

# Step-by-Step Shipment Costs Customizing for Downstream Oil and Gas



## Applies to:

SAP ERP (ECC6.0 version onwards) with IS-OIL components. For more information, visit the [Supply Chain Management homepage](#).

## Summary

The objective of this document is to provide a general understanding on the customizing perspective for Shipment Cost functionality, specifically for Oil & Gas (O&G) industry.

Shipment Cost is the part and parcel of the Logistics Execution (LE) module, which also integrates closely with IS-OIL Transportation & Distribution (TD) functionalities. The IS-OIL TD functionality mainly handles the inbound and outbound delivery/shipment of bulk products for O&G industry.

Shipment Costs on the other hand is the sub-functionality of the IS-OIL TD components that handles the calculation of transportation/shipment cost for a particular shipment.

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## Author Bio



Phang Kok Wai is currently works at SAP Malaysia and has more than four (4) years of solution implementation experience mainly in the Logistics modules covering SAP SD, MM, LE & IS-OIL modules. His main focus includes providing professional consulting services to customers in the area of Outbound & Inbound Logistics and Industry Solution for Oil & Gas.

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## Introduction

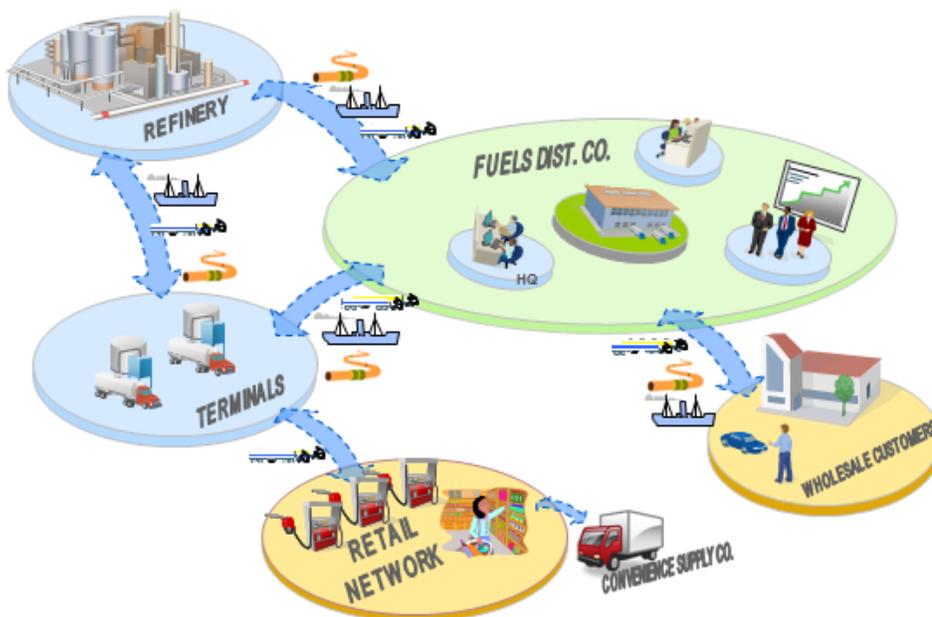
In a macro view, logistics strategically helps business to optimize the production and distribution processes for promoting an efficient and competitive enterprise. The crucial element in any logistics chain is no doubt the transportation system, which joints the separated activities of various business process and/or components. Transportation occupies about one-third of the amount in the logistics costs and as such, the transportation systems of the business influence the performance of logistics system hugely. Transporting activities are necessary in the whole production procedures, from the manufacturing plant to the delivery of the finished products to the final consumers and/or returns of defected products. Only a good coordination between each of the above mentioned components would maximize the benefits and profitability of any businesses.

Hence, it is no surprise that transportation cost has always been an important component in any businesses, especially in the Oil & Gas industry that enterprise should aim to improve and increase its efficiencies to maximize corporate profitability. These logistics activities comprised of physical (transportation and storage etc.) and non-physical activities (transportation system design, forwarding agent selection, freight contract negotiation etc.). As such, a complete information system is crucial to effectively map these physical and non-physical activities of transportation to influence management decision making, and most importantly, to address the key issues of tracking and tracing the movement of products through these transportation system.

Logistics Execution module in SAP is one of the core modules that covers the functionalities of shipment and transportation activities, which also covers the one of the crucial area of transportation function(s) – shipment costing. The functionalities of shipment costs are almost similar to the shipment costs processes described in Sales & Distribution (SD) component, with the exception that the enhanced shipment cost in the Industry Solution for Oil & Gas (IS-OIL) includes the component that specifically meets the O&G industry transportation activities. It allow the combination of outbound deliveries, inbound deliveries and transfers (shipping notifications, reservation & deliveries) in a single shipment while providing the visibility of stock in-transit and providing shipment cost calculation capability of various different legs (i.e. preliminary, main or subsequent leg) through various different vendors. The core process of shipment costing in TD is based on the Transporter and the TD Vehicle data for a particular shipment in Industry Solution for Oil & Gas.

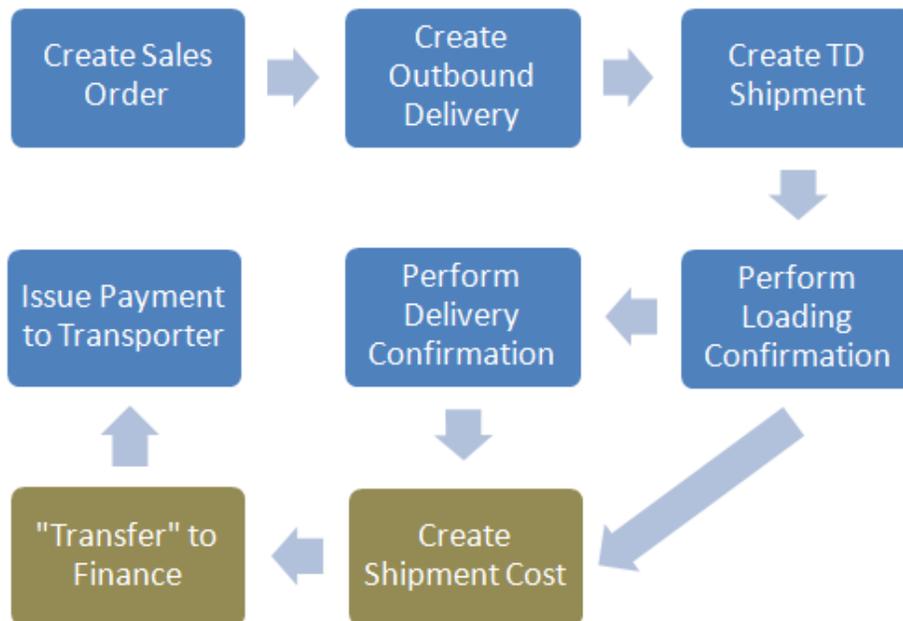
The main aim of this document is to provide a set of basic configuration steps and things to consider for the configuration of shipment costs with the integration of the enhanced IS-OIL functions provided by SAP.

### Brief diagram of transportation system in downstream Oil & Gas industry



**Transaction**

## Flow of Shipment Costs Process (with TD Shipment)



Note: This document aims to provide a general understanding on the customizing for the above highlighted (in BROWN) process.

### Prerequisites

For the shipment costs functions to work, the following configuration has to be completed prior to proceeding with the Shipment Cost customizing:

- The required Transportation Planning Point has been maintained and assigned to relevant Company Codes.
- Routes and Stages (for multiple leg etc.) configuration has been completed and adequately defined.
- TD Shipment configurations and controls have been maintained.
- Forwarding agent vendor master has been duly maintained and extended for the relevant Company Code and Purchasing Organization.

## Step-by-step Shipment Costs Customizing

### Shipment Cost Document

Maintain number range for shipment costs

<b>T-Code</b>	VN08
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Shipment Cost Document → Define Number Ranges for Shipment Costs

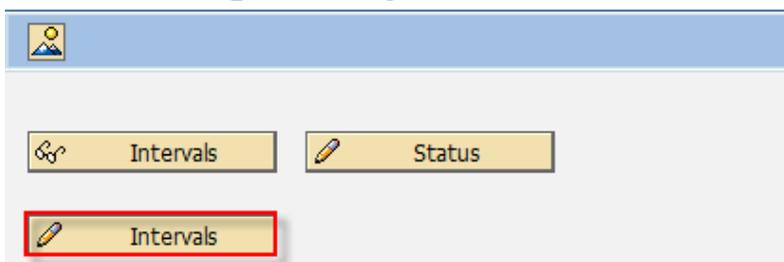
Similar to sales and purchasing business documents used such as sales order and purchase order, shipment cost document is the central document used in shipment cost processing.

This node in the IMG customizing introduces you to the following functions used:

- Number range used in shipment cost document
- Shipment cost type and item categories along with its control parameters and assignment

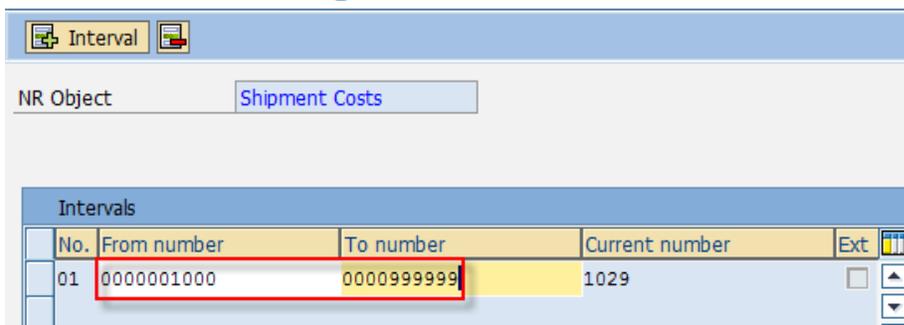
1. At the main screen, click on “Change Intervals” as shown below:

#### Number Range for Shipment Costs



2. Subsequently, maintain the ranges as shown below:

#### Maintain Number Range Intervals



If you want to define a new Interval, click on  Interval to define a new interval.

3. Once the ranges have been maintained, click on  to save the changes made.

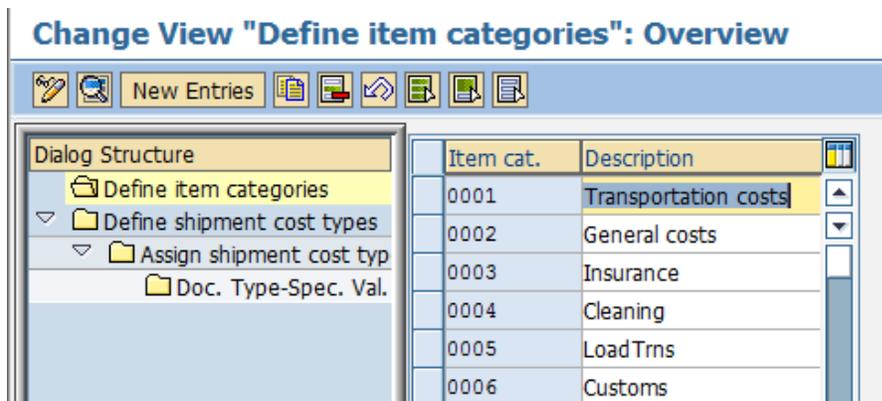
## Maintain shipment cost types and item categories

<b>T-Code</b>	T_56
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Shipment Cost Document → Shipment Cost Types and Item Categories

This configuration path introduces all the important control features used in a shipment cost document:

- Shipment cost header number range assignment
- Status requirements maintenance for shipment documents
- Parameters maintenance for shipment costing
- Parameters maintenance for shipment settlement

1. At the main screen, double click on “Define item categories” and define the required item categories:



Note: The rule of thumb here is to classify the item categories individually if each item contains a different set of general data for shipment cost calculation and settlement and/or service agents.

2. Subsequently, click on  to maintain the relevant controls for each item categories created:

**Change View "Define item categories": Details**

**Dialog Structure**

- Define item categories
  - Define shipment cost t
    - Assign shipment co
      - Doc. Type-Spec

**Item category** 0001 **Transportation costs**

**Calculation**

Pricing date	0002	Stage end (actual)
Partn.function	CR	Forwarding agent
Item det. group	0001	Shipment leg - general

**Settlement**

Cost dist.	C	Delivery item
Acct Assgt Cat.	K	Cost center
Settlement date	0002	Stage end (actual)
Origin CO	A	General ledger account
Settlement rel.	X	relevant for settlement (G/L account)
Generate PO	<input type="checkbox"/>	Do not generate purchase order

In the detailed screen for item categories, you can define few important controls as follow:

- Calculation parameters for shipment costs
- Cost distribution
- Account assignment category usage – you can define whether it is a cost center, profit segment etc.
- Origin of CO objects – either from G/L account or various sequences depending on Order and Delivery
- Frequency of generating a Purchase Order – daily, weekly or monthly.

3. Click on **New Entries** to create the required Shipment Cost Type:

**Change View "Define shipment cost types": Overview**

**Dialog Structure**

- Define item categories
  - Define shipment cost t
    - Assign shipment co
      - Doc. Type-Spec

**New Entries** **BC Set: Change Field Values**

ShpCostTyp	Description
0001	Standard
BARG	Waterway
MARI	Marine(spot charter)
MART	Marine(time charter)
OGSD	OGSD Freight Kalk.
PIPE	Pipeline

Note: The common practice is that an individual shipment cost types for each mode of transport can be maintained.

4. Subsequently, click on  to maintain the relevant controls for each Shipment Cost Type (Header) created:

**Change View "Define shipment cost types": Details**

New Entries       BC Set: Change Field Values

Dialog Structure

- Define item categories
- Define shipment cost types
- Assign shipment cost types and item categories
- Doc. Type-Spec

Ship. cost type PIPE Pipeline

Document cat. a

Number systems

NR int. assgt. 01 No. range ext.

Control data

Ov.stat. Shpmt **5 Shipment start / Co** Scr.seq.group F

Note:

- As highlighted above, the shipment cost types number range is assigned here.
- In addition, the important control data here is to maintain the overall status of shipment document required to create the shipment cost document. This indicator checks the overall shipment status of a TD shipment. In most cases, shipment cost document is allowed to be created when a shipment is completed. However, there are also some cases where shipment document is allowed to be created during shipment loading.
- In some release, where the required overall shipment status for shipment costing is set to Status 4, but system is not allowing the completed shipment document (Status = 6) to be reversed. Please refer to [SAP Note 1585630](#) and [SAP Note 1543888](#) to address this issue.

5. Thereafter, double click on dialog structure "Assign shipment cost types and item categories" to assign the relevant item categories as shown below:

**Change View "Assign shipment cost types and item categories": Overview**

New Entries       BC Set: Change Field Values

Dialog Structure

- Define item categories
- Define shipment cost types
- Assign shipment cost types and item categories
- Doc. Type-Spec

Ship. cost type PIPE

Assign shipment cost types and item categories

Rec.indic.	Ite...	Auto. prop	Val...	RteAutProc
A Shipment Header	HEAD	B Automatically	3200	C Determine account for
B Shipment Leg	STG1	B Automatically	3200	C Determine account for
E Vehicle - Bulk Prod...	VEHI	B Automatically	3200	C Determine account for

Note:

- In this assignment, you also specify whether the item categories are proposed automatically or specified manually during shipment cost document creation.
- You can also maintain the valuation class used for shipment costing and specify whether it will determine a G/L account automatically or entered manually. The valuation class specified here will be used for automatic account determination in the settlement process.
- The valuation class makes it possible to post the values of services of the same service category to different accounts.

- Finally, double click on dialog structure "Doc.Type-Spec.Val. Class (only TD Bulk Shipment)" to assign the relevant valuation class (if necessary) for each document type category as shown below:

**Change View "Doc. Type-Spec. Val. Class (only TD Bulk Shipment)": Over**

DocCa	ValCl
7	3100
J	3100

**Further notes:**

The defined shipment cost type as above can be subsequently assigned to individual bulk shipment type as shown below:

**Change View "TD Shipment Type": Details**

**Units of measure**

UoM ID: 2 volume | Weight UoM: T0 | Nr.decimals: 2  
 Volume UoM: M3 | Nr.decimals: 2

**Additional settings**

Doc.seq.no. unique | Event def.group: MAR  
 Event seq.no.unique  
 Adopt compartment allocation |  Vehicle meter req.  
 Shift mandatory  
 No gain/loss posting within tolerance (Shipment UoM):  
 Qty.from: | Qty to: |  
 Core Shipment type: |

**Shipment cost relevance**

Header | Ship. cost type: BARG | Vol.UoM (amb.): L  
 Vehicle | Shipping type: 15 | Vol.UoM (corr.): L15  
 Leg | Costing base: 0 based on loaded q...  
 Load transfer pt. |  Auto stage assignm.  
 Border cross. pt.

**Example:**

A simple scenario as shown below is: Assuming that you have defined your bulk shipment type based on the specific mode of transport because a different cost calculation method is required for different mode of transport.

Hence, for each bulk shipment type, you can assign an individual shipment cost type:

Bulk Shipment Type	Description	Shipment Cost Type	Description
BARG	Barge transport	ZBRG	Barge shipment cost type
PIPE	Pipeline transport	ZPIP	Pipeline shipment cost type
TRUK	Truck transport	ZTRU	Truck shipment cost type
MARI	Marine transport	ZMAR	Marine shipment cost type
RAIL	Rail transport	ZRAL	Rail shipment cost type

**Note:**

- With the assignment to individual bulk shipment type, the shipment cost type can be automatically determined at the during shipment cost creation, hence eliminating manual entries.
- Another important note here is to maintain the “costing base” for the shipment cost calculation, whether it is calculated based on loaded quantities or delivered quantities. This is maintained for each bulk shipment type configuration.

**Shipment Cost Pricing****Define Price Dependencies**

<b>T-Code</b>	T_03
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Pricing → Pricing Control → Define Price Dependencies

In this configuration path, you can make the condition types (i.e. prices, surcharges, and discounts) dependent on almost all the fields in a shipment cost document. You define these dependencies using the condition tables and where there are fields that are not included in the table, you may manually add it using field catalog.

The allowed fields here are only from KOMG, KOMK and KOMP tables respectively.

To manually create a table to use as your pricing strategy in the access sequence, you may follow the below steps:

- Enter the name of the table you want to create. *(Bear in mind that you can only choose names between 501 and 999. If you do not make a specification, the system automatically assigns a sequential number.)*
- Specify whether you would like to create the table with or without a validity period.
- Enter a description for the condition table.
- Select the required fields for the condition table from the list of the permitted fields listed in the field catalog. You may also manually specify the field name if you know the field name.
- Click on “Generate” to generate the new condition table.

## Define Condition Types

<b>T-Code</b>	T_06
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Pricing → Pricing Control → Define Condition Types

Price elements such as surcharges, prices, taxes etc are represented in the system as condition types.

- At the main screen, define the condition type code and description as required.

**Change View "Condition Types": Overview**

CTyp	Condition Type	Condition class	Calculation type
AFRA	AFRA rate	Discount or surcharge	Percentage
AGNT	Service Agent	Prices	Fixed amount
DISC	Discount	Discount or surcharge	Fixed amount
DISV	Freight:Dist/Vol Sc.	Prices	Distance-dependent
DIVO	2-dim Dist/Vol Scale	Discount or surcharge	Multi-dimensional
ENTF	Distance	Prices	Distance-dependent
FB00	Freight Class/Weight	Prices	Gross weight
FB10	Per diem/Flat rate	Prices	Fixed amount
FD00	Spread	Discount or surcharge	Percentage included

- Subsequently, define the relevant control data and define what changes that is allowed:

**Change View "Condition Types": Details**

Condit. type: **FB00 Freight Class/Weight** Access seq.: **MATK Freight class**

Records for access:

**Control data 1**

Cond. class:  B Prices Plus/minus  positive a

Calculat.type:  D Gross weight

Cond.category:

Rounding rule:  Commercial

**Freight costing**

Calc. base:  D Shipment costs item ShipMatlType:

Matrix maint.:  Standard maintenance

**Group condition**

Group cond. GrpCond.routine:  1 Overall Document

RoundDiffComp

**Changes which can be made**

Manual entries:  C Manual entry has priority

Header cond.  Amount/percent  Qty relation

Item condition  Delete  Value  Calculat.type

**Master data**

valid from:  Today's date PricingProc:

Valid to:  31.12.9999 delete fr. DB:  Do not delete (set the dele...)

RefConType:   Condition index

Note: It is recommended that you do not change the SAP standard conditions types and define your own condition types. The key should start with the letter Z (example, ZPRO – Price).

**Important:**

Freight costing	
Calc. base	D Shipment costs item
Matrix maint.	Standard maintenance
	ShipMatlType <input type="text"/>

In the condition type control, it is important to maintain the correct calculation base. The calculation bases determine the origin of the data that is used during pricing as the basis for the condition type.

Important documentation provided by SAP worth to note for each calculation bases types are as followed:

- **All**
  - A condition type with this calculation basis can be used for every shipment cost sub-item.
  - No sub-items are created from this calculation basis. This means that if only condition types of this kind are contained in the procedure, then the system cannot determine any sub-items.
  - You would use this calculation basis if, for example, you wanted to define a discount as valid for both delivery-related and shipping-unit- related shipment costs.
- **Delivery**
  - If the pricing procedure contains condition types with this calculation basis, then a shipment cost sub-item is created for every relevant delivery.
  - When you use this calculation basis in condition determination, no information is available from the delivery item (e.g. material) or the shipping unit.
  - The scales bases for gross weight, net weight and volume refer to the corresponding information in the delivery headers.
- **Delivery item**
  - If the pricing procedure contains condition types with this calculation basis, then a shipment cost sub-item is created for every relevant delivery sub-item.
  - When you use this calculation basis in condition determination, no information is available from the shipment units.
  - The scale bases for gross weight, net weight and volume refer to the corresponding information in the delivery items.
- **Shipping units**
  - If the pricing procedure contains condition types with this calculation basis, then shipment cost sub-items are created for the shipments units assigned to the shipping material types in the condition types. The number of sub-items created depends on the other features of the shipping units (e.g. shipping unit group 1).
  - When you use this calculation basis in condition determination, no information is available from the deliveries or the delivery items.
  - The scale bases for gross weight, net weight and volume refer to the corresponding accumulated information from the relevant shipping units.
- **Shipment cost item**
  - If the pricing procedure contains condition types with this calculation basis, then exactly one shipment cost sub-item is created.
  - When you use this calculation basis in condition determination, no information is available from the deliveries, the delivery items or the shipping units.
  - The scales bases for gross weight, net weight and volume refer to the corresponding cumulated information from the relevant delivery headers.

The different settings used above determines how many different sub-items determined by the system during shipment cost calculation.

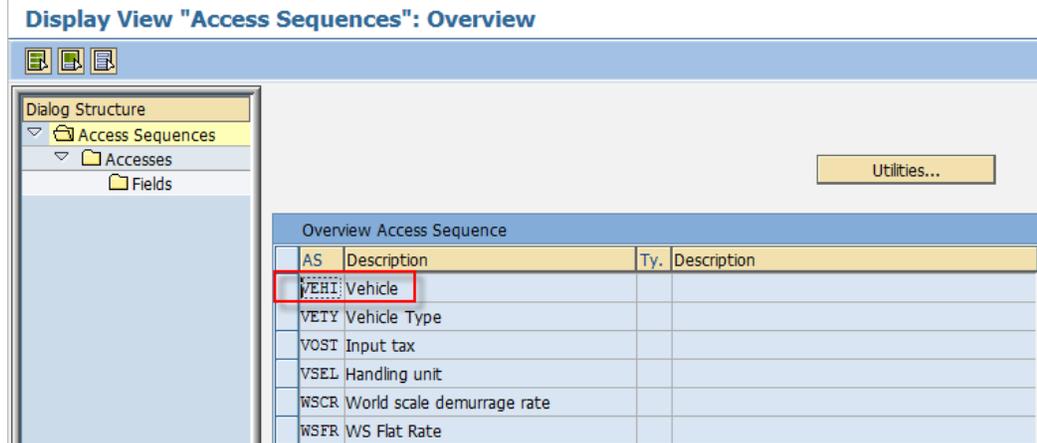
Note: For IS-OIL specific calculation base, there are two specific calculation base that are only relevant for IS-OIL, which is "O: Document Item Quantity – Bulk Product Shipment (IS-OIL)" and "P: Vehicle – Bulk Product Shipment Only (IS-OIL).

In the configuration where the combination of Calculation Base = P (Document Item Quantity) and Calculation Type = T (Multi-dimensional) is maintained, the conditions in the condition tab in the freight cost item details screen in shipment cost creation is showing as zero value. This is a known program error as there are no codes maintained to handle the case when calculation base = P. To fix this issue, please apply [SAP Note 1348330](#).

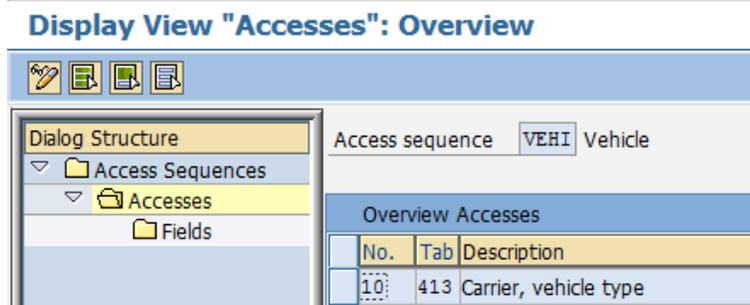
Define Access Sequence

<b>T-Code</b>	T_07
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Pricing → Pricing Control → Define Access Sequence

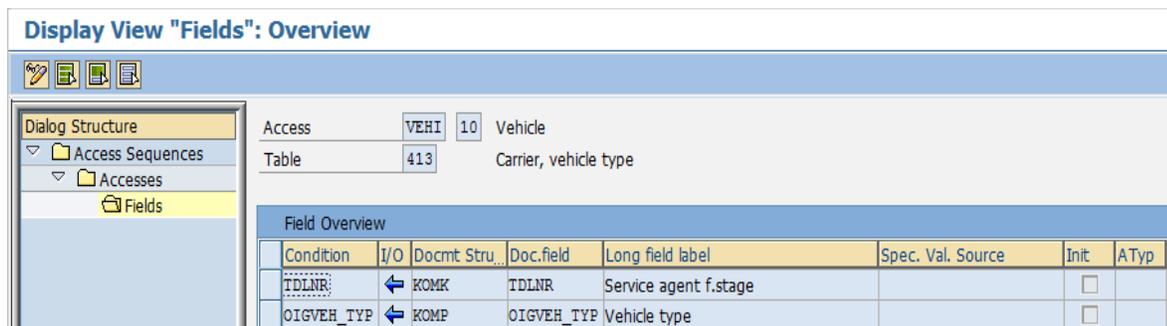
1. In the main screen, you define the access sequence that is required:



2. Double click on "Accesses" in the dialog structure and assign the relevant condition table defined earlier as a search strategy to influence pricing:



3. The "Fields" in the dialog structure further reveal the fields used as a search strategy that has been assigned to the access sequence above:



## Define and assign pricing procedures

<b>T-Code</b>	T_72
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Pricing → Pricing Control → Define and Assign Pricing Procedures → Define and assign shipping type procedure

1. In this activity you define the relevant shipping type procedure used in pricing procedure determination:

## Change View "Define shipping type procedure group": Overview

ShpTyp Grp	Description
0001	Street name
0002	Post and package services
0003	Train
0004	Sea
STS1	Shipment type scheme 1 (Truck/Train)
STS2	Shipment type scheme 2 (Marine)
STS3	Shipment type scheme 3 (Pipeline)
STS4	Shipment type scheme 4 (Barge)

2. Subsequently, you assign the shipping type procedure group to each shipping type as required:

## Change View "Assign shipping type procedure group": Overview

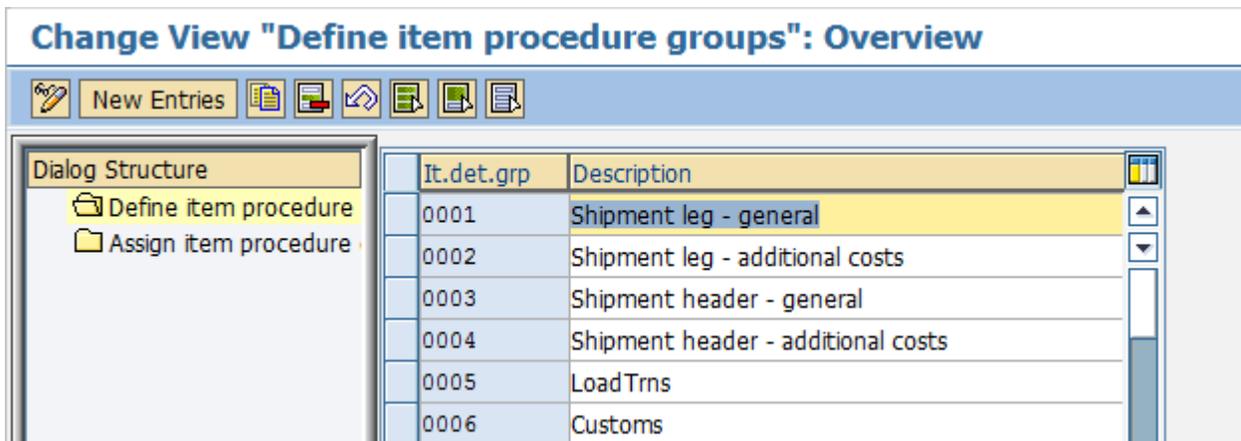
ST	Description	ShpTyp Grp	Description
01	Truck	0001	Street name
02	Mail	0002	Post and package services
03	Train	0003	Train
04	Sea	0004	Sea
11	Truck (TD)	STS1	Shipment type scheme 1 (Truck/Train)
12	Rail (TD)	STS1	Shipment type scheme 1 (Truck/Train)
13	Marine (TD/TSW)	STS2	Shipment type scheme 2 (Marine)
14	Pipeline (TD)	STS3	Shipment type scheme 3 (Pipeline)
15	Barge (TD)	STS4	Shipment type scheme 4 (Barge)
21	Pipeline 21	STS3	Shipment type scheme 3 (Pipeline)

## Note:

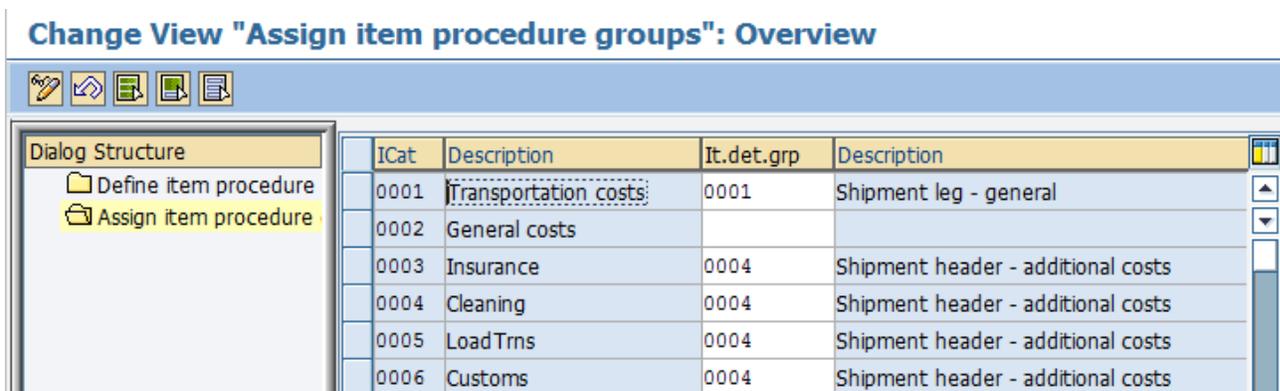
- One shipping type procedure group can be assigned to more than one shipping type.
- For example, assuming that all land shipping type will have the same pricing procedure; hence you may group various shipping types (i.e. Rail and Road) into a shipping type procedure group (i.e. L001 – Land shipping type)

<b>T-Code</b>	T_71
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Pricing → Pricing Control → Define and Assign Pricing Procedures → Define and assign item procedure group

3. In this activity, you define the item determination procedure groups required as shown below:



4. Subsequently, you assign the item determination procedure groups to each item category as required:



Note:

- One item determination procedure group can be assigned to more than one item category.
- For example, assuming that you have several item categories (i.e. insurance, customs etc.) that is relevant for a pricing procedure, then it may be grouped into a single item determination procedure group (i.e. Shipment

<b>T-Code</b>	T_70
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Pricing → Pricing Control → Define and Assign Pricing Procedures → Define service agent procedure group

- In this activity you define the service agent procedure group that is relevant for pricing procedure determination:

### Change View "Service Agent Procedure Group for Shipment Costs":

SA group	Description
0001	Street name
0002	Post and package services
0003	Train
0004	Sea
0005	LoadTrns
0006	Customs
0007	Products Pipeline

- Subsequently, the defined service agent procedure group is assigned to Vendor Master (tcode XK01):

### Create Vendor: Control

**Additional Data, IS-OIL General**

Tax Number 2   Sole Proprietr  
 Sales/pur.tax

Fiscal address

Tax Jur.  VAT Reg. No.

Tax office

Tax Number

---

**Reference data**

Location no. 1  Location no. 2  Check digit

Cred.info no.  Last ext.review

Industry  Train station

SCAC  Car.freight grp  ServAgntProcGrp

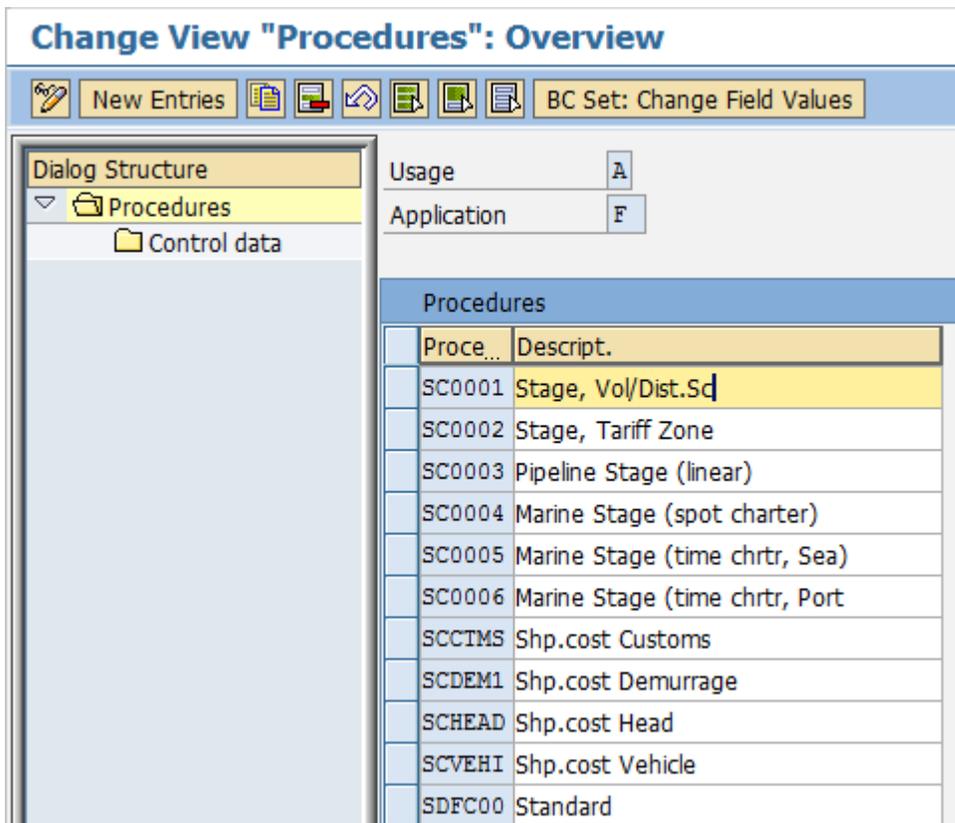
Transport.zone

POD-relevant

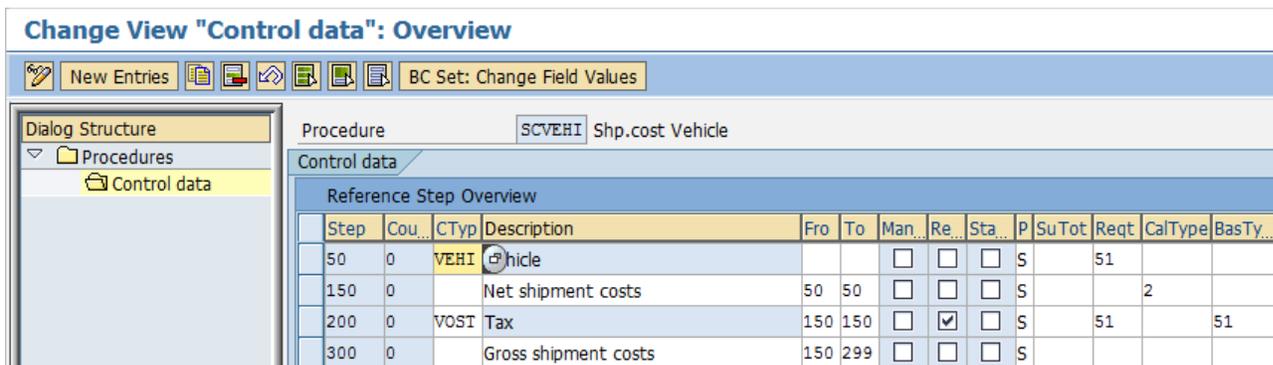
Note: As such, when the service agent is entered in the system during transaction, the service agent procedure group assigned to the vendor acts as a key field in the pricing procedure determination.

<b>T-Code</b>	T_08
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Pricing → Pricing Control → Define and Assign Pricing Procedures → Maintain pricing procedure

7. In this activity, you define the pricing procedure and setup the pricing structure as required:

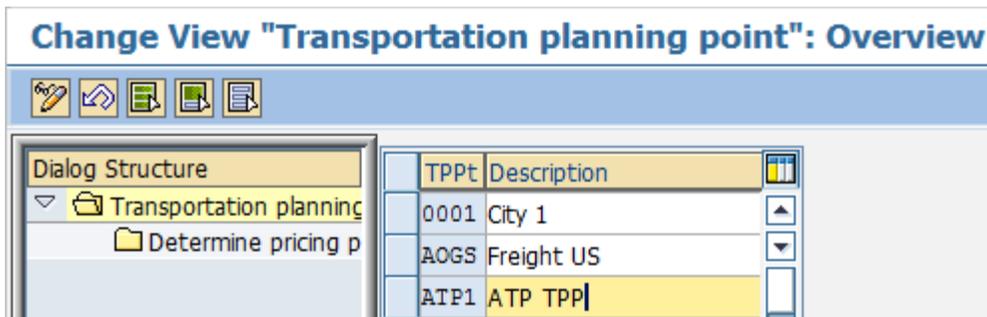


8. Relevant control parameters and settings for the pricing procedure is subsequently maintained in the control data dialog structure. Condition type is assigned in the pricing procedure:

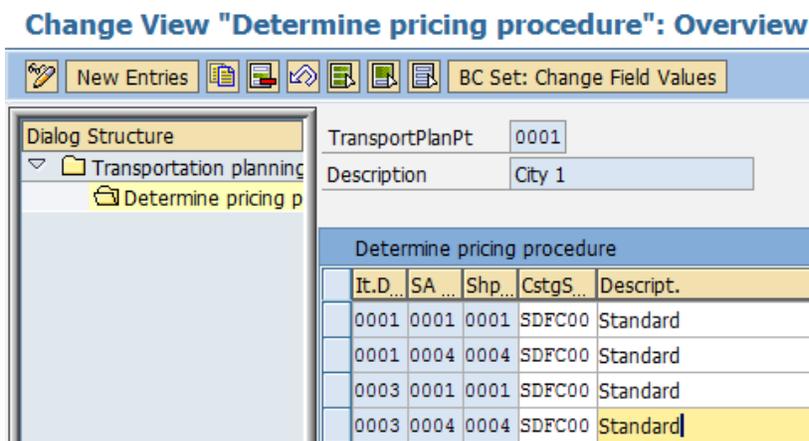


<b>T-Code</b>	T_73
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Pricing → Pricing Control → Define and Assign Pricing Procedures → Define pricing procedure determination for shipment costs

- In this activity, pricing procedure determination is maintained for each transportation planning point defined in the enterprise structure (Logistic Execution):



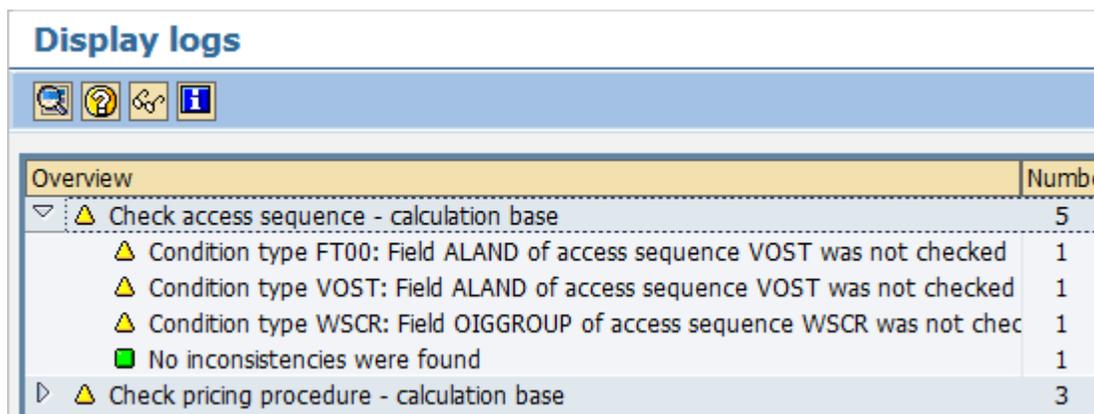
- Subsequently, the pricing procedure determination is maintained with the combination of:  
 Transportation Planning Point + Item Determination Procedure Grp. + Service Agent Procedure Grp. + Shipping Type Procedure Grp.



### Consistency Check for Price Determination Settings

Once the shipment pricing procedure is completed, you may perform a price determination consistency check as below:

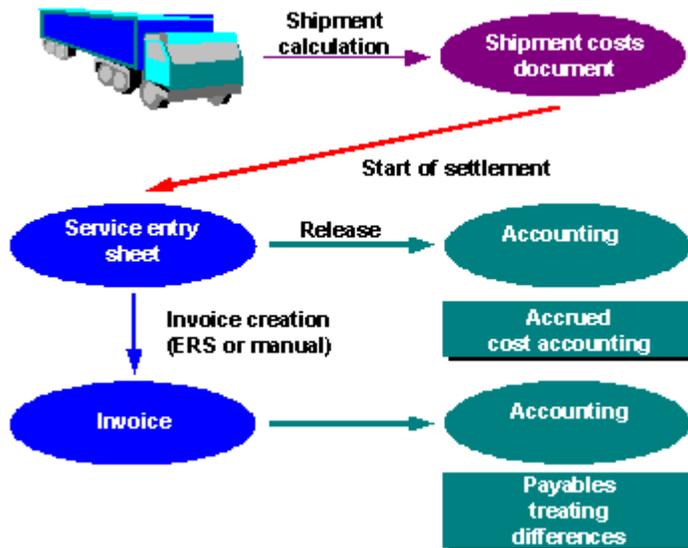
<b>T-Code</b>	VIC00
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Pricing → Pricing Control → Consistency Check for Price Determination Settings



**Further Notes:**

Below are several known issues faced in shipment costs usage in Oil & Gas industry, which relevant SAP Notes can be applied:

- In a particular shipment cost document, there are situations where the shipment cost unit of measure (UoM) is different from the sales UoM and both are in different dimension (i.e. volume and weight), hence the conversion routines do not convert the quantities correctly and system gives error **VYSC 804 “Pricing error: (unit for quantity conversion)”**. This can be addressed by applying [SAP Note 1533508](#).
- When the shipment costing is based on loaded quantities the condition detail screen of the sub item has a quantity field in the header which gets displayed as the “loaded quantity” (refer to Page 9) in shipment unit of measure. This quantity should be displayed in Sales UoM to enable the right conversion to happen for the conditions in different UoM. Please apply [SAP Note 1528598](#). However, after applying the SAP Note, it is subsequently found that the quantity field displaying as zero when the Sales UoM is the same as Shipment UoM. Please apply [SAP Note 1530160](#) for this.
- [SAP Note 1584701](#) – This note allows the adding of partners to TD shipment after shipment costing has started, but does not allow changing the existing partners that will result in inconsistencies in the shipment cost document created.
- [SAP Note 748028](#) – The transfer of a shipment cost item to FI/CO fails and the system issues an error VY 110 “General error during transfer”. The error subsequently advised users to refer to log, which does not provide any useful information pertaining to the actual cause of the error. This note provides the detailed information about the error messages.

**Shipment Cost Settlement**

## Assign Purchasing Data

For settlement to happen, you must assign the organizational units in the shipment to the relevant organizational units in purchasing. These settings are necessary for creating accruals. The accruals are posted using service entry sheets, which is triggered automatically with reference to the Purchase Order generated. Hence, the purchasing organizational units are needed for service procurement.

<b>T-Code</b>	T_53
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Settlement → Assign Purchasing Data

1. In this activity, you assign the combination of transportation planning point and shipment cost type to the relevant purchasing organizational units as shown below:

**Change View "Assignment of Purchasing Data for Shipment Costs":**

New Entries BC Set: Change Field Values

TPPt	SCTy	POrg	PGr	Plnt
0001	0001	0001	001	0001
AOGS	0001	APUR	APU	AP01
AOGS	OGSD	APUR	APU	AP01
B100	MART	SP01	001	B111

## Maintain Account Assignment Category

<b>T-Code</b>	OME9
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Settlement → Maintain Account Assignment Category

1. In this activity, you can maintain the account assignment properties and determine which fields are assigned during shipment cost processing as mandatory, optional, display or suppressed fields.

**Change View "Account Assignment Categories": Overview**

New Entries

Acct Assignment Cat.	Acc.Assgt Cat.Dscr.
A	Asset
B	MTS prod./sales ord.
C	Sales order
D	Indiv.cust./project
E	Ind. cust. w. KD-CO
F	Order
G	MTS prod./project
K	Cost center

2. In the account assignment categories details view, you can maintain the relevant account modifier that is used in the automatic account assignment and determination of G/L account in the subsequent activity:

### Change View "Account Assignment Categories": Details

Acct Assignment Cat.

**Detailed information**

<input type="checkbox"/> Acct.assg.changeable	Consumption posting	<input type="text" value="V"/>	Distribution	<input type="text" value=""/>
<input checked="" type="checkbox"/> AA Chgable at IR	Acct modification	<input type="text" value="VBR"/>	Partial invoice	<input type="text" value=""/>
<input type="checkbox"/> Derive acct. assgt.	ID: AcctAssgt Scrn	<input type="text" value="1"/>	Single account assign	
<input type="checkbox"/> Del.CstsSep.	Special Stock	<input type="text" value=""/>		
<input checked="" type="checkbox"/> Goods Receipt	<input type="checkbox"/> GR Non-Valuated	<input checked="" type="checkbox"/> Invoice Receipt		
<input type="checkbox"/> GR Ind. Firm	<input type="checkbox"/> GR NonVal. Firm	<input type="checkbox"/> IR Ind. Firm		

#### Note:

- The account modification field (i.e. VBR) is mandatory to be filled for automatic G/L account determination.
- To ensure that there are no errors during posting, the settings of the field status group for the account assignment category used must be compatible with the settings for the field status groups of the G/L account determined. The settings for the field status groups are made in Customizing for Financial Accounting (FI).
- In other cases related to CO-PA (Profitability Analysis) in sales transactions, the error KE 396 could occur. This error could occur due to difference in sales Division, which is a possible where the division derived from the material master could be different from the division in the sales order header. To address this error, SAP Note 352699 can be applied.

#### Automatic G/L Account Determination

During shipment cost processing, the system can determine a G/L account for the shipment costs automatically. This process uses the settings that you make in this activity to find the correct G/L account. In the case of shipment cost, the transaction key is set to 'GBB' by the system.

<b>T-Code</b>	OBYC
<b>Path</b>	Industry Solution Oil & Gas (Downstream) → TD (Transportation & Distribution) → TD Bulk Shipment → Shipment Costs → Settlement → Automatic G/L Account Determination

1. In the main screen, double click on the transaction key “GBB” and subsequently indicate the Chart of Account group that applies:

**Configuration Accounting Maintain : Automatic Posts - Procedures**

Group  Materials Management postings (MM)

Procedures

Description	Transaction	Account determ.
Fed. exise tax	FTX	<input checked="" type="checkbox"/>
Offsetting entry for inventory posting	<b>GBB</b>	<input checked="" type="checkbox"/>
Account-assigned purchase order	KBS	<input type="checkbox"/>

2. Subsequently, in the detailed screen for the given Chart of Accounts (from the and Transaction Key, maintain the relevant entry as shown below:

**Configuration Accounting Maintain : Automatic Posts - Accounts**

Posting Key  Procedures Rules

Chart of Accounts  Chart of accounts - IS-OIL

Transaction  Offsetting entry for inventory posting

Account assignment

Valuation m...	General mo...	Valuation cl...	Debit	Credit
1000	VBR	3100	410000	410000
1000	VBR	3200	400000	400000
1000	VBR	7900	890000	890000
1000	VBR	7920	892000	892000

The following are the key parameters set by the system for G/L account determination:

- **Chart of accounts** – Derived from company code of the transportation planning point
- **Valuation grouping code** – Derived from the plant valuation area that is assigned to the transportation planning point and the shipment cost type.
- **Transaction Event key** – Hard-coded in the system to 'GBB'.
- **Account grouping** – Derived from the Customizing setting of the account assignment category
- **Valuation class** – Derived from the Customizing settings for the shipment cost item category

**Additional information provided by SAP documentation notes:****How does the system find the relevant accounts?**

When entering the goods movement, the user does not have to enter a G/L account, since the ERP system automatically finds the accounts to which postings are to be made using the following data:

- **Chart of accounts of the company code**

If the user enters a company code or a plant when entering a transaction, the ERP system determines the chart of accounts which is valid for the company code.

You must define the automatic account determination individually for each chart of accounts.

- **Valuation grouping code of the valuation area**

If the automatic account determination within a chart of accounts is to run differently for certain company codes or plants (valuation areas), assign different valuation grouping codes to these valuation areas.

You must define the automatic account determination individually for every valuation grouping code within a chart of accounts. It applies to all valuation areas which are assigned to this valuation grouping code.

If the user enters a company code or a plant when entering a transaction, the system determines the valuation area and the valuation grouping code.

- **Transaction/event key (internal processing key)**

Posting transactions are predefined for those inventory management and invoice verification transactions relevant to accounting. Posting records, which are generalized in the value string, are assigned to each relevant movement type in inventory management and each transaction in invoice verification. These contain keys for the relevant posting transaction (for example, inventory posting and consumption posting) instead of actual G/L account numbers.

You do not have to define these transaction keys, they are determined automatically from the transaction (invoice verification) or the movement type (inventory management). All you have to do is assign the relevant G/L account to each posting transaction.

- **Account grouping (only for offsetting entries, consignment liabilities, and price differences)**

Since the posting transaction "Offsetting entry for inventory posting" is used for different transactions (for example, goods issue, scrapping, physical inventory), which are assigned to different accounts (for example, consumption account, scrapping, expense/income from inventory differences), it is necessary to divide the posting transaction according to a further key: account grouping code.

An account grouping is assigned to each movement type in inventory management which uses the posting transaction "Offsetting entry for inventory posting".

Under the posting transaction "Offsetting entry for inventory posting", you must assign G/L accounts for every account grouping, that is, assign G/L accounts.

If you wish to post price differences to different price difference accounts in the case of goods receipts for purchase orders, goods receipts for orders, or other movements, you can define different account grouping codes for the transaction key.

Using the account grouping, you can also have different accounts for consignment liabilities and pipeline liabilities.

- **Valuation class of material or (in case of split valuation) the valuation type**

The valuation class allows you to define automatic account determination that is dependent on the material. For example: you post a goods receipt of a raw material to a different stock account than if the goods receipt were for trading goods, even though the user enters the same transaction for both materials.

You can achieve this by assigning different valuation classes to the materials and by assigning different G/L accounts to the posting transaction for every valuation class.

If you do not want to differentiate according to valuation classes you do not have to maintain a valuation class for a transaction.

#### **Further notes**

The following list shows the individual transactions with examples of how they are used. The transaction/event key is specified in brackets.

- **Offsetting entry for stock posting (GBB)**

Offsetting entries for stock postings are used in Inventory Management. They are dependent on the account grouping to which each movement type is assigned. The following account groupings are defined in the standard system:

- VBR: for internal goods issues (for example, for cost center)

You can also define your own account groupings. If you intend to post goods issues for cost centers (mvt type 201) and goods issues for orders (mvt type 261) to separate consumption accounts, you can assign the account grouping ZZZ to movement type 201 and account grouping YYY to movement type 261.

## Related Content

[Shipment Cost Processing](#)

[Shipment Cost Processing in Transportation and Distribution](#)

[Assignment for Cost Accounting](#)

[G/L Account Determination](#)

[TD Bulk Shipment Type](#)

[Maintaining Vendor Master Records](#)

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