need transformation as per the defined transformation rules. It will follow the format required by the target S/4HANA Transportation lanes.

Please find below the DCT details.

Primary key combination for the DCT: Start Location/Zone + Destination Location/Zone + Means of transport (/SAPAPO/TRMC)) + Carrier

DCT Rules

Please refer to the above Google sheet for the DCT rules.

Field Name	Field Description	Rule

Extraction Dependencies

Item #	Step Description	Team Responsible

Transformation

The Target fields are mapped to the applicable Legacy field that will be its source, this is a 3-way activity involving the Business, Functional team and Data team. This identifies the transformation activity required to allow to make the data Target ready:

1. Perform value mapping and data transformation rules.
    a. Legacy values are mapped to the to-be values (this could include a default value)
    b. Values are transformed according to the rules defined in
2. Prepare target-ready data in the structure and format that is required for loading via prescribed Load Tool. This step also produces the load data ready for business to perform Pre-load Data Validation

Transformation Run Sheet

Item #	Step Description	Team Responsible
1	Capture the data for Transportation lanes in DCT. Review and correct any errors if bulk uploading data via downloaded excel DCT template.	Business team
2	Ensure the mapping tables which are needed during transformation have been reviewed and signed off by business.	Business team, Data Team (SCM)
3	Obtain DCT Sign-off from Business	Data Team (SCM)
4	Generate Pre-Load reports	Data Team (Syniti)
5	Review and Validate Error and Preload Reports	Data Team (SCM)
6	Log errors as defects, if any and address resolutions.	Data Team (SCM)
7	Re-transform and re-validate the Pre-load reports if necessary.	Data Team (SCM), Data Team (Syniti)
8	Obtain preload validation sign-off from Business	Business + Functional (SCM) + Data Team (SCM)
9	Generate Load Files	Data Team (Syniti)

Transformation Rules

Please check the attached file for the complete source-to-target field mapping, validation checks and proposed error messages. The validation checks list is not exhaustive and may change over time as the design and configuration of the system evolves.

Rule #	Source system	Source Table	Source Field	Source Description	Target System	Target Table	Target Field	Target Description	Transformation Logic	Notes
1042-001	DCT				SAP S/4 HANA	/SAPAPO /TR, /SAPAPO /TRM, /SAPAPO /TRMCARR	locfr	Start Location /Zone	Direct Mapping	Location or Zone should exist in SAP.
	DCT				SAP S/4 HANA	/SAPAPO /TR, /SAPAPO /TRM, /SAPAPO /TRMCARR	locto	Destination Location/Zone	Direct Mapping	Location or Zone should exist in SAP.
	DCT				SAP S/4 HANA	/SAPAPO /TRM	valfr	Start date	Direct Mapping	
	DCT				SAP S/4 HANA	/SAPAPO /TRM	valto	End date	Direct Mapping	Must be later than Start date.
	DCT				SAP S/4 HANA	/SAPAPO /TRM	dist	Transportation Distance	Direct Mapping	
	DCT				SAP S/4 HANA	/SAPAPO /TRM	durat	Transport Duration	Direct Mapping	
	DCT				SAP S/4 HANA	/SAPAPO /TRM	ttype	Means of Transport	Direct Mapping	
	DCT				SAP S/4 HANA	/SAPAPO /TRM	USAGE_CARRSEL	Relevant to Carrier selection	Direct Mapping	
	DCT				SAP S/4 HANA	/SAPAPO /TRMC	stbase	Priority/Costs	Direct Mapping	
	DCT				SAP S/4 HANA	/SAPAPO /TRMC	cobase	Cost Origin	Direct Mapping	
	DCT				SAP S/4 HANA	/SAPAPO /TRMC	cmbase	Contin Move Type	Direct Mapping	
	DCT	N/A	zLegacySys	Field to capture legacy source system	SAP S/4 HANA	N/A	zLegacySys	Carrier Source system	This will be used together with legacy vendor (carrier) in determining the new (S4) BP number	
	DCT				SAP S/4 HANA	/SAPAPO /TRMCARR	partner	Carrier	Value mapping: Use the legacy to SAP vendor mapping table to determine the new (S4) BP number	Carrier (Business partner) should exist in SAP.
	DCT				SAP S/4 HANA	/SAPAPO /TRMCARR	ttype	Means of Transport	Direct Mapping	
	DCT				SAP S/4 HANA	/SAPAPO /TRMCARR	valfr	Start date	Direct Mapping	
	DCT				SAP S/4 HANA	/SAPAPO /TRMCARR	valto	End date	Direct Mapping	Must be later than Start date.
	DCT				SAP S/4 HANA	/SAPAPO /TRMCARR	CARRTRCOST	Transportation Cost	Direct Mapping	
	DCT				SAP S/4 HANA	/SAPAPO /TRMCARR	CARRTRCOSTUNIT	UoM for Transportation Costs of a Product	Direct Mapping	
	DCT				SAP S/4 HANA	/SAPAPO /TRMCARR	CARRPRIO	Priority of Transportation Service Provider	Direct Mapping	

List of Custom Target Reports for this object is maintained here: Conversion Specification - Custom Reports Register.

Transformation Mapping

Field Name	Mapping Table Name	Mapping Table Description
partner	Vendor Number	LIFNR: Old Vendor Code to New Vendor Code cross reference

Transformation Dependencies

List the steps that need to occur before transformation can commence

Item #	Step Description	Team Responsible
1	Ensure DCT tables completeness	Data Team (SCM)
2	Value Mappings are according to the latest design	Functional Team (SCM) + Data Team (SCM)
3	SAP Transportation management configuration for transportation lanes is complete	Functional Team (SCM)
4	Dependent Master Data records for Locations, zones and business partners are loaded	Functional Team (SCM) + Data Team (SCM)

Pre-Load Validation

Project Team

Completeness

Task	Action
Check Values	Validate the pre-load data confirming the values are aligned with target system format
Validate template structure and required field population	Ensure mandatory fields like Start and End Location/Zone, Means of Transport, Carrier, validity dates are filled
Verify Record Count	SCM Data Team to verify that the total number of relevant records from the DCT is equal to the total number of records in the Preload and Load Sheets.

Accuracy

Task	Action
Conversion Accuracy	SCM Data Team to verify that all fields below meet pass the checks: 1. Mandatory Fields 2. Field and Value Mapping Correctness 3. Null Checks 4. Text Length Checks
Perform format validation (date, currency, decimal separators)	Standardize format to match SAP accepted input (e.g., YYYYMMDD for dates)
Review Error Reports	Review and correct the errors. Achieve a zero-error record count as much as possible. Raise defects for data remediated and requiring a correction in the source data.
Conduct dry runs using LTMC or BAPIs and review logs	Analyze load results and correct format or conversion errors

Business

Completeness

Task	Action
Verify Record Count	Business Data Owner/s to verify that the total number of relevant records from the the DCT is equal to the total number of records in the Preload validation file.

Accuracy

Task	Action
Conversion Accuracy	Business Data Owner/s to verify that all the data in the preload validation file is accurate as per endorsed transformation /mapping rules (and signed-off DCT data). Review error reports in tool for any mismatch or missing transformed values.

Load

The load process includes:

1. Execute the automated data load into target system using load tool or produce the load file if the load must be done manually
2. Once the data is loaded to the target system, it will be extracted and prepared for Post Load Data Validation with side by side check of each fields in scope of the objects with fields to be displayed as XXXX_DCT, XXXX_S4HANA, XXXX_MATCH (As TRUE or FALSE) with an additional column denoting fields not matching and status of loading in S/4HANA as LOADED_IN_S4HANA (As TRUE or FALSE)

Function_Loader_Inlay program or Custom Migration Cockpit Object (LTMOM) will have to be used for automated load of transportation lanes to SAP S/4 HANA TM. There is no standard object available in SAP Migration Cockpit for transportation lanes. The load file format can be finalized when development system is available.

BAPI: BAPI_TRLSRVAPS_SAVEMULTI2

Load Run Sheet

Item #	Step Description	Team Responsible
1	Ensure the load tools are transported into the correct system/instance.	Data Team (SCM)
2	Ensure Pre-load sign-offs are obtained.	Data Team (SCM)
3	Execute upload of Transportation lanes using Function_Loader_Inlay program or Custom Migration Cockpit Object.	Data Team (SCM)
4	Validate few records loaded by accessing standard transactions from S/4HNA E.g. Fiori app 'Define Transportation Lane'.	Data Team (SCM)
5	Generate the post load reports in tool.	Data Team (SCM), Data Team (Syniti)
6	Log errors as defects, if any and address resolutions. Close defects.	Data Team (SCM)
7	Resolve defects by reupload and re-generate post load reports if necessary.	Data Team (SCM), Data Team (Syniti)
8	Business to validate the post load files as part of post-load validation, raise data defects or provide the post-load sign-off.	Business team
9	Repeat steps 5 to 7 if necessary.	Data Team (SCM), Data Team (Syniti)

Load Phase and Dependencies

Transportation lanes data will be loaded in the pre-cutover window.

Configuration

Item #	Configuration Item
1	SAP Transportation management configuration (Means of Transport)

Conversion Objects

Object #	Preceding Object Conversion Approach
1051	TM - Locations
1052	TM - Transportation Zones
3016	Business Partners - Transporters/Forwarders

Error Handling

As part of the transportation lanes data load to S/4HANA using the Syniti data migration tool, various data quality, configuration, and technical challenges may arise.

The following table outlines the most commonly observed error types during data load, and the corrective actions typically taken to resolve them. This helps ensure consistency in issue handling, improves traceability during cutover, and supports smooth end-to-end execution of the transportation lanes load.

Error Type	Error Description	Action Taken
Configuration	Invalid or missing Means of Transport	Engage Functional team to expedite and fix the error in the system
Formatting Errors	One or more key fields (e.g., partner) are incorrectly formatted	Ensure formatting is done correctly (e.g., leading zeros for partner). (Leading zero requirement will be confirmed when loading tool is available/tested)
Authorization Errors	Lack of access to execute load in target client/system	Raised access request; obtained necessary authorizations
Transformation Miss	Required transformation logic not applied before load	Re-applied transformation rules and revalidated source-target mapping
Technical Load Failure	File not processed due to syntax /format error or system issue	Reviewed logs; regenerated file; re-executed load after resolving issue

Post-Load Validation

Project Team

Completeness

Task	Action
Run Fiori app/tcode to check loaded data in SAP	Run Fiori app 'Define Transportation lane' to check if data has been loaded
Compare uploaded data against source file values	Use Custom reconciliation tools e.g. SQL Server or Excel based comparison tools to validate the number of records loaded against the load file record volume
Check for load errors in load tool	Review custom load tool or Legacy Transfer Migration Cockpit LTMC logs for any failures

Accuracy

Task	Action
Compare uploaded data against source file values	Use automated postload validation report or standard reports from S/4 HANA to validate field by field value match across all loaded records

Business

Completeness

Task	Action
Verify Count	Download Postload validation reports from Syniti and verify that the record count loaded in the target S/4 HANA is the same count as of the endorsed load file
Review loaded Transportation lanes	Access the S/4HANA system (via Fiori app Define Transportation lane) to view loaded transportation lanes

Accuracy

Task	Action
Compare Against Approved Load File	Cross-check data in S/4HANA against the final business-approved load file used for migration
Validate Accuracy of Converted/Transformed Data	Review any transformed fields (e.g., business partner number) for correctness
Log and Report Discrepancies	Use provided discrepancy log format or defect management tool to report any findings

Key Assumptions

- Master Data Standard is up to date as on the date of documenting this conversion approach and data load.
- Transportation lanes is in scope based on data design and any exception requested by business.
- Data entries in DCT are target-ready data unless a specific transformation rule is stated for that field in the transformation rules.
- The list of validation checks in transformation section is not exhaustive and may change over time as the design and configuration of the system evolves.

See also

Change log

Version	Published	Changed By	Comment
CURRENT (v. 38)	**Dec 01, 2025 14:19**	**OMER-ext, Mohammed**	
v. 37	Sept 18, 2025 16:44	**OMER-ext, Mohammed**	
v. 36	Sept 05, 2025 10:47	**OMER-ext, Mohammed**	
v. 35	Sept 03, 2025 15:01	**OMER-ext, Mohammed**	
v. 34	Sept 03, 2025 14:55	**OMER-ext, Mohammed**	
v. 33	Sept 03, 2025 14:51	**OMER-ext, Mohammed**	
v. 32	Aug 21, 2025 12:13	**OMER-ext, Mohammed**	
v. 31	Aug 21, 2025 12:10	**OMER-ext, Mohammed**	
v. 30	Aug 19, 2025 17:30	**OMER-ext, Mohammed**	

v. 29	Aug 19, 2025 14:03	**OMER-ext, Mohammed**

Go to Page History

Workflow history

Title	Last Updated By	Updated	State	Status
CNV-1042 TM-Transportation Lanes	OMER-ext, Mohammed	Dec 01, 2025 14:19	Approved	