Integration of SAP TM with SAP NetWeaver BW

THE BEST RUN **SAP**

Content

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> ⚠ Caution
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1 Integration of SAP TM with SAP NetWeaver BW

Use

You use this guide to configure the integration of SAP Transportation Management (SAP TM) and SAP NetWeaver Business Warehouse (SAP NetWeaver BW).

> **i Note**
>
> Since the visualization of query results in the business applications in SAP TM uses SAP Netweaver Portal applications, you should set up SAP Netweaver Portal and connect it to the SAP Netweaver BW and SAP TM Systems.

Prerequisites

Prerequisites in SAP TM

- You have transferred the application component hierarchy in transaction `RSA9`.
- You have transferred and activated the DataSources in transaction `RSA5`.
  You find the DataSources below the hierarchy node *Transportation Management DataSources* (`0SCM_TM_DATASOURCES`):
  - `0SCM_TM` (Transactional DataSources)
  - `0SCM_TM-IO` (Text DataSources)

  To select and activate a DataSource choose a DataSource or node. Choose *Select Subtree* and *Activate DataSources*.
- If you want DataSources to update reference InfoObjects used by SAP TM Content in SAP NetWeaver BW, the following DataSources are of interest:
  - `0APO_LOCNO_ATTR`
  - `0APO_LOCNO_TEXT`
  - `0BPARTNER_ATTR`
  - `0BPARTNER_TEXT`
  - `0PRODUCT_TEXT`
  - `0COUNTRY_TEXT`

  > **i Note**
  >
  > `0APO_LOCNO_ATTR` contains a *Continent* field that is only available for SAP TM if you have activated the service API Business Add-In for the enrichment and have maintained the *Continent* Customizing for SAP NetWeaver BW.

Prerequisites in SAP BW

- You have connected the SAP TM source system to the SAP NetWeaver BW system and replicated the DataSources in transaction `RSA1`. To do so, you have chosen ▶ *Modeling* ❯ *Source Systems* ❯ *Create BW Source System* ◀. As a result, the source system is displayed in the system list. For this source system, you have executed the *Replicate Data Sources* function.
- You have activated the business content for application component `0SCM_TM` (SCM Transportation Management). As a result, the system generates active version *A* from the delivered business content version *D*. This affects all object types of the application component, such as DataSources or MultiProviders.

  You have activated the relevant process chains in transaction `RSA1` by choosing ▶ *BI Content* ❯ *Object Type* ❯ *Process Chain* ◀. To perform the activation, you have selected, transferred, and installed the process chains.

Prerequisites in SAP Netweaver Portal

- You have connected the SAP Netweaver BW system to the SAP NetWeaver Portal. A detailed description can be found at http://help.sap.com/nw74 ▶ *Application Help* ❯ *Function-Oriented View* ❯ *SAP Business Warehouse* ❯ *Configuration* ❯ *Automatically Configuring BI Java* ❯ *Setting Up BW Systems in the System Landscape in the Portal* ❯ *Creating BW Systems in the Portal* ◀
- You have maintained the system alias `SAP_BW` in the enterprise portal to point to your BW system.

> ℹ Note
>
> The iViews that are used can be found in the enterprise portal under ▶ *Portal Content* ❯ *Content Provided by SAP* ❯ *End User Content* ❯ *Platform Add-Ons* ❯ *Business Intelligence* ❯ *iViews* ◀. These iViews are delivered as part of the standard delivery of the enterprise portal.

Process

The data gets loaded from the SAP TM system to the SAP NetWeaver BW into the Persistent Staging Area (PSA). The data model and the data flow are important for performing the transaction data uploads and verifying the results. The figures below illustrate the data flow for the individual business objects (BOs):

- Transportation Request (TR)
- Transportation Order (TO)
- Forwarding Settlement Document (FWSD)
- Freight Settlement Document (FSD)
- Business Share (BSH)
- Trade Lane (TDL)
- Freight Agreement (FAG)

Here a few analysis scenarios that are possible:

> ℹ Note
>
> For a complete list of all analysis scenarios, see the SAP Help Portal at http://help.sap.com ▶ *SAP NetWeaver* ❯ *BI Content* ❯ *All Releases* ❯ *SAP NetWeaver 7.4 BI Content 747 SP 07* ◀.
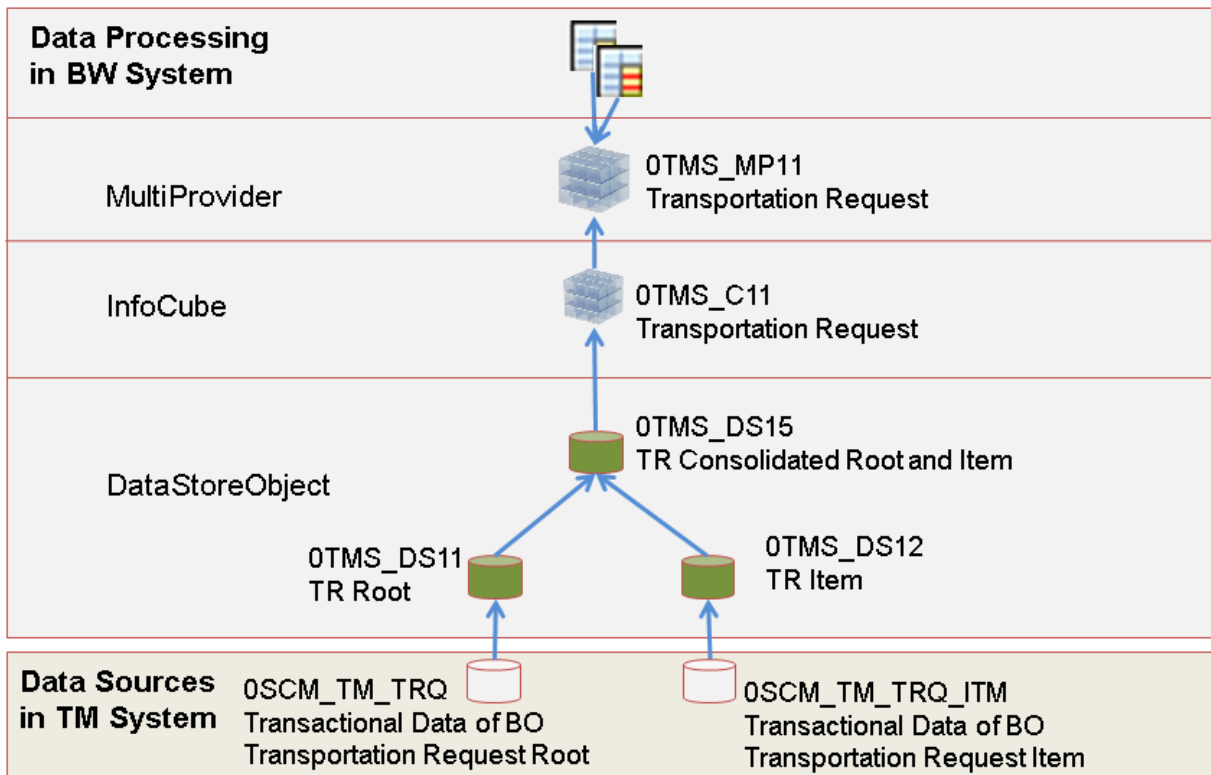
Data flow for business object Transportation Request (TR)
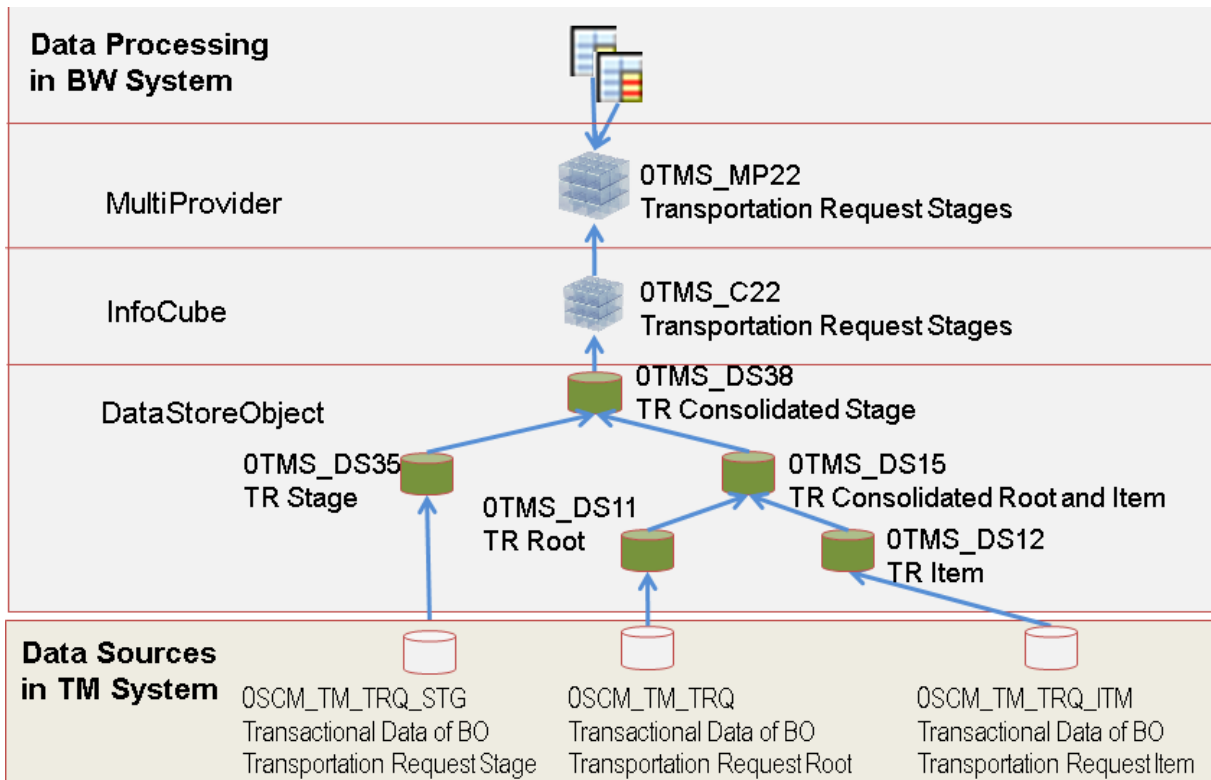
Data flow for business object Transportation Request (TR) enhanced by stages
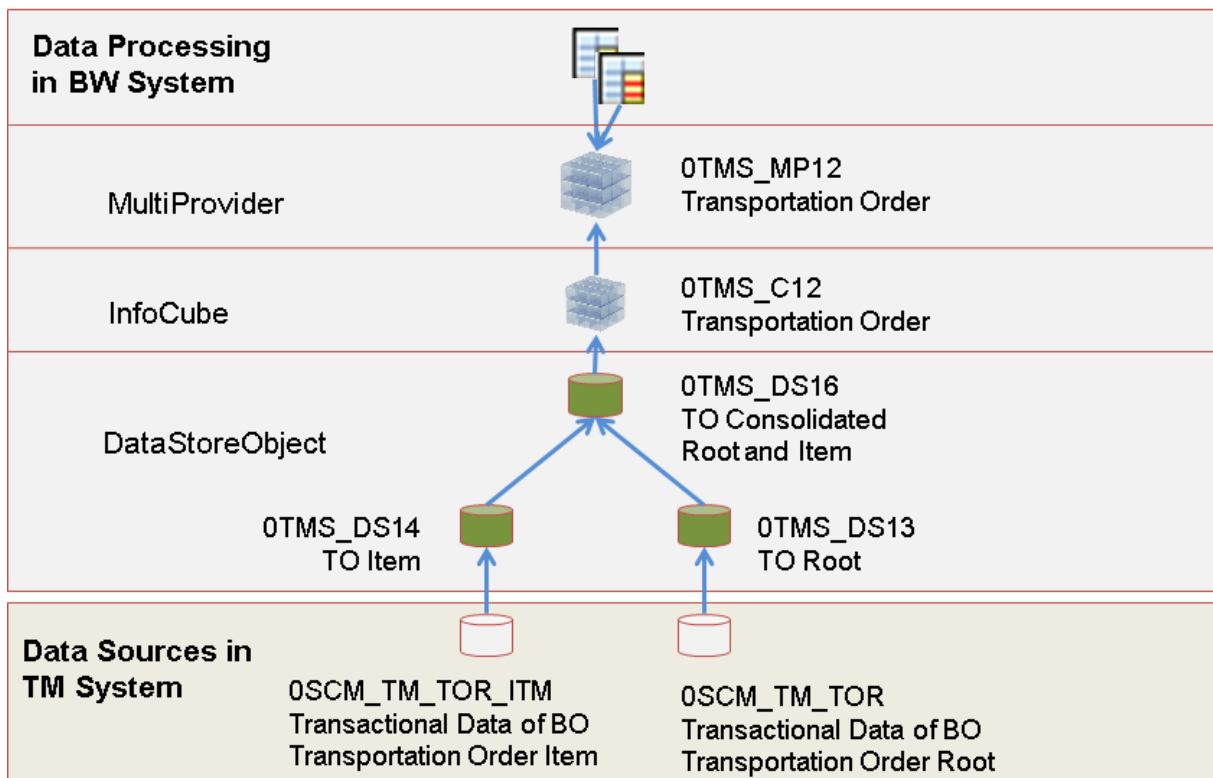
Data flow for business object Transportation Order (TO)

Data flow for Transportation Order enhanced by stages

Data Processing in BW System

MultiProvider
0TMS_MP21
Trade Lane Analysis

InfoCube
0TMS_C21
Trade Lane

DataStoreObject

0TMS_DS32
TO Trade Lane Consolidated

0TMS_DS29
TO Trade Lane

0TMS_DS16
TO Consolidated
Root and Item

0TMS_DS37
TO Consolidated Stages

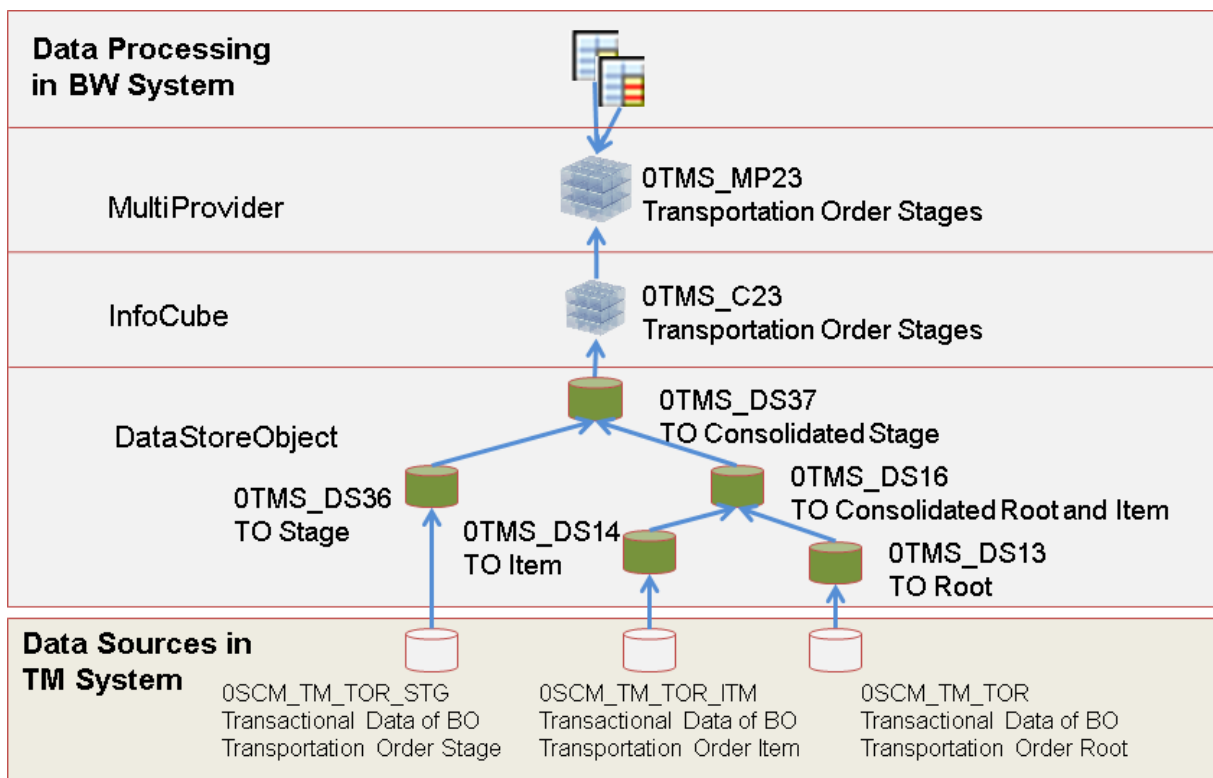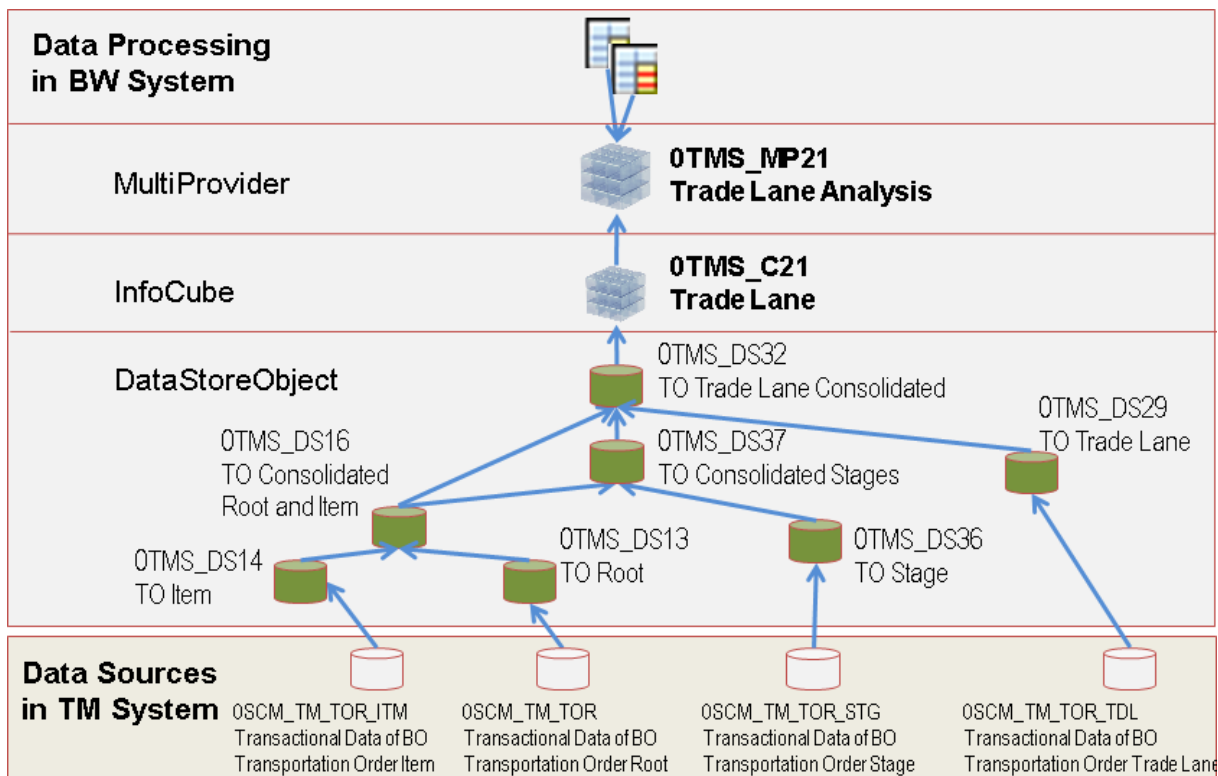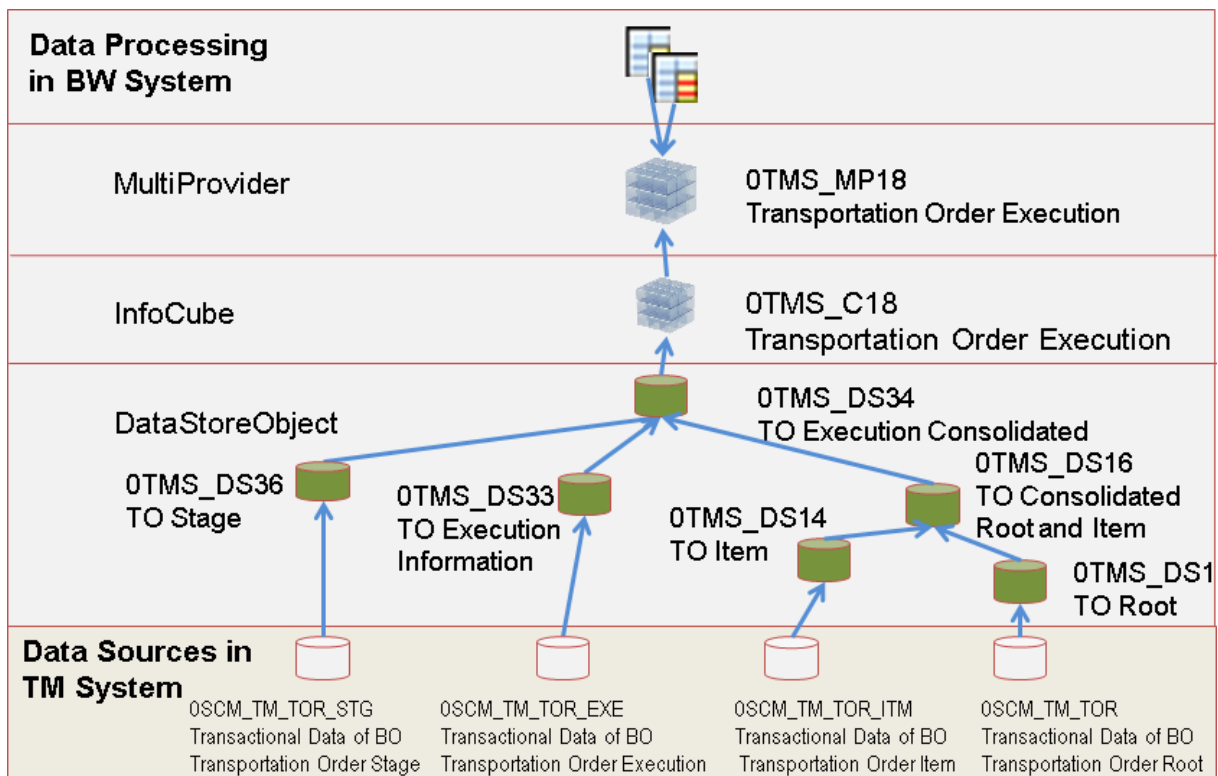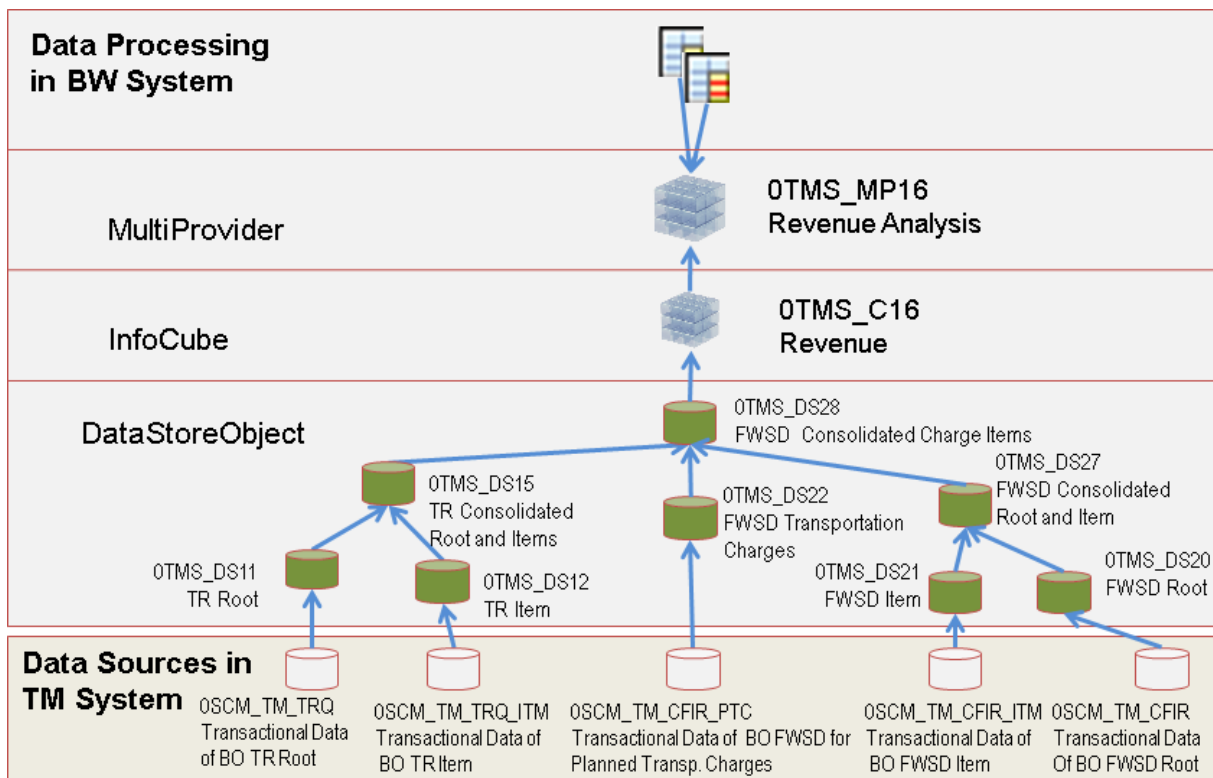0TMS_DS14
TO Item

0TMS_DS13
TO Root

0TMS_DS36
TO Stage

Data Sources in TM System

0SCM_TM_TOR_ITM
Transactional Data of BO
Transportation Order Item

0SCM_TM_TOR
Transactional Data of BO
Transportation Order Root

0SCM_TM_TOR_STG
Transactional Data of BO
Transportation Order Stage

0SCM_TM_TOR_TDL
Transactional Data of BO
Transportation Order Trade Lane

Data flow for Transportation Order enhanced by Trade Lane (TDL)

Data Processing in BW System

MultiProvider
0TMS_MP18
Transportation Order Execution

InfoCube
0TMS_C18
Transportation Order Execution

DataStoreObject

0TMS_DS34
TO Execution Consolidated

0TMS_DS36
TO Stage

0TMS_DS33
TO Execution
Information

0TMS_DS14
TO Item

0TMS_DS16
TO Consolidated
Root and Item

0TMS_DS1
TO Root

Data Sources in TM System

0SCM_TM_TOR_STG
Transactional Data of BO
Transportation Order Stage

0SCM_TM_TOR_EXE
Transactional Data of BO
Transportation Order Execution

0SCM_TM_TOR_ITM
Transactional Data of BO
Transportation Order Item

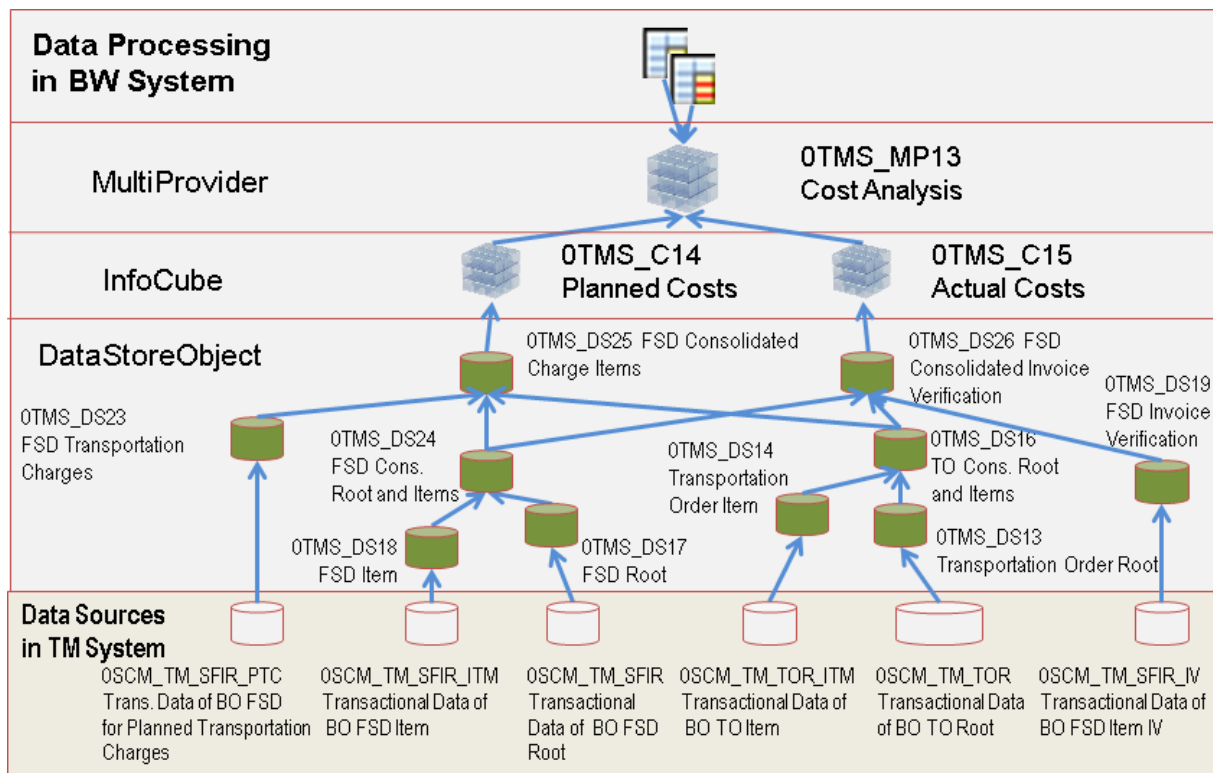0SCM_TM_TOR
Transactional Data of BO
Transportation Order Root

Data flow for Transportation Order enhanced by Execution (EXE)
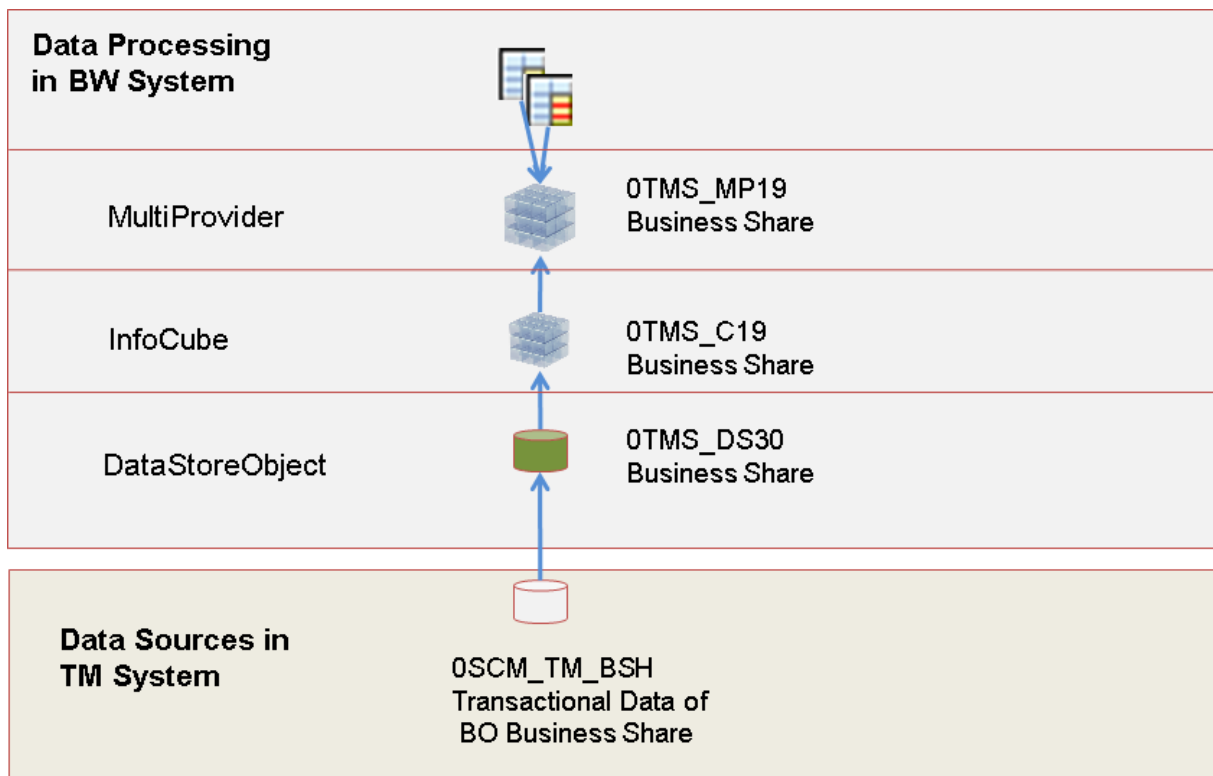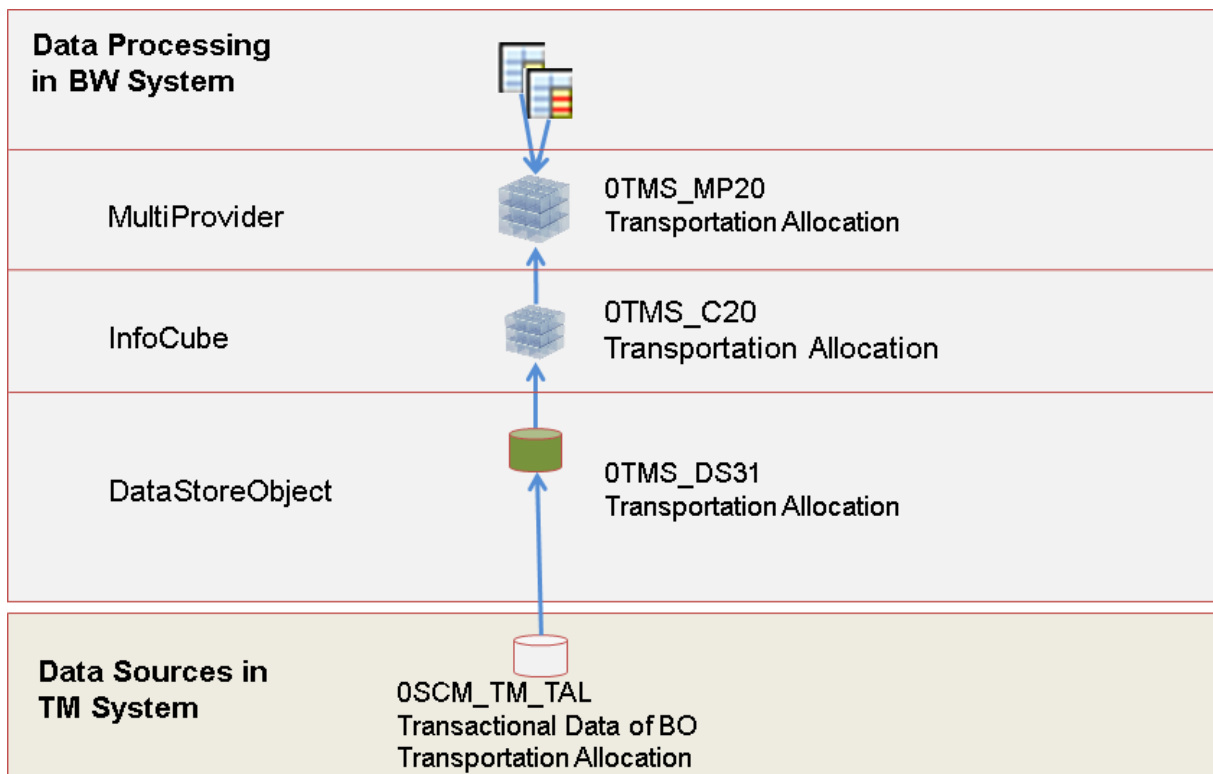
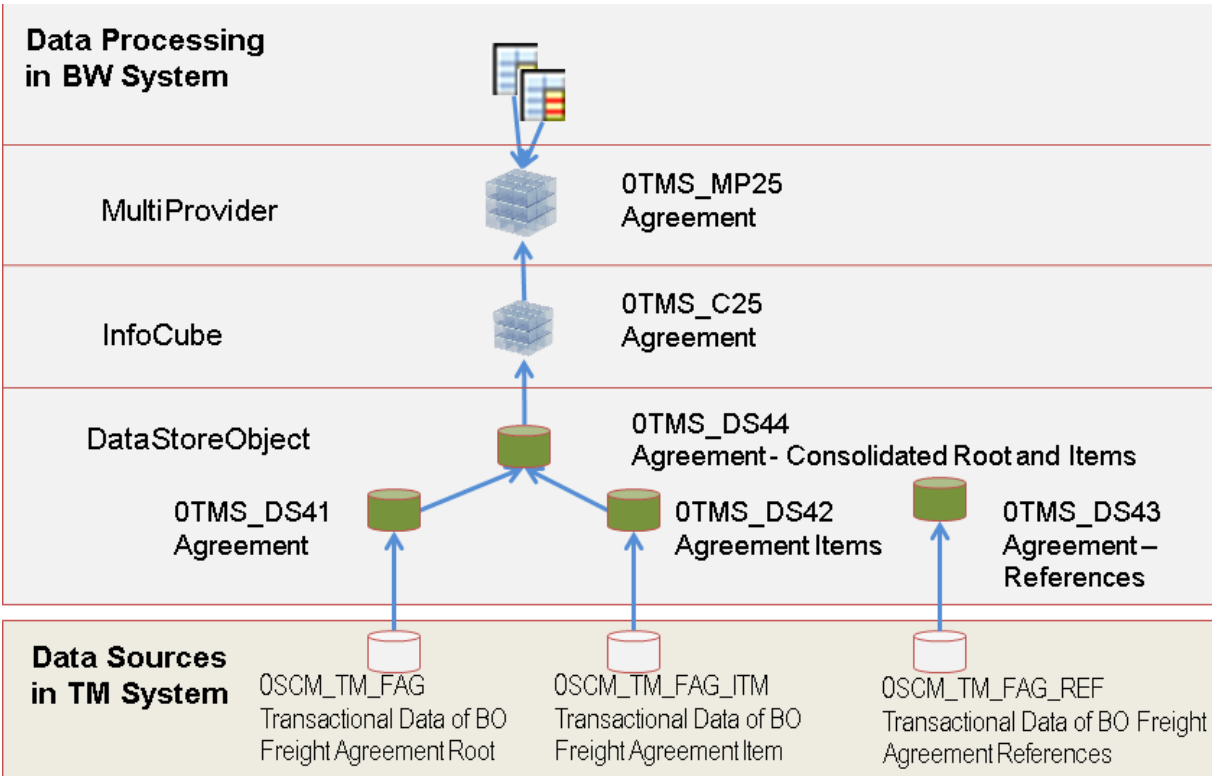Data flow for business object Forwarding Settlement Document (FWSD)

Data flow for business object Freight Settlement Document (FSD)

Data flow for business object Business Share (BSH)

Data flow for business object Transportation Allocation (TAL)

Data flow for business object Freight Agreement (FAG)

2 DataSources for Master Data and Texts

The following DataSources are used for master data and texts to transfer data one-to-one from the SAP Transportation Management system to the SAP NetWeaver Business Warehouse system into the Persistent Staging Area and then into the corresponding objects:

- `0SCM_TM_AGREEPARTROLE` (*Agreement Party Role*)
- `0SCM_TM_AIRCRACO` (*IATA Aircraft Type Code*)
- `0SCM_TM_AIRLINECD` (*Airline Code*)
- `0SCM_TM_AITYPT` (*Item Type*)
- `0SCM_TM_BILLS` (*Settlement Basis*)
- `0SCM_TM_BSHLINETYPE` (*Business Share Line Type*)
- `0SCM_TM_BTD_ITEM_TYPECODE` (*Document Item Type for Business Transaction*)
- `0SCM_TM_BTD_TYPE_CODE` (*Document Type for Business Transaction*)
- `0SCM_TM_BTPRCD` (*Business Transaction Priority Code*)
- `0SCM_TM_BUCKET_TYPE` (*Bucket Type for Transportation Allocation*)
- `0SCM_TM_CALCLEVEL` (*Calculation Level*)
- `0SCM_TM_CALRES` (*Calculation Resolution Base*)
- `0SCM_TM_CARGORCPT` (*Cargo Receipt Status on Item Level*)
- `0SCM_TM_CCODE` (*Commodity Code*)
- `0SCM_TM_CCODE_TYPE` (*Commodity Code Type*)
- `0SCM_TM_CFIRCAT` (*Forwarding Settlement Document Category*)
- `0SCM_TM_CFIRCLASS` (*Forwarding Settlement Document Classification*)
- `0SCM_TM_CFIRCMRCD` (*Forwarding Settlement Document Credit Memo Reason*)
- `0SCM_TM_CFIRLCS` (*Forwarding Settlement Document Life Cycle Status*)
- `0SCM_TM_CFIRTYP` (*Forwarding Settlement Document Type*)
- `0SCM_TM_CHRTYPE` (*Charge Type*)
- `0SCM_TM_CONSOL` (*Buyer's or Shipper's Consolidation*)
- `0SCM_TM_CONTINENT` (*Continent*)
- `0SCM_TM_CONTRBAS` (*Contract Basis*)
- `0SCM_TM_CREATTYP` (*Creation Type of Transportation Order*)
- `0SCM_TM_DGOERROR` (*Dangerous Goods Check Error*)
- `0SCM_TM_DIMWPT` (*Dimensional Weight Profile*)
- `0SCM_TM_DISTLVL` (*Distribution Level for Transportation Charge Distribution*)
- `0SCM_TM_DSTICAT` (*Distribution Category*)
- `0SCM_TM_DTTYPE` (*Downtime Type*)
- `0SCM_TM_FAGDSC` (*Agreement Description Text*)
- `0SCM_TM_FAGIDSC` (*Agreement Item Description Text*)
- `0SCM_TM_FAG_CAT` (*Agreement Category*)
- `0SCM_TM_FAG_PRIC` (*Agreement Priority*)
- `0SCM_TM_FAG_RSTA` (*Agreement Status*)

- `0SCM_TM_FAG_USAC` (*Freight Agreement Charge Usage*)
- `0SCM_TM_FATYT` (*Agreement Type*)
- `0SCM_TM_HANDLCAR` (*Cargo Execution Status on Item Level*)
- `0SCM_TM_IATACODE` (*IATA Location Code*)
- `0SCM_TM_INCCLCD` (*Incoterms Classification Code*)
- `0SCM_TM_INSTYPE` (*Instruction Type*)
- `0SCM_TM_ITMCAT` (*Item Category*)
- `0SCM_TM_LOCTYPE` (*Location Type*)
- `0SCM_TM_MOVETYPE` (*Movement Type*)
- `0SCM_TM_MULTISTOP` (*Multi-Stop*)
- `0SCM_TM_NATSECSTS` (*Country-Specific Air Cargo Security Status*)
- `0SCM_TM_ORGEXT` (*Organizational Unit External ID*)
- `0SCM_TM_ORIENTN_BW` (*Trade Lane Orientation for BW*)
- `0SCM_TM_PACKTYPE` (*Package Type*)
- `0SCM_TM_PRD_DGPROFL` (*DG Indicator Profile*)
- `0SCM_TM_PRD_FRGHT_GRP` (*Product Freight Group*)
- `0SCM_TM_PRD_TRANSP_GRP` (*Product Transportation Group Code*)
- `0SCM_TM_REF_LVL` (*Freight Agreement Reference Level*)
- `0SCM_TM_REF_TYP` (*Freight Agreement Reference Type*)
- `0SCM_TM_RESI` (*Resource*)
- `0SCM_TM_RFQRST` (*RFQ Status Reason*)
- `0SCM_TM_RFQTYT` (*RFQ Type*)
- `0SCM_TM_RFQ_IPER` (*RFQ Item Periodicity*)
- `0SCM_TM_RFQ_ITC` (*RFQ Item Type*)
- `0SCM_TM_RFQ_RSC` (*Item Status*)
- `0SCM_TM_RFQ_SC` (*RFQ Status*)
- `0SCM_TM_RSNCNCLCO` (*Reason for Cancellation*)
- `0SCM_TM_SCON` (*All Contractors*)
- `0SCM_TM_SCONP` (*All Contracting Parties*)
- `0SCM_TM_SECSTAT` (*General Security Status*)
- `0SCM_TM_SET_BY_SERVICE` (*Origin of Entry*)
- `0SCM_TM_SFIRCAT` (*Freight Settlement Document Category*)
- `0SCM_TM_SFIRCRT` (*Freight Settlement Document Creation Type*)
- `0SCM_TM_SFIRCST` (*Freight Settlement Document Item Confirmation Status*)
- `0SCM_TM_SFIRIVT` (*Freight Settlement Document Invoice Document Type*)
- `0SCM_TM_SFIRLCS` (*Freight Settlement Document Life Cycle Status*)
- `0SCM_TM_SFIRTST` (*Freight Settlement Document Item Transfer Status*)
- `0SCM_TM_SFIRTYP` (*Freight Settlement Document Type*)
- `0SCM_TM_SHIPTYPE` (*Shipping Type*)
- `0SCM_TM_STAGETYPE` (*Stage Type*)
- `0SCM_TM_STA_CAT` (*Stage Category*)
- `0SCM_TM_STOP_ASSGN_CAT` (*Stop Assignment Category*)
- `0SCM_TM_STOP_CAT` (*Stop Category*)

- `0SCM_TM_STOP_ORIGIN` (*Stop Origin*)
- `0SCM_TM_STOP_ROLE` (*Stop Role*)
- `0SCM_TM_S_HDL_EXEC_STATUS` (*Handling Execution Status on Stop Level*)
- `0SCM_TM_TALCAT` (*Transportation Allocation Category*)
- `0SCM_TM_TALDSC` (*Transportation Allocation Description Text*)
- `0SCM_TM_TALLINETYPE` (*Transportation Allocation Line Type*)
- `0SCM_TM_TALTYP` (*Transportation Allocation Type Text*)
- `0SCM_TM_TAL_LOAD_TYPE` (*Allocation Load Type*)
- `0SCM_TM_TCCATC` (*Charge Item Category Code*)
- `0SCM_TM_TCCLSC` (*Charge Item Subcategory Code*)
- `0SCM_TM_TCDCHRCAT` (*Charge Category*)
- `0SCM_TM_TCDCHRSCAT` (*Charge Subcategory*)
- `0SCM_TM_TCDDISRULE` (*Distribution Rule*)
- `0SCM_TM_TCDLNTP` (*Transportation Charge Distribution Line Type*)
- `0SCM_TM_TCETC` (*Charge Item Type Code*)
- `0SCM_TM_TIME_DT` (*Time Determination Type*)
- `0SCM_TM_TMODECA` (*Transportation Mode Category*)
- `0SCM_TM_TMODECD` (*Transportation Mode Code*)
- `0SCM_TM_TORCAT` (*Transportation Order Category*)
- `0SCM_TM_TORCOAL` (*Transportation Order Consolidation Allowed*)
- `0SCM_TM_TORCONSOLTY` (*Consolidation Type*)
- `0SCM_TM_TORCUSTACTINB` (*Customs Activity Inbound*)
- `0SCM_TM_TORDISCR` (*Discrepancy*)
- `0SCM_TM_TORDISCRBL` (*Discrepancy Type Leads to Block or Not*)
- `0SCM_TM_TORDISCRTY` (*Discrepancy Type*)
- `0SCM_TM_TOREVENTSTATUS` (*Transportation Order Event Status*)
- `0SCM_TM_TOREXECINFO` (*Source of Execution Information*)
- `0SCM_TM_TOREXEROLECAT` (*Execution Role Category*)
- `0SCM_TM_TOREXETRANSACT` (*Transportation Activity*)
- `0SCM_TM_TORLCS` (*Transportation Order Life Cycle Status*)
- `0SCM_TM_TORTDLRELTYPE` (*Relation Type of Trade Lane for BW*)
- `0SCM_TM_TORTYP` (*Transportation Order Type*)
- `0SCM_TM_TRAFFICD` (*Traffic Direction*)
- `0SCM_TM_TRAZONE` (*Transportation Zone*)
- `0SCM_TM_TRAZONE_HIER` (*Transportation Zone Hierarchy*)
- `0SCM_TM_TRMEANS` (*Means of Transport*)
- `0SCM_TM_TRQCAT` (*Transportation Request Category*)
- `0SCM_TM_TRQITEMT` (*Type of Transportation Request Item*)
- `0SCM_TM_TRQLCS` (*Transportation Request Life Cycle Status*)
- `0SCM_TM_TRQSHIPSECSTAT` (*Shipper Security Status*)
- `0SCM_TM_TRQTYP` (*Transportation Request Type*)
- `0SCM_TM_TRSLCD` (*Transportation Service Level*)
- `0SCM_TM_TRSLCD_CARRIER` (*Transportation Service Level Code – Carrier*)

- `0SCM_TM_TRSLCD_SALES` (*Transportation Service Level Code – Sales*)
- `0SCM_TM_TSRT` (*Service Type*)
- `0SCM_TM_TURESCAT` (*Equipment Group*)
- `0SCM_TM_TURESTCO` (*Equipment Type*)
- `0SCM_TM_ULDCLASS` (*Unit Load Device Rate Class*)
- `0SCM_TM_ULDTYPE` (*Unit Load Device Rate Type*)
- `0SCM_TM_VEHDESC` (*Vehicle Resource Description*)
- `0SCM_TM_VEHTYPE` (*Resource Class*)

> i Note
>
> DataSource `0SCM_TM_TRAZONE_HIER` is especially used to upload the zone hierarchy, which is based for locations and therefore updates the hierarchy of InfoObject `0APO_LOCNO`.

3 DataSources for Transactional Data

The following DataSources are used for transactional data to transfer data one-to-one from the SAP TM system to the SAP NetWeaver BW system into the Persistent Staging Area (PSA) and then into the DataStore object (DSO):

- 0SCM_TM_BSH

  Transactional Data of Business Object Business Share

- 0SCM_TM_TAL

  Transactional Data of Business Object Transportation Allocation

- 0SCM_TM_TRQ

  Transactional Data of Business Object Transportation Request

- 0SCM_TM_TRQ_ITM

  Transactional Item Data of Business Object Transportation Request

- 0SCM_TM_TRQ_STG

  Transactional Data of Stage Information of Business Object Transportation Request

- 0SCM_TM_TOR

  Transactional Data of Business Object Transportation Order

- 0SCM_TM_TOR_ITM

  Transactional Item Data of Business Object Transportation Order

- 0SCM_TM_TOR_EXE

  Transactional Data of Execution Information of Business Object Transportation Order

- 0SCM_TM_TOR_STG

  Transactional Data of Stage Information of Business Object Transportation Order

- 0SCM_TM_TOR_TCD

  Transactional Data of Charge Distribution of Business Object Transportation Order

- 0SCM_TM_TOR_TDL

  Transactional Data of Trade Lanes of Business Object Transportation Order

- 0SCM_TM_CFIR

  Transactional Data of Business Object Forwarding Settlement Document

- 0SCM_TM_CFIR_ITM

  Transactional Item Data of Business Object Forwarding Settlement Document

- 0SCM_TM_CFIR_PTC

  Transactional Data of Business Object Forwarding Settlement Document for Planned Transport. Charges

- 0SCM_TM_SFIR

  Transactional Data of Business Object Freight Settlement Document

- 0SCM_TM_SFIR_ITM

  Transactional Item Data of Business Objects Freight Settlement Document

- 0SCM_TM_SFIR_PTC

  Transactional Data of Business Object Freight Settlement Document for Planned Transportation Charges

- 0SCM_TM_SFIR_IV

  Transactional Data of Business Object Freight Settlement Document Item IV Information (Actual Costs)

- 0SCM_TM_SFIR_TCD

  Transactional Data of Charge Distribution of Business Object Freight Settlement Document

- `0SCM_TM_FAG`
  Transactional Data of Business Object Freight Agreement
- `0SCM_TM_FAG_ITM`
  Transactional Data of Business Object Freight Agreement Item
- `0SCM_TM_FAG_REF`
  Transactional Data of Business Object Freight Agreement References

4   Defining the BW Relevance for Business Document Types

Context

You use this procedure to indicate business document types of business documents (for example, a forwarding order) relevant for SAP NetWeaver BW. During an upload from SAP TM to SAP NetWeaver BW, data is transferred from the documents indicated as relevant.

You can indicate the following business document types as relevant for SAP NetWeaver BW:

- Freight order types
- Freight booking types
- Freight unit types
- Forwarding order types
- Forwarding quotation types
- Forwarding settlement document types
- Freight settlement document types
- Order-based transportation requirement types
- Delivery-based transportation requirement types
- Transportation allocations and business shares
- Freight agreement RFQ types
- Forwarding agreement quotation types
- Freight agreement types
- Forwarding agreement and service product catalog types
- Internal agreement types

Procedure

In Customizing for SAP TM, choose one of the following paths:

- BW relevance of freight order types:

  ▶ *SAP Transportation Management* ❯ *Transportation Management* ❯ *Freight Order Management* ❯ *Freight Order* ❯ *Define Freight Order Types* ❯.
  Select the *BW Relev.* checkbox.

- BW relevance of freight booking types:

  ▶ *SAP Transportation Management* ❯ *Transportation Management* ❯ *Freight Order Management* ❯ *Freight Booking* ❯ *Define Freight Booking Types* ❯.
  Select the *BW Relev.* checkbox.

- BW relevance of freight unit types:

   ❚▶ *SAP Transportation Management* ❭ *Transportation Management* ❭ *Planning* ❭ *Freight Unit* ❭ *Define Freight Unit Types* ❭.
   Select the *BW Relev.* checkbox.

- BW relevance of forwarding order types:

   ❚▶ *SAP Transportation Management* ❭ *Transportation Management* ❭ *Forwarding Order Management* ❭ *Forwarding Order* ❭ *Define Forwarding Order Types* ❭.
   Select the *BW Relev.* checkbox.

- BW relevance of forwarding quotation types:

   ❚▶ *SAP Transportation Management* ❭ *Transportation Management* ❭ *Forwarding Order Management* ❭ *Forwarding Quotation* ❭ *Define Forwarding Quotation Types* ❭.
   Select the *BW Relev.* checkbox.

- BW relevance of forwarding settlement documents:

   ❚▶ *SAP Transportation Management* ❭ *Transportation Management* ❭ *Settlement* ❭ *Forwarding Settlement* ❭ *Define Forwarding Settlement Document Types* ❭.
   Select a Forwarding Settlement Document. Choose *Details*. Select the *BW Relev.* checkbox.

- BW relevance of freight settlement documents:

   ❚▶ *SAP Transportation Management* ❭ *Transportation Management* ❭ *Settlement* ❭ *Freight Settlement* ❭ *Define Freight Settlement Document Types* ❭.
   Select a Freight Settlement Document. Choose *Details*. Select the *BW Relev.* checkbox.

- BW relevance of order-based transportation requirements:

   ❚▶ *SAP Transportation Management* ❭ *Integration* ❭ *ERP Logistics Integration* ❭ *Order-Based Transportation Requirement* ❭ *Define Order-Based Transportation Requirement Types* ❭.
   Select the *BW Relev.* checkbox.

- BW relevance of delivery-based transportation requirement types:

   ❚▶ *SAP Transportation Management* ❭ *Integration* ❭ *ERP Logistics Integration* ❭ *Delivery-Based Transportation Requirement* ❭ *Define Delivery-Based Transportation Requirement Types* ❭.
   Select the *BW Relev.* checkbox.

- BW relevance of transportation allocations and business shares:

   ❚▶ *SAP Transportation Management* ❭ *Planning* ❭ *General Settings* ❭ *Define Transportation Allocation Settings* ❭.
   Select the *TAL BW Relevance* checkbox (Transportation Allocation).
   Select the *BS BW Relevance* checkbox (Business Share).

- BW relevance of freight agreement RFQ types:

   ❚▶ *SAP Transportation Management* ❭ *Transportation Management* ❭ *Master Data* ❭ *Agreement RFQs and Quotations* ❭ *Define Freight Agreement RFQ Types* ❭.
   Select the *BW Relev.* checkbox.

- BW relevance of forwarding agreement quotation types:

   ❚▶ *SAP Transportation Management* ❭ *Transportation Management* ❭ *Master Data* ❭ *Agreement RFQs and Quotations* ❭ *Define Forwarding Agreement Quotation Types* ❭.
   Select the *BW Relevance* checkbox.

- BW relevance of freight agreement types:

   ❚▶ *SAP Transportation Management* ❭ *Transportation Management* ❭ *Master Data* ❭ *Agreement and Service Products* ❭ *Define Freight Agreement Types* ❭.

Select the *BW Relevance* checkbox.

- ○ BW relevance of forwarding agreement and service product catalog types:

  ▶ *SAP Transportation Management* ❯ *Transportation Management* ❯ *Master Data* ❯ *Agreement and Service Products* ❯ *Define FWA and Service Product Catalog Types* ◀ .
  Select the *BW Relevance* checkbox.

- ○ BW relevance of internal agreement types:

  ▶ *SAP Transportation Management* ❯ *Transportation Management* ❯ *Master Data* ❯ *Agreement and Service Products* ❯ *Define Internal Agreement Types* ◀ .
  Select the *BW Relevance* checkbox.

5 Setting Up the Initial Data Upload to SAP NetWeaver BW

Use

You use this procedure to perform an initial data upload from SAP TM to SAP NetWeaver BW and to initialize the delta queues. The initial data upload is done using setup tables in SAP TM for existing data.

The following initialization options are available:

- Delta initialization **without** data transfer
  In this case, the system does not use setup tables and initialization reports in SAP TM. There is only an initialization from SAP NetWeaver BW.
- Delta initialization **with** data transfer
  In this case, you must do the following:
  - Delete all data in the setup tables.
  - Fill the setup tables with data from the extractor.
  - Check data in the setup tables.

  For more information, see the *Procedure* section further down in this topic.

> → Recommendation
>
> To avoid data loss, run the initial upload when there is no data traffic.

> i Note
>
> The delta initialization with data transfer is one option to do the initial data upload and delta initialization in one step. Furthermore, it is also possible to do this in two steps:
>
> 1. Initial data upload with update mode *Full Update*
> 2. Delta initialization without data transfer

Prerequisites

To display the SAP TM-specific menu on the SAP Easy Access screen, choose the Customizing activity *Definition on initial menu* in Customizing for *SAP NetWeaver* under *Application Server* *System Administration* , and set the initial menu to */SCMB/MENUE*.

The system considers only business objects for the initial data upload which have the following life cycle status values:

Business Object	Life Cycle Statuses
Transportation request	*Completed*
Transportation order	In Customizing, you can add the status values *In Process*, *New*, and *Completed*.
Forwarding settlement document	*Ready for Invoicing in SAP ERP*
	Transferred for Invoicing in SAP ERP
	Invoiced in SAP ERP
	Ready for Credit Memo Creation in SAP ERP
	Transferred for Credit Memo Creation in SAP ERP
	Credit Memo Created in SAP ERP
Freight settlement document	*Ready for Accruals*
	Transferred for Accruals
	Accruals Posted
	Invoice Verified in SAP ERP
Transportation allocation	Not applicable
Business share	Not applicable
Trade lane	Not applicable
Transportation order execution information	Not applicable
Master RFQ	*Published*
RFQ	*Submitted*
Service product and agreement	*Released*

Procedure

Step 1: Initializing the Setup Tables

1. To delete all data in the setup tables, on the *SAP Easy Access* screen, choose ▶ *Transportation Management* ❯ *Administration* ❯ *Initial Data Upload to SAP NetWeaver BW* ❯ *Initialize Setup Tables* ▶.
2. Select setup tables by selecting the corresponding checkboxes (for example the *Transportation Order* checkbox).
3. Choose *Execute*.

Result: The setup tables are empty.

Step 2: Filling the Setup Tables (Initialization with Data)

1. To load existing data into the setup tables, on the *SAP Easy Access* screen, choose one of the following paths:

   - ▌▶ *Transportation Management* ❯ *Administration* ❯ *Initial Data Upload to SAP NetWeaver BW* ❯ *Upload of Transportation Requests* ❯
     The *Transportation Request Selection for Init. Upload to SAP NetWeaver BW* screen appears.
     Under *Business Document Identification* and under *Management Data*, you can enter selection criteria, if required.

   - ▌▶ *Transportation Management* ❯ *Administration* ❯ *Initial Data Upload to SAP NetWeaver BW* ❯ *Upload of Transportation Orders* ❯
     The *Transportation Order Selection for Initial Upload to SAP NetWeaver BW* screen appears.
     Under *Business Document Identification* and under *Management Data*, you can enter selection criteria, if required.
     Under Additional Extraction, you can specify whether you want to upload *Trade Lanes*, Transportation Order *Execution Information*, and/or *Charge Distribution* data. Choose the appropriate checkbox.

   - ▌▶ *Transportation Management* ❯ *Administration* ❯ *Initial Data Upload to SAP NetWeaver BW* ❯ *Upload of Forwarding Settlement Documents* ❯
     The *FWSD Selection for Initial Upload to SAP NetWeaver BW* screen appears.
     Under *Business Document Identification* and under *Management Data*, you can enter selection criteria, if required.

   - ▌▶ *Transportation Management* ❯ *Administration* ❯ *Initial Data Upload to SAP NetWeaver BW* ❯ *Upload of Freight Settlement Documents* ❯
     The *FSD Selection for Initial Upload to SAP NetWeaver BW* screen appears.
     Under *Business Document Identification* and under *Management Data*, you can enter selection criteria, if required.
     Under Additional Extraction, you can specify whether you want to upload *Charge Distribution* data. Choose the appropriate checkbox.

   - ▌▶ *Transportation Management* ❯ *Administration* ❯ *Initial Data Upload to SAP NetWeaver BW* ❯ *Upload of Business Shares* ❯
     The *Business Share Selection for Initial Upload to SAP NetWeaver BW* screen appears.
     Under *Business Document Identification* and under *Management Data*, you can enter selection criteria, if required.

   - ▌▶ *Transportation Management* ❯ *Administration* ❯ *Initial Data Upload to SAP NetWeaver BW* ❯ *Upload of Transportation Allocations* ❯
     The *Transportation Allocation Selection Initial Upload to SAP NetWeaver BW* screen appears.
     Under *Business Document Identification* and under *Management Data*, you can enter selection criteria, if required.

   - ▌▶ *Transportation Management* ❯ *Administration* ❯ *Initial Data Upload to SAP NetWeaver BW* ❯ *Upload of Agreements* ❯
     The *Agreement Selection Initial Upload to SAP NetWeaver BW* screen appears.
     Under *Business Document Identification*, you can enter selection criteria, if required.

2. Choose *Execute*.

Result: When loading data into the SAP NetWeaver BW system, the corresponding setup tables are filled with data from the extractor.

> **i Note**
>
> Instead of using the setup programs via SAP Easy Access, there is another way to get the setup tables filled. This procedure is especially developed for SAP TM and provides a complete guided procedure in order to initialize setup tables, do a complete setup of all required DataSources, and check the result of the setup. This procedure can be found at ▶ *SAP NetWeaver Business Client* ❯ *Application Administration* ❯ *BI Processing* ❯ *BI Extractor Cockpit for Setup of Statistic Data* ◀.
>
> This guided procedure is especially made for huge amounts of data for the complete setup of SAP TM statistic data on the customer site and provides six steps. Therefore it doesn't provide the setup of single documents, for example, for text reasons.
>
> 1. Initialize setup tables.
> 2. Maintain package sizes.
> 3. Start extraction.
> 4. Monitor extraction.
> 5. RFC log of extraction process.
> 6. View setup tables (this is a higher performing method than using transaction `RSA3` or the Extractor checker).

Step 3: Checking the Data in the Setup Tables

1. Access the *Maintain DataSources* report (transaction `RSA6`) to perform a DataSource extraction test.
2. On the *Postprocess DataSources and Hierarchy* screen, choose ▶ *Transportation Management DataSources* ❯ *Transportation Management* ◀.
3. Select a DataSource.
4. In the context menu of the DataSource, choose *DataSource Extraction Test*.

Result: The system displays the data records in a detailed view.

6 Enabling a Delta Data Upload to SAP NetWeaver BW in SAP TM

Use

You use this procedure to make the settings for a delta data upload from one of the following business objects in SAP TM to SAP NetWeaver BW:

- Transportation order (TO)
- Transportation request (TR)
- Freight settlement document (FSD)
- Forwarding settlement document (FWSD)
- Business share
- Transportation allocation
- Freight agreement

Prerequisites

You have performed an initial data upload to SAP NetWeaver BW (initialization with or without data transfer).
For more information, see section *Setting Up the Initial Data Upload to SAP NetWeaver BW [page 21]*.

Procedure

Step 1: Enabling Delta Data Upload for Business Objects

1. In Customizing for SAP TM, choose ▶ *Cross-Application Components* ❯ *Processes and Tools for Enterprise Applications* ❯ *Reusable Objects and Functions for BOPF Environment* ❯ *PPF Adapter for Output Management -> Maintain Output Management Adapter Settings* ❯.
2. Choose the dialog structure *Direct Output Agents (w/o PPF & w/o History)*.
3. Select one of the following agents:
    - Transportation Order: `TOR_BW_EXTRACTION`
    - Transportation Request: `TRQ_BW_EXTRACTION`
    - Freight Settlement Document: `SFIR_BW_EXTRACTION`
    - Forwarding Settlement Document: `CFIR_BW_EXTRACTION`
    - Business Share: `BSH_BW_EXTRACTION`
    - Transportation Allocation: `TAL_BW_EXTRACTION`
    - Freight Agreement: `FAG_BW_EXTRACTION`
4. Choose *Details*.

5. Select the *Enable* checkbox.

Step 2: Checking the Delta Queue

1. Access the *BW Delta Queue Monitor* report (transaction `RSA7`).
2. Select a DataSource.
3. Choose *Display data entries*.
4. Select the update mode *Delta Update* to check the RFC queue.

Result

Once the delta data upload is enabled, the system calls the processor class when you save a business document. The system checks whether the upload conditions are fulfilled (for example, if the life cycle status is set to *Completed*). If the conditions are fulfilled, the system writes the data from the business object to the delta queues.

7 Enrichment of Location Master Data with the Continent Field

In Customizing for SAP Transportation Management (SAP TM), choose ▌ *Transportation Management* ❯ *Integration* ❯ *Integration to SAP NetWeaver Business Warehouse* ❯ *Assign Country to Continent* ❯.

In this Customizing activity, you assign a country to its continent. You can define a code for each continent and then you can enter a country name and code for which you can specify a continent. This setting is relevant to BI extraction for location master data only.

You must specify a default continent for each country - a default continent is required for the system to successfully complete BI extraction for location master data with DataSource `0APO_LOCNO_ATTR`. The system uses this data to identify a continent for a given location.

You must only specify one default continent for each country.

8 Specifying Metachains and Process Chains for SAP TM BI Content

Use

Metachains and process chains provide parts of business object (BO)-specific data flows. You can use process chains like modules to set up a customer-specific data flow.

Features

- You can use the standard process or metachains delivered by SAP.

  > **i Note**
  >
  > You need to manually activate these process or metachains. You can select process chains using the textual description (such as `Transport*`) or the technical name (such as `0SCM*`).

  SAP delivers process and metachains in the following components:
  - *Extraction Layer*
  - *Data Mart Layer*
  - *Metachains*

    > **i Note**
    >
    > You use the delivered metachains only for the delta data upload to SAP NetWeaver BW.

- You can create customer-specific process chains and combine process chains to a new grouping. The result of this grouping constitutes a new metachain.

Overview of Metachains and Process Chains

Below find an overview of the metachains, the process chains a metachain contains, and the order of execution of the process chains. In a metachain, first the process chains of the extraction layer and then the process chains of the data mart layer are executed. A metachain leads to an InfoCube.

InfoCube	Metachain	Process Chain Extraction Layer	Process Chain Data Mart Layer
Actual Costs (`0TMS_C15`)	Actual Costs (`0SCM_TM_META_ACT_COSTS`)	1. TO Consolidated (`0SCM_TM_TOR_CONS`) 2. FSD Consolidated (`0SCM_TM_FSD_CONS`) 3. FSD Invoice Verification (`0SCM_TM_FSD_IV_INFO`)	1. Actual Costs (`0SCM_TM_ACTUAL_COSTS`)

InfoCube	Metachain	Process Chain Extraction Layer	Process Chain Data Mart Layer
Planned Costs (`0TMS_C14`)	Planned Costs (`0SCM_TM_META_PL_COSTS`)	1. TO Consolidated (`0SCM_TM_TOR_CONS`) 2. FSD Consolidated (`0SCM_TM_FSD_CONS`) 3. TO Stages (`0SCM_TM_TOR_STG`) 4. FSD Planned Transportation Charges (`0SCM_TM_FSD_PCHARGES`)	1. Planned Costs (`0SCM_TM_PLANNED_COSTS`)
Business Share (`0TMS_C19`)	Business Share Analysis (`0SCM_TM_META_BSH`)	1. Business Share (`0SCM_TM_BSH`)	1. Business Share (`0SCM_TM_BSH_CUBE`)
Transportation Order Execution (`0TMS_C18`)	Execution (`0SCM_TM_META_EXE`)	1. TO Consolidated (`0SCM_TM_TOR_CONS`) 2. TO Execution (`0SCM_TM_TOR EXE`) 3. TO Stages (`0SCM_TM_TOR_STG`)	1. Execution (`0SCM_TM_TOR_EXE_CUBE`)
Revenues (`0TMS_C16`)	Revenues (`0SCM_TM_META_REVENUES`)	1. TR Consolidated (`0SCM_TM_TOQ_CONS`) 2. FWSD Consolidated (`0SCM_TM_FWSD_CONS`) 3. FWSD Planned Tranportation Charges (`0SCM_TM_FWSD_PCHARGES`)	1. Revenues (`0SCM_TM_REVENUES`)
Transportation Allocation (`0TMS_C20`)	Transportation Allocation (`0SCM_TM_META_TAL`)	1. Transportation Allocation (`0SCM_TM_TAL`)	1. Transportation Allocation (`0SCM_TM_TAL_CUBE`)
Trade Lanes (`0TMS_C21`)	Trade Lane (`0SCM_TM_META_TDL`)	1. TO Consolidated (`0SCM_TM_TOR_CONS`) 2. TO Trade Lanes (`0SCM_TM_TOR_TDL`) 3. TO Stages (`0SCM_TM_TOR_STG`)	1. TO Stages Consolidated (`0SCM_TM_TOR_STG_CONS`) 2. Trade Lanes (`0SCM_TM_TOR_TDL_CUBE`)
Transportation Order (`0TMS_C12`)	Transportation Oder (`0SCM_TM_META_TOR`)	1. TO Consolidated (`0SCM_TM_TOR_CONS`)	1. Transportation Order Data (`0SCM_TM_TOR_CUBE`)
Transportation Request (`0TMS_C11`)	Transportation Request (`0SCM_TM_META_TRQ`)	1. TR Consolidated (`0SCM_TM_TRQ_CONS`)	1. Transportation Request Data (`0SCM_TM_TRQ_CUBE`)

InfoCube	Metachain	Process Chain Extraction Layer	Process Chain Data Mart Layer
Transportation Order Stages (`0TMS_C23`)	TO Stages (`0SCM_TM_META_TOR_STG`)	1. TO Consolidated (`0SCM_TM_TOR_CONS`) 2. TO Stages (`0SCM_TM_TOR_STG`)	1. TO Stages Consolidated (`0SCM_TM_TOR_STG_CONS`) 2. TO Stages (`0SCM_TM_TOR_STG_CUBE`)
Transportation Request Stages (`0TMS_C22`)	TR Stages (`0SCM_TM_META_TRQ_STG`)	1. TR Consolidated (`0SCM_TM_TRQ_CONS`) 2. TR Stages (`0SCM_TM_TRQ_STG`)	1. TR Stages (`0SCM_TM_TRQ_STG_CUBE`)
Agreement (`0TMS_C25`)	Agreement (`0SCM_TM_META_FAG`)	1. Agreement (`0SCM_TM_FAG`)	1. Agreement (`0SCM_TM_FAG_CUBE`)

9 Business Add-Ins

Use

You can use the following Business Add-Ins (BAdIs) to specify conditions or to enhance the extraction structures for the data upload:

- *BAdI: Condition for Extraction*
  You use this BAdI to change the conditions for the initial or delta upload of business objects data. For example, you specify that the business document data to be uploaded has a life cycle status other than *Completed*.
- *BAdI: Fill Extraction Structures*
  You use this BAdI to enhance the extraction structures for the data upload of the different business objects. For example, you specify that the system fills fields differently in the standard extraction structure or uses additional fields in a customer append.

Activities

To access the BAdIs, choose in Customizing for SAP TM one of the following paths:

- ▶ *SAP Transportation Management* ❯ *Transportation Management* ❯ *Business Add-Ins (BAdIs) for Transportation Management* ❯ *Basic Functions* ❯ *Business Warehouse* ❯ *BAdI: Condition for Extraction* ❯
- ▶ *SAP Transportation Management* ❯ *Transportation Management* ❯ *Business Add-Ins (BAdIs) for Transportation Management* ❯ *Basic Functions* ❯ *Business Warehouse* ❯ *BAdI: Fill Extraction Structures* ❯

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