

Global Trade Management

SAP S/4HANA 1809 (On-Premise): Stock Transfer Posting with Global Trade Management / Trading Execution Workbench

CUSTOMER

Version: 1809.0.1



Global Trade Management: Stock Transfer Posting

Introduction

In 1994 SAP developed object Trading Contract, a license-free component available on SAP ERP, SAP SoH and SAP S/4HANA (On-Premise) to implement international trading processes.

Since that time Global Trade Management (GTM) has been enhanced due to high customer response by features such as "Expense Management" or the "Trading Execution Workbench".

The ability of processing Stock Transfers – as separate process step utilizing the Trading Execution Workbench - however, was not in scope since typically Trading Companies didn't operate own warehouses – direct deliveries from suppliers to customers were the major business requirement former times.

However, due to the necessity of handling import and export processes global operating companies nowadays are obliged to take warehouse processes into consideration for their trading business as well – meaning to transfer goods between different plants. Thus Stock Transfer Postings, processed out of the Trading Execution Workbench and with particular focus on associations between sales contract positions with purchase contract positions is subject of this development and hence delivered with SAP S/4HANA 1809 (On-Premise).

Global Trade Management: Stock Transfer Posting

Business Pain Points

During maintenance of a Trading Contract a trader needs to enter a plant and / or storage location. However, this information might change for the following use cases:

 A Trader maintains a Pre-Contract with subsequent calloffs. In this case the exact point of entry might change in the meantime



- The delivery time of materials might take a long time (e.g. delivery from China to Germany) and sales-side Trading Contracts will be created during shipment. Hence it is necessary to deliver the goods from the first destination point to another plant first
- Also goods movements within a plant are common business processes so that stock transfers regarding storage locations also need be taken into consideration

Global Trade Management: Business Requirement

Product features for SAP S/4HANA 1809 (On-Premise)

The following features are in scope:

- 1. Stock transfer of materials between different storage locations, utilizing the Trading Execution Workbench, applying restricted rules (see chapter for "Scenario 1")
- 2. Stock transfer of materials between different plants, utilizing the Trading Execution Workbench, applying restricted rules (see chapter for "Scenario 2")
- 3. Integration of field `Open Quantity` as additional field in the List Viewer of the Trading Execution Workbench to indicate the quantity available for Stock Transfer Postings
- 4. For both scenarios Stock Transfers between storage locations and/or plants it must be guaranteed that already associated quantities may not get fragmented into smaller subsets but moved entirely

Excursus: Explanation of Terms

Open Quantity, Associated Quantity, Unassociated Quantity in the context of Stock Transfer Postings

- 1. Open quantity: The `Open Quantity available for Stock Transfers' is calculated differently by the system depending on the type of Stock Transfer:
 - Storage locations: Open quantity = unassociated quantities plus associated quantities minus associated quantities for which an Goods Issue has been posted
 - Plants: Open quantity = unassociated quantity plus associated quantities for which no follow-on documents have been created (Sales Orders, Outbound Deliveries, etc.)
- 2. Associated Quantity relevant for Stock Transfer:
 - 1. Storage location to storage location: Relevant for stock transfer are quantities of sales-side Trading Contracts which have been associated to Goods Receipts of a purchase side Trading Contract except for quantities which have been already maintained in follow-on document "Goods Issue"
 - 2. Plant to Plant: Relevant for stock transfer are quantities of sales-side Trading Contracts which have been associated to Goods Receipts of a purchase-side Trading Contract except for quantities for which follow-on document "Sales Order" already has been created
- 3. Unassociated Quantity: This quantity is calculated as the quantity of a Goods Receipt minus the summarized associated quantities of the Goods Receipt



Stock Transfer Postings – Product feature details

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Storage Location > Storage Location:

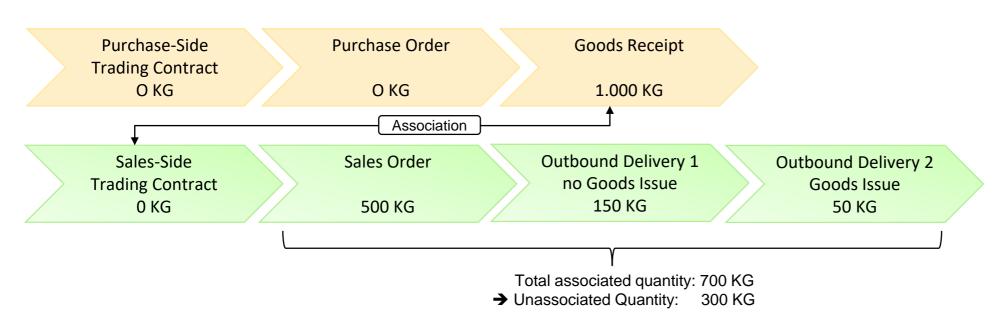
If materials shall be moved from one storage location to another, unassociated quantities can be used for stock transfers as well as associated quantities of sales-side Trading Contracts – except for quantities which have been already maintained in follow-on document "Goods Issue".

Rules to apply: If the quantity relevant for Stock Transfer ...

- 1. equals to an associated quantity, the entire associated quantity shall be transferred (except for quantities which have been already maintained in follow-on document "Goods Issue")
- 2. is less or equal to an unassociated quantity, the unassociated quantity shall be transferred
- 3. is higher than an unassociated quantity, the following logic applies:
 - If the relevant quantity is higher or equal to an associated quantity take the entire associated quantity
 - In case of remaining quantities perform this check again. Note the descending order for this check
 - If the remaining quantity is less than an associated quantity, check whether the relevant quantity is less or equal to an unassociated quantity. If yes, use the unassociated quantity for stock transfer. If not, the stock transfer can not be executed

Initial situation





Associated Quantity relevant for Stock Transfer:
Sales Order: 500 KG
+ Outbound Del. 1: 150 KG
Outbound Del. 2: not relevant due to goods issue 0 KG
650 KG

Open Quantity:

Unassoc. Quantity:

+ Associated Quantity

relevant for ST:

650 KG 950 KG

300 KG

Remarks:

- A Goods Receipt has been posted about 1.000 KG. The initial open quantity relevant for stock transfer is 1.000 KG.
- A sales-side Trading Contract with two Outbound Deliveries is associated to the Goods Receipt. However, the quantity of Outbound Delivery 2 has been already delivered to the customer and is hence no longer available for stock transfer postings anymore. The open quantity remaining for stock transfers is reduced from 1.000 KG to 950 KG
- The associated quantity relevant for stock transfer equals the sum of associated quantities (700 KG) minus quantities maintained in follow-on document Goods Receipt (50 KG)

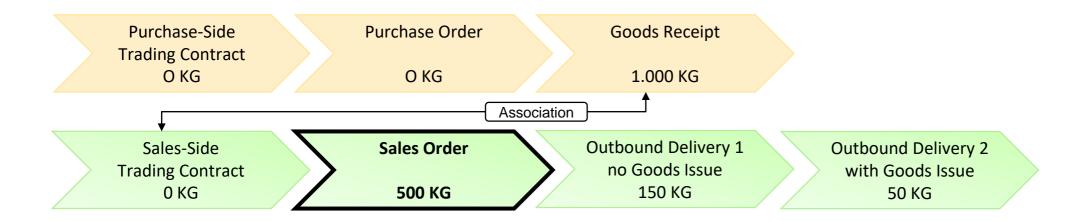
Use Case 1: Entered Quantity = Associated Quantity

Open Quantity	Unassociated Quantity	Associated Quantity relevant for Stock Transfer
950 KG	300 KG	650 KG

Rules to apply: If the quantity relevant for Stock Transfer ...

1. equals to an associated quantity, the associated quantity shall be transferred (except for quantities which have been already maintained in follow-on document "Goods Issue")

Example: Stock Transfer of 500 KG: The associated quantity of the Sales Order (500 KG) can be transferred



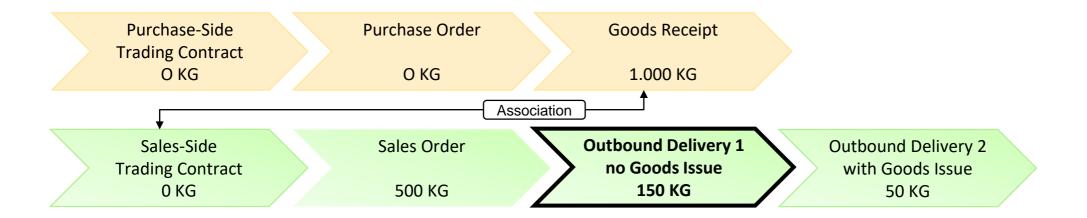
Use Case 1: Entered Quantity = Associated Quantity

Open Quantity	Unassociated Quantity	Associated Quantity relevant for Stock Transfer
950 KG	300 KG	650 KG

Rules to apply: If the quantity relevant for Stock Transfer ...

1. equals to an associated quantity, the associated quantity shall be transferred (except for quantities which have been already maintained in follow-on document "Goods Issue")

Example: Stock Transfer of 150 KG: The associated quantity of Outbound Delivery 1 (150 KG) can be transferred



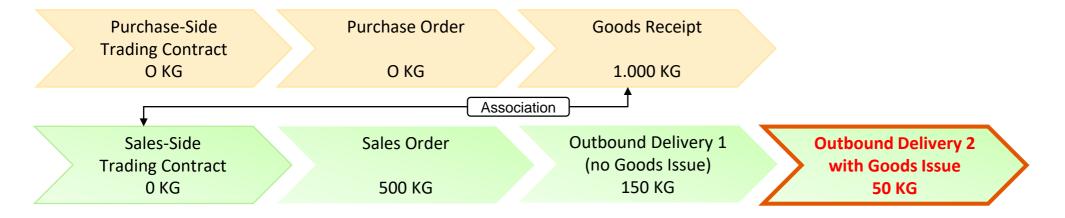
Use Case 1: Entered Quantity = Associated Quantity

Open Quantity	Unassociated Quantity	Associated Quantity relevant for Stock Transfer
950 KG	300 KG	650 KG

Rules to apply: If the quantity relevant for Stock Transfer ...

1. equals to an already associated quantity, the associated quantity shall be transferred (except for quantities which have been already maintained in follow-on document "Goods Issue")

Example: Stock Transfer of 50 KG: The associated quantity of Outbound Delivery 2 (50 KG) is no longer available due to goods issue. It also does not match the quantities of the Sales Order nor of Outbound Delivery 1. Hence, the stock transfer can't be fulfilled using an associated quantity. As an option the stock transfer can be performed using the unassociated quantity.



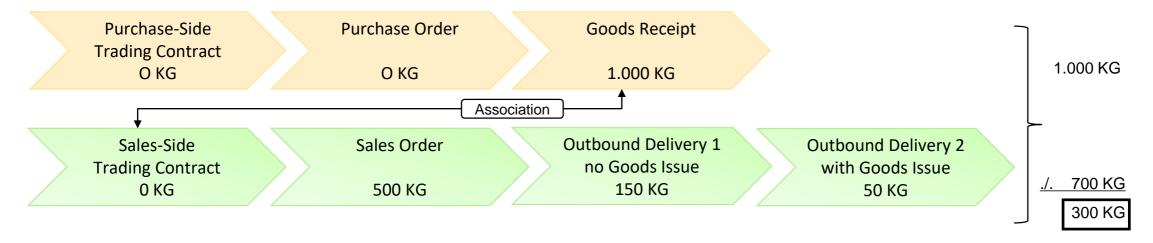
Use Case 2: Entered Quantity <= Unassociated Quantity

Open Quantity	Unassociated Quantity	Associated Quantity relevant for Stock Transfer
950 KG	300 KG	650 KG

Rules to apply: If the quantity relevant for Stock Transfer ...

2. is less or equal to an unassociated quantity, the unassociated quantity shall be transferred

Example: Stock Transfer of 50 KG: The quantity relevant for stock transfer (50 KG) is less than the unassociated quantity (300 KG). Hence, the quantity relevant for stock transfer can be taken from the unassociated quantity.



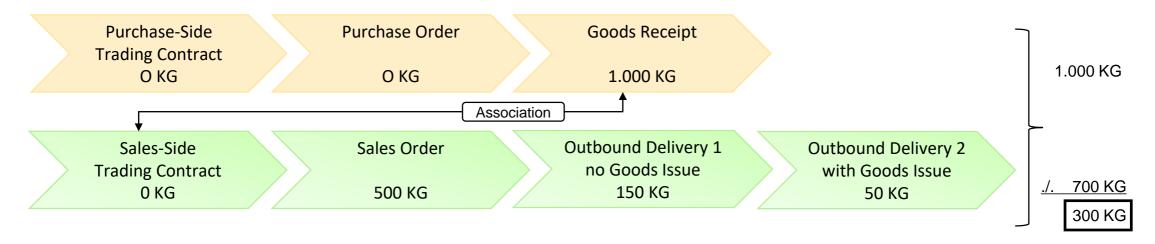
Use Case 2: Entered Quantity <= Unassociated Quantity

Open Quantity	Unassociated Quantity	Associated Quantity relevant for Stock Transfer
950 KG	300 KG	650 KG

Rules to apply: If the quantity relevant for Stock Transfer ...

2. is less or equal to an unassociated quantity, the unassociated quantity shall be transferred

Example: Stock Transfer of 250 KG: The quantity relevant for stock transfer (250 KG) is less than the unassociated quantity (300 KG). Hence, the quantity relevant for stock transfer can be taken from the unassociated quantity.



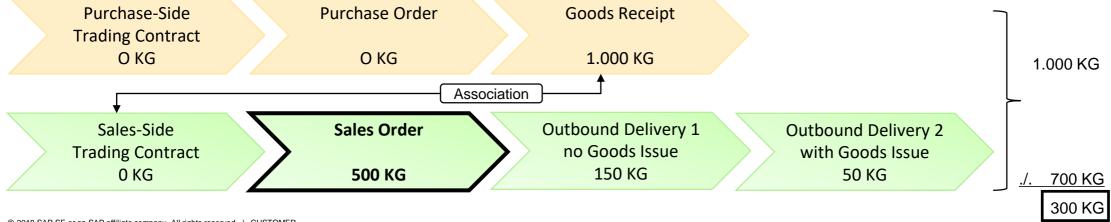
Use Case 3: Entered Quantity > Unassociated Quantity

Open Quantity	Unassociated Quantity	Associated Quantity relevant for Stock Transfer
950 KG	300 KG	650 KG

Rules to apply: If the quantity relevant for Stock Transfer ...

- 3. is higher than an unassociated quantity, the following logic applies:
 - If the relevant quantity is higher or equal to an associated quantity take the entire associated quantity for stock transfer. In case of remaining quantities perform this check again. Note the descending order for this check
 - If the remaining quantity is less than an associated quantity, check whether the relevant quantity is less or equal to an unassociated quantity. If yes, use the unassociated quantity. If not, the stock transfer can not be executed

Example: Stock Transfer of 600 KG: 600 KG is higher than the unassociated quantity (300 KG). The relevant quantity is higher than the associated quantity of the sales order (600 KG > 500 KG). The remaining quantity (100 KG) is not higher than the associated quantity of Outbound Delivery 1 (150 KG). But the remaining quantity (100 KG) is lower than the unassociated quantity (300 KG). Hence, the stock transfer can be fulfilled.



Use Case 3: Entered Quantity > Unassociated Quantity

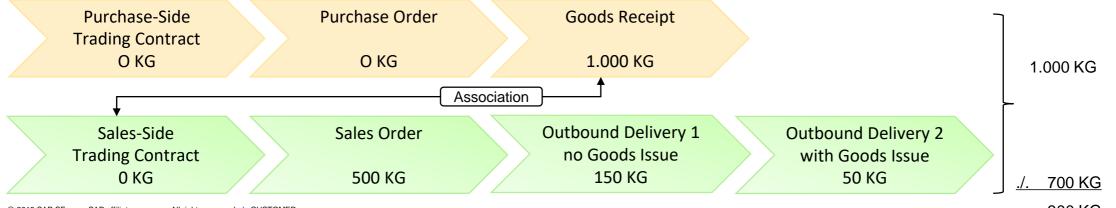
Open Quantity	Unassociated Quantity	Associated Quantity relevant for Stock Transfer
950 KG	300 KG	650 KG

15

Rules to apply: If the quantity relevant for Stock Transfer ...

- 3. is higher than an unassociated quantity, the following logic applies:
 - If the relevant quantity is higher or equal to an associated quantity take the entire associated quantity for stock transfer. In case of remaining quantities perform this check again. Note the descending order for this check
 - If the remaining quantity is less than an associated quantity, check whether the relevant quantity is less or equal to an unassociated quantity. If yes, use the unassociated quantity. If not, the stock transfer can not be executed

Example: Stock Transfer of 470 KG: 470 KG is higher than the unassociated quantity (300 KG). But it's not higher than the quantity of the Sales Order (500 KG) - hence not available for stock transfer. Although the relevant quantity (470 KG) is higher than the associated quantity of Outbound Delivery 1 (150 KG) the stock transfer can not be fulfilled since the remaining quantity of 320 KG is not less or equal to the unassociated quantity (300 KG).



Plant > Plant:

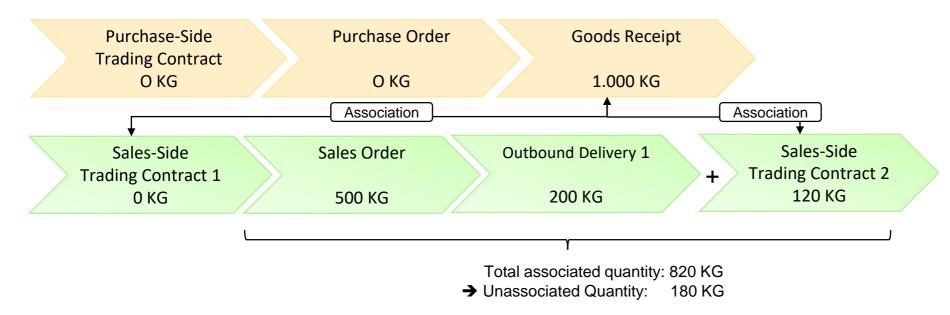
If materials shall be transferred from plant to plant, unassociated quantities can be used for stock transfers as well as associated quantities of sales-side Trading Contracts - except for quantities of sales-side Trading Contracts for which a follow-on document has been already created (Sales Order).

Rules to apply: If the material quantity to be transferred ...

- 1. equals to an associated quantity connected to a sales-side Trading Contract (except for quantities from generated follow-on documents (Sales Orders)), this quantity shall be used for stock transfers
- 2. is less or equal to an unassociated quantity, the unassociated quantity shall be used for stock transfers
- 3. is higher or equal to an unassociated quantity, the following logic applies:
 - Transfer the associated quantity first (note: an associated quantity may not get fragmented)
 - Transfer any remaining quantities from the unassociated quantity

Initial situation

Open Quantity	Unassociated Quantity	Associated Quantity relevant for Stock Transfers
300 KG	180 KG	120 KG



Remarks:

- A Goods Receipt has been posted about 1.000 KG. The initial open quantity relevant for stock transfer is 1.000 KG
- Two Trading Contracts have been associated to the goods receipt of about 820 KG. The unassociated quantity hence is 1.000 KG 820 KG = 180 KG
- Only sales-side Trading Contract 2 has no follow-on documents generated hence the associated quantity relevant for stock transfer is 120 KG
- The open quantity finally equals the unassociated quantity (180 KG) + associated quantity for which no follow-on documents have been generated (120 KG) = 300 KG

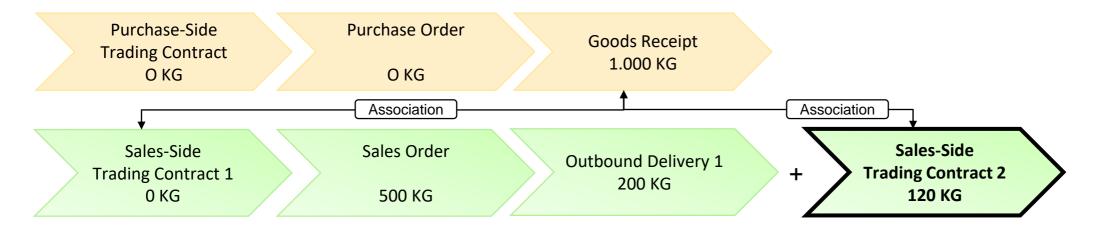
Use Case 1: Entered Quantity = Associated Quantity

Open Quantity	Unassociated Quantity	Associated Quantity relevant for Stock Transfers
300 KG	180 KG	120 KG

Rules to apply: If the material quantity to be transferred ...

1. equals to an associated quantity connected to a sales-side Trading Contract (except for quantities from generated follow-on documents (Sales Orders)), this quantity shall be used for stock transfers

Example: Stock Transfer of 120 KG: 120 KG equals to the associated quantity of Trading Contract 2 (120 KG) since for this trading contract no follow-on documents have been generated so far. Hence, the stock transfer can be fulfilled.



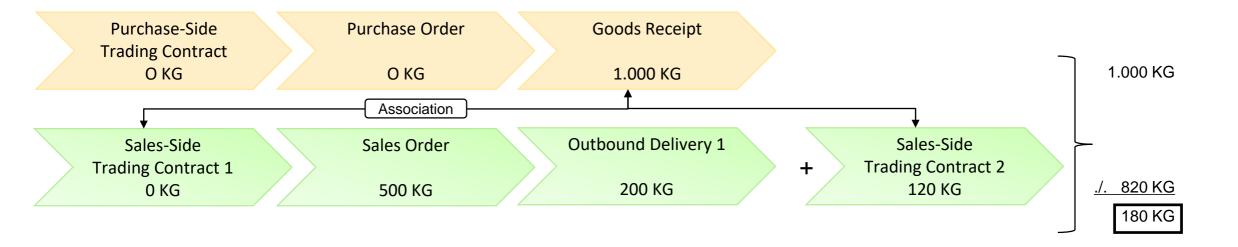
Use Case 2: Entered Quantity <= Unassociated Quantity

Open Quantity	Unassociated Quantity	Associated Quantity relevant for Stock Transfers
300 KG	180 KG	120 KG

Rules to apply: If the material quantity to be transferred ...

2. is less or equal to an unassociated quantity, the unassociated quantity shall be used for stock transfers

Example: Stock Transfer of 150 KG: 150 KG is less than the unassociated quantity (180 KG) and can be taken for stock transfer.



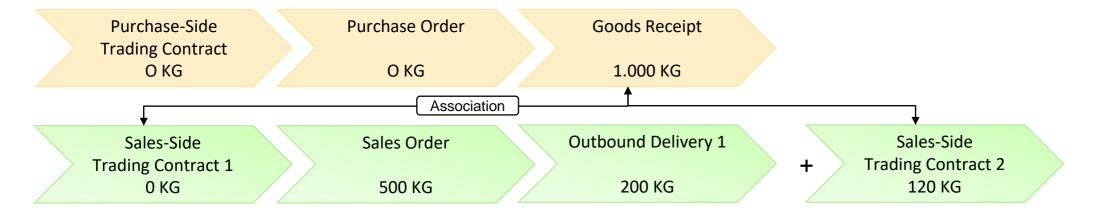
Use Case 3: Entered Quantity >= Unassociated Quantity

Open Quantity	Unassociated Quantity	Associated Quantity relevant for Stock Transfers
300 KG	180 KG	120 KG

Rules to apply: If the material quantity to be transferred ...

- 3. is higher or equal to an unassociated quantity, the following logic applies:
 - Transfer the associated quantity first (note: an associated quantity may not get fragmented)
 - Transfer any remaining quantities from the unassociated quantity

Example: Stock Transfer of 600 KG: 600 KG is higher than the unassociated quantity (180 KG). The associated quantity (120 KG) can be used first. However, the remaining quantity of 480 KG (600 KG – 120 KG) is higher than the unassociated quantity (180 KG). Hence, the stock transfer can't be fulfilled.



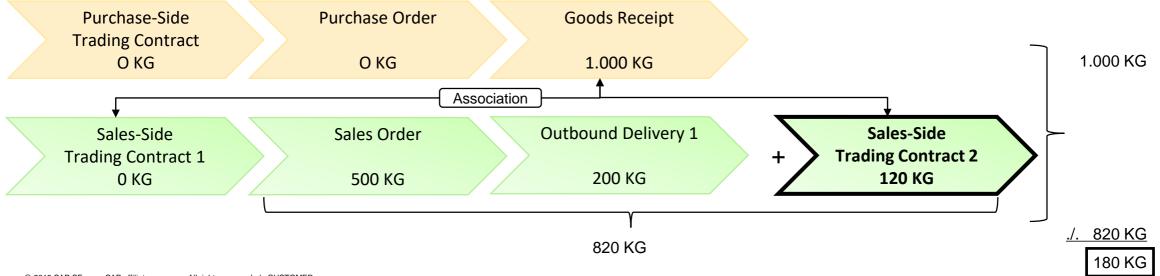
Use Case 3: Entered Quantity >= Unassociated Quantity

Open Quantity	Unassociated Quantity	Associated Quantity relevant for Stock Transfers
300 KG	180 KG	120 KG

Rules to apply: If the material quantity to be transferred ...

- 3. is higher than an unassociated quantity, the following logic applies:
 - Transfer the associated quantity first (note: an associated quantity may not get fragmented)
 - Transfer any remaining quantities from the unassociated quantity

Example: Stock Transfer of 250 KG: 250 KG is higher than the unassociated quantity (180 KG). The associated quantity (120 KG) can be used first. The remaining quantity of 130 KG (250 KG – 120 KG) can be taken from the unassociated quantity (180 KG). Hence, the stock transfer can be fulfilled.





Stock Transfer Postings - Customizing

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Version: 1809.0.1



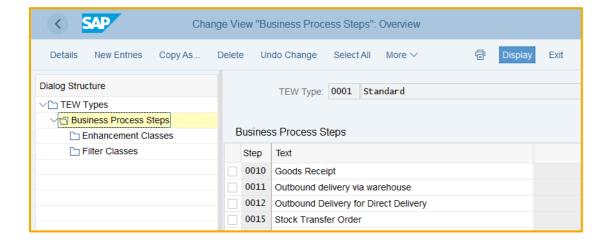
Stock Transfer Postings: Configuration delivered with SAP Standard

Path: IMG > Logistics General > Global Trade Management:

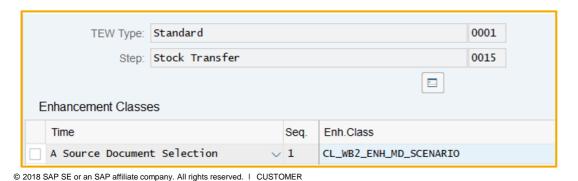
- 1. Trading Execution Workbench Define Business Process Steps
- 2. Trading Execution Workbench Group Business Process Steps
- 3. Trading Execution Workbench Define Action Class
- 4. Trading Execution Workbench Define Enhancement Classes
- 5. Trading Execution Workbench Define Filter Classes
- 6. Trading Execution Workbench Define Possible Combinations of Business Process Steps
- 7. Trading Execution Workbench Assign Action Classes to Combinations of Business Process Steps
- 8. Position Management Association Management Combine Business Process Steps for Association

1. Define Business Process Steps

Definition of new business process step 'Stock Transfer Order' for usage in the Trading Execution Workbench.

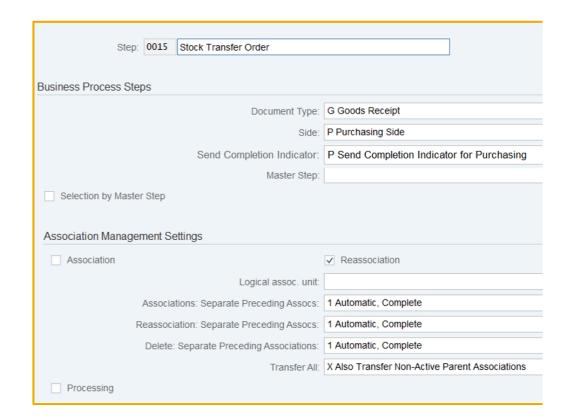


Enhancement Class:



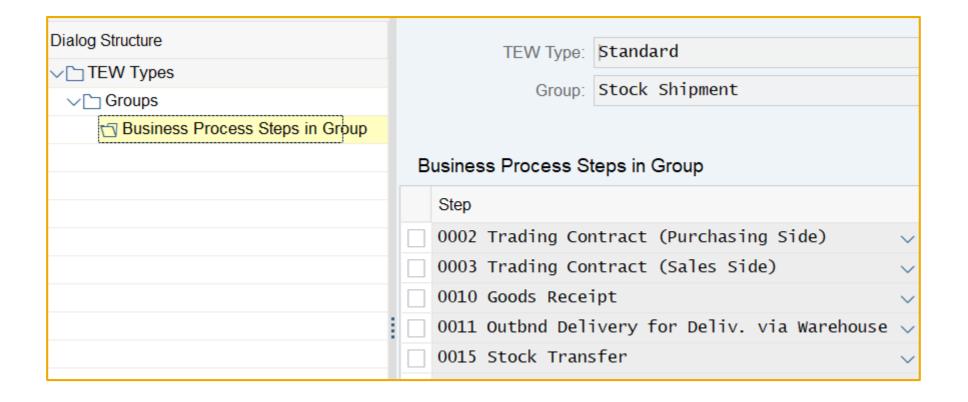
Relevant parameter:

 Document Type, Side, Completion Indicator, Indicator for Association/Reassociation, Association Separation, Associations in Deletion Operation & Quantity increase & effect on associations



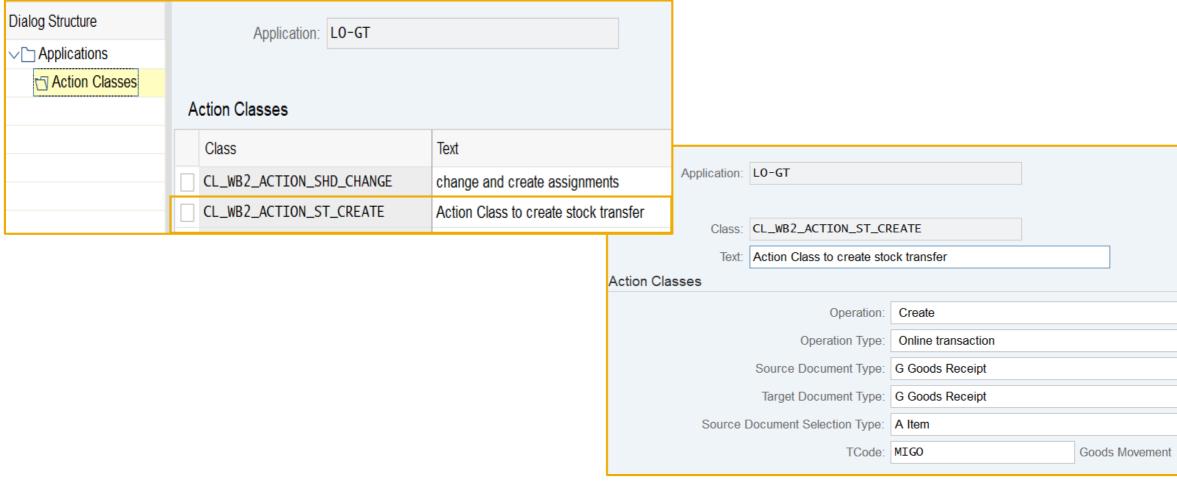
2. Group Business Process Steps

Definition of business groups (Stock Shipment, Drop Shipment, ...) and assignment of business process step `Stock Transfer`.



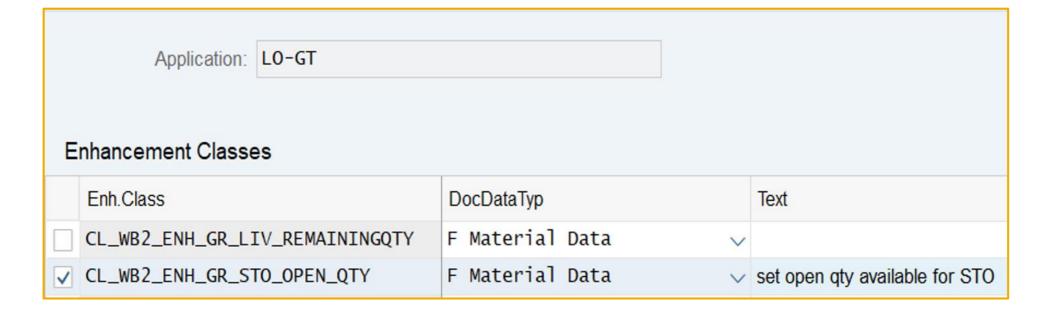
3. Define Action Class

New action class `Action Class to Create Stock Transfer` (CL_WB2_ACTION_ST_CREATE) to trigger Goods Movement based on document type Goods Receipt.



4. Define Enhancement Classes

Enhancement Class `CL_WB2_ENH_GR_STO_OPEN_QTY` to calculate the open quantity and to display the value as additional data in the Trading Execution Workbench list viewer.

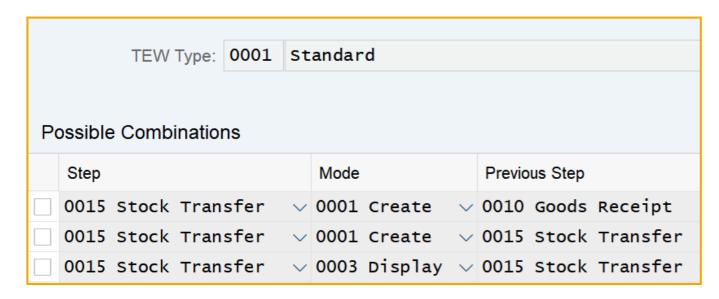


5. Define Filter Classes

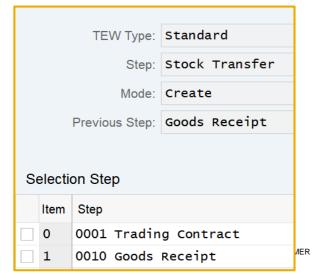
Usage of filter class "CL_WB2_FILTER_TC_OPEN_QUANTITY to filter trading contract items with zero or negative quantity (which is calculated by enhancement class `CL_WB2_ENH_GR_STO_OPEN_QTY`)

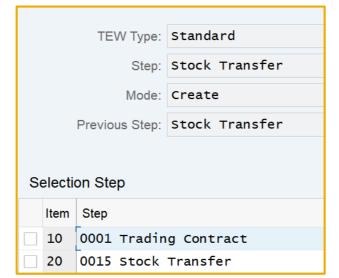
Application: LO-GT				
ı	Filter Classes			
	Filt.Class	DocDataTyp	Text	
	CL_WB2_FILTER_TC_OPEN_QUANTITY	K Trading Contract Data ∨	Filter Out When Open Quantity Is 0 or -	

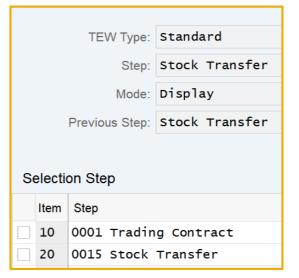
6. Define Possible Combinations of Business Process Steps



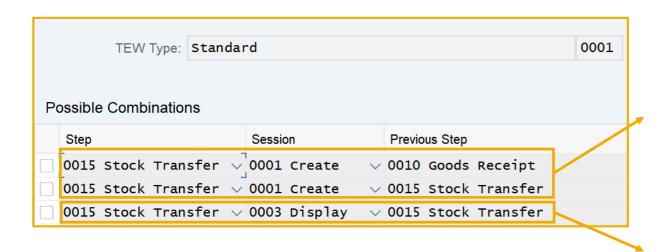
Additional combinations of business steps and modes for stock transfers to appear in the Trading Execution Workbench (type `Standard`)





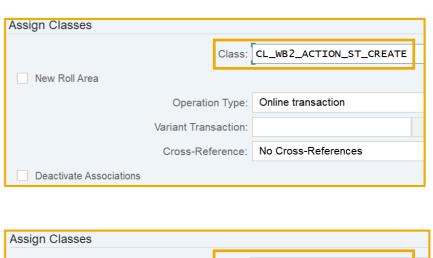


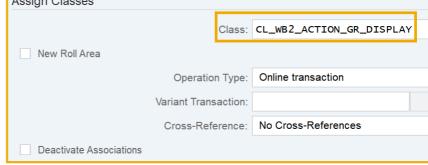
7. Assign Action Classes to Combinations of Business Process Steps



Note: For the creation of stock transfers based on goods receipts movement type '301 - Transfer Posting Plant to Plant' is assigned:







8. Combine Business Process Steps for Association

Definition of relevant business process steps to be associated with business process step "Stock Transfer"





Example: Transfer from Plant to Plant

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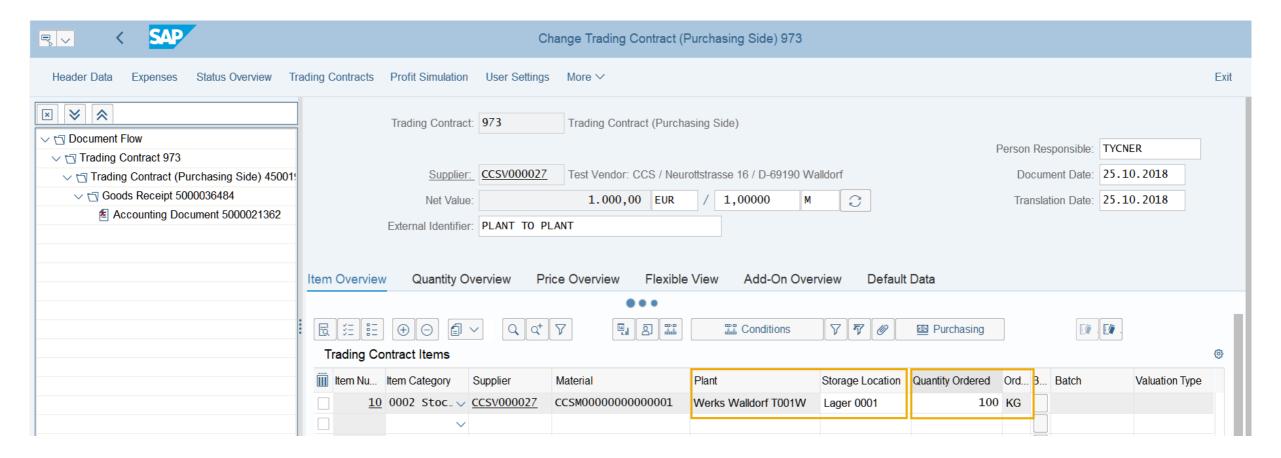


Example: Plant to Plant

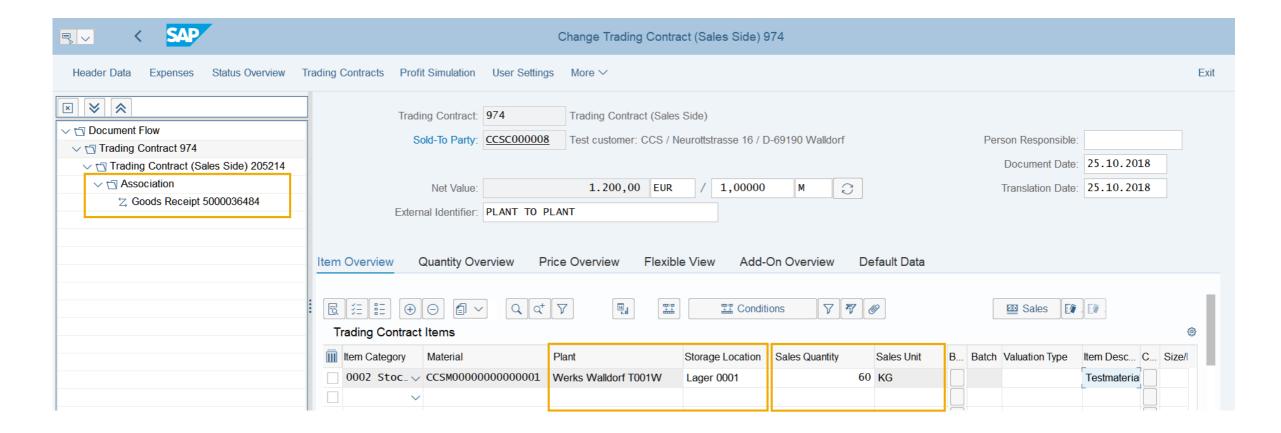
Use Case

- Creation of a purchase-side Trading Contract about 100 KG in plant 0001 with a subsequent goods receipt
- Creation of two sales-side Trading Contracts
 - Trading Contract 1 about 60 KG for plant 0001. The trading contract has been released, follow-up
 document Sales Order has been generated and is associated to the goods receipt
 - Trading Contract 2 about 40 KG for plant 0003. The trading contract hasn't been released (no follow-on document generated); association hasn't been performed
- Stock Transfer of 40 KG from plant 0001 to plant 0003 utilizing the Trading Execution Workbench
- Goal: the system only allows to transfer 40 KG since Trading Contract 1 (60 KG) may not be taken into consideration for stock transfer due to the creation of a follow-on document
- As last step sales-side Trading Contract 2 gets associated to the 'Stock Transfer' (60 KG transferred to plant 0003) out of the trading contract (dialog-box "Association Maintenance")

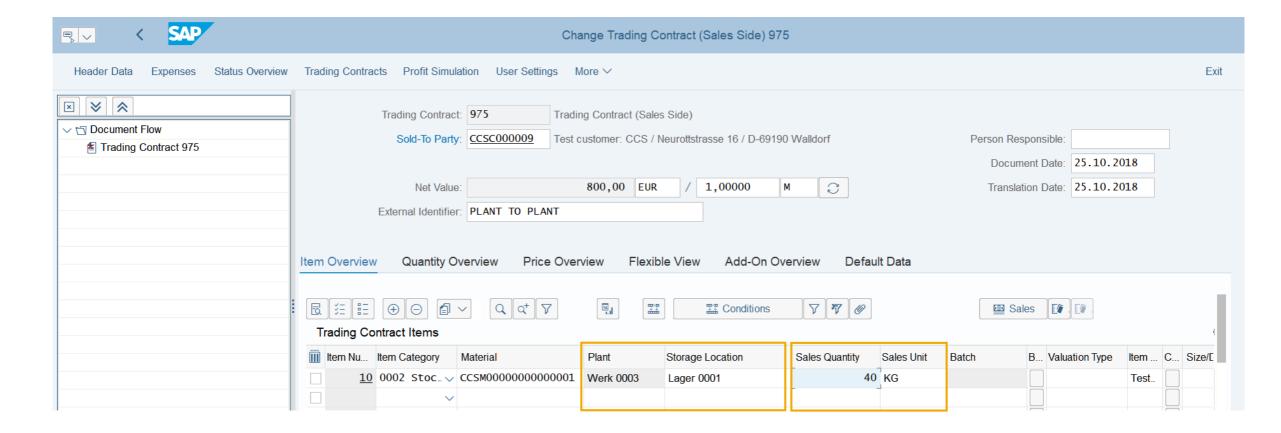
Purchase-side Trading Contract & Goods Receipt in plant 0001

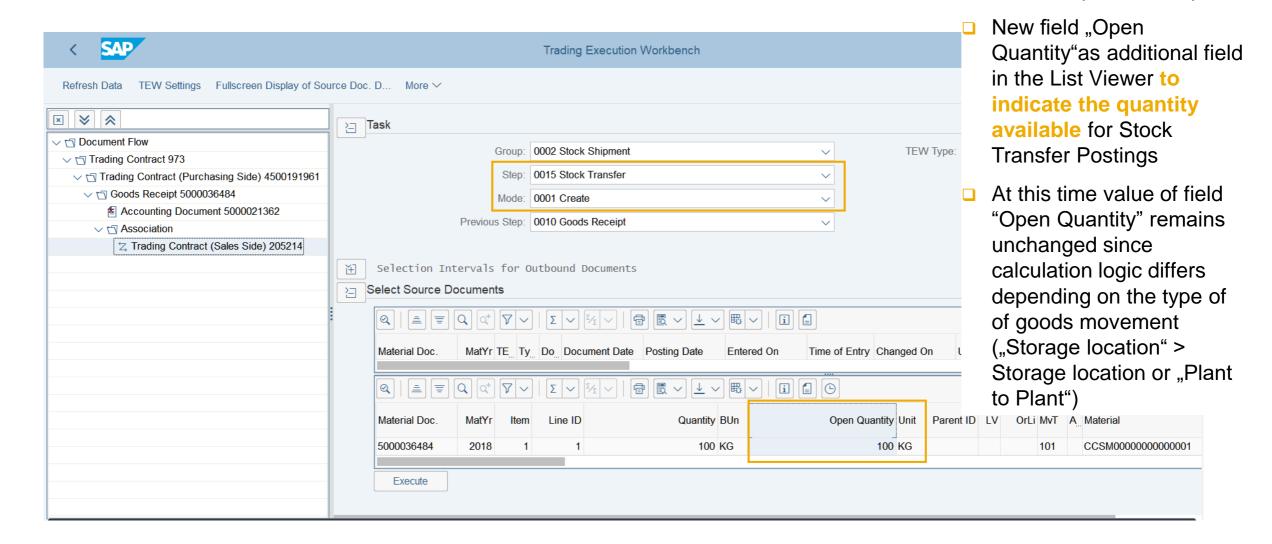


Sales-side Trading Contract 1 with follow-on document; associated to Goods Receipt



Sales-side Trading Contract 2 without follow-on document; no association

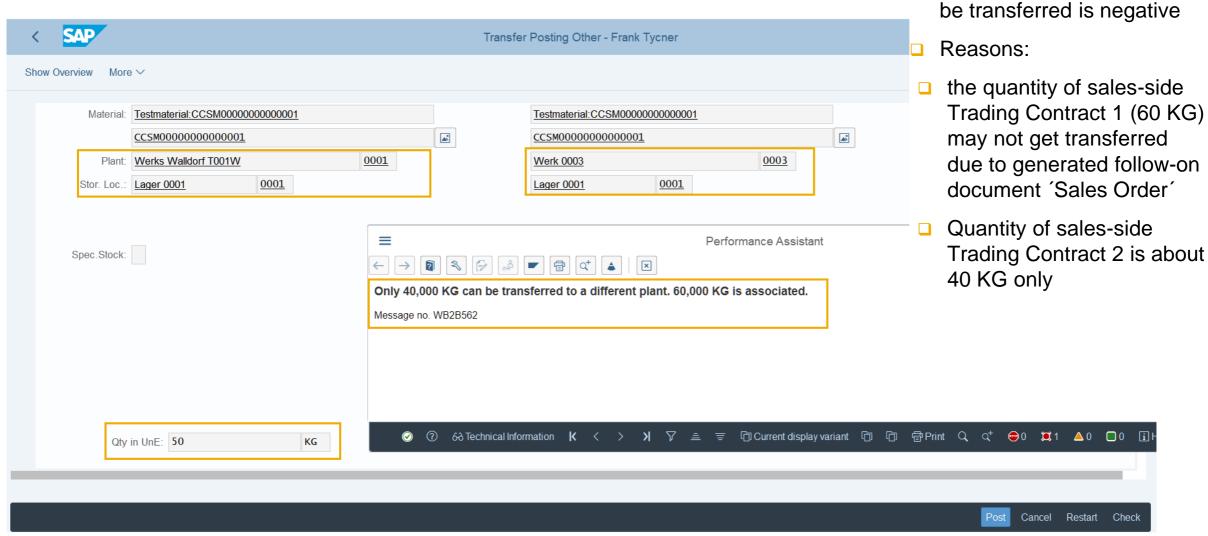




'Stock Transfer' as new

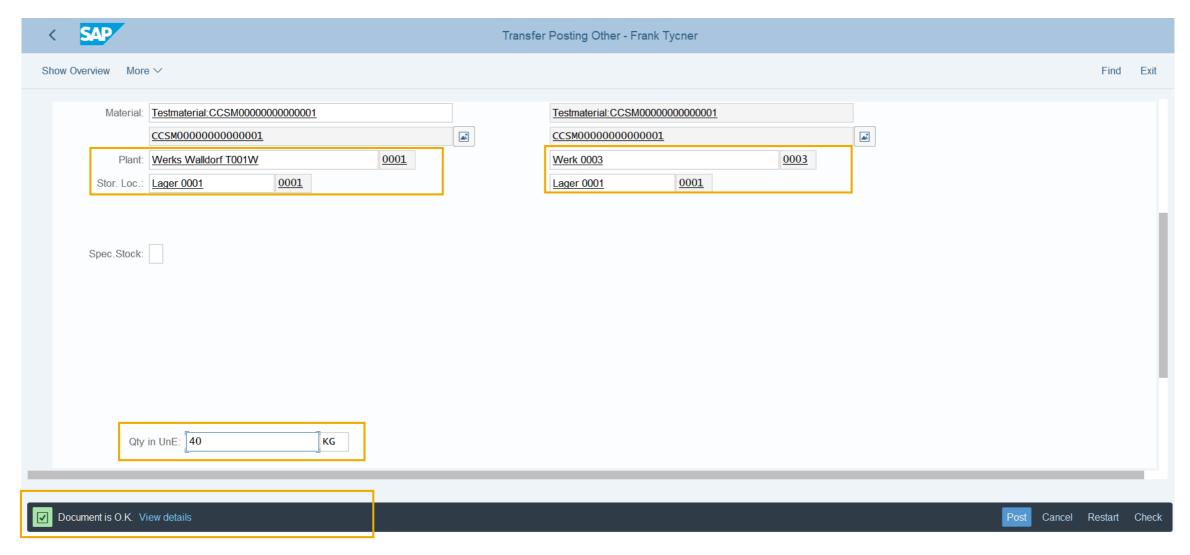
business process step

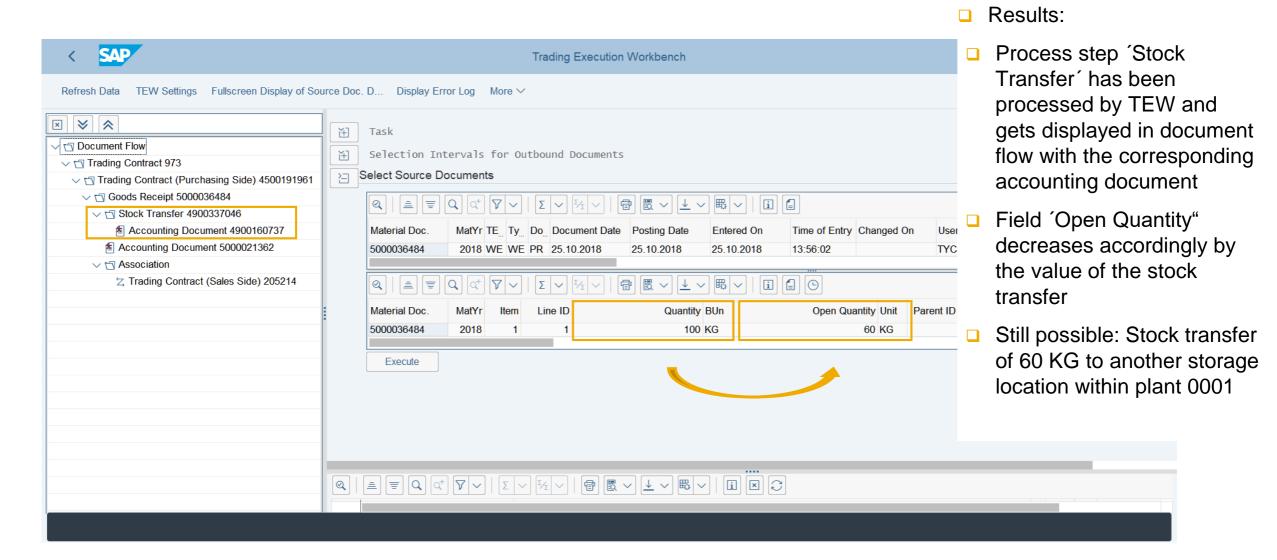
Negative check



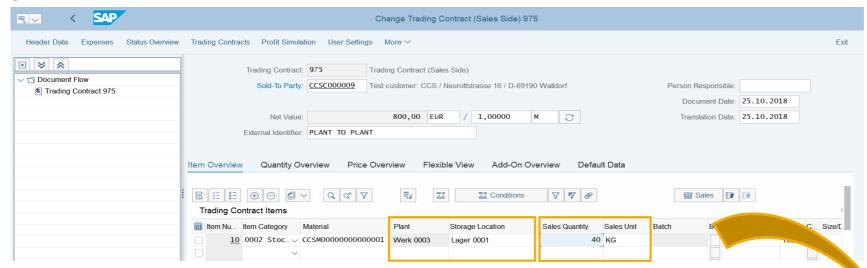
Check whether 50 KG may

Positive check

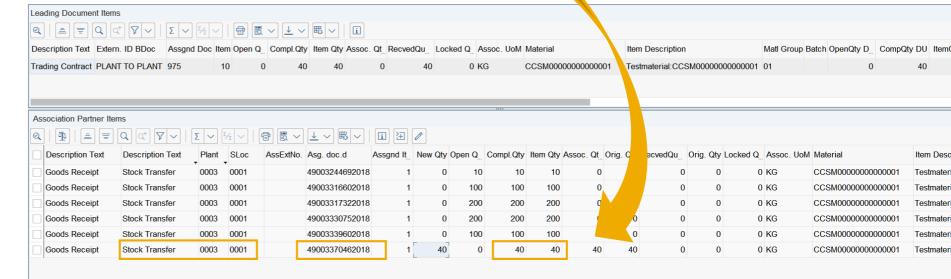




Subsequent association of Trading Contract 2 & further processing 'til process end

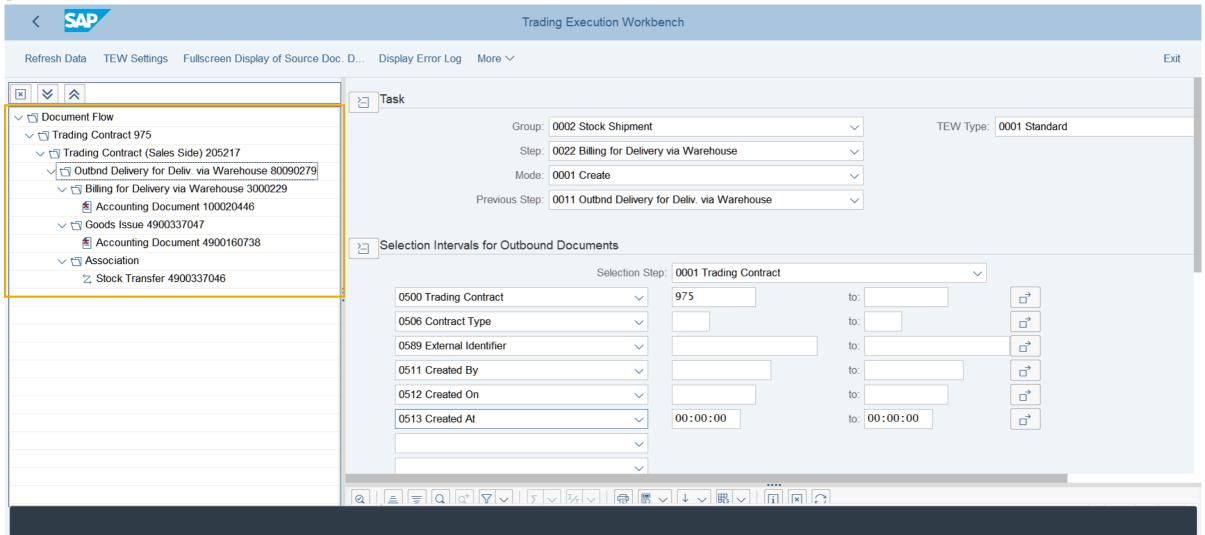


- Additional description text 'Stock Transfer' in dialog-box "Association Maintenance"
- Display of new plant / storage location



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Subsequent association of Trading Contract 2 & further processing 'til process end



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