



# M3 Supply Chain Execution User Guide

Release 16.x

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# About this Guide

## Intended audience

M3 Business Engine User Documentation provides guidance for end users and consultants regarding understanding basic concepts and using key processes in M3 Business Engine. Further information about the available programs and functionality is available as field help texts.

## Document structure

M3 Business Engine User Documentation is a task-oriented documentation, providing descriptions on performing specific procedures, defining settings, and running specific, step-by-step procedures. To some extent, this documentation set also contains conceptual documents, providing background information or describing requirements and how they are matched in M3 Business Engine.

This table provides a brief overview of the most common sections that appear in this document.

Introduction	Briefly describes what kind of information the document provides.
Outcome	Describes the consequence of a process completed or a concept run.
Uses	Explains how the results can be used.
How the system is affected	Describes, if applicable, any changes that have been implemented in M3.
Before you start	Describes the prerequisites of a process or a concept.
Parameters to set	Lists all relevant parameters with a detailed explanation.
Description	Describes, if applicable, the concept or the purpose of the concept and when and how it is run.
Outline	Provides an overview (often as a flow chart) of the activities in the process.
Activity description	Describes all the activities above and provides a summary of when, where and how to carry them out.
Follow these steps	Describes, if applicable, how to carry out a settings instruction.
Related topics	Lists other topics that contain relevant information.

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# Chapter 1: Managing Inhouse Activities

## Analyze and Repair Mismatches for Item per Warehouse

This document explains how you analyze and repair mismatches in the database for allocations, inventory, planning, and rental related data.

### Outcome

Using selection orientation 0 and 1 in this function, you can check which setup of synchronization is used:

- The allocated quantities in transaction files and stock balance files are synchronized with each other for a specific combination of item and warehouse.
- The records in the material plan are synchronized with order line quantities and dates. All types of order categories are included in the check.

If an error is detected, the item/warehouse combination is recorded in a message file.

This routine is used to repair mismatches for allocation, inventory, and planning data in the database.

For more details on how the system is affected, see [Managing Mismatches for Item per Warehouse](#) on page 61.

Using selection orientation 2 in this function, you can check if the reservation, outbound DO, inbound DO, and deliveries connected to a rental agreement line are synchronized with the rental line. Agreements that can be analyzed are limited to status 20, 40 or 50. When checking for errors, the basis is always the rental line status. This means that the rental line status is always assumed to be correct.

### Create an analyze round

- 1 Start 'Item per Warehouse. Analyze and Repair' (MWS980/B). Set the panel sequence to E, F.
- 2 Specify an ID for the analyze round and the selection orientation, then select 1='Create'.
- 3 Press Enter. The E panel is displayed and an analyze round is created with status 10-'New'. Depending on which selection orientation that was set, the E panel displays different fields.
- 4 Specify the 'Description' field and choose which checks you want performed. For selection orientation 0 these checks are available:
  - 'Balance ID allocations': The field checks allocations and matches them to find the balance IDs (MITALO -> MITLOC).
  - 'Transaction allocations': The field checks allocations and matches them to find orders (MITALO-> xxLINE).
  - 'Allocated order lines': The field checks orders and matches them to allocations (xxLINE-> MITALO).

- 'Item/whs accumulators': The field checks the item warehouse quantities and matches them with the item location quantities (MITBAL-> MITLOC).
- 'Planning data': The field checks the records in the material plan (MITPLO) against order lines quantities and dates. All types of order categories are included in the check.
- 'Planned order lines': The field checks order lines (different files depending on the order category) against the material plan (MITPLO).

For selection orientation 2 these checks are available:

- 'Check rental deliveries': The field checks the reservation, the outbound DO and the outbound delivery for the selected agreement lines.
- 'Check rental returns': The field checks the inbound DO and the inbound delivery for the selected agreement lines.

- 5** Press Enter. The F panel is displayed.
- 6** The 'Select by event file based on changed transactions' field indicates whether the analysis round should be selected on the records in the event file. Transactions for each item/warehouse are written to the event file. This field is not available if selection orientation 2 has been selected.
  - If this check box is selected, the 'Log events' field in (CRS701) must be activated. The analysis round is then based on the records in the event file.
  - If this check box is selected, you must leave the fields 'From/to warehouse' and 'From/to items' blank.
- 7** Select the warehouses and/or items to include in the analysis round. If you do not specify these fields, all warehouses and items are selected. If selection orientation 2 has been selected, fields for rental agreement status are also available. Only agreements with status 20, 40 and 50 can be used as a qualifier for searching records in (MWS980).
- 8** The 'Latest warehouse' and 'Latest item' fields indicate the last warehouse record and item record being processed when the analysis round was stopped. Use these fields to determine where the analysis round will start.
- 9** Press Enter. (MWS980/B) is displayed, with the created analysis round in status 10-'New'.

#### Run an analyze round

- 1** Select option 9='Analyze by selections' on (MWS980/B). While the analyze round is processing, the status is 20-'Submitted'.

After running the analyze round, these statuses follow:

- Status 30-'Error exists'
- Status 40-'No errors'

**Note:** This option also submits all results with status 30-'Error exists' to the log file MWASLN, displayed in (MWS981).

- 2** You can run and attempt to repair errors on the same command as an alternative. Select option 21='Repair by selections'.
- 3** You can also pause an ongoing analyze round. Select option 7= 'Pause round'. This finishes the ongoing process for the item/warehouse record. The round gets status 21-'Paused'. Later, you can start the analyze round again from where it was stopped. To restart the analyze round, use the same option that you stopped it with.

- 4 Use option 4='Delete' to delete the record in MWASHE 'Item per Warehouse. Analyze and Repair' (MWS980) and the corresponding records in MWASLN 'Analyze Round. Repair Errors' (MWS981) and MWASMG 'Analyze Round. Display Message' (MWS982).  
This option must not be used when an analyze or repair is ongoing for the round.
- 5 Use option 10='Analyze by result' to perform an analyze based on the result in the MWASLN table.

#### Display and repair identified errors

If the analyze round status is 30-'Errors exist', you can analyze what is causing the errors.

**Note:** Rental outbound or inbound DO with status greater than or equal to 44 is not repairable using (MWS980).

- 1 Options on (MWS980/B)  
Start (MWS980). From (MWS980/B) you can try to repair errors. Select option 22='Repair by result'. This option submits a repair attempt for the result in the log file (MWS981).  
**Note:** Only errors with status 20-'Repairable' are considered. The errors are displayed in (MWS981).  
See a list with all messages in: [Managing Mismatches for Item per Warehouse](#) on page 61.
- 2 To display and repair errors, select option 11='Result'. This starts (MWS981), the error log file.
- 3 Options on (MWS981/B)  
If there are obstacles against an error for some of the items, you can select option 4='Delete'. This deletes records in MWASLN (MWS981) and MWASMG (MWS982). This option must not be used when an analyze or repair is ongoing for the round.
- 4 If you want to repair the actual record (per item/warehouse) use option 21= 'Repair'. This submits a repair attempt.  
These are the statuses for an error:
  - 30-'Error exists'
  - 35-'Submitted to repair'
  - 36-'Ending repair job'
  - 40-'Repaired'
- 5 To display messages for each errors/analyze round, select option 12='Message'. This starts (MWS982).

#### Display error messages

- 1 Messages are displayed on (MWS982/B). Open The E panel, then select option 5='Display' to show the message information.

## Change Location for All Items

This instruction explains how to change the location for all items at a location.

Note: Do not use this method if the movement is a common transaction. Use container management instead.

## Outcome

All items in a location are moved at the same time to another location.

All physical stock transactions are stored in the MITTRA table.

## Before you start

- On the 'Item. Open' (MMS001/E) panel, enter parameter 1 in the 'Inventory accounting' field.
- On the 'Item. Connect Warehouse' (MMS002/G) panel, enter parameter 2 or 3 in the 'Storage method' field (storage at several locations).

## Follow these steps

- 1 Open 'Movement. Change Location - All Items' (MMS180). The A panel is displayed.
- 2 Fill in the 'From location' and the 'To location' fields. Pressing F17 starts 'Balance Identity. Display' (MMS060). Select the location to which you want to move the items from by using option 1=Select.
- 3 Press Enter. The items are moved, and the transaction is displayed at the bottom of the panel.
- 4 Pressing F16 prints out the transaction. The function is only available if the Print field is preset to 1 on the (MMS180/P) panel.

# Change Location for Container

This instruction explains how to move containers between locations. A container is for example a pallet on which deliveries and receipts are loaded. The container number in combination with item number, location and the quantity result in a unique balance identity.

## Outcome

A container is moved between two locations.

The entire container is moved with the related balance identities that are stored there.

All physical stock transactions are stored in the MITTRA table.

## Before you start

- On the 'Item. Open' (MMS001/E) panel, enter parameter 1 in the 'Inventory accounting' field.
- On the 'Item. Connect Warehouse' (MMS002/G) panel, enter parameter 2 or 3 in the 'Storage method' field (storage at several locations).
- For container movement, enter parameter 1, 2, or 3 in the 'Container management' field, on the (MMS002/G) panel.
- A container is created in 'Container. Open' (MMS230).

### Follow these steps

- 1** Open 'Movement. Change Location - Container' (MMS105). All containers and their item numbers are displayed on the B panel.
- 2** Fill in the Container field on the B panel and select a container/item number. This field activates a list from 'Container. Open' (MMS230).
- 3** On the (MMS105/E) panel, fill in the 'To location' field and press Enter.
- 4** The movement transaction is completed. The new location for the container is displayed on the (MMS105/B) panel.

## Change Location for Balance Identity

This instruction explains how to change the location for a balance identity.

### Outcome

Balance identity is moved from one location to another. This is used to move only a certain quantity - not all of the items at a location.

All physical stock transactions are stored in the MITTRA file.

### Before you start

- On the 'Item. Open' (MMS001/E) panel, enter parameter 1 in the 'Inventory accounting' field.
- On the 'Item. Connect Warehouse' (MMS002/G) panel, enter parameter 2 or 3 in the 'Storage method' field (storage at several locations).

### Follow these steps

- 1** Open 'Movement. Change Location - Balance ID' (MMS177).
- 2** On the A panel fill in the 'Item number' field. Enter the location you want to move from in the Location field.
- 3** Press Enter. Information about the selected item and location are displayed on the right side of the panel. The 'Movable net quantity' field indicates the movable quantity which is calculated as:  
Allocable quantity minus allocated quantity is equal to movable quantity. Allocated quantity is defined on the (MMS177/P) panel.
- 4** On the (MMS177/P) panel. Fill in the 'Create Issue' field, which determines whether the transaction should update the MITTRA file.
- 5** Fill in the 'Check picking list quantity only' field. This field defines the allocated quantity. The valid alternatives are:  
0 = All allocation are included in the calculation.  
1 = Only allocation on the picking list are included in the calculation.

- 6 Press Enter. The (MMS177/A) panel is redisplayed.
- 7 Fill in the 'Lot no.', 'Container' and 'Catch weight' fields, if applicable. Fill in the Quantity field. Press Enter. 'Location Select - Available Locations' (MMS160/B) is started.  
This panel displays all available locations where this item can be stored. Pressing F16 displays all the location the item has been stored at. Pressing F15 redisplays all available locations.
- 8 The 'Auto distribution of balance' field, on the (MMS160/P) panel, enables you to specify whether any quantities should be proposed on the (MMS160/B) panel's proposed locations.
- 9 Mark the location you want to move the items to and right-click (option 1 = Select). You can select more than one location. Press Enter. The selected location(s) is displayed on the (MMS160/K) panel.
- 10 Enter the quantity and press Enter, Press F14 to update. The (MMS177/A) panel is redisplayed.  
The most recent transaction is displayed on the lower part of the A panel.  
Pressing F17 starts 'Balance Identity. Display (MMS060)'.

## Change Location for Items

This instruction explains how to move items between locations within a warehouse.

### Outcome

Items are moved between locations.

This is one of few programs where you can move items with status 1=Under inspection and status 3=Rejected. This is very useful for inventory management and when you want to fill up smaller workstation locations from the main location (buffer location).

All physical stock transactions are stored in the MITTRA table.

### Before you start

- On the 'Item. Open' (MMS001/E) panel, enter parameter 1 in the 'Inventory accounting' field.
- On the 'Item. Connect Warehouse' (MMS002/G) panel, enter parameter 2 or 3 in the 'Storage method' field (storage on several locations).
- In order to obtain a proposed order quantity in 'Movement. Change Loc - Item' (MMS175), enter parameter 3 in the 'Replenishment method' field in 'Item. Connect Location' (MMS065), and fill in the 'Order quantity' field. Otherwise the order quantity must be entered each time.

### Follow these steps

- 1 Open 'Movement. Change Loc - Item' (MMS175). The A panel is displayed. Fill in the Warehouse, 'Item number' and 'To location' fields.
- 2 On the (MMS175/E) panel, fill in the 'Transaction quantity' and 'From location' fields.
- 3 Pressing F17 starts 'Balance Identity. Display' (MMS060) where you can select a location to move the item from by using option 1 = Select.

- 4 The (MMS175/A) panel is redisplayed. The most recent transaction is displayed at the bottom of the panel.
- 5 Pressing F16 prints out the transaction in a list. The function is only available if the Print field is activated on the (MMS175/P) panel.

## Change Location for an Item Coded as a Single Location Item

This instruction explains how to change location for an item that is coded as a single location item.

### Outcome

An item coded as a single location item has changed location.

All physical stock transactions are stored in the MITTRA table.

### Before you start

- On the 'Item. Open' (MMS001/E) panel, enter parameter 1 in the 'Inventory accounting' field.
- On the 'Item. Connect Warehouse' (MMS002/G) panel, enter parameter 1 in the 'Storage method' field (storage at a single location).

### Follow these steps

- 1 Open 'Movement. Change Location – Single Location Items' (MMS820). All items and balance identities coded as single location stored, and the locations are displayed on the B panel.
- 2 Fill in the Warehouse field and open the item number that is to be moved.
- 3 Fill in the 'To Location' field on the E panel. This field activates a list (MMS010) from which you select the location to which the item/balance ID is to be moved.

## Change Location on Balance Identity for a Catch Weight Item

This document describes the internal warehouse activities associated with movements for balance ID.

The balance identity (balance ID) is the inventory record, defined by warehouse, location, item, lot, and container.

If necessary, reference the document for an introduction to the functionality available to support the concept of catch weight.

## Outcome

Catch weight movement between locations is managed in 'Movement. Change Loc - Balance ID' (MMS177).

## When to use

When performing movement of a balance ID inside a warehouse.

## Activities in these scenarios

- 1** Move part of balance ID – enter both quantity and catch weight.
- 2** Move part of balance ID – enter only quantity.
- 3** Move all – enter both quantity and catch weight.
- 4** Move all – enter only quantity.
- 5** Move all – enter catch weight only.
- 6** Evaluate results in 'Balance Identity. Open Toolbox' (MWS068) and 'Stock Transaction. Display History' (MWS070).

## Scenarios for move between location 1 and location 2 in (MMS177)

Sce-nario	Start Qty Loc 1	Start CW Loc 1	Move Qt	Move CW	Loc 1 Qty	Loc 1 CW	Loc 2 Qty	Loc 2 CW	Diff CW	CWA for Fi-nance
Part Qty+CW	5	52	3	32	2	20	3	32	0	NO
Part Qty	5	52	3	blank	2	2/5*52= 20.8	3	3/5*52= 31,2	0	NO
All Qty+ CW	5	52	5	51,5	0	0	5	51,5	-0.5	YES -0.5kg
All Qty	5	52	5	blank	0	0	5	52	0	NO
All CW	5	52	blank	53,7	0	0	5	53,7	1.7	YES 1,7 kg

## Scenario - movements conclusions

- 1** Movement can be performed by entering quantity only, quantity + catch weight or catch weight only.
- 2** Movement of the final quantity and catch weight may generate a difference in catch weight.
- 3** Differences are accounted for using a CWA transaction in stock-transaction history.
- 4** Movements by entering quantity only moves a relative proportion of the catch weight. Move 3 of 5 => also move 3/5 \* CW.

# Consignment Stock

The consignment stock functionality enables the management of goods owned by an external owner (for example a supplier) within a warehouse. This means that quantities of goods under consignment are not included in inventory evaluation reports and have no effect on item costs.

The process of managing consignment goods in M3 BE is described in the schematic process below.

- Creation of consignment agreement between supplier and delivering warehouse including business rules such as price, valid dates, and invoicing intervals.
- Consignment goods are replenished to the delivering warehouse by a specific consignment replenishment purchase order type.
- At goods receipt of a consignment replenishment purchase order line, no internal costs are updated since the goods are still owned by the supplier. Normal stock transactions are created in the 'Stock Transaction History' (MWS070). At put away, item/warehouse and item/facility accumulators for consignment quantities are updated as well as a record in 'Consignment Owner Quantities. Open' (MWS020) to keep track of the quantities per external owner of a specific item or warehouse.
- A demand order line (for example CO, DO, MO) allocates goods from stock using normal functionality.
- When issue reporting the demand order line, a consignment usage calculation is executed to calculate if a purchase of consignment goods must be done or if the demand is covered by own stock. The calculation also defines from which supplier, and the quantity to buy from each supplier. Each purchase of consignment goods triggers an automatic purchase process to change the ownership and create a basis for supplier invoice. This change of ownership also updates the internal costing for the specific item.
- The change of ownership can be displayed in (MWS070) as transactions with type 25 (purchase put away). There are two put away transactions created for each ownership change. The first transaction is a negative PO receipt, which represents the issue from consignment stock. This transaction does not create any accounting transactions, but does decrease consignment stock. The second transaction is a positive PO receipt, which represents the purchase of the goods from the supplier. Transaction cost for this transaction is the purchase price per the agreement. This transaction also updates the items average cost. Accumulators in item/warehouse, item/facility are updated as well as consignment quantities per owner.
- Printing an inventory value list at this point excludes goods under consignment but includes own goods.
- A usage PO is created to keep track of each purchase transaction (resulting from an issue transaction). This PO is used to create a report to be sent to the supplier as a specification from which the supplier can create an invoice. Normal invoice processes are used with invoice matching. The matching is done against the usage PO.
- Supporting processes like sell-back, claim of consignment goods, ending consignment agreement, analyzing pending consignment transactions etc., are described in detail below.

## Terms used

Term	Description
Consignment stock	Consignment stock is stock legally owned by a supplier, but held in own warehouse.
Own stock	Term used to differentiate the stock in goods that is owned by the warehouse and goods under consignment. The term 'Own stock' represents the stock that is owned by the warehouse.

Term	Description
Consignment replenishment order	A purchase order which updates the on-hand balance but where the stock is still owned by the supplier.
Sell-back order	A 'Return to supplier' order which changes the ownership of own stock to consignment stock.

## Limitations

- The consignment functionality is not valid for the Brazilian market due to local regulations
- Addition of consignment stock quantities can only be done via consignment replenishment purchase order, and consignment sell-back. All other increases of stock are considered as increase of own stock.
- The change of ownership, from goods under consignment to own goods, is performed at the point of issue reporting of the demand order.
- The on-hand method per facility must be 1 (accumulate changes in balance regarding status 2 and 3) for items with consignment functionality activated.
- Inventory accounting method 1 (standard cost) or 2 (average cost) is recommended.
- Deactivating consignment functionality for an item or warehouse can only be done when the consignment balance is zero (0).
- Includes all balances (on-hand inspect, on-hand reject and on-hand approve) when printing inventory value list from 'Inventory Value. Print Reconcil List' (CAS530).
- Note:** Depending on the amount of reported demand order lines with consignment stock activated and local configuration of order types, agreements etc., consignment stock functionality may have an impact on performance during the issue reporting.
- Active or catch weight items cannot be used under consignment
- Sublot managed items cannot be used under consignment
- Consignment quantities are stored per owner, warehouse, item, and lot and will be consumed on that level during the usage calculation.
- It is not possible to reclassify consignment items using method 0 (new item/new lot).
- For lot managed items, inventory accounting methods 1 (standard cost), 2 (average cost) and 4 (actual cost) are supported.

## Before you start

- Activate consignment agreement in 'Supplier. Define Purchase Financial' (CRS624) to allow creation of consignment agreement for the supplier.
- Create a consignment agreement type in 'Purchase agreement type. Open' (PPS110).
- Create a consignment agreement in 'Purchase Agreements. Open' (PPS100).
- Create a purchase order type in 'Purchase order type. Open' (PPS095) with order category 25, Consignment replenishment.
- Create a purchase order type in (PPS095) with order category 26, Consignment usage.
- Define consignment usage order type on 'Settings - Purchase' (CRS780/H).
- Create a return to supplier order type with order category 4 (sell-back) in 'Return Order Type. Open' (PPS399).
- Create a requisition order type in 'Req/Distr Order Type. Open' (CRS200). Select 'Next man fnct' '7' and activate parameter 'Consignment sell-back' on the H panel.

- 9** Set 'Consignment lvl', 'Usage rule' and 'Seq – sup usage' on 'Item. Connect Warehouse' (MMS002/J).

### Settings descriptions

Program ID/Panel	Heading	Description
(CRS624/E)	Consignment agreement	Allows creation of consignment agreement for the supplier.
(PPS110/E)	Consignment agreement	Indicates that it is consignment agreement type.
(PPS110/E)	Invoice frequency	Controls how long an invoice period is. Consignment purchase is summed up to the period it belongs to, that is, the transaction date of the purchase.
(PPS095)	Purchase order category 25	Replenishment order. This order category is used to replenish inventory, and is used in the same way as the normal order category, but the purchase price of the item is always zero, and purchase orders cannot be invoice matched.
(CRS780/H)	Usage PO type	This is the order type that is used when creating usage purchase orders. purchase order category 26 is required.
(PPS399)	Return to supplier category 4	This type of order is used when own stock should be returned to the consignment stock.
(CRS200/H)	Consignment sell-back	Activates the sell-back parameter use in the sell-back process. The order type is added as the requisition order type on the return-to-supplier type. The field is only visible for transaction type 41 (requisition order) and if next manual function is 7.
(MMS002/J)	Consignment level	Activates consignment functionality for a specific item or warehouse. Set parameter = 1 to use consignment on warehouse level.
(MMS002/J)	CS usage rule	Indicates if own stock should be consumed before or after stock under consignment owned by external owner. Available settings are 1 (use own stock first) or 2 (use external owner's stock first)
(MMS002/J)	Seq – sup usage	Indicates the priority order of which supplier consignment goods are to be used. Available settings are 1 2 3 (First receipt date – Last receipt date – Suppliers prio) or 2 1 3 (Last receipt date – First receipt date – Suppliers prio).

### Replenishment of consignment goods

To order consignment goods, a specific type of purchase order category must be used: PO category 25. This order category requires that a valid consignment agreement exists.

All logistic functionality is the same for order category 25 as the normal order category (category 20). The differences between the two order categories are the price and the financial transactions. A consignment replenishment order always has purchase price zero, no charges connected to the orders, and no financial transactions are created in the goods receiving flow. Since the goods are still owned by the supplier, no invoicing occurs for these orders.

Receiving goods from a normal purchase order category (not 25) results increases your own stock balance and not the consignment stock balance.

### Consumption of consignment goods

Consumption of consignment goods takes place when items are reported issued. Any warehouse activity where balance is reported with a negative transaction triggers the calculation of consignment usage. If the item is configured for consignment, the transactions consuming consignment goods are:

- Customer Order (CO), pick list issue
- Distribution Order (DO), pick list issue
- Requisition Order (RO), pick list issue
- Manufacturing Order (MO), material issue
- Work Order (WO), material issue
- Stock adjustment and stock take, negative reported transaction

### Positive reported transaction of consignment goods

Positive warehouse transactions of items configured with consignment, increases own goods item balance and does not impact consignment goods accumulators. Those warehouse transactions are:

- Reverse of CO pick list issue
- Reverse of DO pick list issue
- Reverse of RO pick list issue
- Reverse of MO, material issue
- Reverse of WO, material issue
- Customer returns
- Stock adjustments and stock take, positive reported transaction

Positive reported transactions use current cost price according to inventory accounting method, handled in 'Item. Connect Facility' (MMS003).

### Warehouse activities for consignment goods

The outbound process for an item with consignment functionality activated in item or warehouse follows the same process as if consignment was not activated. This means that demand order lines are allocated per current logic and are not affected by consignment functionality. The decision of which supplier to buy consignment goods from, and what quantities, are taken at issue reporting of demand order line during the usage calculation.

In-house activities such as movements and reclassifications do not affect consignment balances. The quantity under consignment is not considered in inventory evaluation reports since it is considered as still owned by the supplier.

Any stock adjustment via physical inventory counting follows the same process as any other stock reduction or increase. Note that an increase of stock results in increasing own stock while a reduction of stock goes through the usage calculation and might result in a change of ownership from goods under consignment to own goods.

The parameter consignment level set to 1-'WHS level' indicates that consignment balances are stored on warehouse level. This means that current consignment stock balances can be found in accumulators in 'Item. Connect Warehouse' (MMS002) and (MMS003).

Accumulator MBCSTQ, 'Consignment OHB', is the quantity of consignment goods available for change of ownership or purchased from supplier. This accumulator includes all goods reported as approved during put away of consignment replenishment purchase orders.

**Note:** Since it is possible to issue report goods with status under inspection and rejected, also balances in these statuses (without reporting number) are included.

Accumulator MBCQUW, 'Consignment OHB inspection', is the sum of all balance identities with status under inspection and still not reported for put away (still with receiving number). This accumulator only increases during the receiving process of consignment replenishment purchase orders.

Accumulator MBCRJQ, 'Consignment OHB rejected' is the sum of all balance identities with status rejected and still not reported for put away (still with receiving number). This accumulator only increases during receiving process of consignment replenishment purchase orders.

Information of current stock balances for goods under consignment per owner is displayed in function 'Consignment Owner Quantities. Open' (MWS020).

### Change of ownership

At the point of issue reporting, or reducing stock during stock take variance reporting, a usage calculation is executed to calculate if a purchase of goods under consignment should be executed or if own stock should be used.

This calculation is controlled by two parameters in (MMS002):

- 'Consignment usage rule': controls if all own stock should be used prior to purchase of any goods under consignment, or if all goods under consignment should be used prior to own goods.
- 'Seq – supplier usage': controls the order of reduction of supplier owned goods. This sequence is only important if several suppliers have consignment goods on the same item.

One important detail worth mentioning is how the system calculates the on-hand balance of own goods. This is an important part of the calculation logic that is performed to know the exact quantity to buy from each supplier at issue reporting.

Own stock = Own\_stock1 + Own\_stock3 + Own\_stock2 - inTransit

where:

Addend `Own_stock1` is the part of the own quantity that is under inspection (quantities of stock balance IDs with status = 1).

Addend `Own_stock3` is the part of the own quantity that is rejected (quantities of stock balance IDs with status = 3).

Addend `Own_stock2` is the part of the own quantity that is approved (quantities of stock balance IDs with status = 2).

Addend `inTransit` is the part of the own quantity that is at a transit location.

`Own_stock1 = QUQT - CQUQ - QUQTwithREPN`

All quantity under inspection (QUQT) is deducted with consignment quantity under inspection (CQUQ) and deducted with quantity under inspection with reporting number still on balance identity (QUQTwithREPN).

`Own_stock3 = RJQT - CRJQ - RJQTwithREPN`

All quantity with status rejected (RJQT) is deducted with consignment quantity in status rejected (CRJQ) and deducted with quantity in status rejected and reporting number still on balance identity (RJQTwithREPN).

`Own_stock2 = STQT - CSTQ`

All quantity in status approved (STQT) is deducted with all quantity under consignment ready for usage calculation (CSTQ).

`inTransit`

The sum of balances that are at a transit location. These balances have already been issue reported, but not yet reported as received at the receiving warehouse. This sum is therefore not to be considered as available for usage calculation.

If the usage calculation yields the result that a purchase of consignment goods must be performed, it uses settings in item/warehouse to determine from which supplier to buy. The worktable is used both during the calculation of quantities to purchase (so simultaneous jobs do not use the same quantities in the calculation) and as a basis for purchase of consignment goods, and is called 'Pending Consignment Transactions. Open' (MWS025). This table can also be used for tracking issues occurred during the purchase of consigned goods, since records are not deleted in that case.

When the usage calculation has determined that consignment stock is to be used, this quantity needs to be purchased. The supplier's goods cannot be issued without being purchased first. This purchase is done automatically by creating two PO receipt transactions. This is what purchase order category 26 is used for, that is, purchase of consignment stock. If no PO exists to be used for the receipt, a new PO is created. The consignment PO type defined in (CRS780) is used to create the PO. When the PO is created, it is connected to the right invoice period, the reported transaction date is within the invoice period.

Before the actual issue is performed two PO receipt transaction (transaction type 25) are created in the stock transaction history (MWS070). The first transaction is a negative issue which reduces consignment stock. This transaction does not create any cost accounting transactions. The second receipt is the actual purchase. This transaction updates the received quantity on the usage PO and creates the cost accounting transactions. This transaction is the base for the invoice matching.

As a logical consequence of reducing goods under consignment and increasing own goods at the change of ownership, accumulators in item/warehouse, item/facility and quantities per consignment owner are updated.

**Note:** If the item is lot managed, the usage calculation is done within warehouse, item and lot number. This means that the usage calculation is performed and evaluated within the allocated lot number. No automatic change of allocated lot number should be performed due to result of a usage calculation.

## Invoice periods

The invoice period is the period for which all consignment usage transactions should be accumulated to. The length of the invoice period is controlled by the 'Invoice frequency', defined on the agreement (PPS100), or self-billing agreement in 'Purchase Agreement. Open for Self-Billing' (PPS112).

When an issue transaction is processed, which triggers a consignment usage purchase, the transaction date of the issue controls which invoice period should be accumulated. If self-billing is used, the 'Next invoice date' on the self-billing agreement controls which period to accumulate.

When a consignment purchase is triggered from an issue transaction, a PO is created for the corresponding invoice period. If a PO already exists, a PO line is created, if needed. The create invoice periods are displayed in 'Period for Consignment Invoice. Open' (PPS135) and which purchase orders are created to each period is displayed in 'Consignment Invoice Period. Open Lines' (PPS136). To create a consignment usage specification for an invoice period, 'Consignment Consumption. Print' (PPS545) is used. (PPS545) can be called from (PPS135) or started from the menu. If the purchase order is marked as complete in (PPS545), the printed POs are closed for additional usage transactions. If new transactions are needed, a new PO is created.

## Inventory evaluation

When printing an inventory value list including items with consignment activated, it is recommended that you include balances with all statuses (approved, under inspection, and rejected).

For Items with consignment functionality activated, goods under consignment are not included in the list since they are owned by one or several external suppliers.

## Purchase invoice of bought consignment goods

There is no difference in the invoice process for the purchase of consignment goods. The difference is what the invoice is based on. The replenishment PO is an order to fill up the inventory, but it is not purchased. The invoice is instead based on what has been used, that is, the received quantity on the usage PO. A report can be created in (PPS545) which lists all purchase transactions (detailed or summarized). This report can be sent to the supplier. Based on this, the supplier can create an invoice which can be matched to the usage PO.

## Claim of consignment goods

Claim of consignment goods follows the normal process. If goods are rejected in the QI control, the rejected quantity can be returned to the supplier. No PO transactions are created for change of ownership when the goods are issued.

## Consignment termination

When a consignment relationship ends with a supplier, all consignment stock must be purchased. If the stock is kept in consignment, it is available in the system, but cannot be issued, that is, there are error transactions in 'Pending Consignment Transactions. Open' (MWS025). To purchase all consignment stock from the supplier, use option 30 (Consignment termination) in 'Supplier. Define Purchase & Financial' (CRS624). This option moves ownership transactions from consignment to own stock, and sets all open consignment agreements to status 90 (Canceled).

This option is only valid if:

- No pending consignment transaction exits
- No consignment replenishment purchase orders in status less than 75 (PO category 25) exists.

### **Consignment sell-back**

Sell-back is the process when own stock is sold back to the supplier. This requires two order types to be set up:

- In 'Return Order Type. Open' (PPS399) the field 'Return-to-supplier order category' should be set to 4-'Consignment sell-back'. When this order type is defined, a requisition order type must be set.
  - In 'Req/Distr Order Type. Open' (CRS200), the parameter 'Consignment sell-back' on (CRS200/H) must be activated.
- Note:** Only order types set to 'Next man funct'='7' (Flow completed but no picking lists created (picklist not used)) can activate the parameter.

### **Follow these steps**

Use this process to work with consignment stock:

- 1 Create a consignment replenishment purchase order, that is, order category 25. When the order is received, the received quantity increases the consignment stock for the supplier. Information of current stock balances for goods under consignment per owner is displayed in 'Consignment Owner Quantities. Open' (MWS020).
- 2 Report issue transactions. The issue transactions accumulate the consignment purchase by adding receive transactions to the usage PO. All issue transactions that accumulate consignment purchase go via the worktable MWWCSP (Pending consignment transactions). Messages that occurred during consignment purchase process can be seen in 'Pending Consignment Transactions. Open' (MWS025) if the purchase could not be executed for some reason.
- 3 Print the consignment usage report (PPS545) and send to the supplier, so an invoice can be created. When the invoice is received, the invoice matching can be carried out.

Use this process for consignment sell-back:

- 1 Create an order in 'Return to Supplier. Open' (PPS390) with order type 4-'Consignment sell-back'. The claim is created with parameter 'Credit to issue' activated.
- 2 Create lines in 'Return to Supplier. Open Lines' (PPS391) and enter the quantity to return.
- 3 Print the claim in 'Return to Supplier. Print Document' (PPS820). Once the claim is printed, one requisition order and one purchase order is created. The requisition order is created to issue goods as a normal claim.
- 4 The purchase order is created to receive the goods into consignment and to generate transactions to the invoice matching. Both orders are automatically reported.

## **Container Management**

Container management is used to keep track of the location of specific containers, and which balance identities are stored in them.

# Create Item Selection Table

This document explains how you create an item selection table to be used in a physical inventory.

Item selection table is only used together with inventory selected on balance identities records (MITLOC9). It is not used with inventory selected by stock locations (MITPCE).

## Outcome

You have created an item selection table that is used in cyclic, periodic and zero-point physical inventory.

An item selection table is an optional user-defined selection of fields with specified values for each field (the so-called From/To values).

By using an item selection table when creating a physical inventory round, only the fields relevant to the inventory will be included. In this way, the item selection table creates a great amount of flexibility for the user.

Item selection tables are reviewed in (CRS158) and (CRS159).

For information on which M3 files are updated, refer to the related process document [Taking Physical Inventory](#) on page 90.

## Before you start

The conditions in [Define Physical Inventory Settings](#) on page 39 must be fulfilled.

## Follow These Steps

- 1 Start 'Item Selection Table. Open' (CRS158).
- 2 Fill in the Table field and click New. Click Next and the E panel will be displayed.
- 3 Fill in the Name and Description fields on the E panel and start 'Item Selection Table. Select Fields' (CRS159) by clicking Next.
- 4 Determine in which order the fields should be displayed in the 'Sequence number' field on the (CRS159/B) panel.  
These fields will be displayed in (MMS301/B).
- 5 Fill in the fields in the Field column. Press F4 and select fields from the list presented there.
- 6 Fill in the 'From value' and 'To value' fields.  
Note that if no value is entered in the 'To value' field, the value entered in the 'From value' field will be the only valid value.
- 7 Specify whether to include or exclude the specified selection from valid balance identities. Click Exit.

# Create Lot/Serial Number

This instruction explains how to create a lot number and a serial number. A lot number is connected to one or more items. A serial number can only be connected to one item.

## Outcome

An item with a lot/serial number is created.

The primary use is to be able to:

- Separate balance identities from other balance identities with the same item number
- Trace balance identities backwards and forwards.

The lot is stored in the lot master MILOMA table.

## Before you start

The conditions in [Lot/Serial Number Settings](#) on page 172 must be fulfilled.

## Follow These Steps

- 1 To create a particular lot, open 'Lot/Serial Number. Open/Connect to Item' (MMS235). Select the item for which to create the lot or serial number.
- 2 A lot number is created either manually or automatically, depending on the setting in the 'Lot number method' field on the (MMS001/E) panel.
- 3 Continue with the (MMS235/E) and (MMS235/F) panels.  
A lot number that can belong to one or more balance identities is created.
- 4 To create a serial number specification, open 'Serial Number Specification' (MMS236) by using option 11 from (MMS235/B).
- 5 Fill in the 'Manufacturer serial number' field (which can also be the supplier serial number).
- 6 Fill in the fields on the (MMS236/E) panel.
- 7 To create a serial number, open 'Serialized Item. Open' (MMS240) by using options 12 or 13 from (MMS235/B). Option 12 starts the (MMS240/E) panel and option 13 the (MMS240/B) panel.  
Note: The serial number is the same as the lot number. A new serial number will not be created. The result of this step is that you serialize a lot; that is, the lot/serial number can only belong to one balance identity.
- 8 The Status field on the (MMS240/E) panel must be set to 20=Serviceable.
- 9 To print labels, open 'Label. Print' (LIS601) by using option 26 from the (MMS235/B) panel.

# Create Physical Inventory Counting

This document explains how you create cyclic, periodic, zero-point, and deviation-based physical inventory. It also explains how you take physical inventory up to the point of reporting the results.

You take an inventory to make sure that the recorded item quantities are correct.

## Outcome

You have created a physical inventory-taking round.

Count the items in your stock and compare it to the printed list to check how the list corresponds to the stock.

After you are finished counting, you report and update the inventory. This is done in 'Physical Inventory. Perform' (MMS300) and 'Physical Inventory. Report' (MMS301).

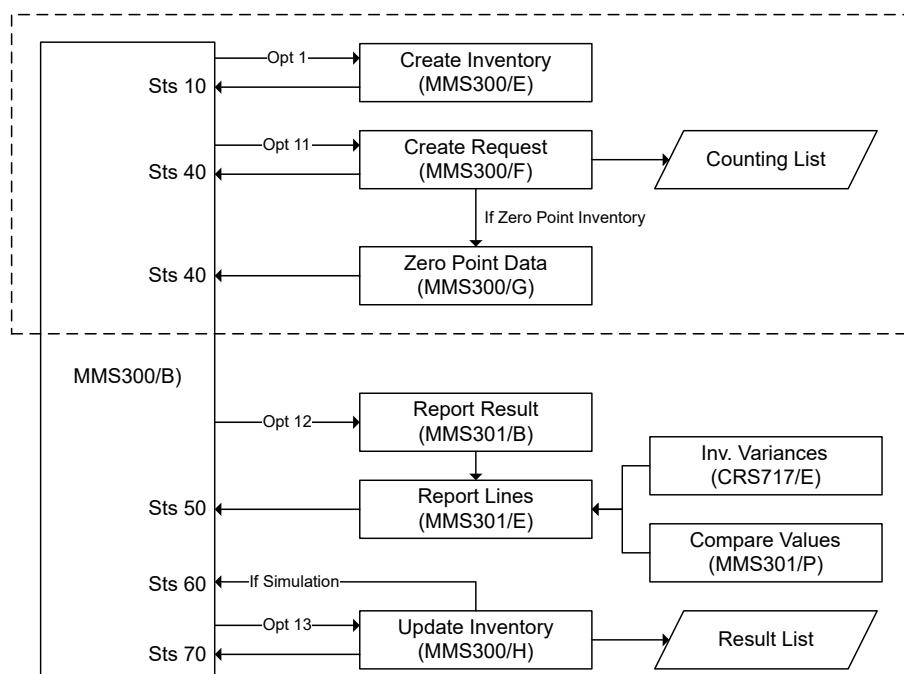
For information about which M3 tables will be updated, refer to the related process document [Taking Physical Inventory](#) on page 90.

## Before you start

- The conditions in [Define Physical Inventory Settings](#) on page 39 must be fulfilled.
- If you want to create a new item selection table, refer to [Create Item Selection Table](#) on page 31.

## Follow these steps

### Outline



### Create cyclic, periodic, zero-point, and deviation-based inventory

- 1 Open 'Physical Inventory. Perform' (MMS300/B).
- 2 Fill in the 'Physical inventory number' field. Click New.  
If this field is left blank, a number will be generated automatically from 'Number Series. Open' (CRS165), number series 12 A.
- 3 On the (MMS300/E) panel, select one of the physical inventory methods: cyclic, periodic, zero-point, or deviation-based inventory.
- 4 If you want to limit the number of inventory lines, you can use the 'Number of physical inventory lines' field.  
If an inventory is taken with a large selection, you do not want the items to be on the inventory list for too long. The solution is to split the inventory and make it possible to final-report some items before the entire lot is counted.
- 5 Fill in the 'Print On-hand balance' or 'Print Next transaction' field if you want this information to be printed on the counting list.
- 6 The 'Consider cycle time' field indicates whether or not cycle time is to be considered for the latest in/out date.

Example:

Today's date is 2001-01-02. The cycle time is one day. Item A at location XX has the physical inventory date 2001-01-01. Item A at location YY has a blank physical inventory date and 2001-01-02 as its latest in/out date. If a physical inventory is performed on 2001-01-02 and this parameter is set to 1, the balance ID at location YY will not be selected for physical inventory. If the parameter is set to 0, both balance IDs will be selected.

- 7 The 'Selection' field indicates whether the stock take lines should be created based on a selection on MITLOC records (alt 0 'Bal ID based'), or on MITPCE records (alt 1 'Location based stock take' or on MITMAS records (alt 2 'Item based')).  
If selection 2='Item based' is selected, items that have no balance IDs (disregarding stock in transit and stock in deviation) are represented in MITTKD with a line carrying the item and no location.  
If physical inventory method 3='Zero point phys inv' is selected, empty locations (no bal IDs=0 on MITPCE) are represented in MITTKD in addition to the MITLOC records.
- 8 The status of the created inventory will be 10='Physical inventory round created but contents not yet created'.  
The next transaction can, in some cases, provide information as to why the system's on-hand balance differs from the counted on-hand balance. For example, a quantity may already have been picked from the location that was included in the calculated on-hand balance.
- 9 Start the (MMS300/F) panel via option 11='Create requested lines' from the (MMS300/B) panel.
- 10 If you have selected stock take lines on MITLOC or MITMAS records, continue with step 11. If you have selected stock take lines on MITPCE records, continue with step 13.

#### **Stock Take Lines Selected on MITLOC or MITMAS Records**

- 11 Fill in the 'Item selection table' field and other selections. It is recommended to exclude balance IDs that are in transit. Decide whether to exclude balance IDs in deviation, or oppositely only list balance IDs in deviation if the objective is to clear this dummy stock. Click Next.
- 12 Select from one of the following alternatives:

- If you have chosen the zero-point physical inventory method, go on to step 15.
- If you have chosen the cyclic, periodic, or deviation-based physical inventory method, go on to step 16.
- If you want to create a new item selection table, refer to [Create Item Selection Table](#) on page 31.

### Stock Take Lines Selected on MITPCE Records

- 13** On the F panel, it is possible to sort on transportation flow code. The purpose of this is to be able to print the stock take lists in a sort order that minimizes travel time during stock take
- 14** The 'Exclude allocation' field, on the F panel, indicates whether stock take lines should not be created for those balance identities where allocation exists. This decreases the risk for incorrect differences caused by picking being performed between the time the stock take list was created and the actual counting.

### Zero-Point Physical Inventory Method

- 15** Define what zero means by activating one of the fields on the (MMS300/G) panel. This panel is only displayed when the zero-point inventory method has been selected. Click Next.

The valid alternatives for defining zero are:

- Negative on-hand balance
- Below safety stock
- Below reorder point
- Percentage left of the reorder point.

For example: If the 'Negative on-hand balance' field is activated, then balance identities with negative on-hand balances will be included in a physical inventory request.

### Continue Creation of Cyclic, Periodic, Deviation-based, and Zero-Point Inventory

- 16** Click Exit to close the program.

Status will be 30='Balance identities selected'. Click Refresh and the status will be 40='Request printed'.

The selected records will be flagged as active now and during physical counting. This means that they cannot be selected until the count is completed.

### Status 41

Status 41 is displayed when you have sent the MI transaction LstStockTake to the API. You can resend the transaction by select option 21='Change status'. This will decrease the status to 40 again.

## Create Quick Physical Inventory

This document explains how to take a quick physical inventory, which is a way of entering or adjusting on-hand balances in the system without going through the entire physical inventory flow.

You use quick inventory when you need to take inventory of separate items or when you just want to correct the on-hand balances. This is also a way of updating the on-hand balances in M3 from other systems, for example in a go-live situation.

## Outcome

On-hand balances have been adjusted and updated.

For information on the uses of physical inventory, refer to [Taking Physical Inventory](#) on page 90

The MITLOC table is updated with new or adjusted on-hand balances.

## Before you start

- The conditions in [Define Physical Inventory Settings](#) on page 39 must be fulfilled.
- If you want to create a new item selection table, refer to [Create Item Selection Table](#) on page 31.

## Follow These Steps

- 1 Start the 'Physical Inventory. Quick Entry' (MMS310/B) panel. On this panel, all items, locations and selected warehouses are displayed.
- 2 If you want to enter a new on-hand balance, enter the item number and location and create a new connection.
- 3 Select the line of the item for which you want to update the on-hand balance.
- 4 To determine the new on-hand balance for this location, fill in the 'Physical inventory quantity' field on the (MMS310/E) panel. Click Next.  
The new on-hand balance will be displayed on the B panel.
- 5 If the quantity is outside the allowed variances, you have to approve the inventory manually by specifying alternative 2 in the 'Status – physical inventory' field.  
The allowed inventory variances are defined in 'Settings. Physical Inventory Variances' (CRS717).
- 6 Click Exit.

# Define Sublot Policy

This document explains how to define a subplot policy which contains settings related to the Reference subplot ID field. Each subplot policy is assigned to the desired subplot controlled items.

## Outcome

The Reference subplot ID, which identifies the subplot associated with a package received into inventory, is generated during subplot creation.

The purpose of a subplot policy is to define how the Reference subplot ID should be populated and whether the field value should be protected from further updates once it is established.

On the F panel of 'Item. Open' (MMS001), you select a value from the Sublot policy field to determine how the Reference subplot ID field is managed for the associated subplot controlled item.

## Before You Start

The Sublot controlled check box must be enabled on the F panel of 'Item. Open' (MMS001), as described in the document [Create Item](#) on page 813, before a subplot policy can be assigned.

## Follow These Steps

- 1 Launch 'Sublot Policy. Open' (MMS476).
- 2 Enter an identifier in the Sublot policy field and select the Create option.
- 3 On the E panel, select the Auto populate reference subplot ID check box if you want the Reference subplot ID to be automatically populated when a subplot is created.
- 4 Select the Protect reference subplot ID check box to prevent any update of the Reference subplot ID field value after it is created.
- 5 To associate the newly created subplot policy with a subplot controlled item, launch 'Item. Open' (MMS001).
- 6 Create or select an existing item where the Sublot controlled check box is enabled on the F panel.
- 7 On the F panel, enter an ID in the Sublot policy field by selecting a record from the browse window.
- 8 Save your changes.

### Function program: MMS476Fnc

This function program is for the creation and maintenance of a subplot policy.

### MI program: MMS476MI

These transactions may be used for subplot policy:

- **Add** - The system creates a single subplot policy.
- **Upd** - The transaction updates values for a given subplot policy.
- **Dlt** - The transaction results in the deletion of a selected subplot policy.
- **Get** - The system retrieves values for a given subplot policy.
- **LstSub** - This transaction retrieves the subplot policies from a given range.

## Date Analysis on Lot-Controlled Items

This document explains how you can perform all the necessary date analyses on balance identities, for instance, expiry date, last sales date and re-inspection date.

### Outcome

The lot-controlled items are displayed in date order. By using some of the selection fields, you can filter out the important balance identities. Several options enable you to skip to a number of programs for executing the decided action.

The last sales date, re-inspection date and the expiry date are now also included in the MITLOC table.

All expiry date, last sales date and re-inspection date changes are made on the lot number level, for instance, in the MILOMA table.

Only lot-controlled balance identities that exist in the MILOMA table are displayed in ‘Balance Identity. Analyze per Date Type’ (MWS320).

In most industries where some sort of expiry date functions are used, there is a need to be able to analyze all materials that are about to expire. This helps you to manage questions such as whether material can be used for something else, in which product this material is included, what the material plan looks like for this item, etc.

## Before You Start

Lot-controlled items with expiry date handling or/and quality inspection date handling are set.

## Follow These Steps

### Options on the (MWS320/B) Panel

**1** Start ‘Balance Identity. Analyze Per Date Type’ (MWS320).

**2** The following options exist:

Option 11 starts ‘Balance Identity. Display’ (MMS060).

Option 12 starts ‘Item. Open Toolbox’ (MMS200).

Option 13 starts ‘Material Plan. Open’ (MMS080).

Option 14 starts ‘Availability. Display All Warehouses’ (MMS081).

Option 15 starts ‘Material Plan. Display Several Items’ (RPS115).

Option 16 starts ‘Where-Used Analysis. Display’ (PDS110).

Option 17 starts ‘Attribute Value. Connect to’ (ATS101)

Option 21 starts ‘Lot/Serial Number. Open/Connect to Item’ (MMS235).

Option 22 starts ‘Balance Identity. Reclassify’ (MMS130).

Option 23 starts ‘Balance Identity. Reclassify’ (MMS130).

Option 24 starts ‘Req/Distr Order. Open’ (MMS100).

Option 25 starts ‘Physical Inventory. Quick Entry’ (MMS310).

Option 38 starts ‘QI Request. Open’ (QMS300)

**Note:** The ‘407 Quality Management’ field in ‘Company. Connect Division’ (MNS100/K) must be defined as ‘Quality management system’ for this option to be available.

### Fields on the (MWS320/B) Panel

- Warehouse = blank warehouse displays all warehouses; if a warehouse is specified, only the selected warehouse is displayed.
- Location type = blank location type displays all types; if a location type is specified, only the selected location type is displayed.
- Status balance ID = blank status displays all balance IDs, if a status is specified, only balance IDs with the selected status are displayed.

- View = according to M3 standard.
- From date = The 'From date' field is used for selecting the balance identities that should be displayed in the subfile. All transactions with a later expiry date, last sales date or re-inspection date (depending on the date type parameter) will be included in the selection.
- Date horizon = The 'From date' plus the 'Date horizon' fields specify an end date for selecting balance identities in the subfile. The calculated end date is compared with the expiry date, last sales date or the re-inspection date (depending on the date type) and only balance identities between the date and the calculated end date are displayed in the subfile.
- Date type = The date type controls which date that should be displayed in the subfile and to which date the from date/date horizon should be compared.

The valid alternatives are:

1 = Expiry date

2 = Last sales date

3 = Re-inspection date.

4 = Planned re-classification date

- Selection = The selection value is used for selecting balance identities. Normally all balance identities in the selected date range are displayed, but by using the key selection fields, you can display just one particular item number or product group, etc.

The valid alternatives are:

1 = Item

2 = Item group

3 = Product group

4 = Assortment

5 = Responsible

6 = Planner

## Define Physical Inventory Settings

This document explains how you enter the settings for physical inventory.

### Outcome

Basic settings for periodic, cyclic and zero-point physical inventory have been entered.

Settings for quick physical inventory have also been entered.

### Before you start

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS001/E)	Inventory accounting	... whether the stock kept for the item should be accounted for in the inventory records.
(CRS717/E)	Difference percentage	... the percentage variance for the physical inventory parameter. This is entered with two decimal places.  This percentage is used for checking how reasonable the physical inventory result is. If an inventory variance is above or below the expected percentage of the inventory value for the balance identity, the physical inventory result must be manually verified in (MMS300).
(CRS717/E)	Variance amount	... the amount used for a check of how reasonable the results from a physical inventory are.
(CRS717/E)	Verify records	... whether or not the stock transaction history file (MITTRA) should be updated when the difference is zero.
(CRS165/B)	Number series type	... the purpose of each number series.
(CRS165/B)	Number series	... the number series.
The following fields apply for cyclic inventory only:		
(MMS002/G) and (CRS110/B)	Physical inventory cycle	... the applicable physical inventory cycle.  The inventory cycle contains information on how many days are to elapse before inventory for the item is once again taken.  Example: An inventory request is created on the first of each month and the time cycle is set to 180 calendar days, which means that the item should be counted every six months. If the item has not been included in any inventory for the last six months, then it will be included in the inventory this time.
(CRS110/E)	Cycle time	... the number of calendar days selected to be the physical inventory frequency of the physical inventory code.  Cycle time for physical inventory is entered for each physical inventory code.

### Follow these steps

- 1 Start 'Item. Open' (MMS001/E) and set the 'Inventory accounting' field to 1=The item is entered in the inventory record.
- 2 Open 'Settings. Physical Inventory Variances' (CRS717/E) and fill in the 'Difference percentage' and 'Variance amount' fields in order to set the parameters for inventory variances.
- 3 To determine whether the stock transaction history should be updated even if there are no inventory differences to report, fill in the 'Verify records' field.

The valid alternatives are:

0 = No

1 = Yes, create records with zero quantity.

The purpose is to verify that the physical inventory has been completed, even if there were no variances.

- 4** Start 'Number Series. Open' (CRS165) and enter number series A of type 12.

*Follow Steps 5–7 Below for Cyclic Inventory Only*

- 5** Open 'Item. Connect Warehouse' (MMS002/G) and fill in the 'Physical inventory' field to determine how often the item is to be counted.

This field starts a table from 'Physical Inventory Cycle. Open' (CRS110).

- 6** In 'Physical Inventory Cycle. Open' (CRS110), specify the number of days for a cycle by filling in the 'Physical inventory cycle' field on the B panel.

- 7** On the (CRS110/E) panel, specify the physical inventory frequency by filling in the number of calendar days in the 'Cycle time' field.

This indicates the number of days that must have elapsed between the last physical inventory date and today's date.

## Display Item per Facility

This instruction explains how to display an item per facility.

### Outcome

The balance is displayed on the facility level. This is the level MPM works with.

Used for global planning and average price setting.

The item/facility connection is stored in the MITFAC file.

### Before you start

- In 'Item. Open' (MMS001/) you must enter 1 = Inventory accounted in the 'Inventory accounting' field. .
- The balance is only totaled at the facility level if the 'On-hand balance total' field is activated in 'Warehouse Type. Open' (MMS006).

### Follow these steps

- 1** Open 'Item. Connect Facility' (MMS003). Option 25=Purchase costs, starts 'Purchase Distribution Costing. Calculate' (PCS280) and option 26=Product costing, calls 'Product Costing. Display' (PCS300). The functionality could be compared with the options in 'Product structure. Open' (PDS001).
- 2** Open the E panel. Enter 1 = Accumulate changes in balance regarding statuses 2 and 3 in the 'On-hand method' field.
- 3** The 'On-hand,' 'On-hand inspect' and 'On-hand reject' fields display the balance on the facility level.

The E panel:

- Press F14 to activate 'Average Cost. Display/Update History' (CAS371) where average price history is displayed
- Press F16 to activate 'Item. Display Stock Transaction History' (MMS071) where stock transaction history per facility is displayed.

Note: The balance must be totaled for the facility level (MITFAC) if average price handling or planning on facility level is used.

For average price handling, the 'Inventory accounting method' field is set to 2 = Average cost in 'Item. Open' (MMS001/E)

For planning on the facility level, the 'Planning method' field is set to 4 = Reorder point planned per item and facility in 'Item. Connect Warehouse' (MMS002/E).

## Display Item per Location

This instruction explains how to display items per location.

### Outcome

All locations where an item is stored are displayed.

- Used for warehouse management, stock control and allocation.
- On this level lot number, serial number, container and receiving number are managed.

Items per locations are stored in the MITLOC table.

Locations are stored in the MITWHL table.

### Before you start

In 'Item. Open' (MMS001/) you must enter 1 = Inventory accounted in the 'Inventory accounting' field.

### Follow these steps

#### Display Balance Identities

- 1 Open 'Balance Identity. Display' (MMS060).  
The name of this file is MITLOC. This is the file that allocation normally uses (soft allocations use MITBAL).
- 2 If (MWS068) is opened from another program - via an option - a predefined information view could be displayed. See .
- 3 On the B panel the 'View' field controls the information to be displayed on this panel.  
Views are user-defined and are created in 'View. Open' (CRS020). Press F4 to display existing views. Press F4 again to start (CRS020). See .

- 4 The sorting order specified in the 'Sorting order' field determines sorting order and search capabilities. Press F4 to display existing sorting orders. Press F4 again and 'Sorting orders. Open' (CRS022) starts. Here you create sorting orders. See .
- 5 Option 11 activates 'Balance Identity. Display Allocations' (MMS063).
- 6 The 'Status Balance ID' field on the E panel displays the condition of the goods. The valid alternatives are:
  - 1 = Balance ID is under inspection.
  - 2 = Balance ID is approved.
  - 3 = Balance ID is rejected.
- 7 The 'Priority date' field is either the last date entered into stock or the expiration date depending on whether the expiration date is activated in 'Item. Open' (MMS001/F). The 'Priority date' field is used for allocation according to the First In First Out (FIFO) method.

### Display Location Information

- 8 Open 'Stock Location. Open' (MMS010). On the E and F panels information about the location is displayed.
  - 9 Option 11=Statistics opens 'Stock Location Statistics. Open' (MMS012).
  - 10 Option 12=Bufflocation, starts 'Stock Location. Connect Location Groups' (MMS011). This table is used during system-directed put-away to find locations close to the pick-face.
  - 11 Option 14=Balance ID, calls (MWS068) and should, by default, show a list of balance IDs that are in the selected location.
- Note:** Before using option 14, go to (CRS014) and press F14 to generate the new link data so the correct sorting order is used.

## Display Stock Location Statistics

This instruction explains how to display stock location statistics.

### Outcome

Stock location statistics for a number of receipts and issues are displayed.

Statistics are displayed for a number of transactions for a location over a period.

Stock location statistics are updated in the stock location transaction statistics table (MITPCS). When a stock transaction is updated in the stock location transaction history table (MITTRA), it is also updated in the MITPCS table.

### Before you start

The conditions in [Settings for Inventory Statistics](#) on page 81 must be fulfilled.

### Follow These Steps

- 1 Open 'Location Statistics. Display' (MMS012).

- 2 Fill in the Warehouse and Location fields.
- 3 Select sorting order. Sorting order 1 displays statistic per period and Sorting order 2 display statistics per year.

## Display Stock Transaction History

This instruction explains how to view all physical stock transactions.

This function has user-defined views and sorting orders. The purpose with this is to view and sequence the information that you need and clear the information you do not need.

### Outcome

Information about stock transactions is displayed.

This history displays, for example, information about which transactions took place on a certain date, for a certain lot number, at a certain location or by a certain transaction type.

All physical stock transactions are stored in the MITTRA table.

### Before you start

- In 'Item. Open' (MMS001/) you must enter 1 = Inventory accounted in the 'Inventory accounting' field.
- The 'History storage method' field (MMS002/G) must be activated.
- A stock transaction is executed.

### Follow these steps

- 1 Start 'Stock Transaction. Display History' (MWS070). Open the P panel by pressing F13.
- 2 Define the default opening panel in the 'Opening panel' field.
- 3 The 'Maximum no. of records' field helps you avoid claiming too much machine capacity, since the range is extensive and includes a large number of records.
- 4 If (MWS070) is opened from another program - via an option - a pre-defined information view could be displayed. See .
- 5 On the B panel the 'View' field controls the information to be displayed on this panel.  
Views are user-defined and are created in 'View. Open' (CRS020). Press F4 to display existing views. Press F4 again to start (CRS020). See
- 6 The sorting order specified in the 'Sorting order' field determines sorting order and search capabilities.  
Press F4 to display existing sorting orders. Press F4 again and 'Sorting orders. Open' (CRS022) starts. Here you create sorting orders. See .
- 7 Select a transaction and enter the E panel to see detailed information. The 'Entry date' field displays when the transaction was created.
- 8 The Responsible field displays who entered the transaction.

- 9 The 'New on-hand balance per transaction date' field reflects the on-hand balance as of the transaction date.
  - 10 The 'New on-hand balance per entry date' reflects the on-hand balance as of the entry date.
  - 11 The 'Stock transaction type' field displays different types of stock transactions, for example:
    - 10 = Maintenance order receipt
    - 20 = Purchase order receipt
    - 31 = Customer order issues
    - 41 = Requisition order issue
    - 50 = Distribution order receipt
    - 92 = Replenishment move order issue
    - 97 = Reclassification of lot number.
- There are many more transaction types.
- Note: You can change the transaction date on the E panel. Changes update the accounts if the general ledger is open. Changes also adjust inventory statistics.
- 12 A stock transaction report is printed in 'Stock Transaction. Print History' (MMS655).
  - 13 Stock transactions can be saved in another library for filed stock transactions. This is done in 'Stock Transaction. File' (MMS195).

## Fixed Lead Time

Fixed lead time is not dependent on the order quantity, as opposed to dynamic lead time. Fixed or dynamic lead time is decided per product in the MO-lead time method in 'Item. Connect Facility' (MMS003).

For each operation, fixed lead time is entered as the number of days before the finish date (Dbf) that the operation should begin. Therefore, the first operation defines the total lead time. Transport- and queue times do not affect lead time.

### Lead time compression

Lead time compression can be done for orders with a fixed lead time by changing the finish date or start date. A percentage displayed on the order shows how much the order was compressed.

## Inventory Statistics

This process document explains how inventory statistics are used to distribute accumulated information for an item or a location over a period.

## Outcome

Statistics about an item is displayed. Statistics can also be grouped together in item type, item group, product group, responsible planner, ABC-volume, ABC-frequency, ABC-contribution, stock zone or location. Statistics can also be recreated for a selected range of periods and warehouses.

Item and location statistics are the foundation for take actions to correct or improve the inventory effectiveness. Recreation of statistics allows experimenting a little with statistics settings and displaying the result.

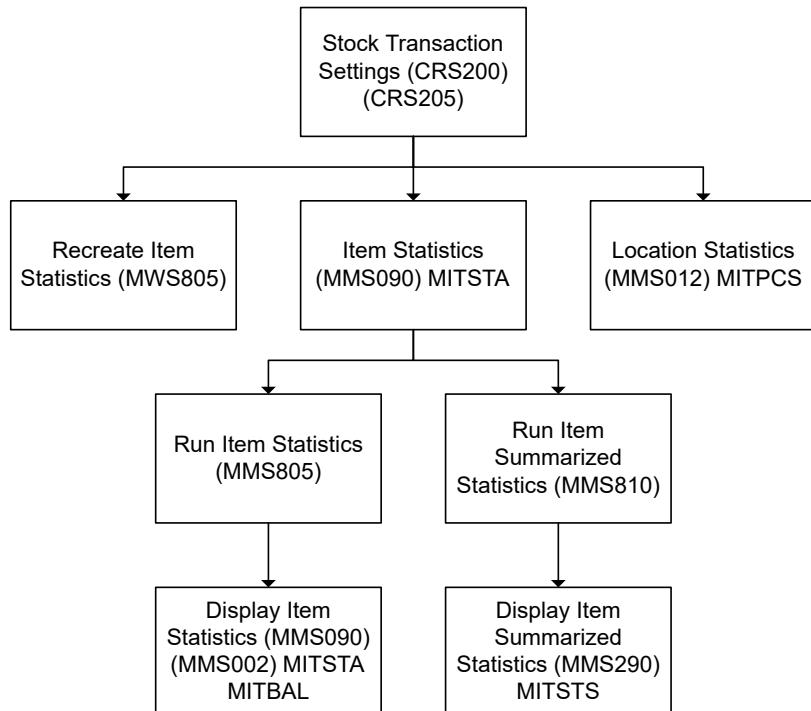
Item statistics are stored in the stock transaction statistics table (MITSTA). This table is updated each time a transaction is entered. The update is done according to the settings on the transaction type in 'Stock Transaction Type. Open Standard' (CRS205) and 'Requisition/Distribution Order Type. Open' (CRS200).

Stock location statistics are updated in the stock location transaction statistics table (MITPCS). When a stock transaction is updated in the stock location transaction history table (MITTRA), it is also updated in the MITPCS table.

## Before you start

The conditions in [Settings for Inventory Statistics](#) on page 81 must be fulfilled.

## How



- 1 The MITSTA and MITPCS statistical files are updated each time a transaction is entered in accordance with the settings in 'Stock Transaction Type. Open Standard' (CRS205) and 'Requisition/Distribution Order Type. Open' (CRS200).

- 2 At the end of every MPM period (as defined in 'Company. Connect Division' (MNS100/F) a periodic statistic run is done in 'Item Statistics. Period Run' (MMS805).
- 3 To recreate item statistics, open 'Item Statistics. Recreate from History' (MWS805). Recreation of statistics is useful for testing how various settings in (CRS200) will affect statistics.
- 4 To get summarized item statistic, run 'Item Statistics. Create Summary' (MMS810). Here you can also recreate summarized statistics.
- 5 'Item Statistics. Display' (MMS090) displays item statistics (the MITSTA file).
- 6 'Item Statistics. Display Totals' (MMS290) displays summarized item statistics (the MITSTS file).
- 7 Reports are printed in 'Item Statistics. Print' (MMS680) and 'Item Statistics Print Date Analysis' (MMS665).
- 8 Location statistics is displayed in 'Location Statistics. Display' (MMS012).

## Manage Sublots

This document explains how to generate one or more sublots associated with an item.

Sublots may be used to capture the catch weight of an individually packaged item. Another purpose of sublots is to track items with serial numbers.

### Outcome

Sublots are unique entities used to capture the catch weight of an individually packaged item or to identify, along the process, where this individual item came from and where it went.

**Note:** The Catch weight (CAWE) field in 'Catch Weight Item. Update Weight' (MMS360) is protected if the item is subplot-controlled. The system instead calls 'Sublot Master. Open' (MMS472) to enable the catch weight to be updated on the sublots.

When a subplot is created, the system assigns a number, referred to as the 'Sublot ID', to that subplot which is unique to the item and lot. A reference subplot ID is also generated during the subplot creation.

The creation of a subplot policy determines how the Reference subplot ID field value is managed for an associated subplot-controlled item.

See [Define Sublot Policy](#) on page 36.

Sublots are stored in the Sublot (MITSUB) table.

Items which are subplot-controlled cannot be backflushed automatically. When receiving an item into a lot that already has sublots defined, the newly assigned subplot numbers may not be incremented from the point where the previous subplot numbers were generated. Since previous sublots could have either been mistakenly created or issued from the same lot, the new subplot numbers may be generated from the next available subplot number for that particular item and lot.

As a subplot progresses through various types of inventory transaction processes, it is assigned one of these subplot states:

- 10: In process - indicates the initial state of a subplot when it is generated
- 20: Received - the state of the subplot when there is a related inventory receipt transaction
- 30: Issued - the subplot state indicated upon inventory being issued
- 95: Relocated - the state assigned to a subplot placed in a different location than originally indicated
- 99: Discarded - the state for a subplot that never has been used in a transaction.

The subplot states come into play for the types of transaction activity described.

If a particular transaction fails, the subplot reverts to its original subplot state (for example, 'In process' or 'Received').

### **Using sublots in inventory transactions**

Sublots may be transacted across the system. When an item is set up as subplot-controlled, all the related transactions require sublots to be selected. If the packaging functionality is used, sublots have to be selected so that they are included in the inbound package.

- When one or more sublots are selected in 'Sublot Master. Open' (MMS472), the original subplot state is 10='In process'.
  - If the transaction is not a receipt, the subplot state changes to 30='Issued'.
  - If sublots are not selected (for example, not used), the subplot state of 99='Discarded' is assigned.
  - For sublots that are selected and received, the subplot state becomes 20='Received'.
- When the inventory is transacted through batch program MMS900 (Stock transactions), the sublots will be updated to the state of 20='Received' for transactions, including a positive adjustment to physical inventory. When in transit, the sublots remain in the Sublot table (MITSUB) with an assigned state of 20='Received' in the in-transit location.

### **Using sublots in stock movement transactions**

There are different ways to do stock movements in a warehouse. The transfer of subplot-controlled items requires individual sublots to be moved along with the quantity specified. Changes to catch weight or to the reference subplot ID are not allowed in any type of stock movement.

- In 'Movement. Change Loc – Item' (MMS175), you can move stock between locations within a warehouse. When using an item that is subplot-controlled, 'Sublot Master. Open' (MMS472) launches to select sublots and also displays the sublots in stock. You can select less than the requested quantity and that specified quantity is used to update the inventory. Once the sublots are selected, the inventory is moved with those sublots from one location to another. When moving the full quantity on-hand, 'Sublot Master. Open' (MMS472) is not opened and the system moves all the sublots.
- In 'Movement. Change Loc – Balance ID' (MMS177), you can move stock between locations within a warehouse. When using an item that is subplot-controlled, 'Sublot Master. Open' (MMS472) launches to select sublots and it displays the sublots in stock. You can select less than the requested quantity and that specified quantity is used to update the inventory. Once the sublots are selected, the inventory moves those sublots from one location to another. When moving the full quantity on-hand, 'Sublot Master. Open' (MMS472) is not launched and the system moves all the sublots. Movement from one location into multiple locations is prevented for subplot-controlled items.
- In 'Movement. Change Loc – Container' (MMS105), you can move stock from one container in a location to another container in another location within the warehouse. When the container has items that are subplot-controlled, the system moves all sublots from the container into another container in a different location.

- In 'Movement. Change Loc - All Items' (MMS180), you can move all the items from a location to different locations within the warehouse. When the location contains subplot-controlled items, the system moves them along with the quantity to the new locations.
- In 'Movement. Change Loc - Single Loc Items' (MMS820), you can move items from a single location to another location. Sublot-controlled items will not be valid for movement.

### Using sublots in balance ID reclassification transactions

In 'Balance Identity. Reclassify' (MMS130), you can change the status of a balance ID or reclassify an item/lot into a new item/lot. When using an item that is subplot-controlled, 'Sublot Master. Open' (MMS472) launches to select sublots and it displays the sublots in stock. Once the sublots are selected, the inventory reclassifies them into the new item/lot.

From item	To item	Result
Item is subplot-controlled	Item is subplot-controlled	(MMS472) opens so you can select sublots. Update the To Item/Lot with new subplot IDs but use the same catch weight and reference subplot ID.
Item is subplot-controlled	Item is not subplot-controlled	(MMS472) is opened and sublots selected are issued. The To item quantity is increased; no sublots are created.
Item is not subplot-controlled	Item is subplot-controlled	

### Using sublots in Manufacturing Order (MO) transactions

#### Manufacturing Order (MO) reporting transactions

- When reporting a positive quantity in 'Manufacturing Order. Report Receipt' (PMS050), the 'Sublot Master. Open' (MMS472) launches and the number of sublots, as indicated by the quantity in base unit of measure, are created. Once you accept the selection and any entered information, including catch weight (if applicable to the item), and 'Reference subplot ID', the inventory is increased and sublots are stored in the subplot state of 20-'Received'.
- For all subplot-controlled items that are set up as catch weight, the only way to specify the catch weight is through (MMS472). You are not permitted to edit the catch weight value in 'Manufacturing Order. Report Receipt' (PMS050).
- If you cancel the selection of sublots, the state of 99='Discarded' is applied to those sublots.

#### Manufacturing Order (MO) reversal transactions

- By specifying a negative quantity in 'Manufacturing Order. Report Receipt' (PMS050), you are performing a reversal transaction. The 'Sublot Master. Open' (MMS472) launches with the previously reported sublots displayed. You may select the subplot quantities required to complete the reversal. You also may select less than the requested quantity and that selected quantity is used to update the inventory. After the sublots are selected, the inventory is decreased and sublots that have been marked as 99='Discarded' will no longer be available in stock.

#### Manufacturing Order (MO) issue transactions

- In 'Manufacturing Order. Report Issue' (PMS060), you may issue from stock inventory into the production line. When using an item that is subplot-controlled, the 'Sublot Master. Open' (MMS472) launches so you can select the sublots to be issued from stock. Only sublots available in a 'Received' state may be selected. Once you select the sublots, the total catch weight and total quantity values are calculated and the inventory is updated with those quantities.

#### Manufacturing Order (MO) return transactions

- In 'Manufacturing Order. Report Issue' (PMS060), you may return into stock inventory what was previously issued from inventory into the production line. When using an item that is subplot-controlled, the 'Sublot Master. Open' (MMS472) launches so you can select the sublots that were originally issued for the same MO. Once you select the sublots, the total catch weight and total quantity values are calculated and the inventory is increased.

### Using sublots in Purchase Order (PO) transactions

#### Purchase Order (PO) receipt transactions

- When receiving sublots in 'Purchase Order. Receive Goods' (PPS300), a lot number is always required for sublots, regardless of the lot number method defined for the item. For all subplot-controlled items that are set up as catch weight, the only way to specify the catch weight is through 'Sublot Master. Open' (MMS472). You are not permitted to edit the catch weight value in 'Purchase Order. Receive Goods' (PPS300).
- Sublots are created in the Sublot table (MITSUB) after the validations have occurred in the goods receipt process in 'Purchase Order. Receive Goods' (PPS300). The number of sublots created corresponds to the received quantity specified. You may display your subplot transactions in 'Sublot Transaction. Display' (MWS072).

**Note:** The recommendation for subplot-controlled items is to always report a desired subplot selection on a unique receiving number, whether it is for a particular location or container.

#### Purchase Order (PO) receipt transactions through batch entry

- The process of receiving sublots using API is performed in 'Order Init Stock Msg. Manage' (MHS850) or using the MHS850MI transaction, 'AddPORReceipt'. When an item is subplot-controlled, no catch weight value is available to report in this transaction and an error message results if an attempt to include the catch weight occurs.
- The execution of 'AddPORReceipt' creates these levels:
  - Message header 'Order Init Stock Msg. Manage' (MHS850)
  - Package header 'Order Init Package Msg. Manage' (MHS851)
  - Message line 'Order Init Stock Trans Msg. Manage' (MHS852)
- The fourth level implemented for sublots through 'Order Init Sublot Msg. Manage' (MHS854) is required to specify the sublots to be included in the goods receipt. Information such as 'Reference subplot ID' (BANT) and 'Catch weight' (CAWE) is updated for each subplot record. This level may be executed using the MHS850MI transaction, 'AddSubLine'.

The 'Subline number' (SUBL) field value in the MHS854MI transaction does not always correspond to the actual 'Sublot ID' (BANS) created in the 'Sublot Master. Open' (MMS472). The 'Subline number' transaction value is used as the temporary number until a valid internal Sublot ID is retrieved from previous transactions.

- When processing the message header, the number of subplot records specified must match the 'Received quantity' (RPQA) on the associated message line level (MHS852). If an alternate unit of measure is used

as the PO unit of measure on the message line, a conversion will be performed to the basic unit of measure and the system will validate the quantity between the line and subplot level.

- Sublot transactions created for a goods receipt processed using batch entry may be displayed in 'Sublot Transaction. Display' (MWS072).

#### Purchase Order (PO) receipt transactions using supplier delivery note

- Suppliers sending advanced shipping notes (ASN) messages with detailed information of the goods shipped are received through the interface program 'Order Init Stock Msg. Manage' (MHS850). ASN messages including a full structure of packages and items are received into the system through the interface program (MHS850MI) using the transactions, 'AddWhsHead', 'AddWhsPack', and 'AddWhsLine'. For subplot-controlled items, the subplot details are specified into Order Init Sublot Msg. Manage (MHS854) through the 'AddSubline' transaction with subplot reference information and catch weight. The ASN message gets a qualifier of '29' in 'Order Init Stock Msg. Manage' (MHS850).

Message numbers with ASN details (i.e. qualifier of '29') in 'Order Init Stock Msg. Manage' (MHS850) are processed into 'Supplier Delivery Note. Open' (PPS360). The ASN record structure has packages, items, and sublots. The sublots are connected to items/packages and handled in 'Delivery Note Sublots. Open' (PPS364) with information such as the subplot reference information and catch weight. You can adjust the subplot details in (PPS364) until the sublots are received into stock.

- Goods receiving sublots in 'Supplier Delivery Note. Open' (PPS360) is done using option 14='Goods receipt'. The goods are updated into stock in 'Balance Identity. Open Toolbox' (MWS068) with quantity, lot number, sublots, and goods receiving number. In the case of in-house packages, sublots are not created after the goods receipt as a temporary lot number exists. Instead, the sublots are created when reporting the next activity defined in the goods receiving method, whether that be quality inspection or put-away.
- The goods receipt reporting for the delivery note is performed using API with the PPS360MI transactions, 'StagePackage', 'StageSSCC', and 'ReceiveHead'. The PPS364MI transaction, 'UpdSublot', handles the update of subplot details per delivery note.

#### Put-away of subplot items

- When reporting put-away for a receiving number in 'Purchase Order. Put away Goods' (PPS320), the lot number cannot be changed as the creation of sublots has already taken place. You must specify the same lot number which has been used in the goods receipt in order to select the sublots in 'Sublot Master. Open' (MMS472). An error message is displayed in 'Purchase Order. Put away Goods' (PPS320) if no sublots are found.
- If the item is catch weight handled, the field will be locked in 'Purchase Order. Put away Goods' (PPS320) as reporting is always done in 'Sublot Master. Open' (MMS472) on the subplot level.
- If the put-away is performed with full quantity, 'Sublot Master. Open' (MMS472) will not open as this suggests that all included sublots were selected. It could also be that the subplot item is catch weight managed, and that the intent is to change the weight on individual sublots. In that case, function key 'F14 – Sublots' can be used in order to open (MMS472) interactively.
- Put-away with partial quantity always results in the automatic opening of 'Sublot Master. Open' (MMS472) as a mandatory step to account for the sublots included. The same applies when a quantity greater than received is specified. In this case, the difference will be created as new sublots with a subplot ID starting from the last used for that item and lot number.
- Sublot transactions related to a put-away are created when submitting the sublots in 'Sublot Master. Open' (MMS472) and can be displayed in 'Sublot Transaction. Display' (MWS072).

### Put-away of subplot items using batch entry

Put-away of subplot items through API is performed in 'Order Init Stock Msg. Manage' (MHS850MI) with the transaction 'AddPOPutaway'. When the item is subplot-controlled, no catch weight will be available to report as this will be done on subplot level. An error message displays if this is attempted.

The transaction works similar to 'AddPORReceipt' where these levels are created upon execution:

- Message header 'Order Init Stock. Msg. Manage' (MHS850)
- Package header 'Order Init Package Msg. Manage' (MHS851)
- Message line 'Order Init Stock Trans Msg. Manage' (MHS852)

The fourth level 'Order Init Sublot Msg. Manage' (MHS854) is utilized to specify the sublots to be included in the put-away. This is only mandatory when reporting partial or higher quantity than received; these scenarios are described here:

- 1** Buyer wants to perform put-away of all reported sublots without changing catch weight on any individual subplot.
  - In this case, no records in (MHS854) need to be created. The quantity (RVQA) specified on the line level (MHS852) must be equal to the quantity left to report. This cannot be performed on a partial or higher quantity of the receiving number.
- 2** Buyer wants to report a quantity that is partial/higher than received or a full quantity with change of catch weight.
  - When this is attempted, subplot records are required to be created at the (MHS854) level and must equal to the quantity specified at the line level (MHS852). This can be utilized with the 'AddSubLine' transaction.
  - When creating sublots in (MHS854) for this second scenario, it is important that the correct 'Sublot reference ID' (BANT) is specified for the subplot. If it does not match a valid subplot in 'Sublot Master. Open' (MMS472), an error message is displayed.

When executing the message number for processing to the system, the lot number used in the goods receipt is always required. Sublots are never allowed to be created with a new lot number in the put-away; an error message is displayed if this is attempted.

Sublot transactions related to a put-away using batch entry are created when executing the message number and can be displayed in 'Sublot Transaction. Display' (MWS072).

You cannot put-away a subplot-controlled item using the 'PutawayPO' transaction in the purchase order interface program (PPS320MI). A stop message is given if this is attempted.

### Quality inspection of subplot items

- When reporting quality inspection for a receiving number in 'Purchase Order. Inspect Goods' (PPS310), the lot number cannot be changed as creation of sublots have already taken place. You must specify the same lot number which has been used in the goods receipt in order to select the sublots in 'Sublot Master. Open' (MMS472). An error message is displayed in (PPS310) if no sublots are found.
- Note:** It is not possible to partially reject sublots in (PPS310) in the use of the 'QI result' (QCRR) field set equal to 3. This is because of the technical risk involved when calling (MMS472) two times interactively to account for which sublots that were approved and rejected.
- If the quality inspection is performed with full quantity, 'Sublot Master. Open' (MMS472) will not open as this suggests that all included sublots were selected. It could also be that the subplot item is catch

weight managed, and that the intent is to change the weight on individual sublots. In that case, function key 'F16 – Sublots' can be used in order to open (MMS472) interactively.

- If the put-away is performed with full quantity, 'Sublot Master. Open' (MMS472) will not open as this suggests that all included sublots were selected. However, it could be that the subplot item is catch weight managed, and that the intent is to change the weight on individual sublots. In that case, function key 'F14 – Sublots' can be used in order to open (MMS472) interactively.
- Quality inspection with partial quantity will always force-open 'Sublot Master. Open' (MMS472) as a mandatory step to account for the sublots included. The same applies when a quantity greater than received is specified. In this case, the difference will be created as new sublots with a subplot ID starting from the last used for that item and lot number.
- Sublot transactions related to a quality inspection are created when submitting the sublots in 'Sublot Master. Open' (MMS472) and can be displayed in 'Sublot Transaction. Display' (MWS072).

### Quality inspection of subplot items through batch entry

- Quality inspection of subplot items using API is performed in 'Order Init Stock Msg. Manage' (MHS850MI) with the transaction 'AddPOInspect'. When the item is subplot-controlled, no catch weight will be available to report as this will be done at the subplot level. An error message will display if this is attempted.  
**Note:** It is not possible to partially reject sublots in the use of the 'QI result' (QCRR) field set equal to 3. An error message will display if this is attempted.
- The transaction works similar to 'AddPOPPutaway' and 'AddPORReceipt' where these levels are created upon execution:
  - Message header 'Order Init Stock. Msg. Manage' (MHS850)
  - Package header 'Order Init Package Msg. Manage' (MHS851)
  - Message line 'Order Init Stock Trans Msg. Manage' (MHS852)
- The fourth level 'Order Init Sublot Msg. Manage' (MHS854) is utilized to specify the sublots to be included in the quality inspection. This is only mandatory when reporting partial or higher quantity than received. For specific scenarios, see [Put-away of subplot items using batch entry](#) on page 52.
- When creating sublots at the (MHS854) level, it is important that the correct 'Sublot reference ID' (BANT) is specified for the subplot. If it does not match a valid subplot in 'Sublot Master. Open' (MMS472), an error message will be displayed.
- When executing the message number for processing to the system, the lot number used in the goods receipt is always required. Sublots can never be created with a new lot number in the quality inspection; an error message is displayed if this is attempted.
- Sublot transactions related to a quality inspection through batch entry are created when executing the message number and can be displayed in 'Sublot Transaction. Display' (MWS072).

You cannot quality inspect a subplot-controlled item through the transaction 'QualityInspPO' in the purchase order interface program (PPS310MI). A stop message is given if this is attempted.

### Report quality inspection and put-way of in-house packages

- Quality inspection (QI) of delivery notes with in-house packages are reported in 'Purchase Order. Inspect Goods' (PPS310) with the inspection result, location and rejection reason for each package number. QI reporting is based on the Package number, not the individual item details in the packages and single goods receiving number. The input to the reporting, therefore, is the warehouse and the supplier delivery note. Before updating the QI results per package, the subplot details such as catch weight, can be updated

manually in 'Delivery Note Sublots. Open' (PPS364) using a related option from 'Purchase Order. Inspect Goods' (PPS310).

The QI reporting of in-house packages also may be performed through the PPS310MI transactions, 'QualityInspPack' or 'QualityInspSSCC'.

- Put-away of delivery notes with in-house packages are reported using 'Purchase Order. Put away Goods' (PPS320). The put-away reporting is based on Package number. Therefore, the input to the reporting is the warehouse and the supplier delivery note. The reporting is performed on the H panel of (PPS320) where the put-away location may be reported for the individual package number. Before updating the put-away per package, the subplot details including catch weight can be updated manually in 'Delivery Note Sublots. Open' (PPS364) through a related option from the H-panel of 'Purchase Order. Put away Goods' (PPS320).

The put-away reporting also can be performed using the PPS320MI transactions, 'PutawayPack' or 'PutawaySSCC'.

### Reversal of PO lines with subplot items

- The reversal of a purchase order transaction in 'Purchase Order. Display Line Trans' (PPS330) for an item that is subplot-controlled results in the restoration of a subplot's original state, in addition to correcting the associated stock transactions.
- When deleting a transaction, the function will always find the related sublots that were received on the prior transactions and update them accordingly. Those sublots will have their previous subplot states restored, regardless of any subsequent inventory transactions processed, such as put-away. For example, if the deletion occurred for a goods receipt transaction, where the subplot state is '20-Received', the new subplot state would be 99='Discarded' and the subplot's connection to the purchase order line is removed as no previous stock transactions would have been created.

Using sublots in cross-docking transactions

- Cross-docking of a subplot-controlled item is allowed only if the full put-away quantity can be cross-docked to one demand order line, i.e. the demand quantity is greater than or equal to the put-away quantity.
- See [Cross-Docking and Extended Cross-Docking](#) on page 239.

### Using sublots in two-step put-away

- When moving a quantity to another location in 'Pending Put-away. Process' (MWS460), sublots have to be selected in 'Sublot Master. Open' (MMS472) unless the full quantity on that combination of location/item/lot number/container is moved.

This means that if there is more than one Put-away number on the same combination of location/item/lot number/container, sublots have to be selected manually in 'Sublot Master. Open' (MMS472) even if the full quantity on a specific Put-away number is moved.

**Note:** All the sublots for the combination of location/item/lot number/container are displayed in (MMS472), not only the ones that are associated with the put-away number that is being changed.

- The quantity that is pending for put-away is not allocatable, but it is possible to select sublots when reporting an issue. This only is applicable when there is an allocatable quantity on the same combination of location/item/lot number/container. The selection of sublots may be required if there is an interval of time between the actual put-away and the reporting of the put-away in 'Pending Put-away. Process' (MWS460). It is possible that the sublots are picked in this time interval and then it is important that the issue can be reported even though the specific sublots are not yet officially put-away.

- Two-step put-away using API is performed in 'Order Init Stock Msg. Manage' (MHS850MI) transaction 'AddPutAwayConf'.

If the 'To location' is blank (that is, 'AddPutAwayConf.TWSL' is blank), the transaction corresponds to related option 16-'Process' in (MWS460). The two-step put-away is confirmed, and the quantity becomes allocatable. If a quantity is specified (in the RVQA field), then that quantity is ignored, since it is not possible to confirm put-away of part of the quantity.

**Note:** You cannot put-away a partial quantity in (MWS460) either.

If the 'To location' is not blank (that is, AddPutAwayConf.TWSL is not blank), the transaction corresponds to option 2-'Change' in (MWS460) and changing the location (performing a move), followed by related option 16-'Process'. This results in a move to the specified location, the two-step put-away is confirmed, and the quantity becomes allocatable. For a subplot item, this is only allowed if the full quantity on that combination of location/item/lot number/container is moved.

**Note:** The combination of location/item/lot number/container can belong to more than one put-away number, which would make it impossible to perform this move using API.

See [Goods Receiving with Two-Step Put-Away](#) on page 248.

## Using sublots in warehouse interface

### Sublot item handling in Internal stock message interface

- The Internal stock message 'Order Init Stock Msg. Manage' (MHS850) is a warehouse interface for item-related transactions, such as stock movement, reclassification, or inventory counting.
- The subplot details are handled in 'Order Init Sublot Msg. Manage' (MHS854) for items having these transactions that involve sublots:
  - Location movements in stock
  - Inventory transactions
  - Package movements in stock
  - Stock-take reporting (for example, inventory counting)
  - Item and lot reclassification

**Note:** The transactions in 'Order Init Stock Msg. Manage' (MHS850) where subplot details are not supported include: MO orderless reporting, Lot blending, and External sales transactions.

- The subplot information is archived together with all the other stock message information when 'Archiving Stock Msg' (MMS894) is executed.

### Sublot item handling in Order initial stock message interface

- The 'Order Init Stock Msg. Manage' (MHS850) program is a warehouse interface to be used for item-related reporting transactions, such as MO put-away, PO receipt, picking/packing transactions, and shipment advice.
- The subplot details are handled in 'Order Init Sublot Msg. Manage' (MHS854) for items having transactions that involve sublots.
- Different transactions are identified with various qualifiers:
  - 20 - PO Receipt
  - 21 - PO Inspect
  - 22 - PO Put-away

- 29 - Shipment advice - The Receive ASN information from a supplier about delivery notes has details about goods delivered in packages and items. All sublots packed per item/package are listed and individual information about the external Sublot reference ID and Catch weight.
- 30D CO Return - Put-away of CO return.
- The subplot information is archived together with all the other stock message information when 'Stock Messages. Archive' (MMS894) is executed.

### Using sublots in physical inventory counts

On-hand balance entries/adjustments in (MMS310)

- When creating or adjusting balance identities in 'Physical Inventory. Quick Entry' (MMS310), the 'Sublot Master. Open' (MMS472) program launches and the number of adjusted sublots in base unit of measure need to be managed.
- The increase of on-hand balance creates and displays the new sublots only. Decrease of on-hand quantity displays existing available sublots. The selected sublots must be equal to the requested number of sublots (or none) before exiting 'Sublot Master. Open' (MMS472). If no sublots were selected, the process of changing the on-hand balance is stopped.
- For all subplot-controlled items that are set up as catch weight, the Catch weight specified by subplot will be accumulated and saved on the balance ID.
- Any created sublots during the process of increasing the on-hand balance and that has not been selected receive the state of 99='Discarded'. Sublots removed from stock are set to the state of 30='Issued' and sublots that have been specified into stock will be set to the state of 20='Received'.

### Using sublots in Customer Order (CO) transactions

CO entry transactions

- Customer order line entry of a subplot item is prevented if:
  - It is a line type of 2 (direct delivery from supplier to customer).
  - The dispatch policy (connected to the CO type) has an auto level above 3 (direct delivery) and the CO type is set up with an Inventory accounting code of '1' in (OIS010).
 

**Note:** Adjustment orders (for example, customer order category '6') and credit orders created from a customer return both use order types that have auto level 5, but they are not blocked since the order types have an Inventory accounting code of '0' in (OIS010).
- For batch order entry, the line would have to be removed manually in 'Batch Order. Open Lines' (OIS276) in order to release the batch order.
- Customer order line entry of a subplot item also is prevented if the quantity is negative and the customer order line is flagged to be inventory accounted in (OIS101). You can also change the Inventory accounting code in order to allow the creation of the order line.

### Using sublots in Customer Order (CO) return transactions

Returned quantities specified for CO return lines

- Sublots must be selected or created in 'Sublot Master. Open' (MMS472) when a returned quantity is specified in 'Customer Return. Open Lines' (OIS391).
- If the customer return has a reference to a customer order and the correct lot number was specified in (OIS391), the sublots in the 30='Issued' state that were delivered on that customer order are displayed

in (MMS472). The catch weight of the selected sublots can be changed. If no matching sublots are found, you can create new sublots instead.

- If the customer return does not have a reference to a customer order and an existing lot number was specified in (OIS391), all its sublots that were issued on a customer order (for example, transaction type '31') are displayed in (MMS472). If the subplot is not known (For example, if it is not possible to read the subplot number on the box), the system allows you to create a new subplot instead of selecting an existing one.
  - If no lot number was specified in (OIS391), the system generates a new lot number and new sublots.
  - If the item is catch weight controlled, the 'Catch weight for credit' field is calculated as the sum of the sublots' catch weights. The 'Catch weight for credit' can be changed in (OIS391), since it is not certain that the customer should be paid for the actual catch weight that is put into stock.
- Note:** Action 'F14 – Retrieve' sets the return lines to status 11='Advised' even if the default status is set to 22='Returned' in 'Settings – Customer Returns' (OIS399). The status is set to '11' to avoid a call to (MMS472) for each line, which would be very cumbersome if there are many lines.
- Related option 12='Received qty' is not permitted for a subplot-controlled item.
  - Related option 15='Split' is allowed if there is a lot number on the return line and the CO number is not blank. The panel sequence is executed in change mode for the new line. This can be used, for example, if the customer order line was supplied from several lots; split the return line to be able to create one return line for each lot number.

#### Inspection results displayed for CO returns

- The lot number is protected in 'Customer Return. Display Inspection Result' (OIS392) for subplot-controlled items.
  - Sublots must be selected in 'Sublot Master. Open' (MMS472) for each line with a reported quantity in (OIS392).
- Note:** Even if the full quantity is moved, the system displays (MMS472) with all the sublots automatically selected. The intention is to provide clarity as to which subplot is associated with each CO return line.

#### CO return entry for subplot-controlled items

- The related option 12='Received qty' is blocked if there is any customer return line for a subplot-controlled item on the customer return.

#### CO return through API

- Customer return put-away through API is performed in MHS850MI and OIS390MI.
- In MHS850MI transaction 'MHS850MI.AddCOReturn' is used. For a subplot-controlled item, the 'AddCOReturn' transaction must be followed by transaction 'MHS850MI.AddSubLine' to record each subplot.
- In OIS390MI, the transactions 'ReturnLine' and 'InspectLine' are used. For a subplot-controlled item the 'RtnSubLotLine' transaction must be run prior to 'ReturnLine' and 'InsSubLotLine' transaction must be run prior to 'InspectLine' to record each subplot.

#### CO return through API MHS850MI

- Sublot-controlled items are not permitted in Maintenance Customer Orders and Work Orders.

### Using sublots in Distribution Order (DO) transactions

#### DO receipt transactions

- Certain data specified in 'Goods Receipt DO/RO. Report' (MWS440) or in 'Goods Receipt DO/RO. Report Details' (MWS445) should not differ from the distribution order:
  - Quantity received in (MWS440) and (MWS445) should not be greater than the quantity issued on the DO.
  - The lot received in (MWS440) and (MWS445) should be the same lot that was issued to the DO.
  - The sublots received in (MWS440) and (MWS445) should be the same lot that was issued to the DO.
- When you report the receipt of goods for a DO using 'Goods Receipt DO/RO. Report' (MWS440), the system redirects you to 'Sublot Master. Open' (MMS472) to select sublots if the item is subplot-controlled and, optionally, catch weight enabled. This program displays the sublots issued from the shipping warehouse and you have the option to select all or some of these sublots. Once you confirm your selection of the sublots, the receipt quantity and total catch weight are calculated based on the selected sublots. Only the selected sublots are updated to the state of 10='In process'. Any sublots not selected will remain in the state of 20='Received'. Since you cannot receive different sublots than were issued to the DO, the creation and deletion of sublots are not allowed for DO receipts.
- When the receipt quantity is recorded in the database for each lot/location/container being received, its corresponding sublots are set to a status of 20='Received'.
- When a DO receipt is reversed, a system call to the Sublot function program MMS472Fnc is made to collect sublots for any item that is subplot-controlled. This function program captures the sublots received for the DO line for a Balance ID. For all of the sublots received in the receiving warehouse for a particular Balance ID, the receipt quantity and total catch weight are calculated.

The system records the entire receipt quantity and associated sublots to the original in-transit location.

**Note:** Since the full receipt quantity of a DO line must be reversed, a call to MMS472Fnc is made for each Balance ID (lot and location and container combination).

## Dispatch DO transactions

Dispatch DO (for example, two-way issue and receipt) transactions

- Issue transactions from stock
    - When one or more sublots are selected in 'Sublot Master. Open' (MMS472), the corresponding subplot state is updated from 'Received' to 'In process'. When the stock is transacted through (MMS900), no update to the Sublot table (MITSUB) is required.
- Note:** In the case of the issue transaction failing, the subplot state reverts from 'In process' to 'Received'.

## Before you start

The subplot-controlled check box must be enabled on the F-panel of 'Item. Open' (MMS001). See [Create Item](#) on page 813.

The subplot policy field must be defined on the F-panel of 'Item. Open' (MMS001). See [Define Sublot Policy](#) on page 36.

## Follow these steps

- 1 From an inventory program, such as 'Physical Inventory. Quick Entry' (MMS310), where a subplot-tracked item is being managed, launch 'Sublot Master. Open' (MMS472).
- 2 Select a range of sublots.

If no sublots exist, select Actions > Create Sublots to go to the A panel:

- a Specify a value in the Requested quantity in the basic unit of measure field.
  - b Specify the subplot catch weight.
  - c Click Next.
- 3 Optionally, on the B1 panel, update the given Reference Sublot ID, which identifies the subplot associated with a package received into inventory, and the Catch weight.
- 4 Select Create to add one or more sublots with the corresponding details in the grid.  
a To remove a subplot, highlight the row in the grid and select the Delete option.
- 5 Save your changes to generate the subplot numbers.

#### Function program: MMS472Fnc

This function program supports the 'Sublot Master. Open' (MMS472) display program, as well as transactions performed on sublots.

#### API: MMS472MI (Sublot interface)

These transactions may be used for listing sublots.

#### API: MWS072MI (Sublot transactions)

These transactions may be used for listing subplot transactions.

## Managing Containers

This document explains how you manage containers on which deliveries and receipts are loaded.

Along with an item number, container could be a number that makes a unique balance identity. An example of container is a pallet on which items have been loaded from stock. The purpose of this is, for instance, to enable handling of automatic stock to give pallets going in and out of the stock-specific balance identities.

There are the types of container management:

- The container ID is a free field in the balance identity, any value may be specified.
- The container ID is registered in the container master.
- The container ID is registered in the container master and controlled with a serial number from the lot/serial master.

#### Outcome

- Container ID is added to a balance identity
- Defined where in the warehouse containers are used
- Moving stock by containers
- Goods receiving containers.

The process can be used for these purposes:

- Simplify warehouse activities by allowing items to be grouped in containers and moved around as a group
- Support the use of containers that must be individually tracked
- Allow grouping subsets of products in large locations.

These tables are updated:

- The container master table (MCONMA)
- The lot master table (MILOMA)
- The serial number table (MILOIN).

### Before you start

- Basic data must be defined for items and warehouse, locations, etc.

### Follow these steps

- 1 To specify the settings for container management, start 'Item. Connect Warehouse' (MMS002). Open the G panel.
- 2 The 'Container management' field has these alternatives:
  - 0 = Container not used
  - 1 = Containers used. Check is not done to determine the existence of the container in the container master.
  - 2 = Containers used. Check is done to determine the existence of the container in the container master (MMS230).
  - 3 = Containers used. This method is designed to be used in situations where the container is a packaging item (MMS050) that is serial number controlled (MMS240).
  - 4 = Same as method 1, but the container may only be stored in one location at a time. This method is designed to be used in situations where the container is a packaging item (MMS050) that is serial number controlled (MMS240).
  - 5 = Same as method 2, but the container may only be stored in one location at a time. This method is designed to be used in situations where the container is a packaging item (MMS050) that is serial number controlled (MMS240).
  - 6 = Same as method 3, but the container may only be stored in one location at a time. This method is designed to be used in situations where the container is a packaging item (MMS050) that is serial number controlled (MMS240).
- Note:** Container methods 3–6 require that the 'Lot control method' field on the (MMS001/E) panel is set to 2 = Lot control used. All lots must be specified in the lot master and each lot number is considered a serial number.
- 3 Start 'Stock Location. Open' (MMS010), and go to the E panel to activate the 'Container management' field.
- 4 For container management methods 2–6, follow these steps:
  - a Start 'Container. Open' (MMS230), on the B-panel, specify a container ID in the Container field.
  - b On the E-panel, select status in the Status field.

The Packaging field indicates the packaging ID which is defined in 'Packaging. Open' (MMS050). The only reason for connecting a packaging ID to the container is if you want to have the container's Weight and 'Volume capacity' fields updated. These fields are specified in (MMS050) and also updated in (MMS230).

The Supplier field indicates the supplier of the container.

The 'Lot number' field indicates the unique serial number for this container. This is defined in 'Serialized Item. Open' (MMS240). A serial number for the container must be defined if Container management method 3 – 6 is specified on the (MMS002/G) panel.

- 5 In working with container management, the distribution order goods receiving can be reported for the container in 'Goods receipt DO/RO. Report Details' (MWS445). Option 11=Report DO/RO in (MWS440) and (MWS442).
- 6 Select the location for the container in 'Location. Select' (MMS160/K).
- 7 Purchase order goods receiving can be reported by container in 'Purchase Order. Receive Goods' (PPS300).
- 8 Stock movements inside a warehouse by container are done in 'Movement. Change Loc – Container' (MMS105).

The API MMS230MI is also available to add, update, get, list, copy and delete containers.

## Managing Mismatches for Item per Warehouse

This document explains the M3 BE solution for analyze and repair mismatches in the database for allocations, inventory, and planning data.

### Outcome

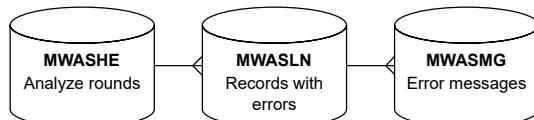
This function makes it possible to check that:

- The allocated quantities in transaction files and stock balance files are synchronized with each other for a specific combination of item and warehouse.
- The records in the Material Plan are synchronized against order lines quantities and dates. All types of order categories are included in the check.

If an error is detected, the item/warehouse combination is recorded in a message file.

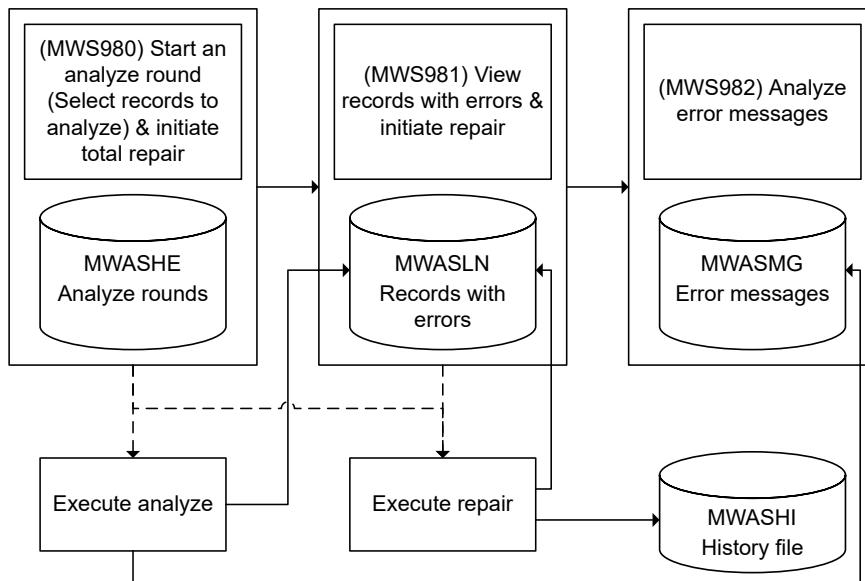
This routine is used to repair mismatches for allocation, inventory, and planning data in the database.

This diagram illustrates the analyze flow in this routine.



- MWASHE - Allocation Synchronization Rounds
- MWASLN - Allocation Synchronization Errors
- MWASMG - Allocation Synchronization Messages

## Solution overview



### 1 (MWS980) - Analyze allocations and inventory

(MWS980) enables selections of warehouse/item and submits an analyze round. One record is created in MWASHE for each round.

### 2 (MWS981) - Analyze errors

(MWS981) displays all identified errors. Records are created in MWASLN.

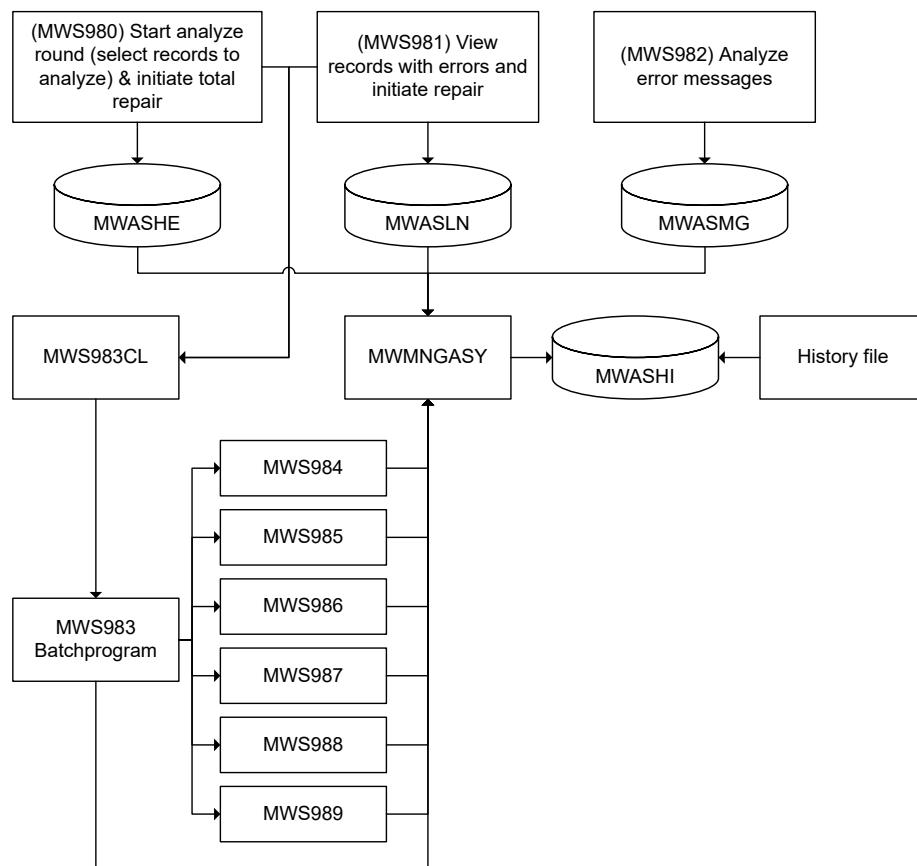
### 3 (MWS982) - Analyze messages

(MWS982) displays error messages. Records are created in MWASMG.

### 4 MWASHI - History file

The MWASHI history file is updated by the function MWMNGASY (Manage synchronization). It is only the repairable errors that are logged in the history file.

### Description of involved programs and error messages



- (MWS984) aggregates MITALO records based on MITLOC.
- (MWS985) aggregates MITALO records based on XXLINE.
- (MWS986) checks orders and matches them to allocations XXLINE->MITALO.
- (MWS987) checks MITBAL and matches them to MITLOC.
- (MWS988) checks the records in the Material Plan (MITPLO) against order lines quantities and dates. All types of order categories are included in the check.
- (MWS989) checks order lines (different files depending on the order category) against material plan MITPLO.

### Recommendations

- The panel sequence must be filled in for (MWS981), but the program does not contain any other panels than the B panel. The valid panel sequence is therefore 2 (option 12) and 4 (option 14), according to M3 standard programming.
- When you have submitted an analyze, you can check the error file (MWS981) while the job is running. By pressing F5, it will build up the sub file with the errors as they occur. Once one error has occurred, you can check the error messages (MWS982) for that record while the job is running.

- Option 7 in (MWS980) pauses an analyze round. When you have used this option, there is no job running in the background. In (MWS980/F), the last warehouse and last item number is displayed which indicates at what record the analyze round was paused.
- The analyze round does not perform any updates except on the analyze files.
- The option Repair by result only repairs the errors that have severity level 20.
- In (MWS980/E), you have different parameters to choose from. We also recommend to not overlap your selections for item/warehouse because of timing and performance issues. For example, you should not run whs 001- 001 item 1000 – 3000 in two different rounds at the same time.
- Take note of the text in the (MWS980) sub file when you have a round paused. The text indicates which option the round was paused with. This is the same option you will use to start the analyze round again. You also have a status that indicates which status the job is in.
- The history file is not emptied automatically, we recommend that you check the size of this file so that it does not becomes too large. The history file displays errors that have been repaired.
- Using the event file settings in (CRS701) and (MWS980/E) nets the changed transactions, which in turn makes the program faster since the amount of records will be fewer. Compared to not using the event file, the whole database for the selection made is used.

## Manual Movement of Items, Balance IDs and Containers Between Locations

This process document explains how to move items, balance identities and containers from one location to another within the warehouse. The movement is manually initiated, as compared to planned move orders, which can be initiated automatically.

This process includes stock transaction programs connected to inventory management, and does not cover stock transactions related to manufacturing, customer order, etc.

### **Outcome**

Items, balance identities and containers are moved from one location to another within a warehouse.

This process is used for inventory management.

All physical stock transactions are updated in the MITTRA table.

### **Before you start**

- On the 'Item. Open' (MMS001/E) panel, enter parameter 1 in the 'Inventory accounting' field.
- On the 'Item. Connect Warehouse' (MMS002/G) panel, enter parameter 2 or 3 in the 'Storage method' field (storage at several locations). To move single location items, enter parameter 1.
- In order to obtain a proposed order quantity in 'Movement. Change Location - Item' (MMS175), enter parameter 3 in the 'Replenishment method' field in 'Item Location. Open' (MMS065) and the 'Order quantity' field is filled in. Otherwise, the order quantity must be entered each time.
- For container movement, you must enter parameter 1, 2 or 3 in the 'Container management' field on the (MMS002/G) panel. A container is created in 'Container. Open' (MMS230).

## Follow these steps

### Step activity

#### 1 Change Location for Items

'Movement. Change Location – Item' (MMS175) is used to move items and specific quantities from one location to another. This is useful in a Kanban situation, which fills up the smaller workstation location from the main location.

#### 2 Change Location for All Items

'Movement. Change Location – All Items' (MMS180) moves all items, lot numbers or containers from one location to another. This could be of use when moving a pallet, etc.

Note: This should not be used if the movement is a common transaction. Use container management instead.

#### 3 Change Location for Single Location Stored Items

'Movement. Change Location – Single Location Items' (MMS820) moves an item that is coded as a single location stored item.

#### 4 Change Location for Balance Identities

'Movement. Change Location – Balance ID' (MMS177) moves balance identities. Balance identity refers to item number, location, lot number, container and quantity, as applicable.

#### 5 Change Location for Containers

'Movement. Change Location – Container' (MMS105) moves containers from one location to another. The container number in combination with item number, location and the quantity result in a unique balance identity.

## Migration of Item Statistics

This document explains how to use M3 API to migrate item statistics from external systems into M3.

### Outcome

Historical item statistics are imported from external systems through an API.

### Before you start

The conditions in [Settings for Inventory Statistics](#) on page 81 must be fulfilled.

## Follow these steps

MMS090MI is used to import historical item statistics data into M3 BE.

The API MMS090MI transfers data sent from the external system to M3 BE and creates records in Item Statistics table MITSTA.

The following MI transactions exist:

- Add - Creates new item statistics for entered warehouse, item, and period in Item Statistics table MITSTA. Records created via API have Copied Information (CPYI) set to 2 - Copied from external system.
- Upd - Updates item statistics for entered warehouse, item, and period. Only records with Copied Information (CPYI) set to 2 can be updated.
- Del - Deletes item statistics for entered warehouse, item, and period. Only records with Copied Information (CPYI) set to 2 can be deleted.
- Get - Retrieves item statistics for entered warehouse, item, and period.
- Lst - Lists item statistics starting from entered warehouse, item, and/or period.

Item statistics for periods entered through the API cannot be recreated via 'Item Statistics. Recreate History' (MWS805) since transactions do not exist in M3.

Future periods cannot be entered since this will limit flexibility of item statistics functionality.

## Movement of Items, Balance IDs and Containers Between Locations within a Warehouse

This principal process document explains the different methods available to move stock between locations within a warehouse. This principal process includes stock transaction programs connected to inventory management and does not cover stock transactions related to manufacturing, customer order, etc.

### **Outcome**

- Items, balance IDs, and containers are moved manually between locations within a warehouse.
- Planned move orders using reorder point method. The planned move order is manually or automatically released to a requisition order.

The process is used for these purposes:

- Changing location for items, balance identities or containers
- Filling up smaller workstation locations from the main location (buffer location).

All physical stock transactions are stored in the MITTRA table. See the relevant process for detailed information.

### **Before you start**

Before this principal process can be run, these prerequisites must be met:

- For manual movement, see the prerequisites in [Manual Movement of Items, Balance IDs and Containers Between Locations](#) on page 64.
- For movement with planned move orders, see [Movement of Items Using a Planned Move Order](#) on page 68 .

### **Description**

This list includes the different methods available to move stock between locations within a warehouse.

- Change location for items

'Movement. Change Location - Item' (MMS175) is used to move items and specific quantities from one location to another. This is handy in a kanban situation, filling up the smaller workstation location from the main location
- Change location for all items

'Movement. Change Location - All Items' (MMS180) moves all items, lot numbers, or containers from one location to another. This could be of use when moving a pallet, etc.

**Note:** Do not use this option if the movement is a common transaction, use container management instead.
- Change location for single location stored items

'Movement. Change Location - Single Location Items' (MMS820) moves an item that is coded as a single location stored item.
- Change location for balance identities

'Movement. Change Location - Balance ID' (MMS177) moves balance identities. Balance identity refers to item number, location, lot number, container and quantity, as applicable.
- Change location for containers

'Movement. Change Location - Container' (MMS105) moves containers from one location to another. The container number in combination with item number, location and the quantity result in a unique balance identity.
- Change location with planned move order

In 'Planned Move Order. Process' (MMS170) planned move orders are displayed and released to a requisition order. The release can either be manually or automatically done. Reorder point method is used as a trigger for creating a planned order.

## Movement of Item Between Locations Using a Planned Move Order

This process explains how to move items between locations using planned move orders.

### Outcome

Items are moved to the location where there was a shortage. This is done via a move order that can be released to a requisition order either automatically or manually.

All physical stock transactions are stored in the MITTRA file.

Movement of item between locations using a planned move order is used for filling up the smaller workstation location from the main location (buffer location).

### Before you start

The prerequisites listed in [Movement of Items Using a Planned Move Order](#) on page 68 must be fulfilled.

### Follow these steps

The move order is created either automatically or manually. This depends on the settings in 'Settings – Location Replenishment' (CRS783).

- 1** To perform an automatic release of a planned move order to a requisition order (i.e. move order):
  - a** Create an order type with transaction type 92=Replenishment move order issue in (CRS200).
  - b** When stock has reached the reorder point, then a move order is created automatically by the auto-start job (MMS940). This program starts (MMS126) to create the replenishment order, which in turn starts (MMS117) to write to the MGHEAD and MGLINE tables. An order is created in 'Req/Distr Order. Open' (MMS100) with the transaction type 92=Replenishment (move order).
  - c** The created order is then processed as a normal requisition order. This is described in the requisition order flow. See related documents.
- 2** To perform a manual release of a planned move order to a requisition order (i.e. move order):
  - a** Create an order type with transaction type 92=Replenishment move order issue in (CRS200).
  - b** When stock has reached the reorder point, then a planned move order is created in 'Planned Move Order. Process' (MMS170) with status 10 = Ready for print out of picking list.
  - c** Select F14 on the (MMS170/B) panel to release the planned move order to a requisition order (move order).

After the order has been released, the status on the planned order is raised to 30 = Requisition order created. An order is created in 'Req/Distr Order. Open' (MMS100) with the transaction type 92 = Replenishment (move order).

- d** The created order is then processed as a normal requisition order. This is described in the requisition order flow.
- 3** To perform a manual move order and prevent allocation from the picking location:
  - a** You can manually create a move order (replenishment) in (MMS100), by using transaction type 92 = Replenishment (move order).

This can be useful when you want to make a movement to another location than the usual one, defined in (MMS065). If automatic allocation is used, M3 automatically prevents allocation from the pick location defined in the **Location** field on the (MMS002/G) panel. Often this location is the location defined in (MMS065) as the location that should be refilled.

## Movement of Items Using a Planned Move Order

This settings document explains how to execute a move order between locations using a planned move order.

### Outcome

These settings determine if the planned move order will be released automatically or manually to a requisition order (move order).

Used for defining the rules for filling smaller workstation locations from the main location (buffer location).

## Before you start

There are no prerequisites for this process.

## Parameters to set

Program ID/Panel	Field	The field indicates ...
(MMS002/G)	Storage method	<p>... the storage method for each item/warehouse and determines how the item is distributed at different locations.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>1 = Single location</li> <li>2 = Multiple location</li> <li>3 = Multiple location where reorder points are used.</li> </ul> <p>If alternative 1 is specified, the item can only be stored at one approved location (status 2). This must be specified for each item/warehouse.</p> <p>If alternative 2 is specified, the item can be stored in an unlimited number of locations.</p> <p>Alternative 3 is the same as alt. 2, but in addition certain combinations contain a reorder point level that is automatically monitored.</p>
(MMS002/G)	Allocation method	<p>.... how allocation is carried out for each item/warehouse combination.</p> <p>For replenishment orders (transaction type 92), allocation methods 3 or 4 are automatically switched to allocation method 2.</p>
(MMS002/G)	Second allocation method	<p>... the allocation method to use if the first allocation method does not allocate enough quantity.</p> <p>Note: The 'Allocation method' field must be set to 2, in order to make 'Second allocation method' to work.</p>
(CRS200)	Stock transaction type	<p>... that you can distinguish different stock transactions in M3. For this setting the following transaction type is used:</p> <p>92 = Replenishment move order issue.</p>

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(CRS783)	01 Order type	<p>... an order type, which is a combined identity for a number of rules that control how an order will be treated at entry and beyond in the order flow.</p> <p>Order types are defined per order category in the following programs:</p> <ul style="list-style-type: none"> <li>Order Category Program</li> <li>1 = Manufacturing Order PMS120</li> <li>2 = Purchase Order PPS095</li> <li>3 = Customer Order OIS010</li> <li>4 = Requisition Order CRS200</li> <li>5 = Distribution Order CRS200</li> <li>7 = Service Order SOS010</li> <li>8 = Project Order POS010.</li> </ul> <p>Enter the order type (transaction type 92) created in (CRS200).</p>
(CRS783)	05 Automatic update of replenishment order	... whether replenishment orders should be automatically updated.
(MMS065/B)	Location	... the location to which the items should be moved.
(MMS065/B)	From date	... the date from which the registered data becomes valid.
(MMS065/E)	Replenishment method	<p>... which method is to be used to fill a location when a shortage occurs.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>1 = Kanban</li> <li>2 = Reorder point with automatic control</li> <li>3 = Manual replenishment without automatic control.</li> </ul> <p>Method 2 means that M3 automatically generates a requisition order when stock reaches the reorder point, according to the rules defined in (CRS783)</p>
(MMS065/E)	Order type	... an order type entered here will override the order type entered in (CRS783).
(MMS065/E)	Reorder point	<p>... the quantity that initiates the reorder process.</p> <p>When the item location's on-hand balance is equal to or less than the reorder point, replenishment of the item location's order quantity is initiated.</p>
(MMS065/E)	Critical reorder point	... the critical stock level. This should be a value less than the reorder point value.

Program ID/Panel	Field	The field indicates ...
(MMS065/E)	Order quantity	<p>... the order quantity, which is to be used for replenishment of the item's location.</p> <p>The order quantity method determines how the quantity is to be calculated.</p>
(MMS057/E)	Exclude for order category	... order categories that are excluded from the stock location type allocation table. The allocation table controls allocation according to location type.

### Follow these steps

- 1 Open 'Item. Connect Warehouse' (MMS002/G). Enter 3=Multiple location where the reorder point method is used, in the 'Storage Method' field.
- 2 Open 'Req/Distr Order Type. Open' (CRS200). Create an order type with transaction type 92=Replenishment (move order). See related documents for creating requisition/distribution order types.
- 3 Open 'Settings - Location Replenishment' (CRS783). Enter the order type (type 92) created in (CRS200) in the '01 Order type' field.  
Select the '05 Automatic update of replenishment order' field. The valid alternatives are:
  - Cleared (not selected) check box means "No automatic update of planned orders". You must release the planned order to a requisition order manually in 'Planned Move Order. Process' (MMS170).
  - Selected check box means "Yes, Automatic update of planned orders". The auto-start job (MMS940) creates a requisition order from the planned order.
 Infor recommends that you select the check box.
- 4 Open 'Item Location. Open' (MMS065).
- 5 Enter the Warehouse and Item fields on the B panel.
- 6 Enter the location to which the items should be moved in the Location field on the B panel.
- 7 On the E panel, enter 2 = 'Reorder point with automatic control' in the 'Replenishment method' field. See related documents for reorder point planning. You can override the default (CRS783) order type in the 'Order type' field.
- 8 Enter the 'Reorder point' , 'Critical reorder point' and 'Order quantity' fields.  
**Note:** Set these parameters sensibly. The system will keep releasing orders while the sum of the stock on-hand plus orders already created are lower than the reorder point.  
**Note:** Already created orders will affect the calculation with the part of the ordered quantity that is yet not reported.

## On-hand Balance

On-hand balance is the quantity of an item physically in stock according to the system. It is displayed in different summation levels; the balance per item and facility is the highest level and the balance per balance identity the lowest level.

The on-hand balance can be divided into different categories for quantities that are no longer available and for others that are being processed or are rejected.

The on-hand balance is often used for planning issues and acquisitions, as well as for inventory valuation.

## On-hand Balance Reporting per Facility

During on-hand balance reporting, the on-hand balances at the warehouses belonging to a facility are totaled.

The on-hand balance method regulates how the balances should be totaled. There are two main methods:

- Method 1 - Balances with item status 2 and 3 at the warehouses belonging to a facility are totaled. This requires that the warehouse is connected to a warehouse type which allows totaling by facility.
- Method 2 - Only the following transaction types are totaled: purchase orders for new acquisitions, physical inventory differences, manufacturing, sales, scrap, and distribution orders between facilities. This method is best used by maintenance facilities.

On-hand balance reporting per facility is deactivated by using method 0.

## On-hand Balance Status

The on-hand balance status is used in warehouse activity control to distinguish inventory approved in the quality inspection from rejected lots or from items under inspection. It categorizes all stock into approved, rejected and for inspection.

The valid statuses are:

- 1 = Processing in progress. Lots with this status cannot be used until they are approved.
- 2 = Approved. (All items that have not been quality-inspected are assigned this status.)
- 3 = Rejected. Lots with this status cannot be issued from inventory.

The on-hand balance status can be displayed when you display balance identities or transaction history in 'Stock Transaction. Display History' (MMS070). It can only be changed in 'Balance Identity. Reclassify' (MMS130).

## Perform Physical Inventory for a Catch Weight Item

This document describes the internal warehouse activities such as quick inventory counting and inventory counting as they relate to the concept of catch weight and its functionality.

If necessary, reference the document for an introduction to the functionality available to support the concept of catch weight.

## Outcome

Catch weight is managed in the following functions for physical inventory:

- Quick inventory counting in 'Physical Inventory. Quick Entry' (MMS310).
- Inventory counting in 'Physical Inventory. Perform' (MMS300).

## Physical quick inventory counting (MMS310)

### Activities in this scenario

- 1** Create a new balance ID for quick inventory
- 2** Quick inventory:
  - a** Adjust quantity only
  - b** Adjust quantity and weight:
- 3** Evaluate Results:
  - a** Balance ID in 'Balance Identity. Open Toolbox' (MWS068).
  - b** Stock transactions in 'Stock Transaction. Display History' (MWS070).

### Examples for different inventory count transactions

- 1** Increase quantity and catch weight
  - Quantity = 11 and Catch Weight = 113
  - Only new quantity = 12
- 2** Increase quantity and reduce catch weight
  - Quantity = 13 and Catch Weight = 115
- 3** Reduce quantity and increase catch weight
  - Quantity = 10 and Catch Weight = 117
- 4** Reduce quantity and catch weight
  - Quantity = 9 and Catch weight = 95
  - Only new quantity = 8

### Follow these steps

- 1 Increase quantity and catch weight**
  - a** Open 'Physical Inventory. Quick Entry' (MMS310/E)
  - b** Increase 'Ph Inv quantity' from 10 to 11 and 'Ph Inv Weight' from 110 to 113
  - c** View result on (MWS068/B)
- 2 Increase only quantity**
  - a** Change 'Ph Inv quantity' from 11 to 12 and leave 'Ph Inv Weight' = 'blank'
  - b** View result on (MWS068/B) with a view including (MLCAWE): New Quantity 12 units. New Catch Weight scaled up =  $113 \text{ kg} * (12/11) = 123.27$ .
- 3 Increase quantity and reduce catch weight**
  - a** Increase quantity from 12 to 13 and reduce catch weight from 123 to 115.

- b** View result on (MWS068/B) with a view including (MLCAWE).
- 4 Reduce quantity and increase catch weight**
- a** Reduce quantity from 13 to 10 and increase catch weight from 115 to 117.
  - b** View result on (MWS068/B) with a view including (MLCAWE).
- 5 Reduce quantity and catch weight**
- a** Reduce quantity from 10 to 9 and reduce catch weight from 117 to 95.
  - b** View result on (MWS068/B) with a view including (MLCAWE).
- 6 Reduce only quantity**
- a** Change 'Ph Inv quantity' from 9 to 8 and leave 'Ph Inv Weight' = 'blank'.
  - b** View result on (MWS068/B) with a view including (MLCAWE): New Quantity 8 units. New Catch Weight scaled down =  $95 \text{ kg} * (8/9) = 84,4445$ .
- 7** View results for all transactions above in 'Stock Transaction. Display History' (MWS070/B).
- a** Select a view including catch weight fields: MTCAWE, MTCWTQ, MTCWTT.
  - b** It is possible to find all the new transactions and also see that on-hand quantity and on-hand catch weights have been updated.

### Physical inventory counting (MMS300)

When to use:

- (MMS300) is used for inventory count and is performed for a whole warehouse or for a selection of it. The quick inventory (MMS310) is performed for one balance ID at a time.
- The update of quantity and catch weight is performed in a similar way as in (MMS310).
- The result of the inventory count is the same if performed in (MMS310) or (MMS310).
- (MMS300) and (MMS310) does not support change of catch weight only. That can only be performed in (MMS360).
- In (MMS301) the 'Ph inv quantity' and 'Ph inv weight' are changed in a similar way as in (MMS310).

### Summary

- Updates the individual balance IDs.
- Quantity and catch weight are counted simultaneously.
- Both addition and deduction of quantity are represented.
- With a count only on quantity, catch weight is scaled up or down.

### Related restrictions

- Count of catch weight only (not changing quantity) is not supported in (MMS300), (MMS310), (MMS850) or (MMS850MI). In this case it is only possible to count both quantity and catch weight simultaneously.
- (MMS360) is the main function for change of only catch weight.
- In (MMS130) it is possible to perform count of catch weight without changing quantity. However, when changing a part of the whole lot (on location level) a new lot number will be created for the quantity the catch weight was changed for.

## Physical Inventory

Physical inventory is a physical count (a stock take) of the quantity of each item selected. It ensures that the recorded quantity of items in inventory is correct. If there are variances between the inventoried and the recorded quantities, these and the new on-hand balances are recorded.

Physical inventory can be done periodically during an accounting year, or as needed.

## Physical Inventory Method

A physical inventory method is the way a physical inventory is carried out. M3 contains these methods:

- Cyclic
  - Physical inventory is carried out on a recurring basis at set intervals. You define the cycle and then use it to determine which items need to be inventoried at what time.
- Periodic
  - Physical inventory is carried out at any determined time based on user-determined selections.
- Zero-point
  - Physical inventory is carried out on selected items having an on-hand balance that meets one of these criteria:
    - Negative on-hand balance
    - On-hand balance under the limit for safety stock
    - On-hand balance under the reorder point
    - On-hand balance under the reorder point plus a specified percentage .
- Deviation
  - Selection is made for items that have at least one balance ID in a deviation location. This method restricts the physical inventory lines to items that suffered from a DO deviation, making balance inaccuracy likely.

### Description

A cyclic physical inventory is a good method for taking inventory, allowing you to repeatedly check on-hand balances. You can supplement it with a periodic physical inventory for inventories that lie outside the normal pattern.

A zero-point physical inventory is suitable for high-volume items or items stocked at numerous locations.

A physical inventory based on deviation targets possible stock inaccuracy due to errors in reporting during the distribution order process. We recommend that you use this in warehouses that serve as large distribution centers, from which goods are distributed to other warehouses.

## Physical Inventory Request

A physical inventory request is a printout and the creation of the stock balances to be checked that acts as supporting documentation during physical inventory. It contains a predefined number of lines. Each record included in the selection is assigned a line number, which is then used during reporting.

## Report and Update Physical Inventory

This document explains how you report and update the results from cyclic, periodic, and zero-point physical inventories.

You take inventory to make sure that the recorded item quantities are correct.

### Outcome

The results from physical inventory have been reported. Depending on your choice, you have either recorded new on-hand balances or simply printed a variance list.

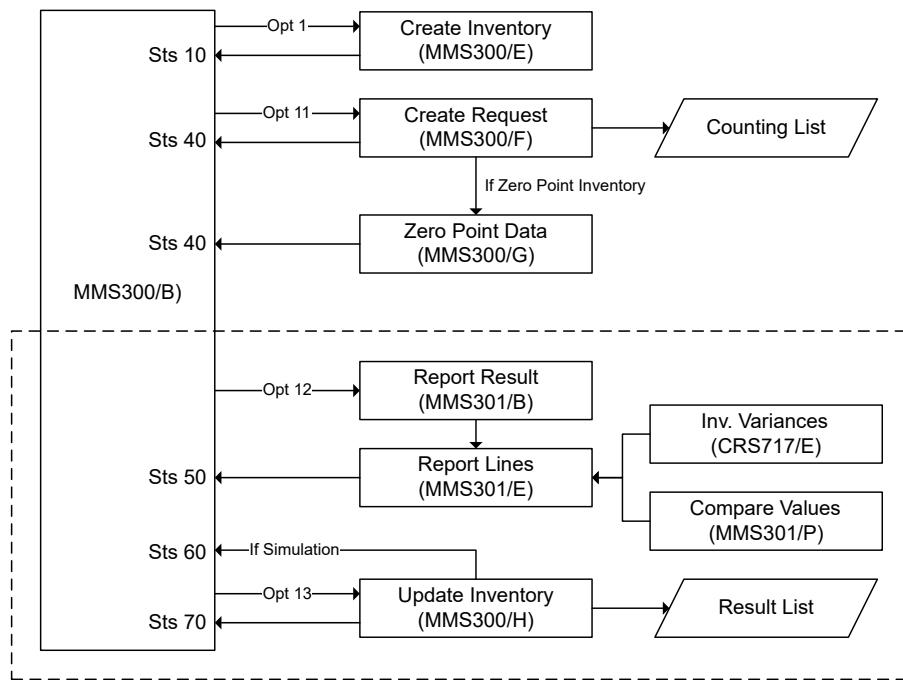
For information on the uses of physical inventory, refer to the related process document [Taking Physical Inventory](#) on page 90.

### Before you start

- The conditions in [Define Physical Inventory Settings](#) on page 39 must be fulfilled.
- If you want to create a new item selection table, refer to [Create Item Selection Table](#) on page 31.

### Follow these steps

Follow the steps outlined in this image:



### Report physical inventory result

- 1 Start 'Physical Inventory. Report' (MMS301/B) using option 12='Physical inventory lines' on the (MMS300/B) panel.
- 2 Select the on-hand balance that you want to compare to the inventoried one. To do this, display the (MMS301/P) panel by pressing function key F13 on the (MMS301/B) panel. On the P panel, you can preset the date to use during the on-hand balance check as well as the 'Balance to compare' for the F panel (where reporting is done). Click Next.

The valid alternatives for the 'On-hand balance to compare' field are:

- 1 = On-hand balance of the balance identity when marked/requested for inventory
- 2 = Current on-hand balance of the balance identity
- 3 = On-hand balance of the balance identity during date reported for inventory.

Usually, alternative 3 is the most convenient one to use.

On (MMS301/P), you can also decide to ignore the warning messages related to tolerance checks by setting the parameter 'Skip warnings' (SKIP).

- 3 To report a line, double-click the line on the (MMS301/B) panel. The (MMS301/E) panel is displayed.
- 4 Specify the inventoried quantity in the 'Physical inventory quantity' field. Click Next.
- 5 Repeat step 4 until there are no more lines to report. If remaining lines still exist, use F20='Report as zero' to report 0 on all remaining, unreported lines. Click Exit.

The (MMS300/B) panel is displayed.

After reporting, the inventory status is set to 50='Feedback of inventory result started'.

### Update physical Inventory and print variance list

- 1 Display the (MMS300/H) panel by selecting option 13='Physical inventory variances' on the (MMS300/B) panel.
- 2 Check the 'Status' field to see whether a physical inventory difference has been approved automatically or if it has to be approved manually.

The valid alternatives for the 'Status' field are:

1 = Physical inventory reporting has been done; the difference is within allowed values and has therefore been approved automatically.

2 = Physical inventory reporting has been done; the difference is not within the allowed range and has therefore been approved manually.

The limits for the variances are determined by the settings in 'Settings. Physical Inventory Variances' (CRS717).

- 3 If the inventory difference has not been approved automatically and you want the difference to be approved manually, specify 2 in the 'Status' field. Click Next.
- 4 Determine the price that should be used for inventory valuation in the 'Inventory accounting method' field.

The valid alternatives are:

0 = Current price

1 = Standard price.

- 5 Activate the 'Update' field for updating the on-hand balance with the physical inventory variances, and to create transactions for the stock transaction history.

The status is raised to 70='Update of physical inventory has been made', nothing remains to be reported.

- If an update is to be made, the variance is always calculated against the 'On-hand balance to compare' that was valid during reporting, regardless of what was specified as the 'On-hand balance to compare' when the variance list was ordered.

- 6 If the 'Update' field is left blank, the variance list is printed without an update. In this case, an evaluation of the variances can be made for a costing type of your choice. In addition, a recount of the inventory for the same inventory number is performed

The status will be raised to 60='Difference list is printed'.

## Run, Recreate, Display and Print Item Statistics

This instruction explains how to run, recreate, display and print item statistics. Item statistics are used to get accumulated information for an item over a period.

### Outcome

At the end of an MPM period, item statistics can be run and displayed. Item statistics can also be recreated.

The item statistic is used to see how many items have been purchased, manufactured, sold, used and scrapped. It can also be used to see positive and negative physical inventory variances.

Reasons for recreating statistics can include:

- A new site has gone live where the MITTRA table has been converted and MITSTA table must be built.
- Changes have been made in the settings for item statistics buckets in (CRS200), and these should be reflected in the MITSTA table for the last period.
- Data loss has occurred in the MITSTA table for some reason.

Each time a transaction is entered, the regular statistical table (MITSTA) is updated in accordance with the transaction settings.

### Before you start

The conditions in [Settings for Inventory Statistics](#) on page 81 must be fulfilled.

### Follow These Steps

- 1** When the decision to close the MPM period has been made, 'Item Statistics. Period Run' (MMS805) is opened. Fill in the 'Report version' field on the (MMS805/B) panel.
- 2** Select whether the A or E panel should be the opening panel.
- 3** On the (MMS805/E) panel, enter which values should be included in the calculation.
- 4** Open the (MMS805/F) panel and select the period for which to run the calculation.
- 5** Press Enter, periodic statistics have now been run.
- 6** To recreate item statistics, open 'Item Statistics. Recreate History' (MWS805). Fill in the fields on the E panel and press Enter. The item statistics have now been recreated.
- 7** The next step is to open 'Item Statistic. Display' (MMS090).
- 8** Create a view by clicking in the 'View' field. Click again and 'View. Open' (MMS091) is started.
- 9** Fill in the 'View' field on the (MMS091/B) panel.
- 10** On the (MMS091/E) panel, up to six column headings can be selected and named. Selections are made from the fields displayed on the lower part of the screen. Enter the selected field numbers in the 'Field number' field. Up to five different field numbers can be connected to each column.
- 11** Add, subtract, divide or multiply the different fields with each other by using an operand.
- 12** The 'Column display' field (Dsp) indicates how the total in (MMS090) should be displayed. The 'Deviating number of decimal places' field (Dec) indicates the number of decimal places that should be used for a statistic column.
- 13** Select the created view (option 1 = Select). The (MMS090/B) panel is redisplayed.  
Two sorting orders are available: Sorting order 1 displays the statistics by period and sorting order 2 displays the statistics by year.
- 14** Enter the (MMS090/E) panel. The fields in the MITSTA table are displayed. Budget and forecast quantity could be used as input for updating planning values such as safety stock, reorder point, etc.
- 15** Item statistics is printed in 'Item Statistics. Print' (MMS680).
- 16** A report indicating the different dates that have affected the item statistics (last receiving date, issue date, inventory date, etc.) is printed in 'Item Statistics. Print Date Analysis' (MMS665).

# Run and Display Summarized Item Statistics

This instruction explains how to run and display summarized item statistics. Summarized item statistics is used to get accumulated information of an item over a period.

## Outcome

At the end of an MPM period, summarized item statistics can be run and displayed.

The summarized item statistic can be used to display statistic information about item type, item group, product group, responsible planner, etc.

Each time a transaction is entered, the regular statistical table (MITSTA) is updated in accordance with the transaction settings. Summarized statistics is saved in the stock transaction statistics summary table (MITSTS).

## Before you start

The conditions in [Settings for Inventory Statistics](#) on page 81 must be fulfilled.

## Follow These Steps

- 1 When the decision to close the MPM period has been made, open 'Item Statistics. Create Summary' (MMS810). Fill in the 'Report version' field on the (MMS810/B) panel.
- 2 Select whether the A or E panel should be the opening panel.
- 3 On the (MMS810/E) panel, enter which period should be included in the calculation. This program will create summarized statistics according to the settings in 'Settings. Summary Inventory Statistics' (CRS716).
- 4 Periodic summary statistics have now been run or recreated.
- 5 The next step is to display the summarized statistic. Open 'Item Statistics. Display Totals' (MMS290).
- 6 To create a View, click in the 'View' field. Click again and 'View. Open' (MMS091) is started.
- 7 Fill in the 'View' field on the (MMS091/B) panel.
- 8 On the (MMS091/E) panel, up to six column headings can be selected and named. Selections are made from the fields displayed on the lower part of the screen. Enter the selected field numbers in the 'Field number' field. Up to five different field numbers can be connected to each column.
- 9 Add, subtract, divide or multiply the different fields with each other by using an operand.
- 10 The 'Column display' field (Dsp) indicates how the total in 'Item Statistics. Display' (MMS090) should be displayed. The 'Deviating number of decimal places' field (Dec) indicates the number of decimal places that should be used for a statistic column.
- 11 Select the created view (option 1 = Select). The (MMS290/B) panel is redisplayed.
- 12 The 'Summation key' field on the (MMS290/B) panel specifies how statistics are displayed.  
The summation key displays statistics about:
  - 01 Item type
  - 02 Item group
  - 03 Product group

- 04 Cost reference
- 05 Responsible planner
- 06 ABC volume
- 07 ABC frequency
- 08 ABC contribution
- 09 Manual ABC class
- 10 Stock zone.

Example: If you select Summation key 01=Item type, then the lead text Item type appears, and you can specify up to five different item types or leave it blank to include all existing item types in the statistics.

- 13** Select a period or year (depends on the selected sorting order) and select option 5=Display. On the (MMS290/E) panel, summarized statistics for that period or year are displayed.

## Settings for Inventory Statistics

This setting document explains the settings for inventory statistics.

### Outcome

Basic settings that are mandatory for displaying statistics for item and stock location are defined.

### Before you start

- Basic data for items is entered.
- Basic data for inventory management is entered.

### Parameters to set

Program ID/ Panel	Field	The field indicates ...
(MMS002/G)	History storage method	<p>... if and how stock transactions are stored in the stock transaction history file. The valid alternatives are:</p> <p>0 = No storage. No item statistics will be updated, and no financial transactions created.</p> <p>1 = Detailed storage.</p> <p>2 = Accumulated storage on daily level per order and transaction type.</p> <p>3 = Accumulated storage on daily level per transaction type.</p> <p>For alternatives 2 and 3, all receipts are stored on a detail level (as for alternative 1).</p>
(MMS002/G)	Statistical storage group	<p>... how the inventory statistics are to be saved.</p> <p>The code is defined in a separate table and can be specified for each item/warehouse.</p>
(CRS255/B)	Statistical storage group	<p>... how the inventory statistics are to be saved.</p> <p>The code is defined in a separate table and can be specified for each item/warehouse.</p>
(CRS255/E)	Period range	<p>... which system period interval applies during accumulation of inventory statistics.</p> <p><b>Example:</b></p> <p>If the number of periods per year is 12 and the interval entered is 3, statistics will be gathered for periods 3, 6, 9 and 12. Accordingly, if the interval is 6, statistics will be gathered period 6 and 12. Observe that this also controls the period interval of the forecast component.</p>

Program ID/ Panel	Field	The field indicates ...
(CRS255/E)	Number of years	... the number of years system period statistics should be saved. For example, value 02 means that the current and previous years' statistics should be saved.
(CRS255/E)	Number of cumulative years	... the number of years cumulative stock statistics should be saved. For example, value 02 means that the current and previous years' statistics should be saved.
(MMS010/F)	Transaction statistics	<p>... a code specified for each location. It determines how statistics for stock transactions should be created.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>0 = No</li> <li>1 = Yes, annually</li> <li>2 = Yes, for each period.</li> </ul>
(CRS716/E)	Summary key	<p>... the type of key to be used when summing up inventory statistics.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>01 = Item type</li> <li>02 = Item group</li> <li>03 = Product group</li> <li>04 = Cost reference</li> <li>05 = Responsible planner</li> <li>06 = ABC volume</li> <li>07 = ABC frequency</li> <li>08 = ABC contribution</li> <li>09 = Manual ABC class</li> <li>10 = Stock zone.</li> </ul> <p>Statistics can only be displayed if they are first summed up in a period run. In the parameter program 'Settings - Summary Inventory Stats' (CRS716), it is determined whether aggregation should be performed. Alternatives 01 – 04 are defined by item and 05 – 10 by item per warehouse.</p>

Program ID/ Panel	Field	The field indicates ...
(MNS100/F)	Period type MPM	... which period type, 1–5, is to be used in M3 MPM. Up to five different period types can be defined using 'System Calendar. Open Period' (CRS910). For each application, specify the period type.
(MNS100/F)	Number of period types 1	... the number of periods per year is included in a period type.
(CRS910/B)	Period type	... a key identity in the period table, which enables working simultaneously with up to five different period divisions. For each record in the system calendar, you can see that the day is connected to one of five different period types. Besides the five period types, period type 9 can be defined. It is used in the forecast component to enable forecasting item numbers per week.

**Example:**

If you use period type 1 to define accounting periods and period type 2 to define payroll periods that differ from the accounting periods, you must specify in the company file that the accounting system is to use period type 1 and that the payroll system is to use period type 2. However, if the same period type is to be used for both accounting and payroll this should be entered in the company file.

### Follow these steps

- 1 Open 'Item. Connect Warehouse' (MMS002/G). Activate the 'History storage method' field; select between parameters 1, 2 or 3.
- 2 Activate the 'Statistic storage group' field. A list is activated from 'Statistic Storage Group. Open' (CRS255).
- 3 Enter the (CRS255/B) panel and create a statistical storage group. Enter the (CRS255/E) panel and specify the fields.

- 4 The 'Period range' field together with the 'Number of years' field controls the intervals for storing, and for how long the statistics should be stored. The current year is included.  
Period range 1 means that statistics are stored for each MPM period. If the MPM periods per year are 12 and the period range is set to 3, then statistics will be gathered for period 3, 6, 9 and 12.
- 5 The 'Number of years' field specifies for how many years the detailed statistics should be saved.
- 6 The 'Number of cumulative years' field specifies for how many years the accumulated statistics should be saved.
- 7 Open the 'Stock Location. Open' (MMS010/F) panel.
- 8 Activate the 'Transaction statistics' field (parameter 1 or 2).
- 9 In 'Settings - Summary Inventory Stats' (CRS716) there are some specific settings for summarized item statistics.
- 10 On the (CRS716/E) panel, values for each 'Summary key' are specified. These keys are used in 'Item Statistics. Display Totals' (MMS290).
- 11 'Stock Transaction Type. Open Standard' (CRS205/E) indicates which fields should be updated in MITSTA statistical table when a transaction using this transaction type is entered.
- 12 The requisition and distribution order types are based on standard transaction types, but the effect on the statistics can be overridden in 'Req/Distr Order Type. Open' (CRS200/E). You can override the standard sign (from CRS205) in the open field in front of the Statistical field. The transaction signs follow mathematical rules, so minus (transaction sign) and minus (field sign) results in a positive sign, etc.

#### **Workflow to create MPM periods**

- 13 Statistics are stored in MPM periods. To define an MPM period, open the 'Company. Connect Division' (MNS100/F) panel to define which period types to use in the different application components.
- 14 Enter the 'Period type MPM' field and define a period type.
- 15 Fill in the 'Number of period types 1' field.
- 16 To define a period type, open 'System Calendar. Open Period' (CRS910). On the (CRS910/B) panel, fill in the 'Period type' field. Open the (CRS910/E) panel and define each period.

## Single Location

A single location is used to stock an item only at one location per warehouse. This item is then only stocked at this particular location.

## Stock and Inventory Information

This document explains how to display and analyze information about stock and inventory.

## Outcome

The balance identity for an item is displayed on three different levels as follows:

- At the lowest level—the location level—all locations where this item is stored are displayed.
- At the next level—the warehouse level—information is displayed about items per warehouse or per warehouses if the item is stored at several warehouses.
- At the highest level that MPM works with, balance per facility can be displayed.
- You can also display stock transaction history and perform date analysis on lot-controlled items.

The information is used for global planning, average price setting, planning, reservations, soft allocation, stock control, allocation, etc.

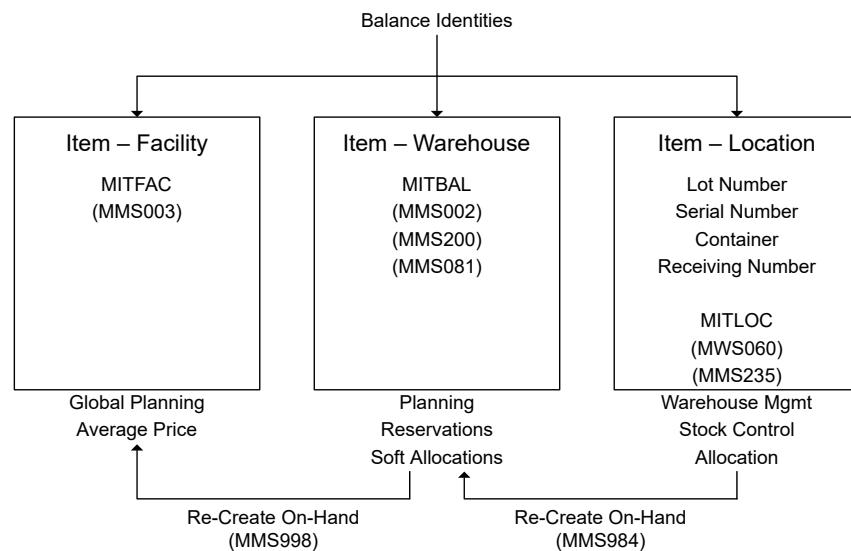
The following tables are updated:

- Items per facility are stored in the MITFAC table.
- Items per warehouse are stored in the MITBAL table.
- Items per location are stored in the MITLOC table.
- Lot numbers are stored in the MILOMA table.

## Before you start

No prerequisites needed.

## How



### 1 Allocations per balance identity

All locations where an item is stored are displayed in 'Balance Identity. Open Toolbox' (MWS068).

### 2 Allocations per warehouse

On the warehouse level, balance IDs are displayed mainly in 'Item. Open Toolbox' (MMS200) and 'Item. Connect Warehouse' (MMS002/H). 'Availability. Display All Warehouses' (MMS081) displays items that are stored at several warehouses.

### **3 Allocations per facility**

The highest level that we work with in MPM is the facility level. The balance IDs on this level are displayed in 'Item. Connect Facility' (MMS003).

### **4 Stock transaction history**

Stock transaction history is displayed in 'Stock Transaction. Display History' (MWS070).

### **5 Date analysis**

Date analysis (expiry date, last sales date, re-inspection date) on lot-controlled items is performed in 'Balance Identity. Analyze per Date Type' (MWS320)

### **6 Recreate MITBAL and MITFAC**

If there is a problem with balance IDs, these two programs can be useful:

'On-Hand. Re-Create in MITBAL via MITLOC' (MMS998) and

'On-Hand. Re-Create in MITFAC via MITBAL' (MMS984).

These programs also could be useful when installing M3 BE and the parameters have been changed.

### **7 Consignment stock information**

If an item is under consignment, information about consignment stock quantities per owner and warehouse is displayed in 'Consignment Owner Quantities. Open' (MWS020).

If the item is both lot controlled and under consignment, information about consignment stock quantities per warehouse, owner, and lot number is also displayed in (MWS020).

### **8 Pending consignment transactions**

If there is a problem with reporting issue of an item under consignment, information about the active job can be found in 'Pending Consignment Transactions. Open' (MWS025).

## Stocktake During Picking

The functionality enables automatic creation of physical inventory for the balance identities from which a picking is made. Lines on the physical inventory round are added line by line as picking list lines are reported.

Parameters on the dispatch policy and on the location work as switches for enabling the functionality.

The parameters that control what conditions should cause creation of the physical inventory lines are found in program 'Settings - Physical Inventory Line' (MMS309).

Stocktake during picking enables reporting physical inventory at the time when picking is made. Based on the setup of the physical inventory parameters in (MMS309), the system checks if it should create a physical inventory line for the picked line. If the conditions for creating a physical inventory line are met, a line is created. The physical inventory number and line number are sent in API output and can be used to report the line right away.

## Limitations

The functionality is only enabled when reporting picking using APIs, not when reporting picking in 'Picking List. Report' (MWS420) and 'Picking List. Report Lines' (MWS422).

## Setup

The following must be done to enable the functionality.

- 1 Parameter '560 - Create physical inventory during picking' in 'Dispatch Policy. Open' (MWS010) must be activated.
- 2 The same parameter also exists on the locations. It must be activated on each location to facilitate creation of physical inventory lines for the balance identities on the location.
- 3 Valid records must be set up in (MMS309) and the triggers for creation of physical inventory lines must be activated.

(MMS309) is a parameter program with an object-controlled table. That means that the key fields are dynamic. Therefore, the setup can be made on a detailed level. The parameters in (MMS309) can be set-up on a general level, such as a warehouse, but can also be set up on a specific item number.

The setup of which fields are used as control objects is made in 'Generic Object Control Table. Open' (CMS017) for parameter 'Physical Inv Setting' (which is reached from 'Available Object Control Parameters. Open' (CMS016)).

This table shows the parameters in (MMS309) that control creation.

Parameter	Description
Physical inventory time fence control	<p>The parameter controls if and how a time fence is considered when creating a physical inventory line. When time fence is used, the current date must be later than the latest physical inventory date on the balance identity plus the time fence value.</p> <p>For value 1 the time fence is the physical inventory cycle time of the item. This is set up on the item in 'Item. Connect Warehouse' (MMS002). It is not a requirement to set a physical inventory cycle on the item. If none is set, the time fence is considered to be zero days.</p> <p>For value 2, the time fence is the value of the physical inventory time fence parameter in (MMS309).</p> <p>A time, in calendar days, added to the latest physical inventory date of the balance identity forms a calculated limit date which must be passed in order for creation of a physical inventory line for the balance identity.</p>
Quantity limit control	The parameter controls whether a physical inventory line should be created when the remaining on-hand balance on the balance identity, after pick reporting, is below a set quantity limit or equal to zero.
Quantity limit for count task	The value in this field is the quantity limit used when the quantity limit control parameter is active and the remaining on-hand balance is checked.

Parameter	Description
Short pick	<p>The parameter controls whether a physical inventory line should be created when not all the quantity on the picking list is picked, when the line is short picked.</p> <p>The short pick is an indication that not all the allocated quantity could be picked and that there could be a discrepancy between the quantity in the system and the actual quantity.</p>
Deviating location	<p>The parameter controls whether a physical inventory line should be created when picking is reported from a location different from the location on the picking list.</p> <p>Picking from a different location is an indication that not all the allocated quantity could be picked from the location on the picking list and that there could be a discrepancy between the quantity in the system and the actual quantity.</p>
Set non-allocatable	<p>When a physical inventory line is created due to shortpicking or deviating location, it is likely that the quantity of the balance identity in the system does not correspond to the actual quantity of the balance identity.</p> <p>For these two reasons it is possible to set the balance identity to non-allocatable, and with that prevent further allocation from the balance identity, until physical inventory has been performed.</p>

## Workflow

This section describes what steps to take to create physical inventory during picking.

- 1 Perform the setup in 'Stock Location. Open' (MMS010) and (MMS309) to enable the functionality.
- 2 Create order lines that generate a picking list, for example a customer order. Use an order type that uses a dispatch policy where the 'Create physical inventory during picking' parameter (parameter 560) is activated.
- 3 Allocate a balance identity where the 'Create physical inventory during picking' parameter on the location is activated.
- 4 Release the delivery for picking so that the picking lists are created.
- 5 Report the picking list lines using one of the following API transactions:
  - MHS850MI.AddCOPick
  - MHS850MI.AddMOPick
  - MHS850MI.AddDOPick
  - MHS850MI.AddROPick
  - MHS850MI.AddReplPick
  - MHS850MI.AddPickViaRepNo
  - MHS850MI.AddPickViaPack
  - MHS850MI.AddPickByPacStk
- 6 In case a physical inventory line is created, the physical inventory number and the line number are returned by the API transaction.
- 7 The physical inventory line can be reported and the balance identity can be updated.

- 8 The benefit is that at the same time as a picking list line is reported, a physical inventory line is created, reported and the balance identity is also updated.

Whether a physical inventory line is created when a picking list line is reported depends on if the conditions for creating a physical inventory line are met, or not.

When packages are reported, a number of picking list lines are reported with one transaction. In that case, several physical inventory lines can be created by one transaction call. The last number of the last created physical inventory line is returned.

## Taking Physical Inventory

This document explains how you take a physical inventory, which is a physical count of the quantity of each item selected.

You take inventory to make sure that the item quantities recorded are correct.

### Outcome

When a physical inventory has been taken, you have either chosen to update the on-hand balances or simply to print a list with the differences between the inventoried and the recorded quantities.

By taking a physical inventory, you have also fulfilled the legal requirements concerning warehouse management.

The differences between the balance reported from inventory and the recorded balance quantities will be calculated and inventory values adjusted.

Physical inventory is reviewed in 'Physical Inventory. Perform' (MMS300). Quick physical inventory can be reviewed in 'Physical Inventory. Quick Entry' (MMS310).

An inventory request is created; either selected by balance identities (MITLOC) or by stock locations (MITPCE). The MITLOC table is flagged as active and is also stored in the MITTKD table. When the inventory is approved, the new on-hand balances are updated in the MITLOC table.

If you select inventory counting selected by balance identities you can use an item selection table for detailed selection. This table consists of a field group (CRITM). This field group consists of all item (MITMAS) and style (HMSTYN) fields.

### Before you start

- You must have performed [Define Physical Inventory Settings](#) on page 39.
- If you prefer to create an item selection table of your own, instead of using a predefined one, see [Create Item Selection Table](#) on page 31.

### Purpose of Inventory Counting Selected by Stock Locations

The purpose of location-based stock taking is to be able to perform stock take for certain locations or a certain area within the warehouse. Hereby, the possibility to create stock take lines also for empty locations is

provided. These lines should be confirmed if the locations really are empty or, if any items are found at this location, a new line should be manually created.

This way, items that are placed in a location which is supposed to be empty are more easily discovered when inventory is being taken.

When using location-based stock take you can also sort on transportation flow code. The purpose of this is to be able to print the stock take lists in an order which minimizes travel time during stock take.

The purpose of being able to exclude allocated balance identities is to simplify the stock take and lower the risk for incorrect differences caused by picking being performed in between the creation of the stock take list and when the stock is actually counted.

## Workflow in M3

### 1 Select physical inventory method

Select one of the following physical inventory methods:

- *Cyclic inventory method*

All items with a last inventory date outside a specified time cycle will be included in the inventory.

- *Periodic inventory method*

Inventory can be taken at any time and based on any selections.

- *Zero-point inventory method*

Items with a balance equal to zero or close to the reorder point will be included. This simplifies the taking of the physical inventory since items recently updated with large quantities will not be on the counting list.

- *Inventory based on deviation*

Selection is made for items that have at least one balance ID in a deviation location. This method will restrict the physical inventory lines to items that suffered from a DO deviation, that made balance inaccuracy likely.

- *Quick physical inventory*

This is a method for adjusting the stock balances without going through the entire physical inventory flow. Quick physical inventory is done from 'Physical Inventory. Quick Entry' (MMS310).

Select whether stock take should be based on balance IDs (MITLOC) or on locations (MITPCE).

### 2 Create and start physical inventory

You create cyclic, periodic and zero-point inventory methods in 'Physical Inventory. Perform' (MMS300). On the E panel you define whether the inventory should be selected by balance identities or by stock locations.

When the inventory is created, its status is set to 10='Physical inventory round created, but contents not yet generated'.

If you have created an inventory selected by balance identities, you can fill in an item selection table on the (MMS300/F) panel.

If you have created an inventory selected by stock locations, you also decide whether allocated balance identities should be included or not.

If you have created an inventory selected by balance identities or items, you can decide whether balance IDs in transit should be excluded. Stock in transit is pending for distribution order receipt and should normally not be updated as part of a physical inventory.

If you have created an inventory selected by balance identities or items, you can exclude balance IDs in deviation. Deviation stock is the result of a difference between what was sent and what was received on a reported distribution order. Deviation stock IDs are dummy records to track the deviation and cannot be physically counted. You can, on the other hand, ask for listing only the balance IDs in deviation when the aim is to clear them.

The inventory's status is then set to 30='Balance identities selected'. This status is then automatically set to 40='Counting list printed' after a few minutes.

Status 41 is displayed when you have sent the MI transaction LstStockTake to the API. You can resend the transaction by selecting option 21='Change status'. This will decrease the status to 40 again.

### **3 Count**

When the inventory has been created and you the counting list is printed, you count the items in order to see how your stock corresponds to the counting list.

### **4 Report results**

Report the results of your count in 'Physical Inventory. Report' (MMS301). Inventory status will then be set to 50='Feedback of physical report started'.

Use F20='Report Zero' to report 0 on the remaining lines. This can be applicable when aiming to clear stock in deviation.

### **5 Update**

Update the system with the reported values. If you want physical inventory variances entered to update the on-hand balances and to create transactions for the stock transaction history, activate the 'Update' field. The inventory status will then be set to 70='Update of physical inventory has been made'.

If you only want to run a simulation, do not activate the 'Update' field. In this case, the inventory status will be set to 60='Difference list printed'.

## Chapter 2: Managing DO/RO

### Distribution Calendar

A distribution calendar indicates, for each distribution relation, which days of the week or dates are approved shipment days when distribution orders are generated automatically.

The following conditions must be met in order to use the calendar to regulate the dates for planned and released distribution orders:

- Panel (MMS002/G) indicates that a check against the distribution calendar should be made for each item/warehouse.
- Current transportation days from the delivering warehouse are entered for the distribution network in program 'Distribution Relation. Open' (DPS001). These are either days of the week or specific dates. If a specific date from a date range is entered, it overrides any days of the week entered.

### Handling Requisition Order

This document explains how to specify a requisition order, create order lines, and release the order.

#### Allocation and dispatch

Requisition orders that result in a take out from stock action (transaction type 41) require allocation and dispatch. Allocation and dispatch are described in these documents:

See [Allocation and Cross-Docking Concepts](#) on page 275 and [Dispatch Handling](#) on page 403.

#### Outcome

A requisition order (transaction type 40 or 41) is created and released.

Requisition order head is stored in the (MGHEAD) table and the order lines in the (MGLINE) table.

Handling Requisition Order is used when in case of claim, when shipping goods back to the supplier, or when shipping material to a subcontractor.

#### Before you start

The conditions in [Basic Settings for Requisition and Distribution Order](#) on page 338 must be fulfilled.

## Follow these steps

### Order entry for requisition order with transaction type 40 and 41

- 1 Start 'Req/Distr Order. Open' (MMS100). A new order is created from the A-panel or the B-panel. A list of existing orders is displayed on the B-panel. Here, you define the panel sequence that should contain E and 1.
- 2 Create a new order on the A or B panel by filling in the 'Order type' field and selecting New (1='Create'). Order types are essential for the order flow because they determine which fields should be displayed and whether information may be updated or only displayed on the subsequent panel sequence. Order types are created in 'Req/Distr Order Type. Open' (CRS200).
- 3 The (MMS100/E) panel is displayed. Here, some default values are displayed which are preset in 'Req/Distr Order Type. Open' (CRS200) and in 'Item. Connect Warehouse' (MMS002). You can override the default values on this panel. There are also some open fields where you can add information about the order header.
- 4 If you make a positive transaction (stock transaction 40='Requisition order return'), you do not have to specify or change any fields here.
- 5 On the 'Req/Distr Order. Open Lines' (MMS101/B) you have the option to specify the 'View' field and start 'View. Open' (CRS020).
- 6 Define and select a view. The user-designed view is displayed on the (MMS101/B) panel. If it is blank, the standard screen will be displayed.
- 7 The Panel sequence is defaulted from the order type (CRS200).
- 8 Fill in the 'Item number' and Transaction Quantity fields. The Location field is optional. If you click twice in the 'Item number' field, 'Item Toolbox. Open' (MMS200) will start. If you click in the 'Transaction Quantity' field, 'Balance Identity. Open Toolbox' (MWS068) will start. Your on-hand balance is displayed here.
- 9 From the (MMS100/B) and (MMS101/B) panels, you can use Option 44='Delivery line' to indicate your delivery number. This option starts 'Delivery. Open Line Toolbox' (MWS411).
- 10 Pre-allocation can be performed for transaction type 41 by using Option 39='Pre-Allocation' on the (MMS101/B) panel. This starts 'Pre-Allocation. Perform Detailed' (MWS121).
- 11 If there are values missing, or if there are warnings (Example: You specified a quantity greater than what is allocable from the selected location), then the (MMS101/F) panel will be displayed and will require you to input values.
- 12 If all values are verified, the registered order line is displayed on the upper part on the (MMS101/B) panel with line status 15='Not released'.
- 13 If you open or show an already created order line, the (MMS101/E) panel will be displayed.
- 14 The order is now registered. Press Enter and go back to the (MMS100/B) panel.
- 15 The complete registered order status is displayed on the (MMS100/B) panel. Depending on the settings in 'Req/Distr Order Type. Open' (CRS200) these are the statuses:  
 22='Quantity remains to be allocated'  
 33='Completely allocated'  
 44='Picking list released'  
 99='Transaction complete'

If the stock transaction type is 40='Positive transaction', then the status is raised to 22 or 99 (if you put something into the location, you do not need allocation or a picking list).

**16 Order with transaction types 40**

If 'Return Document Control' is activated in (CRS200) print the documents on the (MMS100/B) panel, by selecting option 16='Return doc'. After printout, the delivery status is raised from 68 to 70.

**17 Pre-allocation, allocation and dispatch handling for requisition order with transaction type 41**

The allocation and dispatch rules regarding requisition orders with transaction type 41='Take out from stock', are the same as for customer orders and distribution orders.

**18 Allocation and dispatch can be performed and set up in many different ways. See [Allocation and Cross-Docking Concepts](#) on page 275 and [Dispatch Handling](#) on page 403.**

**19 Goods receiving for requisition orders**

Goods receiving and put away for requisition and distribution orders are managed the same way as in M3. See [Goods Receiving DO/RO Using Different Methods](#) on page 251.

## Display Information about Distribution Order

This instruction explains how to display information about distribution orders.

### Outcome

- Order transactions are displayed.
- Available supplying warehouses are displayed.
- Where different quantities are in the distribution flow is displayed.

Distribution orders are used to distribute items between two warehouses.

### Before you start

A distribution order is created.

### Follow These Steps

#### Material Plan

- 1 Open 'Material Plan. Open' (MMS080). The material plan will indicate negative transaction quantities (order category 511 – distribution order issue) for the supplying warehouse and positive transactions (order category 501 – distribution order goods receipt) for the receiving warehouse. Both transactions will be displayed with a reference text that displays the From-To warehouse (001(901)).

#### Availability in All Warehouses

- 2 Open 'Availability. Display All Warehouses' (MMS081), where availability can be displayed for all warehouses. If something is needed at a specific warehouse, such as the sales warehouse, this function can give information on whether the material can be distributed from the production warehouse, from another sales warehouse, etc.

### How Far Order Lines Have Come in the Order Flow

- 3 You can see where different quantities are in the distribution flow on the E panel in 'Req/Distr Order. Open Lines' (MMS101).

## Distribution Order

A distribution order is used for movement between warehouses. The warehouses can belong to the same or different divisions (legal units). Distribution orders use stock transaction type 51='Distribution order issue'.

Distribution order lines can also be directly assigned to supply specific demand order lines such as a customer order line. Distribution orders are used for warehouses that have a supplying warehouse from which deliveries are made.

The distribution order type defines how the orders are processed.

### Outcome

A distribution order results in these movement between warehouses:

- Movement between warehouses by automatically created order proposals is generated by the MRP or DRP run. For multilevel distribution networks, this process can continue down through the various levels of regional warehouses.
- The warehouses can be placed in the same facility or they can belong to different facilities.
- The facilities can also belong to the same division or to different divisions. If the facilities belong to different divisions, M3 Multiple Unit Coordination (MUC) is used.

As part of the process, these M3 tables are updated:

- All physical stock transactions are stored in the MITTRA table
- The distribution order uses the MGHEAD and MGLINE tables
- The distribution order type is stored in the MGTYPE table.

### Before you start

The conditions in [Basic Settings for Requisition and Distribution Order](#) on page 338 and [Settings for Distribution Orders](#) on page 110 and must be fulfilled.

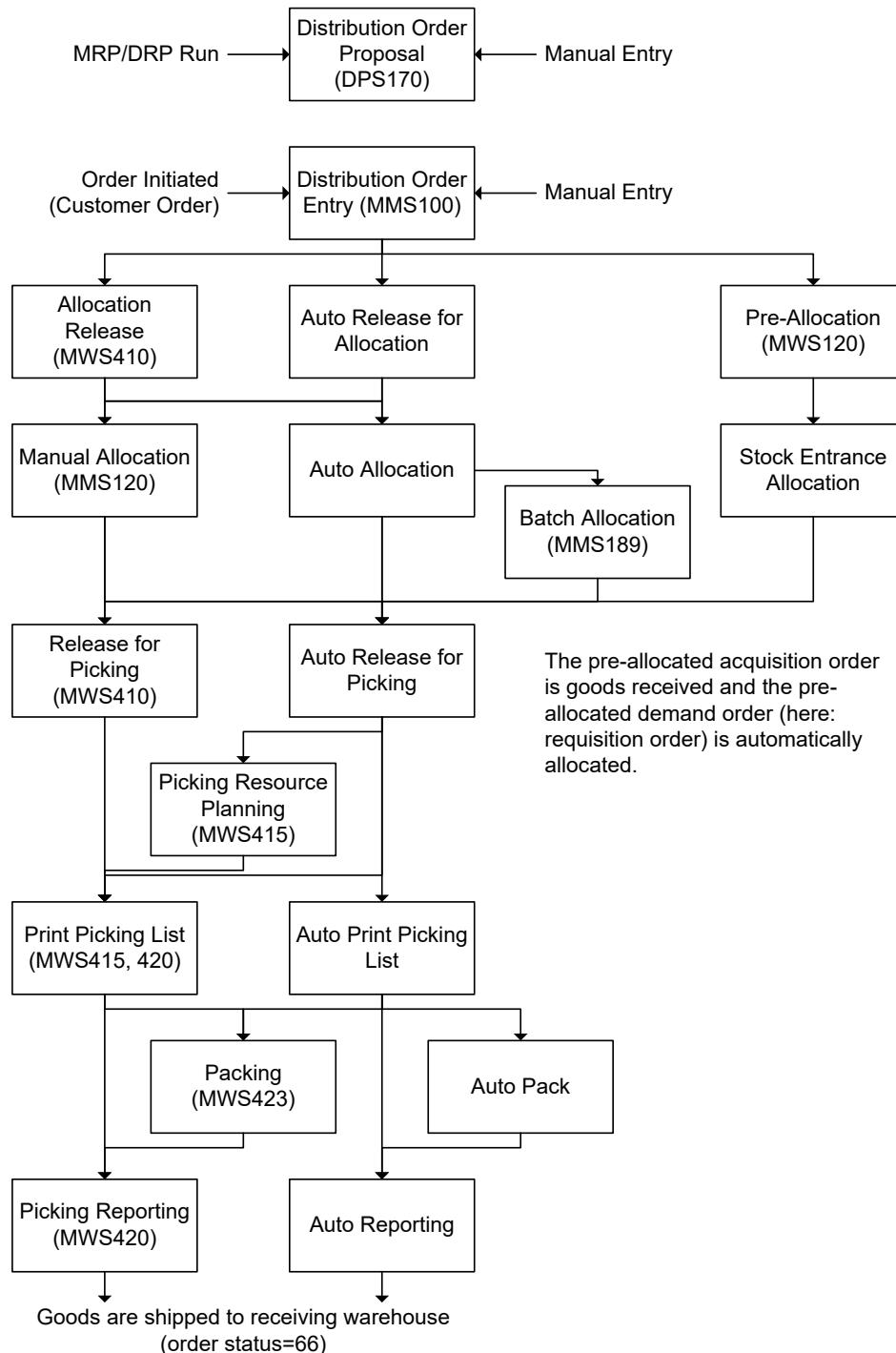
### Description

M3 Distribution Order Processing enables you to control the flow of material across your entire hierarchy of distribution warehouses, such as to and from central warehouses, subcontractors and other manufacturing companies. It is specially designed for a diversified environment and is therefore highly configurable. Aside from being directly related to warehouse management and transportation planning, it automatically handles financial and statistical transactions as an integral part of the process.

M3 Distribution Order Processing also enables you to execute continuous replenishment programs for your entire warehouse network.

The distribution calendar controls all your planning and scheduling. In addition to the valid days for inter-warehouse transfers, and includes transportation lead time for each delivery method between warehouses. To optimize transportation costs, M3 can include orders likely to be delivered within a certain time period on the same delivery.

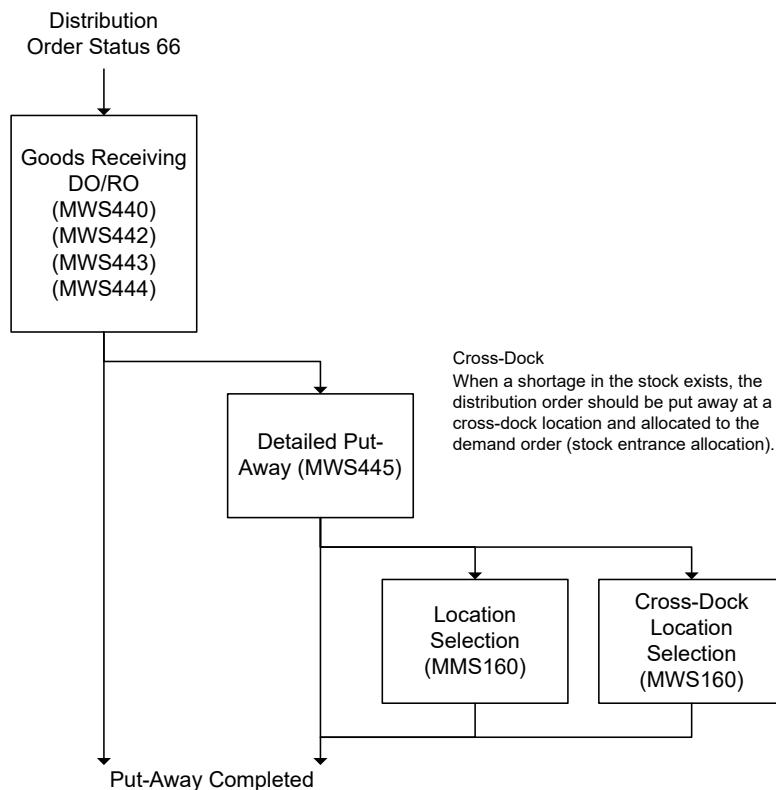
### M3 workflow for distribution order - Enter, allocate, and dispatch



- 1 Distribution order proposals are specified in 'Planned Distribut Order. Open' (DPS170). Proposals are created by an MRP or DRP run, or are specified manually. Releases of the proposals into distribution orders are done here.

- 2 An order header is created in 'Req/Distr Order. Open' (MMS100).
- 3 Order lines are created in 'Req/Distr Order. Open Lines' (MMS101).
- 4 A quick entry, which enables you to specify all needed data on only one panel, is done on the (MMS100/N) panel. The N-panel must be selected as the opening panel.
- 5 Delivery addresses are connected in 'Req/Distr Order. Connect Delivery Addr' (MMS110).
- 6 Allocation can be automatic or manual, and set up in several ways.
- 7 If there is a stock shortage and you cannot allocate the total order quantity, then you can do a pre-allocation. This means that you pre-allocate to an acquisition order that includes the same item numbers as your requisition order (demand order).
- 8 The dispatch handling and packing can be automatic or manual, and set up in several ways. This is described in [Dispatch Handling](#) on page 403.
- 9 Adjusting reported quantities is done in 'Picking Correction. Adjust' (MMS429)
- 10 If an item is moved from one warehouse in one facility to another warehouse that belongs to another facility, you may want to transfer the costing information to the other facility as well. That transfer is done in 'Distributed Item. Transfer Cost' (DPS290).

### M3 workflow for distribution order - Goods receipt at the receiving warehouse



- 1 If you know the order number or the delivery number, use 'Goods Receipt DO/RO. Report' (MWS440) to receive the goods on the requisition order.
- 2 If you would like to display a list and search for the order or delivery number, use 'Goods Receiving DO/RO. Open Toolbox' (MWS442).
- 3 Put-away at a location is done in 'Goods Receiving DO/RO. Report Details' (MWS445).
- 4 Search for a suitable location and/or split and put away the quantities at several locations in 'Location. Select' (MMS160).
- 5 If there is a stock shortage and the requisition order should be put away at a cross-docking location and allocated to a demand order, then you automatically display 'Cross-Dock Selection Results. Open' (MWS160) when you receive the goods.

## Distribution Order Entry

This instruction explains how to create a distribution order and a planned distribution order.

### **Pre-Allocation, allocation, dispatch, and cross-docking**

The pre-allocation, allocation, dispatch, and cross-docking of distribution orders are described in these documents:

See [Allocation and Cross-Docking Concepts](#) on page 275

See [Dispatch Handling](#) on page 403

### **Goods Receiving for Distribution Order**

See [Goods Receiving DO/RO Using Different Methods](#) on page 251.

### **Outcome**

A distribution order is created. Depending on the settings for the order type, the status can be:

22 = Quantity remains to be allocated

33 = Completely allocated

44 = Picking list released

99 = Transaction complete.

Distribution orders are stored in the MGHEAD and MGLINE tables.

Distribution orders are used, for example, in the following cases.

- Demands on a sales warehouse (for example, a customer order) result in a distribution order from a supplying warehouse to the sales warehouse.
- An MRP or DRP run indicates that the stock is low at a production warehouse. This results in an automatically created planned distribution order. The planned order is released to a distribution order and should be distributed from a supplying warehouse.

## Before you start

The conditions stated in these documents must be fulfilled:

See [Basic Settings for Requisition and Distribution Order](#) on page 338

See [Settings for Distribution Orders](#) on page 110

## Follow these steps

### Planned distribution order

A planned distribution order can be generated manually in 'Planned Distribution Order. Open' (DPS170). An MRP or DRP run can also generate the planned order.

- 1 Open 'Planned Distribution Order. Open' (DPS170) and enter a new planned distribution order. Select the A panel (can be done by using F17=Create). Fill in the 'From warehouse', 'To warehouse' and 'Item number' fields.  
A predefined information view can be displayed if (DPS170) is opened from another program via an option. See .
- 2 Open the E panel. Fill in the 'Planned delivery date', 'Planned quantity' and 'Order type' fields.  
The default order type is defined in (MMS002/E).
- 3 Press Enter and the (DPS170/A) panel is redisplayed. Select the B panel as the opening panel.
- 4 Open the (DPS170/B) panel and specify option 11=Release.  
This will release the planned distribution order to a distribution order, which is displayed in 'Req/Distr Order. Open' (MMS100).
- 5 You can also release several orders by using F14=Create DO.

### Distribution order entry

- 1 Open 'Req/Distr Order. Open' (MMS100) to enter a new distribution order.
- 2 Enter ET123 as the panel sequence. Use F13 to start the (MMS100/P) panel. Select the A panel. Fill in the 'Order type' field.
- 3 Fill in the Warehouse field (the from warehouse). Fill in the 'To warehouse' field.  
You do not have to fill in the 'To location' field. If it is left blank, the default location from 'Warehouse. Open' (MMS005) is used.  
**Note:** If the order is created automatically from a planned order by an MRP or DRP run, then the 'To warehouse' field is filled in by default.
- 4 On the 'Req/Distr Order. Open Lines' (MMS101/B), you have the option to fill in the 'View' field and start 'View. Open' (CRS020).
- 5 Define a view. The user-designed view is displayed on the (MMS101/B) panel. If it is blank, the standard screen will be displayed.
- 6 The 'Panel sequence' field is defaulted from the order type (CRS200).
- 7 Fill in the 'Item number' and Quantity fields. The Location field is optional.
- 8 From the (MMS100/B) and (MMS101/B) panels, you can use option 44='Delivery line' to note your delivery number. This option starts 'Delivery. Open Line Toolbox' (MWS411).

- 9** Pre-allocation can be done for transaction type 41 by using option 39=Pre-allocation on the (MMS101/B) panel. This starts 'Pre-Allocation. Perform Detailed' (MWS121).
- 10** Press Enter and the created order line is displayed at the top of the panel. Select Finish and 'Req/Distr Order. Connect Delivery Addr' (MMS110/E) is displayed.
- 11** The 'Delivery term', 'Delivery method' and 'Delivery address' fields are displayed on the (MMS110/E) panel. These fields are retrieved from 'Distribution Relation. Open' (DPS001). It is possible to make changes here. Press Enter. The (MMS100/A) panel is redisplayed. Select the B panel as the opening panel.
- 12** On the (MMS100/B) panel, the values in the 'Lowest status' and 'Highest status' fields for the created distribution order depend on the settings in (CRS200), as well as on the status for the order line(s). The valid alternatives are:
  - 10 = Material plan updated. Allocation cannot be done.
  - 22 = Quantity is not allocated.
  - 33 = Quantity is fully allocated.
  - 23 = Some quantity remains to be allocated and some is fully allocated.
  - 44 = Picking list is printed.
  - 24 = A partial quantity remains to be allocated and part of the quantity is printed to a picking list.
  - 50 = Quantity is moved to a packing location (optional).
  - 60 = Quantity is moved to a docking location (optional).
  - 66 = Picking list is reported and the goods are in transport (in (MMS420), status 70).
  - 69 = The receiving warehouse has received and put away part of the order.
  - 99 = The receiving warehouse has received and put away the entire order.
- 13** The complete registered order status is displayed on the (MMS100/B) panel. Depending on the settings in 'Req/Distr Order Type. Open' (CRS200), the statuses can be:
  - 22 = Quantity remains to be allocated
  - 33 = Completely allocated
  - 44 = Picking list released
  - 99 = Transaction complete.

### Pre-allocation, allocation and dispatch handling

- 1** The allocation and dispatch rules regarding requisition orders with transaction type 41='Take out from stock' are the same as for customer orders and distribution orders.
- 2** Allocation and dispatch can be done and set up in many different ways. For more descriptions, refer to these documents:
  - See [Allocation and Cross-Docking Concepts](#) on page 275
  - See [Dispatch Handling](#) on page 403

### Goods receiving and put-away at the receiving warehouse

- 1** M3 manages goods receiving and put-away for requisition and distribution orders in the same way. See [Goods Receiving DO/RO Using Different Methods](#) on page 251.

# Internal Orders including Requisition and Distribution Orders

This principal process document explains the routines for internal orders. There are two types of internal orders: requisition and distribution. Both types of orders are executed in 'Req/Distr Order. Open' (MMS100), but use different order types. There are several parameter settings for these user-specific order types, which are set in 'Req/Distr Order Type. Open' (CRS200).

## Outcome

A requisition order results in a withdrawal from stock or an additional stock transaction.

A distribution order results in a shipment between two different warehouses.

These are the uses of a requisition order:

- Claim, shipping back to the supplier
- Shipping material to a subcontractor
- Miscellaneous (or even routine) issues of stock from warehouse. Examples: stationery tools, disposable materials (gloves, paper, towels, etc.).

These are the uses of a distribution order:

- Shipping between locations in different warehouses
- For multilevel distribution networks, this function can continue down through the various levels of regional warehouses
- The warehouses can be placed in the same facility or they could belong to different facilities
- The facilities may belong to the same or different divisions. If the facilities belong to different divisions, there is an M3 configuration called Multiple Unit Coordination (MUC).

The (MGHEAD) and the (MGLINE) tables manage requisition and distribution order heads (MMS100) and lines (MMS101). The (MGTYPE) table manages the requisition and distribution order types (CRS200).

## Before you start

Basic data for item and inventory are set.

## Follow these steps

- 1 An order head is created in 'Req/Distr Order. Open' (MMS100).
- 2 Order lines are created in 'Req/Distr Order. Open Lines' (MMS101).
- 3 A quick entry, which enables you to specify all necessary data on only one panel, is done on the (MMS100/N) panel. The N-panel must be selected as the opening panel.

If the requisition order is a withdrawal from stock (transaction type 41), then this stock must be allocated. Allocation can be automatic or manual, and set up in different ways. See [Allocation and Cross-Docking Concepts](#) on page 275.

If the requisition is a stock transaction type 40='Put into stock', no allocation is performed.

- 4 Dispatch flow (release for picking, pack, pick, report picking) is also only performed for requisition orders that result in withdrawal from stock. Dispatch can be automatic or manual, and set up in different ways. See [Dispatch Handling](#) on page 403.  
If the requisition is put into a stock transaction, no dispatch is performed.
- 5 For the requisition order that is a put into stock transaction goods are placed at the location(s) in 'Goods Receipt DO/RO' (MWS440).

#### Workflow for distribution order

- 1 Distribution order proposals are specified and released in 'Planned Distribut Order. Open' (DPS170).
- 2 Distribution orders are specified and released in 'Req/Distr Order. Open' (MMS100).
- 3 Order lines are created in 'Req/Distr Order. Open Lines' (MMS101).
- 4 Delivery addresses are specified in 'Req/Distr Order. Connect Delivery Addr' (MMS110).
- 5 A quick entry, which enables you to specify all necessary data on only one panel, is done on the (MMS100/N) panel. The N-panel must be selected as the opening panel.
- 6 Allocation can be automatic or manual, and set up in different ways. See [Allocation and Cross-Docking Concepts](#) on page 275.
- 7 Dispatch (release for picking, pack, pick, report picking) can be automatic or manual, and set up in several ways. See [Dispatch Handling](#) on page 403.
- 8 The receiving warehouse reports the receiving and put away of the goods in 'Goods Receipt DO/RO. Report' (MWS440), 'Goods Receipt DO/RO. Open Toolbox' (MWS442), 'Goods Receipt DO/RO. Report Packages' (MWS443), 'Goods Receipt DO/RO. Report Packages Det' (MWS444), and 'Goods Receipt DO/RO. Report Details' (MWS445).

## Mass Change Aggregated Distribution Order Lines

This procedure is used to aggregate distribution order lines in 'Req/Distr Order. Open Lines' (MWS301) and simultaneously change information contained in several distribution order lines in one process.

The aggregated change functionality is accessible through the basic option "Change" in (MWS301/B). In order to update many distribution order lines an aggregated sorting order is required

Fields that can be changed this way are:

- Transaction date
- Joint delivery
- Reason
- To location
- Department
- Reference
- Project number
- Project element

This procedure also enables mass close and mass delete of distribution order lines on an aggregated level.

## Limitations

When an update is performed, a batch job is created. The lines are processed one after another, but during this time the lines are locked. When the lines are locked, you cannot validate any of them. If you validate the locked lines, they will get a failed status. You can view the reason for the failed lines using action F17 – "Display Error Log" in (MWS301).

## Follow These Steps

### **Change aggregated distribution order lines in MWS301.**

- 1** Start 'Req/Distr Order. Open Lines' (MWS301).
- 2** Choose an aggregated sorting view.
- 3** Select an aggregated line and use the basic option "Change". (MWS301/E) is opened.
- 4** On (MWS301/E), you can define a new value for different fields. Each field shows a check box, which you should select in order to update the corresponding field. You can select the check box and leave the corresponding field blank in order to update the field with a blank value.
- 5** Use action 'F16 – Validate' to simulate the update.
- 6** Information is shown regarding the number of lines affected and how many of them failed the simulation. Action 'F17 – Display Error Log' is visible if there are failed order lines and can be used to access more information about the cause of the failure.
- 7** Use action 'F14 – Update' to update the distribution order lines contained in the selected aggregated line. The distribution order lines that failed the simulation will not be updated. This action can also be used without using action 'F16 – Validate' first.

### **Delete aggregated distribution order lines in MWS301.**

- 1** Start 'Req/Distr Order. Open Lines' (MWS301).
- 2** Choose an aggregated sorting view.
- 3** Select an aggregated line and use the basic option "Delete". (MWS301/E) is opened.
- 4** Use action 'F16 – Validate' to simulate the deletion.
- 5** Information is shown regarding the number of lines affected and how many of them failed the simulation. Action 'F17 – Display Error Log' is visible if there are failed order lines and can be used to access more information about the cause of the failure.
- 6** Use action 'F14 – Delete' to delete the distribution order lines contained in the selected aggregated line. The distribution order lines that failed the simulation will not be deleted. This action can also be used without using action 'F16 – Validate' first.

### **Close distribution order lines in MWS301.**

- 1** Start 'Req/Distr Order. Open Lines' (MWS301).
- 2** Select a non-aggregated or an aggregated line and use related option 24 – "Close Order Line". (MWS301/D) is opened.
- 3** Use action 'F16 – Validate' to simulate the close.

- 4 Information is shown regarding the number of lines affected and how many of them failed the simulation. Action 'F17 – Display Error Log' is visible if there are failed order lines and can be used to access more information about the cause of the failure.
- 5 Use action 'F15 – Close Lines' to close the distribution order lines contained in the selected aggregated line. The distribution order lines that failed the simulation will not be closed. This action can also be used without using action 'F16 – Validate' first.

## Requisition Order

A requisition order is an order used to fill an internal requirement at a warehouse when a shortage arises. It is also used for put-away and material issues that are not managed through the regular channels via customer orders, purchase orders or manufacturing orders.

All requisition orders are controlled by the requisition order type, which contains information on processing that is directly and indirectly related to an order.

## Requisition Order Flow

This document explains the requisition order flow.

It is recommended that you use requisition orders whenever something does not follow the normal flow of production within purchasing, manufacturing or delivery to the customer.

In 'Stock Transaction Type. Open Standard' (CRS205) specify which standard transaction type should be used for the requisition order flow.

The stock transaction types for requisitions orders are:

40 = Positive stock transaction. Put into stock.

41 = Negative stock transaction. Take out from stock.

In 'Req/Distr Order Type. Open' (CRS200) specify the flow for the requisition order based on a selected stock transaction type above.

### Outcome

A requisition order results when you take out from stock or put into a stock transaction.

The following are uses of this process:

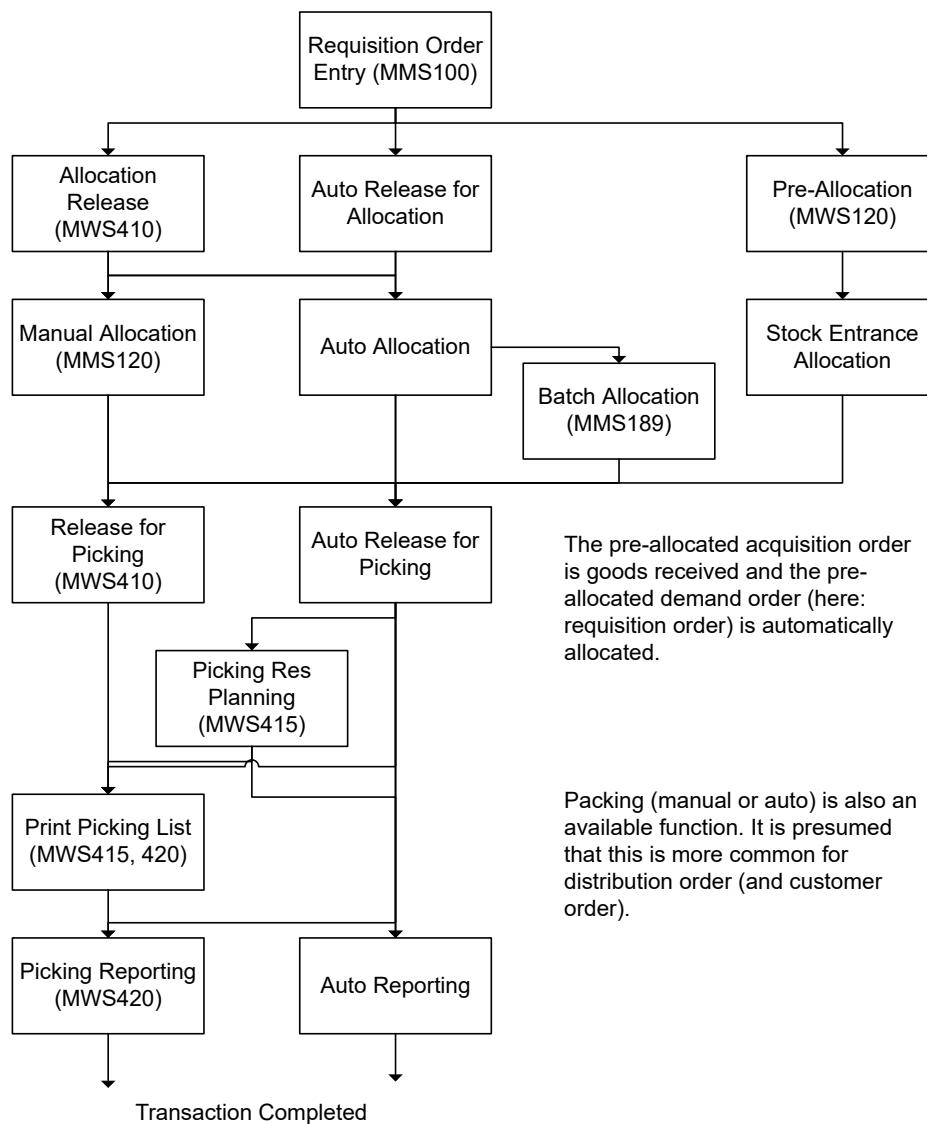
- Claim, shipping back to the supplier
- Shipping material to a subcontractor
- Miscellaneous (or even routine) issues of stock from warehouse. Examples are items such as stationary tools, disposable materials (gloves, paper, towels, etc.).

All physical stock transactions are stored in the MITTRA table. The requisition order is using the MGHEAD table for the order head and the MGLINE table for the order lines.

### Before you start

The conditions in [Basic Settings for Requisition and Distribution Order on page 338](#) must be fulfilled.

### Workflow for Requisition Order-Take Out from Stock (transaction type 41)



### 1 Create Order Head and Lines

An order head is created in 'Req/Distr Order. Open' (MMS100).

Order lines are created in 'Req/Distr Order. Open Lines' (MMS101). The B panel has several options, for example: 11 = Allocate, 12 = Display change log, 21 = Available check, 44 = Delivery line.

If you click twice in the 'Item number' field, 'Item Toolbox. Open' (MMS200) will start.

If you click in the 'Transaction Quantity' field, 'Balance Identity. Open Toolbox' (MWS068) will start. Your on-hand balance is displayed here.

A quick entry, which enables you to enter all necessary data on only one panel, is done in the (MMS100/N) panel. The N panel must be selected as the opening panel.

## 2 Allocate

Allocation can be more or less automatically or manually performed. Allocation can be done and set up in several ways. See [Allocation and Cross-Docking Concepts](#) on page 275.

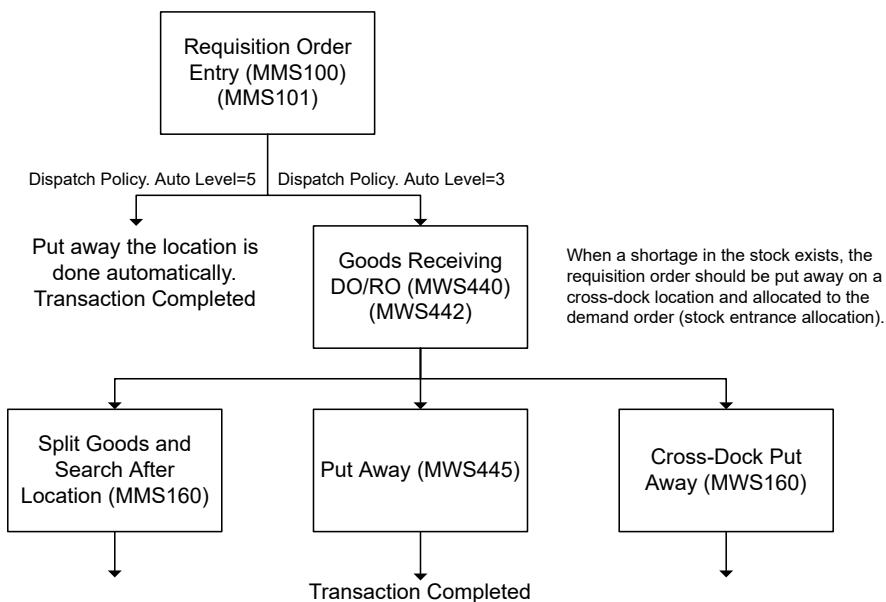
## 3 Pre-Allocate

If there is a shortage in stock and you can not allocate the total order quantity, then you can perform a pre-allocation. This means that you pre-allocate to an acquisition order, which includes the same item numbers as your requisition order (demand order). See [Allocation and Cross-Docking Concepts](#) on page 275.

## 4 Dispatch

The dispatch handling can be more or less automatically or manually performed. Dispatch can be done and set up in several ways. See [Basic Settings for Dispatch Handling](#) on page 300.

### Workflow for Requisition Order—Put Into Stock (transaction type 40)



## 1 Create Order Head and Lines

An order head is created in 'Req/Distr Order. Open' (MMS100).

Order lines are created in 'Req/Distr Order. Open Lines' (MMS101).

A quick entry, which enables you to enter all necessary data on only one panel, is done in the (MMS100/N) panel. The N panel must be selected as the opening panel.

## 2 Automatic Goods Receiving and Put Away

If the order type (CRS200) has a dispatch policy (MWS010) connected with Auto level = 5, then the transaction is completed now. Put away on the location is done automatically, and the order status is 99=Transaction completed.

### 3 Manual Goods Receiving and Put Away

If the Auto level=3, then you must perform the put away on the location manually as described below.

The next step is to goods receive the requisition order. If you know the order number or the delivery number, use 'Goods Receipt DO/RO. Report' (MWS440).

If you want to display a list and make a search for the order or delivery number, use 'Goods Receiving DO/RO. Open Toolbox' (MWS442).

Put away on a location is done in 'Goods Receiving DO/RO. Report Details' (MWS445).

### 4 Split Goods and Search for a Location

Split and put away the quantities on several locations and search after a suitable location in 'Location. Select' (MMS160).

See also [Goods Receiving DO/RO Using Different Methods](#) on page 251.

### 5 Put Away on a Cross Dock Location

If there is a shortage in stock and the requisition order should be put away on a cross-dock location and allocated to a demand order, then you will automatically display 'cross-Dock Selection Results. Open' (MWS160), when you perform goods receiving.

This is described in the [Allocation and Cross-Docking Concepts](#) on page 275.

## Requisition/Distribution Order Quick Entry

This document explains how you create a quick entry requisition/distribution order. This is done in only one panel for both order head and order line.

You can only enter one order line when you use the quick entry function.

### Outcome

- A requisition order (transaction type 40 or 41) is created and released.
- A requisition or distribution order (transaction type 40 or 51) is goods received and put into a stock location.
- A distribution order is created (transaction type 51).

The following are uses of this process:

- Claim, shipping back to the supplier
- Shipping material to a subcontractor
- Movement between two warehouses.

Requisition order head is stored in the (MGHEAD) table and the order lines in the (MGLINE) table.

### Before you start

The conditions in [Basic Settings for Requisition and Distribution Order](#) on page 338 must be fulfilled.

### Follow These Steps

- 1 Start 'Req/Distr Order. Open' (MMS100). Open the P panel by clicking F13=Settings.
- 2 On the P panel enter N=Fast entry in the 'Opening panel' field.
- 3 Press ENTER and (MMS100/N) is displayed.
- 4 Fill in the order type and item number. The Quantity field can also be filled in, if you do not fill in this field, you will be forced to enter the quantity on the (MMS101/B) panel.  
It is optional to fill in the Location field, which specifies the location from which the quantity will be allocated
- 5 Press Enter, the requisition order is now created. Open the (MMS100/P) panel and select the B panel as the opening panel. You can now display the created order on the (MMS100/B) panel.
- 6 It can occur that the (MMS100/F) panel would be displayed, for example, if the system has a warning message. Press Enter again, and the order is created.  
Note: By using the quick entry you create an order with only one order line. You can add order lines by using 'Req/Distr Order. Open Lines' (MMS101).

## Settings for Distribution Orders

This settings document explains the distribution order settings.

### Outcome

The basic settings for running a distribution order are provided.

Distribution orders are used for movement between warehouses.

### Before you start

The conditions in [Basic Settings for Requisition and Distribution Order](#) on page 338 must be fulfilled.

### Follow these steps

#### Settings for item/warehouse (MMS002)

- 1 Open 'Item. Connect Warehouse' (MMS002/E). Specify this information for the supplying warehouse:
  - '**Acquisition code**' is set to 1 or 2.
  - '**Planning method**' depends on whether an MRP run or reorder point planned per item/warehouse should trigger the demand. It can also be an order-driven demand. This means that distribution orders are only triggered, created and released by a requiring order.
  - '**Master scheduled**' is set to 1.

- 2 Specify this information for the supplied (sales) warehouse:
    - '**Acquisition code**' is set to 3.
    - '**Planning method**' is set to 1.
    - '**Master scheduled**' is set to 1.
    - '**Order type**': stock transaction type 51. In (CRS200), this is user-defined.
    - '**Supplying warehouse**
  - 3 Open the (MMS002/G) panel for the supplied warehouse. The '**Distribution/Supplier calendar check**' field controls what will happen with demands that do not have a due date according to the shipment calendar. Refer to 'Warehouse. Update Distribution Days' (DPS002).
 

These alternatives are valid:

0 = Distribution calendar is not used.

1 = Delivery date is determined according to backward scheduling.

2 = Delivery date is determined according to forward scheduling.

3 = Delivery date is determined to the closest date.
  - 4 The '**Distribution group**' field is used to group similar items that are distributed to the same warehouse. Distribution groups are defined in 'Distribution Group. Open' (CRS107).
  - Warehouse (MMS005)**
  - 5 Open 'Warehouse. Open' (MMS005/F) for the supplied (sales) warehouse. In the '**To locations**' field, provide a default location to suggest as the receiving location during the distribution order entry flow.
  - Stock zone (MMS040)**
  - 6 On 'Stock Zone. Open' (MMS040/E), set the '**Print package label**' field with 'Yes', 'No', or 'Yes, print package labels in batch' that depends on whether the package label is to be printed for the stock zone in question.  
**Note:** This setting only applies when using package-based receipt.
  - 7 **Distribution relations (DPS001)**  
 If distribution requirement planning (DRP) is to be used, the '**Planning method**' field is set to either 1, 2, or 3 on (MMS002/E). Then, a relation between the supplying and the receiving warehouse must be defined.
  - 8 If an item is distributed from several warehouses, a distribution group and/or item can define the relative share from each respective warehouse. This is completed in 'Distribution Relation. Open' (DPS001).
  - 9 Open (DPS001). The '**Relation type**' field indicates the defined relation as follows:
 

1 = Distribution between two warehouses. When this relation is created, the 'Group identity' field is left blank.

2 = The relation is maintained by the distribution group (entered in (MMS002/G)). The 'Group identity' field is filled in by default.

3 = The relation is maintained per item number and warehouse. This relation is, in fact, an exception within the distribution group. This relation is only valid when it is covered by the exception on (CRS107/E).
  - 10 For each relation, you can maintain the transport times and a distribution calendar. If a calendar should be used, the '**Distribution/Supplying calendar**' field must be set to either 1, 2, or 3 on (MMS002/G).  
**Note:** Distribution group and unique distribution relations are only allowed if the items have multiple supplies activated on (MMS002/G).
- Distribution relations Type 1 (DPS001/E)**

- 11** Open (DPS001/E). The '**Transportation time**' field defines the transportation time between two warehouses in days. The number of transportation days is considered when calculating the available date for the receiving warehouse.
- The '**Transportation hours**' field is for information only. The '**Documents needs**' field indicates whether documents are used in the distribution flow and how they will be created.
  - The '**Forward agent**' field indicates the transport firm, if used. The '**Delivery method**' field indicates the transportation method. It is defined in (CRS070).
  - The '**Delivery term**' field indicates when the responsibility for a delivery is transferred from the supplier to the customer (receiving warehouse). It is defined in (CRS065).
  - The '**Weight capacity**', '**Volume capacity**' and '**Container capacity**' fields indicate average values that could be sent each day between two warehouses.
  - If a distribution calendar is used, the permitted days of delivery are specified in the '**Permitted delivery days**' fields. These days will be default delivery dates when the distribution calendar is created in (DPS002). Creation is done through function key F14.
  - The '**Individual distribution calendar**' field indicates whether a distribution calendar exists.

#### Distribution relation types 2 and 3 (DPS001/E)

- 12** Open (DPS001/E). The '**Relative share**' field indicates what share of the requested quantity is scheduled to be supplied from the specified warehouse.

#### Distribution days (DPS002)

- 13** Open 'Warehouse. Update Distribution Days' (DPS002), which is started through option 11 on (DPS001/B) or when function key F14 on (DPS001/E) is used to create a distribution calendar.

The table on the B panel displays all defined distribution days between two warehouses. These days are either specified manually or generated according to the valid delivery days set on (DPS001/E). Exceptions can be made by adding or deleting existing dates.

#### Distribution order types (CRS200)

- 14** Distribution order types are set in 'Req/Distr Order Type. Open' (CRS200). Refer to [Basic Settings for Requisition and Distribution Order](#) on page 338.

## Transportation Lead Time For Purchasing and Distribution

This document explains the settings for transportation lead time. Transportation lead time is the time it takes to ship the goods from the supplier to the buyer's final address.

Transportation lead time is used for purchased and distributed items, not for manufactured items.

For each transportation method you can define a transportation lead time. For example, truck and train ship a delivery from the supplier, so you define the lead time for the both transport methods.

#### Outcome

The transportation lead time is set depending on the delivery responsible type, defaulted delivery terms and the delivery method.

Transportation lead time is specified for purchased items via supplier's term of delivery and delivery method. For distributed items it is specified transportation timetable (ITTRDY/MITDRT).

Transportation Lead Time For Purchasing and Distribution is used

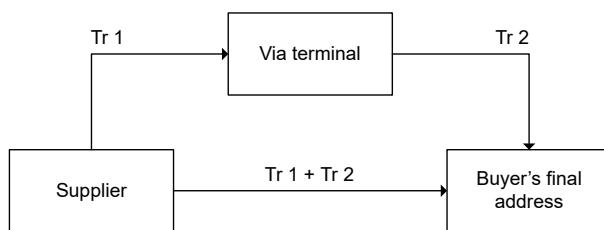
- to define the time it takes to ship the goods from the supplier to the buyer's final address.
- as a lead time component to calculate the total lead time per item/warehouse connection.

### Before you start

- Basic data for item and inventory management must have been set.
- The 'Acquisition code' field in 'Item. Connect Warehouse' (MMS002) is set
- Basic data for the supplier are set in 'Supplier. Open' (CRS620)
- 'Delivery term' and 'Delivery method' fields are specified in 'Supplier. Define Purchase & Financial' (CRS624).
- The 'Delivery term' field is set in 'Delivery Term. Open' (CRS065)
- The 'Delivery method' field is set in 'Delivery Method. Open' (CRS070)
- For transportation lead time between warehouses, when using distribution orders, the distribution relation must have been defined in 'Distribution Relation. Open' (DPS001)
- The 'Place of load' field in 'Place. Open' (MMS008) is set.

### Follow these steps

- 1 Transportation lead time for purchasing (Acquisition code 2 in MMS002/E):
  - a Start 'Supplier. Open' (CRS620), select option 13 which calls 'Supplier. Define Purchase & Financial' (CRS624).
  - b In (CRS624), select option 14 which calls 'Supplier. Connect Transp Lead Times' (PPS010).
  - c Fill in the fields on the B panel.
  - d Enter the E panel and enter mandatory and significant data for transportation lead time for purchasing.
  - e The total transportation lead time is displayed on the (MMS002/E) panel.
- 2 Transportation lead time for distribution between warehouses (Acquisition code 3 in MMS002/E):
  - a Start 'Distribution Relation. Open' (DPS001). Fill in the 'Transportation time' field on the E panel.
  - b The transportation lead time is displayed on the (MMS002/E) panel.



### Parameters to set

#### Purchasing (Acquisition code = 2 in MMS002/E)

<b>Program ID/ Panel</b>	<b>Field</b>	<b>This field indicates ...</b>
(PPS010/B)	Delivery terms	...the delivery term, which indicates when the responsibility for a delivery is transferred from the supplier to the customer. This calls 'Delivery Term. Open' (CRS065).
(PPS010/B)	Delivery method	...how the delivery is made.
(PPS010/B)	Place of load	... the transport lead time for this supplier and place of load.
(PPS010/E)	Goods responsibility	<p>From 'Supplier. Open' (CRS620/B) option 13, calls 'Supplier. Define Purchase &amp; Financial' (CRS624). From (CRS624) option 14 calls (PPS010/B)</p> <p>The transportation lead time depends on the goods responsibility type.</p> <p>If the buyer assumes liability when the goods leave the supplier's inventory (1) the total transportation lead time in (MMS002/E) will be Tr1+Tr2.</p> <p>If the buyer assumes liability when the goods are received at the buyers transport address (2) only Tr 2 will be included in the transportation lead time.</p> <p>If the buyer assumes liability when the goods are received at the buyer's final address (3), no transportation lead time will be included.</p>
(PPS010/E)	Transportation lead time 1 (Tr 1)	<p>...the number of workdays needed to transport from the supplier to the transport station (via terminal).</p> <p>Also indicates the number of workdays for order processing, from the time the purchase order is sent to the supplier until the goods are dispatched to the transport station (via terminal).</p>

<b>Program ID/ Panel</b>	<b>Field</b>	<b>This field indicates ...</b>
(PPS010/E)	Transportation lead-time 2 (Tr 2)	<p>...the numbers of workdays needed from when the goods are sent from the transport station (via terminal) to the buyer's final address.</p> <p>Tr 1 plus Tr 2 gives the total transportation lead time, in workdays, from when the purchase order is sent to the supplier until the goods are received at the final address.</p>

**Distribution between two warehouses (Acquisition code = 3 in MMS002/E)**

<b>Program ID/ Panel</b>	<b>Field</b>	<b>This field indicates ...</b>
(DPS001/E)	Transportation time	...the numbers of workdays calculate as necessary to transport items between two warehouses.

## Chapter 3: Managing Items

### Alias Number

#### Definition

An alias number is an alternative ID for one or more item numbers. The alias number can be used during order entry for customer, service, requisition, or distribution order lines.

An item number can have more than one alias number and the same alias number can be used for more than one item number.

When an alias number connected to more than one item number is entered, the items are displayed during order line entry in 'Customer Order. Open Line' (OIS101/E).

Alias numbers can be used in the following programs:

- 'Customer Order. Open Line' (OIS101)
- 'Req/Distr Order. Open Lines' (MMS101)
- 'Item. Open Toolbox' (MMS200)

Alias numbers are entered and updated in 'Item. Connect Alias Number' (MMS025).

#### Uses

The examples below illustrate the alternative aliases that can be entered for an item number.

- Catalogue page where the item is entered
- User-defined search ID for items
- EAN number

### Alias Number for Items

This supporting function is used to specify an alias number for items. An alias number is an alternative ID for an item and functions as a different search path for the item number.

#### Before you start

This supporting function can be used when the items are specified in 'Customer. Open' (CRS610).

### Description

An alias number is used as an alternative ID for an item number so the item can be identified even when its number is unknown. Alias numbers are primarily used to specify items during order entry such as for customer orders, distribution orders, service orders, etc.

An item can have an unlimited number of alias numbers connected to it and an alias number can be connected to more than one item. These connections (search paths) are saved in the MITPOP file.

Alias numbers are specified and updated in 'Item. Connect Alias Number' (MMS025). A default quantity for order entry can also be specified for an alias number in this program.

### Alias type

Every alias number in the alias file is connected to an alias type to facilitate processing. The alias type regulates both the way records are created in the file and the search order in the alias file.

### Automatically created alias numbers

Alias numbers are automatically created when an item is specified in these programs:

- 'Supplier. Connect Item' (PPS040) - automatically creates alias type 05 (supplier's item number).
- 'Customer. Connect Item' (OIS005) - automatically creates alias type 06 (customer's item number).
- 'Assortment. Connect Items' (OIS072) - automatically creates alias type 07 (assortment).

## Alias Type

An alias type is a grouping of alias numbers with similar characteristics. When entered, alias numbers are connected to an alias type which indicates the origin of the number.

If EAN numbers are used often, a specific alias type for them can be entered.

### Description

An alias type can be used as a search ID. When this is done during customer order entry, the customer numbers are sorted according to the alias numbers in the alias type.

Examples of alias types:

- EAN number
- Supplier delivery number
- Internal delivery number
- Customer order number

# Archive or Delete Items

This document explains how you archive or delete items that are no longer in use. When you archive or delete items, you can keep your registers up to date.

In order to avoid archiving or deleting items that are still in use, you can define different checks that will be performed automatically.

This document also explains how you delete the product costing data connected to the archived item, and how you delete fashion items (styles, SKUs, and so on).

## Outcome

- The item is either archived in a library or deleted.
  - The item has status 90 (Item no longer stocked).
  - The product costing data connected to the archived item is deleted.
- Archived and deleted items are stored in the CJBCMD file.

This routine is used to keep your item master up to date.

## Before you start

The basic settings for item archiving and deletion must be defined. See [Settings for Item Archiving and Deletion on page 217](#).

## Follow these steps

### Specify type of selections

- 1 Start 'Item - Qualify for Filing/Deletion' (MWS810/B).
- 2 Set the panel sequence:
  - Alternative 1=E, F (Settings, selections From-To)
  - Alternative 2=E, G (Settings, specified selections)
  - Alternative 3=E, H (Settings, fashion selections).All three alternatives have the E panel in common.

**Note:** For detailed instructions on deleting fashion items, see the section [Delete Style and SKUs](#).
- 3 Select 1=Create.
- 4 Press Enter. The E panel is displayed and an archiving/deletion number is created.
- 5 Fill in the Description field and press Enter.
- 6 Depending on the panel sequence you selected, different panels are displayed. See below:
  - **The F Panel=Selections From-To**  
Fill in the 'Warehouse From/To' fields, the 'Item number From/To' fields, and the 'Item type From/To' fields.  
**Go to Archive and Delete.**
  - **The G Panel=Specified Selections**

Fill in the 'Item number' field, the Warehouse field, and the 'Item type' field.

Go to **Archive and Delete**.

- **The H Panel=Fashion Selections**

The H panel is used for mass deletion/archiving in the fashion area.

Note: For detailed instructions on the deletion of fashion items, see the section 'Delete Style and SKUs.'

### **Archive and delete**

- 1 Press Enter. The (MWS810/B) panel is displayed again. The current status is 20 (In progress).
- 2 Press F5=Refresh. The status will be one of the following:
  - Status 30 (Completed with errors)
  - Status 40 (Completed, no errors).
- 3 Select option 22=Execute to continue the archiving and deletion of the item.
- 4 Press F5=Refresh. The item will receive status 90.

The archiving and deletion is completed when the status is 90 (Finished).

### **Analyze item archiving and deletion (Status 30=Completed with Errors)**

- 1 If the item status is 30 (Completed with errors), you can analyze the problem.
- 2 Start 'Item. Qualify for Filing/Deletion' (MWS810). Select option 23=Analyze. This starts 'Item Filing/Deletion Analysis' (MWS811).
- 3 If there are problems with the archiving or deletion of certain items, you might want to select option 4=Delete for those items.
- 4 Then return to (MWS810/B) and select option 21=Qualify before pressing Enter. The status of the item will now be 40 (Completed, no errors).

### **Delete product costing data connected to the archived item**

- 1 Currently, product costing data cannot be archived according to the field item since no archiving routines currently exist. Instead, you must delete records in the costing files using 'Product Costing. Delete' (PCS270). It is recommended that you select the following values on the E panel:
  - Deletion type 2: In addition to the detail files, the total record for the costing ID is deleted.
  - Save previous 0: Whether the last costing ID of the specified costing type should be saved, regardless of the costing date.

The following files are deleted by running PCS270:

- MCCWAR (Calculation warnings)
- MCBOMS (Saved costing fields material)
- MCCMAT (Material costing components Standard cost)
- MCSEM (Semi-finished material cost components Standard cost)
- MCROUS (Saved costing fields operations)
- MCCOPE (Operation costing components Standard cost)
- MCCOMA (Costing components aggregated)
- MCCOML (Costing components this level)
- MCCOPU (Purchase costing file)

- MCHEAS (Saved costing fields header)
- MCHEAD (Costing header file)
- Attached texts (attached via TXID) cleaned up in MSYTXH (Text header file) and MSYTXL (Text line file).

### Delete style and SKUs

- Delete all SKUs when acquisition code is 1 or 2

These steps apply to deletion when all SKUs have acquisition code 1=Manufactured or 2=Purchased in every warehouse (MMS002/E).

- 1 Start 'Item. Qualify for Filing/Deletion' (MWS810).
- 2 On the (MWS810/B) panel, set panel sequence EH.
- 3 Create a new archiving/deletion round. The archiving/deletion number is automatically created.
- 4 Open the (MWS810/E) panel.  
Activate; Delete items, Delete style  
Deactivate; Delete alias
- 5 Open the (MWS810/H) panel.  
Fill in the style number. Leave the remaining fields blank (if you want to delete all SKUs). Press Next.
- 6 Perform the deletion. See **Archive and delete**.

Result: All SKUs are now deleted from:

MITMAS	MMS001
MITBAL	MMS002
MITFAC	MMS003
MITSUG	MMS076/077
MMMODMA	MMS016/017
MMMODFE	MMS017
MMMODCO	MMS018/028
MITMAH	Item hierarchy

- Delete all SKUs when acquisition code is 1 and 3

These steps apply to deletion when all SKUs have acquisition code 1=Manufactured in one warehouse (the production warehouse) and 3=Distributed in the rest of the warehouses (MMS002/E).

The SKUs must be deleted in the following order:

- 1. Delete SKUs in all warehouses with acquisition code 3.
  - 2. Delete the SKUs in the production warehouse with acquisition code 1 and in MITMAS.
- 1 Start 'Item. Qualify for Filing/Deletion' (MWS810).
  - 2 On the (MWS810/B) panel, set panel sequence EH.
  - 3 Create a new archiving/deletion round. The archiving/deletion number is automatically created.
  - 4 Open the (MWS810/E) panel.

- Deactivate; Delete item, Delete alias, Delete style
- 5 Open the (MWS810/H) panel.  
Fill in the style number, item number (if some SKUs should be deleted, if all should be deleted, leave this field blank), and warehouses. Press Next.
  - 6 Perform the deletion. See **Archive and delete**.
  - 7 Then you create a second deletion round with exactly the same settings as in "Delete all SKU's when acquisition code is 1 or 2". These will delete the SKUs in the production warehouse and in MITMAS.
- Delete Specific SKUs
    - 1 Start 'Item. Qualify for Filing/Deletion' (MWS810).
    - 2 On the (MWS810/B) panel, set panel sequence EH.
    - 3 Create a new archiving/deletion round. The archiving/deletion number is automatically created.
    - 4 Open the (MWS810/E) panel.  
Activate; Delete items  
Deactivate; Delete alias, Delete style
    - 5 Open the (MWS810/H) panel.  
Fill in the style number and item number. Press Next.
    - 6 Perform the deletion. See **Archive and delete**.

Result: Specific SKUs are now deleted from:

MITMAS	MMS001
MITBAL	MMS002
MITFAC	MMS003
MITSUG	MMS076/077
MMMODMA	MMS016/017
MMMODFE	MMS017
MMMODCO	MMS018/028
MITMAH	Item hierarchy
  - Delete SKUs in Specific Warehouses
    - 1 Start 'Item. Qualify for Filing/Deletion' (MWS810).
    - 2 On the (MWS810/B) panel, set panel sequence EH.
    - 3 Create a new archiving/deletion round. The archiving/deletion number is automatically created.
    - 4 Open the (MWS810/E) panel.
    - 5 Open the (MWS810/H) panel.  
Fill in the style number, item number, and warehouses. Press Next.
    - 6 Perform the deletion. See **Archive and delete**.
  - Delete Style only in Warehouses and Facility

This will delete the style from the MITBAL (MMS002) and MITFAC (MMS003) tables. The style will not be deleted from MITMAS (MMS001).

- 1** Start 'Item. Qualify for Filing/Deletion' (MWS810).
- 2** On the (MWS810/B) panel, set panel sequence EF or EG.
- 3** Create a new archiving/deletion round. The archiving/deletion number is automatically created.
- 4** Open the (MWS810/E) panel.  
To delete the style only, select the Delete style check box and clear the Delete alias and Delete item check boxes.
- 5** Open the F panel (or the G panel).
- 6** Enter the style number in the 'Item number' field. Leave the remaining fields blank. Press Next.
- 7** Perform the deletion. See **Archive and delete**.

#### Features on the (MWS810/H) panel

- Feature Connected to Quality
  - 1** Enter the ID of the feature connected to feature group Z in the Feature field.
  - 2** Enter the option connected to option group Z in the 'Option from and to' fields.
- Feature Connected to Sizes
  - 1** Enter the ID of the feature connected to feature group X in the Feature field.
  - 2** Enter the option connected to option group X in the 'Option from and to' fields.
- Feature Connected to Color
  - 1** Enter the ID of the feature connected to feature group Y in the Feature field.
  - 2** Enter the option that applies for the feature color in the 'Option from and to' fields.
  - 3** Enter the item numbers for which the archiving or deletion should be valid in the 'Item number from and to' fields.
  - 4** Fill in the 'Season from and to' fields. These are used to connect styles to the time periods for which the styles are valid.
  - 5** Fill in the 'Warehouse from and to' fields.

## Archive and Delete Lot and Sublot

This document explains how you archive and delete consumed lots and sublots.

For large companies, especially in the fresh food and beverage industries, the volume of lots and sublots can grow very quickly. To reduce the load on disk-space and improve performance while querying the tables in M3, there is a need to archive and delete consumed lots and sublots.

#### Outcome

Lot and subplot records are archived or deleted. Archived lots and sublots are saved in a user-defined library.

## Before you start

- A number series (43 E) must be added in 'Number Series. Open' (CRS165).
- An archive library must exist in the database.

## Description

Lot and subplot data archiving and deletion are divided into several steps.

In 'Lot Number. Archive/Delete' (MWS830), you create an archive round with a selection on item numbers or lot numbers.

The archive program first identifies the lots and sublots that qualify for archiving as per your selection. A lot number qualifies for archiving or deletion if there are no existing balance identities and stock transaction history records associated with the lot number.

When executed, a batch program performs the actual archive or delete operation.

The archived data is saved in a user-defined library.

The 'Arc/ del no' (archive or deletion number) field may contain one of these statuses:

- 10-'New'
- 20-'In progress'
- 30-'Completed, with errors'
- 90-'Finished'

## Follow these steps

Follow these steps to archive or delete lots and sublots:

- 1 Start 'Lot Number. Archive/Delete' (MWS830).
- 2 On the B panel, create a new 'Arc/del no'. The number is created automatically when you go to the E panel.
- 3 On the E panel, the '**Status**' field is set to 10='New'.
- 4 Make a selection using the item and lot number fields. Specify the '**Archive/delete**' field, select 1-'Archiving' or 2-'Deletion'.
- 5 Press Enter and the B panel is redisplayed. Select related option 9-'Run'.
- 6 The status is temporarily raised to 20-'In progress' while the archiving or deletion is in progress.
- 7 The end result is status 30-'Completed, with errors' or 90-'Finished'.

Follow these steps to analyze errors for archiving or deletion:

- 1 If the status on an 'Arc/del no' is 30-'Completed, with errors', analyze the run. To do so, select option 21-'Analyze' on the (MWS830/B) panel.
- 2 'Lot Number. Analyze Archived/Deleted' (MWS831) is started. On the B panel, the current archiving or deletion number and the lot numbers in error are displayed with a message explaining why archiving or deletion could not be performed.

Examples:

'Stock transactions still exist for lot number xx. Verify in (MWS070) and archive/delete via (MMS195)': Check in 'Stock Transaction. Display History' (MWS070) and, if relevant, archive those transactions using 'Stock Transaction. Archive' (MMS195).

'Balance IDs still exist for lot number xx.': Check in 'Balance Identity. Open Toolbox' (MWS068).

## Catch Weight and Cost Unit of Measure Settings

This document describes the settings required to support the catch weight functionality and cost unit of measure (U/M).

If necessary, reference the document for an introduction to the functionality available to support the concept of catch weight.

### Why use location based catch weight

- Catch weight follows the quantities on location as opposed to averages per lot.
- Costing is performed at a unit of measure other than basic unit of measure.
- Inventory evaluation is based upon catch weight rather than basic unit of measure.

### Outcome

Parameters for catch weight and costing unit are set.

### Restrictions

Parameter 'FoB-Food' must be specified at company level in 'Company. Open' (MNS095).

### Follow these steps

- 1 Set 'Industry parameter' field in 'M3 Company. Open' (MNS095) to 'FoB-Food'.
- 2 Activate the 'Override balance status' field in 'Settings - Warehouse Planning Control' (CRS701).
- 3 Set tolerance parameters in 'Item Group. Open' (CRS025), 'Settings - Physical Inventory Line' (MMS309) and 'Settings - Physical Inventory' (CRS717).
- 4 Activate catch weight fields in 'Item Type. Open' (CRS040) and 'Item Type. Select Fields' (MWS041).
- 5 Set alternate cost unit in 'Item. Connect Alternate U/M' (MMS015).
- 6 Activate cost unit in 'Item. Open' (MMS001), 'Item. Connect Facility' (MMS003) and 'Product Costing. Display' (PCS300).
- 7 Specify stock zone settings in 'Stock Zone. Open' (MMS040).
- 8 Specify the settings for 'catch weight' and 'catch weight cost' in:
  - 'Item Type. Open' (CRS040)
  - 'Item. Connect Alternate U/M' (MMS015)
  - 'Item. Connect Facility' (MMS003)
  - 'Picking List. Report' (MWS420/P)
- 9 Define panel versions to include catch weight information in:
  - 'Balance Identity. Open Toolbox' (MWS068)

- 'Stock Transaction. Display History' (MWS070)
- 'Item. Open Toolbox' (MMS200)

### Setting descriptions

Program ID	Field heading	Description
(MNS095/E)	Industry	Select 'FoB-Food' for the required company.
(CRS701/E)	Override balance status	Select the check box to enable override of the lot status with status per balance identity. Can only be used when the setting 'FoB-Food' is specified in (MNS095/E). Can be used for ordinary lots and catch-weight controlled lots.
(MMS040/E)	Two-step put-away	<p>Indicates whether two-step put-away is activated:</p> <p>'0=No'</p> <p>'1=Yes'</p> <p>'2=Staged'. IE. located at a receiving area, waiting to be directed to the correct put-away location during put-away confirmation.</p> <p>This activation occurs in the stock zone, and in the goods receiving method or order type. For purchase orders, the activation is in goods receiving method. For manufacturing orders and DO/RO orders, it occurs in the respective order types.</p> <p>Must be active in both the stock zone and the goods receiving method/order type for two-step put-away to commence.</p>
(CRS717/E)	Propose quantity	Select the check box if quantity is to be proposed when reporting physical inventory. Must be activated in order to report physical inventory line with empty location and no on hand balance.
(CRS717/E)	Enter Catch Weight	<p>Indicates if catch weight/physical inventory weight should be calculated based on the existing MITLOC record or entered manually. Alternatives:</p> <p>0 = Catch weight calculated based upon existing MITLOC record.</p> <p>1 = Catch weight must be entered when quantity is changed.</p>
(CRS025/E) (MMS309/E)	Tolerance percent	The field indicates the maximum variance tolerated of the expected weight per item group when a stock transaction is reported for a catch weight item. The variance is expressed as a percentage to two decimal places. This can also be set in (MMS309/E) per warehouse/Item.

<b>Program ID</b>	<b>Field heading</b>	<b>Description</b>
(CRS025/E) (MMS309/E)	Tolerance weight	The field indicates the maximum variance tolerated of the expected average weight per item group when a stock transaction is reported for a catch weight item. The variance is expressed in a unit of weight. This can also be set in (MMS309/E) per warehouse/item.
(MWS041/G)	Location Based CW	Select fields for (MMS001/G) Activate 'Loc-based CW'
(MWS041/1H)	Cost U/M	Select fields for (MMS001/H) Activate output fields for cost units of measure
(MWS041/1H)	Alternate U/M	Select fields for (MMS001/H) Activate output fields for new units of measure
(MWS041/1H)	Catch Weight U/M	Select fields for (MMS001/H) Activate output fields for new units of measure
(MWS041/2H)	Catch Weight - Approved ohb	Select fields for (MMS002/H) Indicates the on-hand balance in Catch weight U/M
(MWS041/2H)	Catch Weight - Rejected ohb	Select fields for (MMS002/H) Indicates the rejected on-hand balance in Catch weight U/M
(MWS041/2H)	Catch Weight - Inspection ohb	Select fields for (MMS002/H) Indicates the on-hand balance under inspection in Catch weight U/M
(MWS041/3E)	Catch Weight - Approved ohb Rejected ohb Inspection ohb	Select fields for (MMS003/E) Activate output fields for Catch Weight On-hand balance accumulators

Program ID	Field heading	Description
(MWS041/3E)	Catch Weight Cost	<p>Select fields for (MMS003/E)</p> <p>Indicates if the value for a specific transaction should be calculated based on the actual weight multiplied by the cost per weight. All stock transactions and internal accounting transactions will be created based on the actual weight and a cost expressed per weight unit. Internal accounting and general ledger transactions will continue to hold a quantity but this will be the actual weight-based quantity and not the quantity in the basic unit of measure.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>0 = No catch weight cost</li> <li>1 = Catch weight cost</li> <li>2 = Catch weight cost by facility</li> </ul> <p>If alternative 1 is selected, the standard weight of the product is the same across the company and the standard cost is calculated based on the weight conversion factor in (MMS015/E). If alternative 2 is selected, the standard weight of the product varies from facility to facility and the standard cost is calculated based on the weight conversion factor in (MMS003/E).</p> <p>Prerequisites for the catch weight cost are:</p> <ul style="list-style-type: none"> <li>Value in the (MNS905/E) 'Industry' field must be 'Fob-Food'.</li> <li>Value in the (MMS001/G) 'Active or catch weight item' field must be 2, 3, or 4</li> <li>Value in the 'Standard U/M – Catch weight' field must be equal to that in the 'Standard U/M – Cost' field in (MMS015/E)</li> </ul>

#### Setting for alternate cost unit

- Alternate cost unit can be used separately without catch weight.
- If catch weight is not activated, a fixed conversion between basic unit of measure and cost unit of measure will take place.

Program ID	Field heading	Description
(MMS015/B)	Alternate U/M type	The most common setting is to have both type 1 and type 2 set, where for example purchase and sales prices are set in same unit of measure as the CW unit of measure.

<b>Program ID</b>	<b>Field heading</b>	<b>Description</b>
(MMS015/B)	Alternate U/M	Indicates an alternate unit of measure (U/M) for the basic U/M of an item. An unlimited number of alternate U/Ms may be defined for each item.
(MMS015/E)	Std PO U/M	Indicates whether or not the alternative U/M is the standard purchase U/M. Select the check box if the alternative U/M is the standard purchase U/M. Standard purchase U/M is used when purchase U/M is not entered at purchase order entry. If standard purchase U/M is not defined, the basic U/M of the item will be used as purchase U/M.
(MMS015/E)	Std Pe U/M	Indicates whether or not the alternative U/M should be used as the standard product engineering U/M. Select the check box if the alternative U/M should be used as the standard product engineering U/M. Standard product engineering U/M is used when product engineering U/M is omitted when materials are entered in the structures. If standard product engineering U/M is not defined, the basic U/M of the item will be used.
(MMS015/E)	Std CW U/M	Select the check box if a catch weight U/M should be used as a standard U/M for the catch weight. If catch weight U/M is not defined, the basic U/M of the item will be used as the catch weight U/M. Catch weight U/M can only be entered for an item when 'Location based CW' is selected in (MMS001/G).
(MMS015/E)	Std CO U/M	Select the check box if the alternative U/M will be used as the standard sales U/M. Standard sales U/M is used when sales U/M is omitted during order line entry. If there is no standard sales U/M, the basic U/M of the item will be used as sales U/M during order line entry.
(MMS015/E)	Std St U/M	Select the check box if the alternative U/M should be used as standard statistics U/M. Standard statistics U/M is used both in the order entry and sales statistics. If no standard statistics U/M has been entered, the basic U/M of each item will be used in the statistics.

Program ID	Field heading	Description
(MMS015/E)	Std MO U/M	Select the check box if the alternative U/M should be used as the standard manufacturing U/M. Standard manufacturing U/M is used when manufacturing U/M is not entered in connection with the entry of receipts from manufacturing in the manufacturing order processing module. If standard manufacturing U/M is not defined, the basic U/M of the item will be used.
(MMS015/E)	Std Cost U/M	Select 'Alternate U/M' (defined on (MMS015/B)) as Std Cost U/M. Cost unit of measure is displayed in (MMS001/H). Cost unit is displayed in various programs, for example in (MMS003/E) and (PCS300/B).
(MMS003/E)	Inv Acc Method	Select Inventory accounting method.
(MMS003/E)	CW Cost	<p>The field indicates if the value for a specific transaction should be calculated based on the actual weight multiplied by the cost per weight. All stock transactions and internal accounting transactions will be created based on the actual weight and a cost expressed per weight unit. Internal accounting and General Ledger transactions will continue to hold a quantity but this will be the actual weight-based quantity and not the quantity in the basic unit of measure.</p> <p>Alternatives:</p> <p>0 = No catch weight cost</p> <p>1 = Catch weight cost. The standard weight of the product is the same across the company and the standard cost is calculated based on the weight conversion factor in (MMS015/E).</p> <p>2 = Catch weight cost by facility. The standard weight of the product varies from facility to facility and the standard cost is calculated based on the weight conversion factor in (MMS003/E).</p> <p>Prerequisites for the catch weight cost are:</p> <p>Value in the (MNS095/E) Industry field must be 'FoB-Food'.</p> <p>Value in the (MMS001/G) active or catch weight item field must be 2, 3, or 4.</p> <p>Value in the Standard U/M – Catch weight field must be equal to that in the Standard U/M – Cost field in (MMS015/E).</p>
(MMS001/E)	Lot control Method	For Catch Weight methods, lot in lot-master with alternative 3 should be selected.

<b>Program ID</b>	<b>Field heading</b>	<b>Description</b>
(MMS001/G)	Active/ Catch weight Item	Select from CW item 2 - 4.
(MMS001/G)	Location Based CW	Select the check box. This stores catch weight on the location level. If not selected, catch weight is stored on the lot level. In order to store catch weight on the location level, the alternative 'FoB-Food' must be selected in the Industry field in (MNS095).
(MMS001/H)	Cost U/M	The U/M in which the cost of the item is calculated and saved. In addition to the cost the inventory accounting price, acquisition cost, average cost, and internal transfer price are defined in the cost U/M. Every item has a cost U/M specified. For companies not in the Food and Beverage industry, the basic U/M is always used as the cost U/M and it cannot be changed. For companies in the Food and Beverage industry, an alternate U/M in (MMS015) can be defined to be the standard U/M for cost.
(MMS001/H)	Catch Weight U/M	The field indicates the catch weight U/M. The U/M in which the catch weight of the item is saved. For Food & Beverage customers who use location based catch weight, an alternative U/M for catch weight can be created.

#### Define panel version for catch weight on (MWS068) and (MWS070)

<b>Program ID</b>	<b>Field heading</b>	<b>Description</b>
(MWS068/B)	CW Balance ID/Lot CW	Old catch weight fields calculated from lot master MILOMA (&LCAWE and &BCAWE). Remove &LCAWE and &BCAWE when new location based catch weight is used. Instead add Catch Weight from balance ID table MITLOC (MLCAWE)
(MWS070/B)	Catch Weight OHB on trans date	Select these fields for stock: Catch Weight OHB on trans date – MTCWTT
	Catch Weight OHB on reg. date	Catch Weight OHB on reg. date - MTCWTQ
(MWS070/B)	Costing unit of measure	Select these fields for costing:
	Costing quantity for transaction	Costing unit of measure – MMCPUN Costing quantity for transaction- MTCSQT

Program ID	Field heading	Description
(MMS200/B)	Different Catch Weight fields	<p>The following fields are available to support catch weight:</p> <ul style="list-style-type: none"> <li>• MMCAWP - Location based Catch weight</li> <li>• MMCWUN – Catch weight U/M</li> <li>• MMCPUN – Costing U/M</li> <li>• MBQUCW – Catch weight under insp per warehouse</li> <li>• MBRJCW – Rejected catch weight per warehouse</li> <li>• MBSTCW – Catch weight on hand per warehouse</li> <li>• M9QUCW – Catch weight under inspection per facility</li> <li>• M9RJCW – Rejected catch weight per facility</li> <li>• M9STCW – Catch weight on hand per facility</li> </ul>

#### Display catch weight fields on (MWS422/B), (MWS440/A), and (MWS445/B)

This table describes the available catch weight fields in programs 'Picking List. Report Lines' (MWS422/B), 'Goods Receipt DO/RO. Report' (MWS440/A), and 'Goods Receipt DO/RO. Report Details' (MWS445/B).

Program ID	Field heading	Description
(MWS420/P)	Propose weight	<p>Indicates how catch weight is displayed in 'Picking List. Report Lines' (MWS422).  If Propose Weight = 0:  The catch weight field is open in (MWS422/B) and proposed CW=allocated weight. This reflects the weight at the time for allocation and can be changed.  If Propose Weight = 1:  The catch weight field is closed in (MWS422/B). Calculated and issued CW = Avg CW per unit on balance ID * issued quantity. This reflects the actual weight recorded in MITLOC (MWS068).</p>
(MWS445/P)	Propose weight	<p>Deactivated check box: If not populated, the catch weight field is opened for editing in (MWS445/B), but not proposed.  Activated check box: If populated, the catch weight field is opened for editing in (MWS445/B), and the weight is displayed reflecting the actual weight recorded in MITLOC (MWS068).</p>

Program ID	Field heading	Description
(MWS440/P)	Propose weight	<p>Indicates whether the catch weight from pick list reporting (MWS422) should be proposed as the default during DO receipt.</p> <p>If the catch weight should be proposed as default (alternatives 1 and 2 below), the fields on the (MWS440/A) panel must be entered based on the receipt of a single line.</p> <p>0 = No. Not proposed as default.</p> <p>1 = Yes. Propose catch weight as default, but do not show the A panel again unless there is an error.</p> <p>2 = Yes. Propose catch weight as default, and re-display the A panel so that the retrieved catch weight is displayed.</p> <p>This reflects the actual weight recorded in MITLOC (MWS068).</p>

## Catch Weight Loss Transactions

This document describes the activities that trigger the creation of catch weight loss transactions.

These transactions can be viewed in 'Stock Transaction. Display History' (MWS070).

If necessary, reference the document for an introduction to the functionality available to support the concept of catch weight.

### Catch Weight Loss Transactions (CWA 95) displayed in (MWS070)

The activities that trigger the creation of catch weight loss transactions are as follows:

- 'Catch Weight Item. Update Weight' (MMS360) is ran, regardless of whether catch weight is increased or decreased.
- 'Movement. Change Location - Balance ID' (MMS177) is ran and an update performed so that 'Qty=0', there is a CW rest, and:
  - More than CW is moved on location.
  - Less than CW is moved on location.
- 'Physical Inventory. Perform' (MMS300) is ran and stock take is performed so that Qty=0, there is a catch weight rest, and:
  - More than CW is reported on location.
  - Less than CW is reported on location.
- 'Physical Inventory. Quick Entry' (MMS310) is ran and stock take is performed so that Qty=0, there is a catch weight rest, and:
  - More than CW is reported on location.

- Less than CW is reported on location.
- 'Balance Identity. Reclassify' (MMS130) is ran and re-classify performed so that Qty=0, there is a catch weight rest, and:
  - More than CW is reported on location.
  - Less than CW is reported on location.

## Catch Weight in Distribution Order

This document describes the process by which Catch Weight is managed during dispatch.

If necessary, reference the document for an introduction to the functionality available to support the concept of catch weight.

### Settings

See also .

Program ID	Field heading	Description
(CRS200/H)	Two step put-away	Select the check box if put-away is to be reported directly. If not selected goods receipt, including any quality inspection, occurs before put-away. Direct put-away means that one report covers both goods receipt and put-away. Even if selected it is possible to override this if, for instance, a quality inspection report is needed due to transportation damage.

### Follow these steps

**Note:** The pick report activity is the same for a distribution order (DO) and a customer order (CO).

- 1 Create a DO in 'Req/Distr Order. Open' (MMS100/B).
- 2 Create lines in 'Req/Distr Order. Open Lines' (MMS101/B).
- 3 Allocate the DO in 'Preallocation. Perform Detailed' (MWS121/B1).
- 4 In 'Picking List. Report' (MWS420/B), open the P-panel. The 'Propose Weight' field indicates how catch weight will be displayed in 'Picking List. Report Lines' (MWS422).

#### If Propose Weight = 0:

The catch weight field is open in (MWS422/B) and proposed CW=allocated weight. This reflects the weight at the time for allocation. Catch weight can be changed.

#### If Propose Weight = 1:

The catch weight field is closed in (MWS422/B). Calculated and issued CW = Avg CW per unit on balance ID \* issued quantity. This reflects the actual weight recorded in MITLOC (MWS068).

- 5 The dispatched quantity and catch weight (19Kg) is proposed in 'Goods Receipt DO/RO' (MWS445/B1). It is possible to reuse the information entered at dispatch and receive, else add another complication, for example when weighed again and only 18 kg is found at the receiving warehouse.
- 6 The result in 'Stock Transaction. Display History' (MWS070) will be a CWA-transaction (-1Kg) to compensate for 'lost' catch weight.

### **Summary**

- Weight can be adjusted when reporting the picking list lines.
- Weight can be adjusted when performing the goods receiving.
- CWA-transaction is generated in (MWS070) if received CW is not equal to dispatched CW.
- If multiple unit co-ordination (MUC) then internal invoice is based on goods received Catch Weight.

## Catch Weight Management

This document introduces the concept of catch weight in M3 and acts as a reference to other documentation available to support the concept and its functionality.

A requirement for the use of catch weight arises when an item is valued and priced in weight or volume but stocked in another unit of measure. Two parallel units of measure must be used to manage the stock transactions, pricing, inventory valuation etc. and the relationship between the two units may vary from one unit to the other. Use of catch weight ensures that items are valued according to actual weight and not according to default values of weight.

Typical examples derive from the food industry and include cheese or meat, where one unit of an item may vary in weight over a period of time. In order to facilitate the correct management, pricing and costing, at all times, and for each lot, there is a requirement to know the quantity in both units of measure. The number of cases or pieces for procurement and physical movements is required in addition to the weight of these same cases or pieces, as a way of obtaining accurate pricing and costing across purchase, production, sales and warehouse.

Catch weight is also referred to as variable weight or random weight.

Throughout the documentation, the term catch weight is used to refer to:

- The overall concept of catch weight.
- The functionality available to manage the catch weight requirement across key processes and functions.
- The actual catch weight measurement.
- The item (catch weight item) that is subject to measurement.

### **Outcome**

- Items that are stocked in one unit, such as pieces, are valued in another unit, such as weight in kilograms.

- Catch weight is used for pricing in procurement management, warehouse management, customer order management, distribution order management and production management.
- Catch weight data is stored in the lot master catch weight and potency table (MILOMC).

## Structure

Catch weight can be structured in three different ways:

- The actual weight is controlled during receipts and delivery.
- The actual weight is controlled during receipt.
- The actual weight is controlled during delivery without lot control requirement.

## Supporting documents

- **Settings:**

The settings available to support catch weight functionality and cost unit of measure are described in . This document describes both mandatory pre-requisite and optional configuration settings for the functionality so must be referenced to ensure the required set up is activated.

- **Catch weight in procurement management:**

The process by which catch weight is configured and used from a logistical perspective in procurement is described in .

- **Catch weight in production:**

For catch weight in production, the manufacturing order is entered as per the normal process in basic unit of measure. Catch weight will be reported in a number of places when the items are manufactured. The issued material is reported in both basic unit of measure and catch weight in 'Manufact Order. Report Issue' (PMS060/E) where a weight is proposed (due to the conversion factor) but can be changed. Receipts are reported in basic unit of measure and catch weight in 'Manufact Order. Report Receipt' (PMS050), where a weight is proposed (due to the conversion factor) but can be changed. The by-product is reported in basic unit of measure and catch weight in 'Manufact Order. Report By-product' (PMS080/E) where again, a weight is proposed (due to the conversion factor) but can be changed. The co-product is reported in basic unit of measure and catch weight in 'Manufact Order. Report Co-product' (PMS090/E), where the weight is proposed (due to the conversion factor) but can be changed. If orderless production functionality is used for the catch weight-product, report the manufactured quantity in basic unit of measure and catch weight in 'Manufact Order. Report Orderless' (PMS260).

- **Catch weight in distribution order management:**

The process by which catch weight is managed during dispatch is described in .

- **Catch weight in warehouse management:**

- The internal warehouse activities such as quick inventory counting and inventory counting as they relate to the concept of catch weight and its functionality are described in .
- describes how to update a catch weight measurement and view the impact of the change against the balance identity and stock transaction history.
- The conditions under which catch weight loss transactions are displayed along with the locations they are displayed are described in .
- The internal warehouse activities involved in reclassification for balance ID are described in .
- The internal warehouse activities associated with movements for balance ID are described in .

- **Catch weight in customer order management:**

The concept of catch weight and its application in the area of customer order processing is described in

## Catch Weight Update

This document describes how to update a catch weight measurement and view the impact of the change against the balance identity and stock transaction history.

If necessary, reference the document for an introduction to the functionality available to support the concept of catch weight.

### Outcome

Weight adjustment without change of the quantity.

### Follow these steps

- 1 Start 'Catch Weight Item. Update Weight' (MMS360).
- 2 On the A panel populate the 'Warehouse', 'Item no', 'Lot no', 'Location' fields.
- 3 On the E panel populate the 'Catch weight' field with the updated weight. Press Enter.

### View result

View 'Balance Identity. Open Toolbox' (MWS068). The catch weight field has been updated with the new value. The on hand balance quantity is unchanged.

View 'Stock Transaction. Display History' (MWS070/B). A CWA-transaction has been generated with stock transaction type 95 (Catch weight adjustment, no quantity recorded) where the catch weight field has been adjusted but the quantity remains the same. The transaction quantity remains as 0 as no change was applied.

## Check and Modify Item to Facility Connection

This document explains how you modify the connection of an item to a facility that was created automatically when you connected the item to a warehouse in 'Item. Connect Warehouse' (MMS002).

### Outcome

Information about the following will be modified: the main warehouse, the on-hand balance method per facility, customs data and flow order planning for the combination item/facility.

The created combination of item and facility is used in cost calculations and in the process of export and import.

Item/facility connections are stored in the (MITFAC) table.

### Before you start

- The overall inventory structure must have been created. See [Define Warehouse Structure](#) on page 870.
- An item must have been defined. See [Create Item](#) on page 813.
- The item must have been connected to a warehouse. See [Connect Item to Warehouse](#) on page 776.

### Parameters to set

Program ID/Panel	Field	The field indicates ...
(MMS003/E)	Customs statistical number	<p>...the customs statistics number, which is used in printouts of various shipping documents, such as the unit document. It is also used for regulating and calculating data for transactions to Intrastat, the trade statistics of the EU.</p> <p>The customs statistics number is specified for each item/facility.</p>
(MMS003/E)	Administrative lead time	<p>...the administrative lead time, which is added to the total lead time for each item/warehouse. In principle, the administrative lead-time can be considered as the time allotted to perform activities required before a planned order can be released.</p> <p>The administrative lead-time is used only for acquisition methods 1 and 2. See related document <a href="#">Connect Item to Warehouse</a> on page 776</p>
(MMS003/E)	Main warehouse	<p>...main warehouse for the current item per facility. The item's cost is retrieved from the main warehouse. If the item is connected to several warehouses and acquired in different ways, then the acquisition code set for the main warehouse is used to calculate cost.</p> <p>Note:</p> <p>When the item is scheduled with optimal on-hand balance per facility, acquisition is presumed to be from the main warehouse.</p> <p>Manufactured items have necessary connections from the facility to the item/warehouse, which are made according to settings in the main warehouse.</p>
(MMS003/E)	Ordering cost	<p>...the ordering costs per item, expressed in domestic currency. This is for the fixed costs that arise each time the item is purchased or manufactured.</p> <p>The ordering cost is used for calculating the economic order quantity according to the Wilson formula, and when lot sizes are calculated for requirements planning. If the ordering cost per item is missing, use the one entered as parameter in 'Settings. Ordering Costs' (CRS730).</p>
(MMS003/E)	Minimum accepted contribution margin ratio	<p>...the minimum contribution margin ratio for an item. The information is used to check the contribution margin ratio when customer order lines are entered.</p> <p>The value is stated as a percent with a maximum of two decimal places. If no value is entered (zero or blank), the check will not be made.</p>

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS003/E)	On-hand balance method-facility	<p>...which method is to be used when calculating the on-hand balance for the facility. The valid alternatives are:</p> <ul style="list-style-type: none"> <li>0 = Do not accumulate on-hand balance.</li> <li>1 = Accumulate changes in balance for status 2 and 3.</li> <li>2 = Accumulate changes according to transaction types:           <ul style="list-style-type: none"> <li>- Purchasing, order category 1</li> <li>- Physical inventory differences</li> <li>- Manufacturing</li> <li>- Sales</li> <li>- Scrap.</li> </ul> </li> </ul> <p>Note: This method is intended for use within maintenance-oriented activities.</p>
(MMS003/E)	Optimal on-hand balance facility	<p>...the optimal on-hand balance for each facility. If this point is not reached, the order control method specified for the facility's main warehouse is checked.</p> <p>If the current warehouse has method 4 and existing orders (planned or released) do not cover the quantity needed, a planned order will be created.</p>
(MMS003/E)	Production line	<p>...the default production line where the product will be produced. It is defined as a work center in 'Work Center. Open' (PDS010). It can be changed manually in a planned order or a released order.</p>

Program ID/Panel	Field	The field indicates ...
(MMS003/E)	Inventory accounting method	<p>...the inventory accounting method that sets how the cost of an item is determined per item/facility. The valid alternatives are:</p> <p>0 = Zero cost      1 = Standard cost      2 = Average cost      3 = Dynamic product cost      4 = Actual cost      5 = Simplified purchasing.</p> <p>Note that one of lot control methods 2 to 5 must be selected for the item in (MMS001/E). The cost is calculated per lot number.</p> <p>If you select alternative 0, zero cost, the item has no inventory value. This method can be used for all kinds of items.</p> <p>If you select alternative 1, standard cost, the method is used for repetitive manufacturing or standardized items/products. The standard cost is calculated per item/facility. It can be used for all kinds of items.</p> <p>If you select alternative 2, average cost, the method is primarily used for purchased items, as when the cost cannot be defined in advance. It can be used for all kinds of items.</p> <p>If you select alternative 3, dynamic product cost, the method is primarily used for manufacturing configured items. When the order is released, the standard cost is calculated for that specific order.</p> <p>If you select alternative 4, actual cost, the method is used when you want inventory value to equal actual cost for the item, so no variances are created for the item. The actual cost is calculated per lot number. The method can be used for any kind of item.</p> <p>Alternative 5, simplified purchasing, can only be used for items registered as non-inventory goods - in the 'Inventory accounting' field in (MMS001/E) - for example office supply. No accounting transactions are then created at goods receipt. Instead the expense accounting is created based on accounting rule PP20-903 when the invoice is later matched to the purchase order and goods receipt. (The accounting string for this accounting rule is proposed when the purchase order is created but can be changed manually for the specific order).</p>

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS003/F)	Item cost quantity	<p>...the default item cost quantity per item/facility (or equipment, in the case of maintenance). However, if the field is used in an order line, it indicates a specific relationship between the value and that order line only. The order line value will then replace the default item cost quantity entered in (MMS003/E).</p> <p>The item cost quantity is always entered in the basic unit of measure of the item. Example:</p> <p>If an item costs USD 150 and the item cost quantity is 5, then the item cost per basic unit of measure is <math>150/5 = 30</math>.</p> <p>The purpose of displaying the cost per item cost quantity is to obtain a more accurate calculation by using more decimals. Example:</p> <p>If an item obtains the cost of 10.333333 from the product calculation, only the value 10.3333 is stored if the maximum number of decimals is used. However, by basing the calculation on 100 items, for example, the value 1033.3333 is stored, thereby avoiding any rounding-off problem.</p>
(MMS003/F)	Orderless production	<p>...if the item is manufactured and delivered with or without a manufacturing order. The valid alternatives are:</p> <p>0 = With a manufacturing order.</p> <p>1 = Without a manufacturing order.</p>
(MMS003/F)	Consumption code for trade statistic	<p>...indicates the consumption code, which is defined for each item used for trade statistics.</p>
(MMS003/F)	MO reservations	<p>...if the item should be reserved for a manufacturing order.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes</p> <p>The alternative is specified for each item/facility. In those cases the item is controlled by a reorder point and is used frequently, this parameter helps minimize the load on the system.</p> <p>However, if no reservations are made in 'Material Plan. Open' (MMS080), it is not possible to use a picking list when allocating the item. Instead, a so-called backflush is defined in 'Item. Connect Warehouse' (MMS002/G). (Issue method must be set to 1).</p>
(MMS003/F)	Area/state	<p>...an area, province or state within a country. This information is used for U.S. sales tax and for trade statistics.</p>

Program ID/Panel	Field	The field indicates ...
(MMS003/F)	Automatic creation of MO	<p>...if a prompt to create a manufacturing order (MO) for dynamically configured manufactured items is made immediately after customer order (CO) line entry. If the item will not be configured, the valid alternatives are:</p> <p>0 = No, prompt to create MO later 1 = Yes</p> <p>Dynamically configured manufactured items have configuration code 1.</p>
(MMS003/F)	Customs procedure - import	<p>...the customs procedure used for the import of goods. The information is used to update the trade statistics.</p>
(MMS003/F)	MO lead time method	<p>...the lead time method for manufactured items. The valid alternatives are:</p> <p>0 = The number of days that an operation must start before an item's finish date. This method ignores quantity when calculating the total lead-time for the product/MO. However, order quantity affects the operation time.</p> <p>1 = The operation time is automatically calculated depending on the setup time for each operation. The lead-time for every operation is added to the previous operation's lead-time. This method does consider order quantity. This field is normally activated.</p>
(MMS003/F)	Custom procedure-export	<p>...the customs procedure used for the export of goods.</p>
(MMS003/F)	Dynamic lead time fence	<p>...the fence, in days, during which a dynamic lead time calculation should be performed. For an order to be inside the fence its finish date must be within it.</p>
(MMS003/F)	Costing model-Purchasing	<p>...the ID of the costing model used for each item. The costing model is defined in 'Purchase Costing Model. Open' (PPS285)</p>
(MMS003/F)	Flow order planning	<p>...if the item should be flow order planned within the specified flow order fence. The valid alternatives are:</p> <p>0 = No. 1 = Yes, within the flow order fence. 2 = Yes, within the flow order fence and for all released manufacturing orders.</p> <p>A flow order means that material (reservations) and expected receipts are distributed in accordance with the duration expected:</p> <ul style="list-style-type: none"> <li>- Planned material issues are distributed throughout the operation time according to the operation in which they are to be used. However, a condition is that the material is also specified as a flow order and that a leveling fence exists.</li> <li>- Planned receipts of products are distributed during the operation time for the last operation, which is performed in a key resource.</li> </ul>

Program ID/Panel	Field	The field indicates ...
(MMS003/F)	Costing model-Product costing	...the ID of the product costing model generally applied in (PCS001) or for each separate item in 'Item. Connect Facility' (MMS003). The costing model is defined in 'Costing Model. Open' (PCS025).
(MMS003/F)	Costing model - sales price	...the ID of a costing model for sales prices. Costing models can be connected to different price lists and are used to calculate both basic prices and order-costed prices.
(MMS003/F)	Flow order fence	...the number of days within which manufacturing orders are to be classified as flow orders.
(MMS003/F)	Planning process	...the ID of a process planning item. By entering a process planning item, you define an item as an end product. The end product is an item that is the result of a planning process.  A process-planning item must have inventory accounting code 2 in 'Item. Open' (MMS001) and master scheduling code 4 in 'Item. Connect Warehouse' (MMS002).
(MMS003/F)	Push process	...the process planning item for a push process. This function is not activated in the current release of M3.
(MMS003/F)	Preliminary price for line type 0, 1 or 2.	...the default value for the preliminary price code on customer order line for line type 0, 1, 2, and 3. The preliminary price code on a CO line controls whether the sales price on a customer order line is preliminary. Customer order lines with preliminary price marking will not be invoiced until the marking has been removed.  The valid alternatives are: 0 = The sales price is not preliminary. 1 = The sales price is preliminary. The preliminary price marking will automatically be set to 0 (final price) if sales price calculation is performed from: <ul style="list-style-type: none"><li>- Purchase proposal (PPS170)</li><li>- Purchase order line (PPS201)</li><li>- Purchase confirmation (PPS250)</li><li>- Check supplier invoice (PPS405)</li><li>- Re-calculate sales price (OIS156).</li></ul> 2 = The sales price is preliminary. The preliminary price marking will automatically be set to 0 (final price) if sales price calculation is performed from: <ul style="list-style-type: none"><li>- Check supplier invoice (PPS405)</li><li>- Re-calculate sales price (OIS156).</li></ul> 3 = The sales price is preliminary. The only way to remove the preliminary price marking is to change the order line.

Program ID/Panel	Field	The field indicates ...
(MMS003/F)	Calculate price for line type 0, 1 or 2.	...whether the sales price on a customer order line with line type 0, 1 or 2 is calculated (dynamically) during customer order entry. The valid alternatives are: 0 = No. 1 = Yes.

#### Follow these steps

- 1 Start 'Item. Connect Facility' (MMS003).
- 2 On the B panel, select the item/facility combination you want to modify.
- 3 On the E and F panels, enter the necessary data. See the Parameters to Set section for parameter descriptions.
- 4 To connect the item to other facilities, repeat step 2 and 3 for each facility.

## Create and Connect Item to a Warehouse Structure

This document explains how you create an item and thereafter connects it to warehouses and facilities in your inventory structure.

#### Outcome

An item will have been registered and connected to warehouses and facilities.

Item-specific information will be connected to each item/warehouse and item/facility combination.

Mandatory information for warehouse control, material planning and product management etc. is created.

Items are stored in the (MITMAS), (MITMPR), and (MITMAD) tables.

#### Before you start

A warehouse structure must be created. See [Define Warehouse Structure](#) on page 870.

#### Follow these steps

##### 1 Create an item

Create an item in the item master file in 'Item. Open' (MMS001). The item can be any unique manufactured or purchased part, material, intermediate, subassembly or product. Item type is mandatory.

##### 2 Connect item to warehouse

The item must be connected to a warehouse for the material planning processing and order processing etc. Basic information about planning method and lot handling is defined in this activity. You connect

an item to one or several warehouses in 'Item. Connect Warehouse' (MMS002). When you connect the item to a warehouse, it is automatically connected to a facility.

### 3 Item/Facility connection – Check and modify

The automatic connection between the item and a facility may need some modification. On-hand balance method per facility, main warehouse, production line flow, order planning etc. are examples of modifications that you make in 'Item. Connect Facility' (MMS003).

**Note:** You can connect an item to one or several facilities.

## Create Group Technology Class

This document explains how to create a group technology class in 'Group Technology Class. Open' (MMS042).

The group technology class indicates a technical relationship that is used to group items and also used as a selection criterion. After creating a group technology class(es), you may assign it to an item in 'Item. Open' (MMS001/F). This grouping is used for the detailed release of printouts on the lines in a picking list.

### Outcome

After you create group technology classes and assign them to selected items, you can use these classes to indicate a technical relationship for a group of items.

### Before You Start

No prerequisites exist.

### Follow These Steps

- 1 Start 'Group Technology Class. Open' (MMS042).
- 2 On the B panel, enter a value in the 'Group technology class' field and select the Create option.
- 3 On the E panel, enter a description and name in the respective fields.
- 4 Click Next to save the record.
- 5 Start 'Item. Open' (MMS001/F) to create or change an item.
- 6 On the F panel, select the desired 'Group technology class' ID and click Next to save.

## Create Storage Requirement

This document explains how to create a storage requirement code in 'Storage Requirement. Open' (MMS046).

The storage requirement indicates the storage conditions required for the associated item. After the code is created, you may assign it to an item in 'Item. Open' (MMS001/I).

## Outcome

Special requirements and conditions are defined for the storage of an item, such as dryness, freezer, and so on. Each requirement is defined in a separate file. After you create storage requirements and assign them to selected items, you can use these requirements to choose the appropriate locations into which to store these items.

## Before You Start

No prerequisites exist.

## Follow These Steps

- 1 Start 'Storage Requirement. Open' (MMS046).
- 2 On the B panel, enter an identifier in the 'Storage requirement' field and select the Create option.
- 3 On the E panel, enter a description and name in the respective fields.
- 4 Click Next to save the record.
- 5 Start 'Item. Open' (MMS001/F) to create or change an item.
- 6 On the I panel, select the desired 'Storage requirement' ID and click Next to save.

# Connect Bulk Item to Packaged Item

This document explains how to associate a bulk item to a packaged item, resulting in the creation of a packaged item (also referred to as an item pack).

In the process manufacturing industry, items are produced in bulk either through physical or chemical means and then packed into different sized containers. For purposes of costing, planning, manufacturing and fulfillment, a connection is required between the bulk item and its pack configuration (i.e. pack).

## Outcome

An item is created containing information such as item type, lot handling, and whether the item is manufactured or purchased, and so on.

Items are stored in the (MITMAS), (MITMPR) and (MITMAD) tables. When a item is connected to a bulk item via 'Item Pack. Connect' (MMS023), the (MITPAK) table stores the item number, bulk item, bulk quantity and bulk U/M (unit of measure) for that cross-reference record.

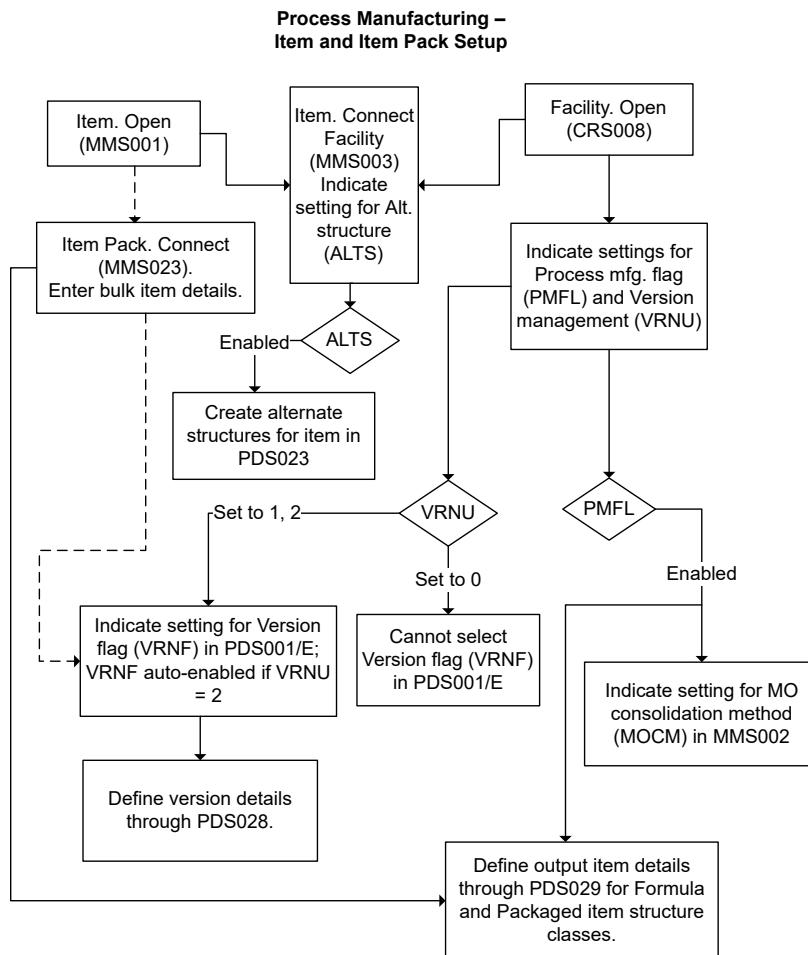
**Note:** You cannot update the 'Bulk quantity' field when the item is created with a packaged item product structure because the item has a product structure set up.

In addition, you cannot define a phantom item (i.e. having an Item category of '2') as a packaged item (i.e. an item pack), nor use a phantom item as a bulk item when connecting an item to a pack.

Also, the 'Bulk U/M' value must be the base U/M defined for the bulk item, OR you may use any alternate U/M created on Item. Connect Alternate U/M (MMS015) for this particular bulk item.

For more details on product structures, refer to this document:

This diagram illustrates the setup of item and item pack records and how this setup relates to the product structures used in Process manufacturing:



### Before you start

You must create item records that represent the 'Bulk item' before you can create a packaged item (i.e. an item pack). See [Create Item](#) on page 813.

### Follow these steps

- 1 Start 'Item. Open' (MMS001).
- 2 On the B panel, enter an Item to represent the packaging portion of the item and select the Create option.
- 3 On the E, F and G panels, enter relevant item data.

- 4 Highlight an item in the grid and select Related > Item Pack (or CTRL+55) to launch 'Item Pack. Connect' (MMS023).
- 5 On the B panel, select a bulk item in the field above the grid and select the Create option.
- 6 On the E panel, enter bulk item values for the 'Bulk quantity' field and 'Bulk U/M' field.
- 7 Click Next to save the item.

## Connect Style to Composition

This document explains the process for connecting a style to a composition. Use this procedure to connect a composition code to a style in 'Style. Connect Composition' (MMS018).

### Outcome

Style is a term for describing a number of similar items. Style is used in the fashion industry. Composition codes are used to describe different material contents, or components, that can be printed on tags.

### Before you start

- Data must be set up for styles in 'Item. Open' (MMS001) and also for compositions in 'Composition. Open' (MMS028). Refer to these documents for more information:
  - [Create Style and Stock Keeping Units](#) on page 855
  - [Style Composition](#) on page 223

### Follow These Steps

- 1 Start 'style. Connect Composition' (MMS018).
- 2 On the B panel, select the desired Style number in the field above the grid.
- 3 Enter a composition ID in the Composition field in the grid and select the Create option.
- 4 On the E panel, enter a numeric value in the 'Composition percentage' field to indicate the percentage of this specific composition in the associated style.
- 5 Click Next to save your changes.

## Define Alias Number

This document explains how you connect an alias number to an item. This number functions as an alternative identification of an item. An item can be connected to several alias numbers.

## Outcome

An alias number is created and connected to an item.

An alias number is created as an alternative number to the item number. An alias number reflects a certain relation. For example, an alias can be the same as the supplier number.

The created alias number is saved in the MITMAS table and can be reviewed in 'Item. Connect Alias Number' (MMS025).

## Before you start

An item must have been created in 'Item. Open' (MMS001).

## Parameters to set

Program ID/Panel	Field	The field indicates ...
(MMS025/B)	Alias category	<p>...the type of alias number. The valid alternatives are:</p> <ul style="list-style-type: none"> <li>01 = Popular number. (the American equivalent to EAN). 02 = EAN (European Article Numbering) or UPC</li> <li>03 = External database (not used by M3).</li> <li>04 = Manufacturer's item number.</li> <li>...05 =...Supplier's item number.</li> <li>06 = Customer's item number</li> <li>07 = Assortment</li> <li>09 = EDI partner's item</li> </ul> <p>Alias types 84-88 are only used in fashion and are automatically created from (MMS276).</p> <p>84 - 87 = As defined in 'Alias Type. Open' (MMS024) and created when SKUs are created, based on the setup in 'Item Type. Connect Alias' (MWS043).</p> <p>...88 = Style number - cannot be manually entered in (MMS025), always automatically created when the SKU is created. If it has not been created in table MITPOP, it can be created by re-running the create function in function program (MMS276).</p>

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
02 = EAN (European Article Numbering) or UPC (MMS025/B)	Alias Qualifier	<p>...additional information about the alias category. Note: This should only be specified if alias type 02 or 03 is used. If alias category 02 (EAN number) is used, specify the type of EAN number as follows:</p> <ul style="list-style-type: none"> <li>EA08 = EAN 8, an EAN number containing eight digits</li> <li>EA13 = EAN 13, an EAN number containing 13 digits</li> <li>DU14 = DUN14, a packaging variant of an EAN number.</li> </ul> <p>UPC = UPC number.</p> <p>If alias category 03 (external database) is used, you can define the qualifier ID as you wish. For other alias categories, the alias qualifier is not used.</p>
(MMS025/B)	Season	<p>...the season and is used to connect styles to the time periods when they are valid.</p> <p>Seasons can be used:</p> <ul style="list-style-type: none"> <li>* In customer order entry to ensure that only items connected to a certain season are entered on an order.</li> <li>* When simulating sales prices to calculate only those items for the season specified.</li> <li>* As a statistics field in orders received statistics and sales statistics. The season entered in the project field on the order line.</li> </ul>
(MMS025/B)	Alias number	<p>...the alias number, which is an alternative ID for an item. It can be defined so that an item has several alias numbers and can be searched in different ways.</p> <p>This can be an EAN code or supplier's item number. Every alias number is connected to an alias type which regulates the information used as the alias.</p> <p>The same alias number can be used for several items. Example:</p> <p>When two different customers regularly order the same item, but each has its own item number for it, these two numbers can be entered as alias numbers for that item. The alias numbers can then be used during customer order entry.</p> <p>When entered, the alias number is automatically changed to the correct item number.</p>
(MMS025/B)	Valid from	...the date the alias number becomes valid. The field is optional. If it is left blank, the alias number becomes valid as soon as it is entered.

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>														
(MMS025/E)	Partner	<p>...an external trade partner. The alias type determines the type of partner in question.</p> <p>The table below shows the alias type and the resulting partner type</p> <table> <thead> <tr> <th>Alias Type</th> <th>Partner Type</th> </tr> </thead> <tbody> <tr> <td>02 Manufacturer</td> <td></td> </tr> <tr> <td>03 Manufacturer</td> <td></td> </tr> <tr> <td>04 Manufacturer</td> <td></td> </tr> <tr> <td>05 Supplier</td> <td></td> </tr> <tr> <td>06 Customer</td> <td></td> </tr> <tr> <td>08 Customer</td> <td></td> </tr> </tbody> </table>	Alias Type	Partner Type	02 Manufacturer		03 Manufacturer		04 Manufacturer		05 Supplier		06 Customer		08 Customer	
Alias Type	Partner Type															
02 Manufacturer																
03 Manufacturer																
04 Manufacturer																
05 Supplier																
06 Customer																
08 Customer																
(MMS025/E)	Sequence number	<p>...the sequence number, which regulates the order in which items are displayed when a popular number is used. This number is optional and can be defined in any way.</p> <p>The sequence number is used during full-screen entry of customer order lines in (OIS101).</p>														
(MMS025/E)	Quantity	...the included quantity to be proposed for this alias number during customer order entry.														
(MMS025/E)	Alternate U/M	<p>The field indicates the U/M of the alias number.</p> <p>If the alias number is a DUN14 number (type 02 and qualifier DU14), the alternate U/M entered will be proposed as the sales U/M when entering customer orders.</p> <p>If the alias type is 1=Popular number, an alternative U/M must be entered in combination with a quantity. If the quantity is 0, the basic U/M is used.</p> <p>In all other cases, the item's basic U/M will be used.</p>														

### Follow these steps

- 1 Start 'Item. Connect Alias Number' (MMS025).
- 2 On the B panel, select an sorting order in accordance with the alias types you are about to create. Note that new entries cannot be made for sorting orders 1 - 5.

These alternative sorting orders are available:

FOR ALL ALIAS TYPES

- 1 = Alias type, qualifier, item number, alias number
- 2 = Alias number, alias type, qualifier, item number
- 3 = Alias type, qualifier, alias number, item number
- 4 = Item number, alias type, qualifier, alias

number

5 = Season, alias number, alias type, item number

FOR ALIAS TYPE 01 - POPULAR NUMBER

11 = Item number, popular number

12 = Popular number, sequence number, item number.

FOR ALIAS TYPE 02 - EAN NUMBER

21 = Item number, qualifier, manufacturer, from date, EAN number

22 = Qualifier, EAN number, manufacturer, from date, item number

23 = EAN number, qualifier, manufacturer, from date, item number.

FOR ALIAS TYPE 03 - REFERENCE TO EXTERNAL DATABASE

31 = Qualifier, item number, reference number, manufacturer, from date

32 = Qualifier, reference number, manufacturer, from date, item number.

FOR ALIAS TYPE 04 - MANUFACTURER'S ITEM NUMBER

41 = Item number, manufacturer's item number, manufacturer, from date

42 = Manufacturer's item number, manufacturer, from date, item number.

FOR ALIAS TYPE 09 - EDI PARTNER'S ITEM NUMBER

91 = Item number, EDI partner's item number, EDI partner, from date

92 = EDI partner's item number, EDI partner, from date, item number.

- 3** Specify the 'Alias Category' field and the 'Alias Number' field and click New or Option 1.

**Note:** The alias categories 84-88 are used in the fashion industry and cannot be manually created in (MMS025). The aliases are automatically created at SKU creation in (MMS276) based on the alias categories connected to the item type in (MWS043).

- 4** On the next panel, specify the necessary data. Which panel is next depends on the alias type selected. (See parameter descriptions.)

# Define Alternate Unit of Measure

This document explains how you set and define an alternate unit of measure for an item. The alternative can be based on quantity, price or supplementary Intrastat. An unlimited number of alternate units of measure may be defined for each item.

## Outcome

Alternate units of measure with a specified conversion factor, as well as conversion method for conversions to a basic unit of measure, will be set and defined.

When the transaction is executed in measures other than those defined as basic units of measure, the alternate unit of measure can be used for conversion purposes in the purchasing, sales and manufacturing processes.

The alternate unit of measure is saved in the MITAUN table (in 'Item. Connect Alternate U/M' (MMS015)).

The conversion between basic and alternate unit of measure is saved in the MITUCV table (CRS051).

## Before you start

- An item must have been created in 'Item. Open' (MMS001).
- The 'Alternate Unit of Measure in Use' parameter must have been set to alternative 1 or 2 on 'Item. Open' (MMS001/E).
- Units of Measure must have been set in 'Unit of Measure. Open' (CRS050).

## Parameters to Set

Program ID/Panel	Field	The field indicates ...
(MMS015/B)	Type	...the type of alternate unit of measure. The valid alternatives are: 1 = Alternate quantity U/M 2 = Alternate price U/M 3 = Supplementary Intrastat U/M.
(MMS015/E)	Conversion factor	...a factor that is used for conversion from alternate U/M to basic U/M. You may enter a factor with up to 9 decimal places. The factor is used for either multiplication or division, depending on the conversion form that is selected. See "Conversion form".

Program ID/Panel	Field	The field indicates ...
(MMS015/E)	Conversion form	<p>...how the conversion factor is used when converting from an alternate U/M to a basic U/M.</p> <p>The valid alternatives are:</p> <p>1 = Convert to the basic U/M by multiplying the alternate U/M by the conversion factor.</p> <p>2 = Convert to the basic U/M by dividing the alternate U/M by the conversion factor.</p> <p>Note: For a purchase price U/M, the opposite conversion relation is valid. Thus, 1=division and 2=multiplication.</p> <p>Conversion is always done directly between the units of measure to ensure that the factors are treated the same.</p> <p>Example:</p> <p>The following applies for a metal plate that measures 3 square meters and weighs 1.5 kilograms:</p> <p>Basic U/M = pieces</p> <p>Purchase U/M = square meters</p> <p>Purchase price U/M = kilograms</p> <p>Set the conversion rate between the purchase U/M and basic U/M to 3 with factor type 2 (or set the conversion factor to 0.33333 with factor type 1.)</p> <p>Set the conversion rate between the purchase price U/M and basic U/M to 1.5 with factor type 2 (or set the conversion factor to 0.66667 with factor type 1.)</p>
(MMS015/E)	Order multiple	<p>...the purchase order multiple quantity in the basic unit of measure (U/M). It is used in order to avoid the need to break up packages, etc.</p> <p>The order multiple can be specified per item/warehouse or per item/supplier. Also, it is possible to specify a unique order multiple for each alternate U/M. When alternate U/Ms are used for purchasing, the order multiple is not checked per item/warehouse.</p> <p>When an order is planned or created, a check is made to ensure that the order quantity is divisible by the order multiple without any remainder. A check is also made during lot sizing (calculation of the order quantity).</p>

Program ID/Panel	Field	The field indicates ...
(MMS015/E)	Price adjustment factors	<p>...how much the price for each alternative U/M should be adjusted in relation to the price for each basic U/M.</p> <p>Example:</p> <p>An item is stored in the basic U/M PCE (piece) and has a price per U/M of 30. An alternative stock U/M is defined as WHP (wholesale package) including 12 basic units of measure. On sale in wholesale packages, the price is 15 percent lower than on sale in the basic U/M. This results in a price adjustment factor of 0.85 and the price of each wholesale package is calculated: <math>12 \times 30.00 \times 0.85 = 306</math>.</p>
(MMS015/E)	Standard unit of measure PO, CO, MO, Product engineering, Statistics	<p>...a code indicating whether or not the alternative U/M is the standard purchase U/M for a specific order type.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p> <p>If a standard purchase U/M is not defined, the basic U/M of the item will be used as the purchase U/M.</p> <p>An alternate U/M that is set as standard for purchase orders is suggested as default in the transaction.</p> <p>Standard purchase U/M is used when purchase U/M is not entered at purchase order entry.</p> <p>If standard purchase U/M is not defined, the basic U/M of the item will be used as purchase U/M.</p>

### Follow These Steps

- 1 Start (MMS015).
- 2 On the B panel, specify the Item, 'Alternate type' and 'Unit of measure' fields. Click New or Option 1.
- 3 On the E panel, specify the 'Conversion factor' field, the 'Conversion method' field and any other necessary data. See the description of parameters above.
- 4 Press F3 to end the setting.

### Using API

The API MMS015MI transactions can be used to add, update, get, list and delete items' alternate units of measure.

## Define Item Transport Information

This document explains how to maintain item transport information, also known as hazardous material.

## Outcome

An item is connected to one or two records in the **Hazardous Material** table: one connection to a UN (United Nation) record and one for the NA (North America) record previously defined in 'Hazardous Material table. Open' (CRS213). You can retrieve the item hazardous information for transportation.

## Before you start

You must define the **Danger class** in 'Danger Class. Open' (CRS210).

You can add information about the material in 'Supplementary Information. Open' (CRS214). These are the examples of supplementary information:

- **marine pollutant**
- **waste**
- **molten**
- **stabilized**
- **solution**
- **mixture**

You must define Hazardous Material table in (CRS213).

You can define the label for the user-defined fields in 'User-Def Flds. Item Trade & Transp Data' (MWS002).

## Follow these steps

- 1 Open 'Transport Information. Open' (MWS001) to define the hazardous material classification for an item.
- 2 Select an item and click **Create**.
- 3 In the E panel:
  - a Use the **UN number** field to browse and select the appropriate record from the hazardous material table (CRS213) with type **1 - UN**.  
The system retrieves the hazardous material ID, which is displayed in the **UNID** field, establishing a link between the item and a UN record from (CRS213).
  - b Use the **NA number** field to browse and select the appropriate record from (CRS213) with type **2 - NA**.  
The system retrieves the hazardous material ID, which is displayed in the **NAID** field, linking the item to an NA record from (CRS213).
- Note:** An item can only be linked to one CRS213 record of the UN type and one record of the NA type.
- 4 Enter user-defined fields on panels MWS001/F and MWS001/G.  
The MWS001/H panel displays detailed hazardous material information for the item, retrieved from the connected record in (CRS213).
  - The left section contains details related to the UN number.
  - The right section contains details related to the NA number.

# Define Names and Languages for an Item

This document explains how you define names and languages for an item in order to adjust it for foreign markets. These names and languages are only applicable for external documents.

## Outcome

An item will have a foreign language and name connected to it.

This setting is used when printing documents for foreign markets.

The names and languages are saved in the CSYTAB table and can be reviewed in (MMS030).

## Before you start

- An item must have been defined in 'Item. Open' (MMS001).

## Parameters to Set

Program ID/Panel	Field	The field indicates ...
(MMS030/B)	Language	<p>...the language in which external documents should be printed.</p> <p>Note: Invoices in the order system are printed in the language indicated in (CRS610) for the actual payer.</p>
(MMS030/E)	Name per language	<p>...the name of an item in each foreign language.</p> <p>The item name per language code is displayed by default during entry of new customer or purchase order lines for those customers/suppliers who are connected to the language.</p>

## Follow These Steps

- 1 Start 'Item. Enter Names/Languages' (MMS030).
- 2 On the B panel, fill in the 'Item number' field for the item to which you want to connect a language and a name.
- 3 Fill in the Language field and click New or Option 1.
- 4 On the E panel, fill in the 'Name per language' field and the Description field and click Next or Finish.

# Define Related Items

This document explains how you relate interchangeable items in order to be able to respond to an order even if the item ordered is out of stock.

## Outcome

Items are connected and defined as interchangeable with each other.

This setting is used when there is a need to substitute items because of a stock shortage at order placement.

The defined relationship between items is saved in the MITALT table and can be reviewed in 'Item. Define relations' (MMS020).

## Before you start

An item must have been created in 'Item. Open' (MMS001).

## Parameters to Set

Program ID/Panel	Field	The field indicates ...
(MMS020/B)	Replacement type	<p>...which type of replacement relationship applies between the two items.</p> <p>The valid alternatives are:</p> <p>1 = Complete replacement - the replaced number may not be used (status 90).</p> <p>2 = The item number has been replaced, but the current balance must be used before the replacement takes effect. Until then, the item has status 50.</p> <p>3 = The item number is interchangeable (substitution) with the other item number.</p> <p>This occurs in accordance with the specially defined rules of interchangeability.</p> <p>4 = The item number is fully interchangeable with the other item number without any technical restrictions.</p> <p>5 = The item number is fully interchangeable with the other item number without any technical restrictions. Can only be used for alternative material in the product structure.</p>
(MMS020/B)	Related item	<p>...a related item. A related item may replace an item that is out of stock or has been deleted.</p> <p>If an item is out of stock or has been deleted, a list of related items is shown at order line entry.</p> <p>An unlimited number of related items may be entered per item.</p>
(MMS020/E)	Interchangeability	...the degree of interchangeability as a complement to the relation type. The value is defined in 'Interchangeability. Open' (CRS098).

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS020/E)	Reference type	<p>...the reference type relevant to the specified reference ID.</p> <p>The valid alternatives are:</p> <p>0 = Optional reference</p> <p>1 = ECO number is used as reference</p> <p>2 = Document ID is used as reference.</p>
(MMS020/E)	Reference identity	...the ID according to the selected reference type.
(MMS020/E)	Quantity factor	...the quantity relationship that applies when an item is replaced by several items. The field is not used in the current version of the system.
(MMS020/E)	Start date	...the date from which this record is valid.
(MMS020/E)	Preferred item	<p>...if, among the related items, this item is preferred for purchase order and distribution order purposes.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p>

### Follow These Steps

- 1 Start 'Item. Define Relations' (MMS020).
- 2 On the B panel, fill in the 'Item number', 'Replacement type' and 'Related item' fields. Click New or Option 1.
- 3 On the E panel, enter the necessary information. See parameter descriptions.
- 4 End the setting by pressing F3.

## Enter Kit Item

The purpose of this procedure is to enter a kit item, which is a set of items sold together as a unit. The kit item is made up of a number of items connected to an ID for it.

Every kit item has specified how it is processed in different situations, such as for pricing, inventory reservations, content variants and updating statistics. It is possible to choose whether the information for any of these is defined commonly for the kit item or retrieved separately from each item included.

It is only possible to make partial deliveries for a complete kit item.

### Before you start

To start this procedure, these prerequisites must be met:

- The item to be entered as kit item is entered as an item in 'Item. Open' (MMS001).
- The items to be included in the kit item are entered in 'Item. Open' (MMS001).
- The 'Display panel G for kits during new record entry' field is activated in 'Product Structure. Open' (PDS001/P).

#### Follow these steps

Follow these steps to enter a kit item.

- 1 Start 'Product Structure. Open' (PDS001). Specify panel sequence EFG.
- 2 Specify a product number for the product structure and structure type, select 'New' to proceed to the E panel. To also be able to produce the kit item using a manufacturing order (process as a normal product structure), go to step 3. Otherwise, go to step 5.
- 3 On the E panel, specify the status. Click 'Next' to proceed to the F panel.
- 4 On the F panel, specify basic settings on how the item is to be processed as a kit structure Press Enter to proceed to the G panel.
- 5 Specify 0 or 1 in the 'Kit control' field to define the item as a kit item. Specify the necessary options for processing the kit item on a main or detailed level.
- 6 Press Enter to end the procedure.

## Enter Items in Kit Item

This procedure is used to enter the items included in a kit item.

#### Before you start

To start this procedure, these prerequisites must be met:

- A kit item is entered.
- The items included are entered in the item file.

#### Follow these steps

Follow the steps below to enter items in a kit item.

- 1 Start 'Product Structure. Open' (PDS001).
- 2 Select the appropriate kit item, select option 11=Material/operation and 'Product. Connect Materials/Operations' (PDS002) is started.
- 3 Specify sorting order 11. Press Enter.
- 4 Specify an item number in the 'Component number' field. Click 'New' to display the E panel.
- 5 On the E panel, specify the quantity included in the kit item.
- 6 Enter more items in the same kit item, if needed. Press Enter to confirm the entered information.

- 7 Press F3 to end.

## Feature

A feature is used to define a specific characteristic of a product. Several different features are often used to fully define a product. Feature is often not specified until a customer order is entered which makes it mostly used in a make-to-order-situation.

A feature can be compared to a question or choice proposed when a product is configured. Color, for example, would be a kind of feature. The feature regulates which answers, or options that can be specified. The [Feature Type](#) on page 160 regulates whether the options are entered using numbers, letters, or item numbers.

Examples of features are:

- Color
- Height
- Engine type
- Amperage
- Size.

## Feature Type

A feature type regulates what type of options for each [Feature](#) on page 160 that can be entered. Numbers, letters, item numbers, or a free text can all be used.

Feature types that are specified when new features are entered cannot be changed at a later point.

## Formula

A formula is a type of product configuration element used when products are configured.

Formulas are defined by the user. They can contain attributes features, fixed numeric values from the item, bill of material or routing, drawing measurements, and ordered quantities.

Boolean algebra and trigonometric functions can be used when creating formulas. One formula can also give multiple results; for example, both length and width can be calculated from the same formula.

### Description

Formulas are mainly used to calculate quantities, run times, drawing measurements and sales and purchase prices.

Formulas also are used for calculated quality tests in the Quality Management System (QMS). For more details, refer to the following document:

## Item Flow Create, Copy and Display

This document explains the extended functionality for create, copy, change and display items. This functionality is optional. Creating items can still be used as described in [Create and Connect Item to a Warehouse Structure](#) on page 143.

These are the features:

- Better view, filter and search functionality
- Display information from different files in the same views
- Better work flow for item creation:
  - Auto creation of item number
  - Auto creation of item/warehouse
  - Auto creation of alias like EAN, UPC
  - Template item used as a template for creating item
  - Field control – what fields to be displayed
  - Support the 'buy to order' concept
  - Authority check on warehouse
- Better work flow for item copy:
  - Copy item/warehouse
  - Copy item/facility
- Item hierarchy

### Outcome

- Better control when creating and copy items by use the settings in item type and use item template.
- Auto creation for items and alias, used for large volumes.
- Flow for fashion item creation
- Better possibilities for display and search for items

These tables are updated:

- Item type is stored in the MITTY table.
- Numbering rules are stored in the MITNUM table.
- Items are stored in the MITMAS, MITMPR and MITMAD tables.
- 'Item. Connect Alternate U/M' (MMS015) is stored in the MITUCV table.
- 'Item. Define Relations' (MMS020) is stored in the MITALT table.
- 'Item. Connect Alias Number' (MMS025) is stored in the MITPOP table.
- 'Item. Enter Names/Language' (MMS030) is stored in the MITLAD table.
- The style master is the MMODMA table.

## Before you start

- The conditions in [Define Warehouse Structure](#) on page 870 must be fulfilled.
- The basic flow for how to create items, connect to warehouse and facility and create related item data should be known. See these documents:
  - [Create and Connect Item to a Warehouse Structure](#) on page 143
  - [Define Item-related Data](#) on page 869

## Follow these steps

### 1 Settings

Create an item numbering rule and connect it to an item type.

### 2 Create Items

These are the options for creating items:

- Create Item - Number Manually. Forced Panel Sequence (EFGH)
- Create Item - Number Manually. Item Values from Item Template and Item Type.
- Create Item - Number from a Numbering Rule. Forced Panel Sequence (EFGH)
- Create Item - Number from a Numbering Rule. Values from Item Template and Item type
- Create Item - Fashion Flow (Style and SKUs)

### 3 Copy Items

Copy Item - Included all Data as below:

- Items (MMS001)
- 'Item. Connect Warehouse' (MMS002)
- 'Item. Connect Facility' (MMS003)
- 'Item. Connect Alias Number' (MMS0025)

Copy Item – Select one, several or all of the Related Data:

- Text in (MMS001)
- Alternate Unit of Measure (MMS015)
- Relations (MMS020)
- Alias (MMS025)
- Additional Information

### 4 Managing Items

Item Toolbox - the main program for search and display items

## Lot Blending

This document explains the routines for lot blending. Each lot consists of one or more quantities that possess identical characteristics. Bulk items, both those stored in Silos or Full Mix Tanks (Location Characteristic = 2 or 3), can be either solid or liquid. They can be received into a silo or full mix tank by receiving of any type of order (PO, DO, MO and CO return). In addition, items stored in silos and full mix tanks can be transferred (pumped or conveyed) from one location to another.

When items share the same Location Characteristic with one another and also with the location (such as a silo or tank), the blending of those items is permitted. Tank cleaning is the equivalent of a stock adjustment whereby a location balance will be set to zero so that a tank may be used to blend a different set of items.

Use lot blending for items to be put-away or transferred to locations with matching location characteristics. All existing programs used to put-away or transfer items will validate this, and any transactions where the Location Characteristic of the item and location are not equal are prevented. In some cases, existing location change functions will be blocked entirely and you are directed to 'Blending Lot. Open' (MWS155) for this purpose.

## Outcome

- For Silo items and corresponding locations:**

Only one item (single item number) that is set up as being stored in a silo with first-in-first-out (FIFO) consumption will be allowed in any silo location at any given time. Items stored in silos are not blended (mixed). Rather, the system uses existing logic to segregate lots within the silo. Each lot retains dimensional and demographic data such as status, allocations, attributes, etc. Lots are relieved from the silo using FIFO logic.

- For Full Mix items and corresponding locations:**

Only one item (single item number) that is set up as being stored in a full tank will be allowed in any Full Mix location at any given time.

**Note:** Multiple bulk items *cannot* be mixed or blended using the system functions. You must use manufacturing orders to blend multiple items to produce a new item.

- When you put-away or transfer lots of full mix items to a full mix tank that is not occupied by another lot of the same item, the item data such as status, allocations, action dates, etc. are retained.
- When you put-away or transfer lots of full mix items to a tank that is occupied by the same lot of the same item, then the item data, including status, allocations, action dates, etc., are retained. The quantity of the item in the 'To' location is increased to include the quantity transferred or put-away.
- When you put-away or transfer lots of full mix items to a full mix tank (which is the 'From' lot) that is occupied by a different lot of the same item (the 'To' lot), the two lots are blended unless:
  - either lot is on a Picking List. Therefore, blending is not allowed.

*or*

- allocatable lots are attempted to be blended with non-allocatable lots. This is not permitted.

Items designated as 'Full Mix' are required to use an automatic lot numbering method. Therefore, the resulting blended lot is identified by a new, system-generated lot number. These are the dimensional and demographic data for the new, blended lot:

- Status
  - IF the status of either the 'From' lot or the 'To' lot = '3-Rejected' THEN the status of the new, blended, lot = '3-Rejected'
  - IF the status of either the 'From' lot or the 'To' lot = '1-Under Inspection' THEN the status of the new, blended, lot = '1-Under Inspection'
  - ELSE the status of the new lot = '2-Approved'
- Dates
  - Expiration date: earliest of the 2 blended lots
  - Follow-up date: earliest of the 2 blended lots
  - Harvested date: earliest of the 2 blended lots

- Earliest sales date: earliest of the 2 blended lots
- Priority date: earliest of the 2 blended lots
- Allocatable
  - IF both the 'From' and 'To' lots are allocatable, THEN the new lot is allocatable ELSE, the lot is not allocatable
- Allocations
  - IF either the 'From' or 'To' lots have system-generated allocations, THEN the new lot will show the same allocations
  - Manual allocations are not retained and must be entered by the user.
- Allocated Quantity
  - Allocated quantity of the new, blended lot will equal the total allocated quantity of the 'From' and 'To' lots.
- Catch Weight
  - Catch weight (if used for the item) of the new, blended lot will equal the total approved catch weight of the 'From' and 'To' lots.
- On Hand Quantity
  - On Hand quantity of the new, blended lot will equal the total on hand quantity of the 'From' and 'To' lots.
- Approved Quantity
  - Approved quantity of the new, blended, lot will equal the total approved quantity of the 'From' and 'To' lots.
- Potency
  - Potency of the new, blended lot must be entered by the user.
- Attributes
  - Attributes (if used for the item) will not be preserved for a blended lot. Attributes for the new, blended lot must be entered by the user.

Lot blending is a concept used when handling bulk items in tanks and/or silos. Because food safety is more important than ever, the system supports a solid lot blending process that is industry-specific in Food & Beverage, as well as the Chemicals industry. Blending ensures a secure proper proactive control of logistics flows and provides follow-up and traceability within the supply chain.

To gain traceability, a Location Characteristic may be attached to stock locations and to the item master. In contrast to Location Type, Location Characteristic has a limited number of options describing the nature of the location, providing the ability to add logic to the behavior of an item in the location.

Two important tables are used for lot blending. They are MILOMA (Lot Master File) and MIWLAL (Location Action Log).

The lot characteristic (TANK) defined for the item is stored in the MITMAS table (item master).

The lot characteristic (WHLC) defined for the location is stored in the MILOMA table (lot master).

The MIWLAL table (Location Action log) displays the history for related transactions (with a transaction type of '99-Blending').

### Before you start

- The Location Characteristic conditions in [Lot/Serial Number Settings](#) on page 172 must be fulfilled.

- The Location Characteristic conditions outlined in the document [Create Location in Warehouse](#) on page 844 must be defined and must match the corresponding item's location characteristic.
- Basic item setup must be completed.
- Basic data for inventory management must be set.

### **Completing the basic item setup**

- 1 Open 'Item. Open' (MMS001).
- 2 On panel G, select a Lot characteristic of '0-No special characteristics', '1-Bulk', '2-Silo with FIFO consumption' or '3-Full Mix Tank'.
 

**Note:** After the value is set, it cannot be changed until the quantity on hand of the item is zero (for all balance identities, all locations, all warehouses).
- 3 If you select a Lot characteristic of '2-Silo with FIFO consumption', you must define the item's Lot control method on panel E as anything other than '0-Not used'.
- 4 If you select a Lot characteristic of '3-Full Mix Tank', the item must:
  - Have a Lot control method of '1-Lot control used but not defined in lot master' or '3-Lot control used and must be entered in lot master'.
 

AND
  - Use a Lot numbering method (defined on panel E of MMS001) of '1-Automatically use YYMM plus a 6-position long sequence number', '2-Automatically use YY plus an 8-position long sequence number', '3-Automatically use a 7-position long sequence number', or '6-Automatically use YYMMDD plus a 4-position long sequence number'.

### **Setting the basic data for inventory management**

- 1 Open 'Stock Location. Open' (MMS010).
- 2 On panel E, select a Location characteristic value of '0-No special characteristics', '1-Bulk', '2-Silo with FIFO consumption' or '3-Full Mix Tank'.
 

**Note:** After the value is set, it cannot be changed until the quantity on hand in the location is zero.
- 3 If you select a Location characteristic of 2 or 3:
  - Multi-storage must be set to '3-Same item'
 

AND
  - Container management must be set to '0-Not selected'.
- 4 Open 'Item. Connect Warehouse' (MMS002).
- 5 On panel G, the default location for the item must have the same Location characteristic as the item. Otherwise, an error message, saying "Item can only be stored in location with corresponding Location characteristic," will be presented.
- 6 If the item has a Location characteristic of 2 or 3, the Container Management setting on panel G must be set to '0-Not used' and this value cannot be changed.
- 7 Open 'Item. Connect Facility' (MMS003).
- 8 On panel E, you cannot set up items with the Location characteristic value of 3 to use dynamic or actual costing. Therefore, the Inventory accounting method field cannot be set to '3-Dynamic' or '4-Actual'.
- 9 Open 'Number Series. Open' (CRS165) to view each series that supports blending:
  - Series B5 A for Lot blending
  - Series B6 A for Tank cleaning

- 
- 10** On 'Stock Transaction Type. Open' (CRS205), you may assign a Transaction type of '99-Blending'.

### Follow these steps

#### Blending lots

- 1** Launch 'Blending Lot. Open' (MWS155).
- 2** On panel A, specify the Warehouse, Item Number, Location (From Location), Lot Number, To Location, Quantity (to transfer), and Catch Weight (if used for the item).
- 3** On panel E, you can select a Status for the new lot and enter additional details. The system displays details of the last recorded movement on the New lot no, (Total) New qty, and (Total) Allocated qty fields.
- 4** Click Next to perform the transfer. A new item-lot number is created for the blend.  
**Note:** 'Blending Lot' (MWS155) replaces 'Movement. Change Loc - Item' (MMS175) and 'Movement. Change Loc - Balance ID' (MMS177) for items with a location characteristic of '3 - Full Mix Tank'.
- 5** Open 'Tank cleaning' (MWS156) to set all Balance Identities in a selected location to '0' by generating a Transaction Type = '91-Scrap transaction'.  
**Note:** This function is restricted to locations with a Location characteristic of '2-Silo with FIFO consumption' or '3-Full Mix Tank'.
  - 6** On panel B, enter or select the Warehouse and the Location within the warehouse to be cleaned.
  - 7** Click Next and the system displays all lots found in the location as well as the last cleaning date/time.
  - 8** Specify a Remark and a Trans Reason code, if desired.
  - 9** From the Actions menu, select Clean Tank Update. The system displays the message: 'WARNING - the location balance will be '0' after cleaning.'
  - 10** Again, select Clean Tank Update from the Actions menu.
  - 11** Click Next to clean the tank. The screen refreshes and shows that no lot balances occupy the location.
  - 12** Open 'Location Activity Log. Open' (MWS157) to view the history for blended transactions.
  - 13** On panel A, specify a Warehouse and Location.  
**Note:** Optionally, you may specify a transaction date and time, item number and lot number to filter the result set.
  - 14** Click Next and the system will display all records from MIWLAL (Location Action Log) that match the input criteria.
  - 15** Open 'Lot. Trace' (MMS140) and select the Transaction Type of '99-Blending' to trace blended items.

## Lot Handling

This document lists the routines for lot handling.

A lot consists of one or more quantities that possess identical characteristics. Every lot has an identity that allows that particular lot to be managed on an individual basis. This identity is the lot number or a serial number. A serial number is a type of lot number that is only allowed to carry one balance identity per item. For example, each car has a unique serial number.

There are usually two main reasons for using lot handling:

- Separation—Lot handling enables you to separate one set of balance identities from other balance identities of the same item number.
- Tracing—Lot handling enables you to trace balance identities backwards and/or forwards. This enables you to see in which product a specific raw material identity is used and vice versa; that is, which raw material identities were used in a specific product identity.

**Note:** Simple Lot Tracking is not lot handling. Lot tracking is when you want to track lots to customer orders without handling lots in your own stock.

### Outcome

A lot number is created for an item. There are three main ways to create a lot number:

- Goods receiving through purchasing
- Put-away from production
- Manually, directly from the lot master file.

Lot handling is used to control purchased and manufactured items in the material flow by setting unique identities—lot numbers or serial numbers.

A lot master for the item must exist in order to be able to perform quality inspection.

The following tables are used for lot handling.

- MILOMA (Lot Master File) - updated by MMS900
- MITTRA (Transaction History File) - updated by MMS901

### Before you start

- Basic item data must be set.
- Basic data for inventory management must be set.
- The conditions in [Lot/Serial Number Settings](#) on page 172 must be fulfilled.

### Purpose

For more details, refer to the documents in the See also section.

- Create, reclassify, trace and display a lot
- Lot handling in purchasing
- Lot handling in production
- Lot settings
- Simple lot tracking
- Lot blending

## Lot Handling in the Purchasing Flow

This process document explains how lot control management is handled in the purchasing flow.

## Outcome

A lot number or an item with a serial number is created during goods receiving for purchased items.

A received quantity is split into the created lots.

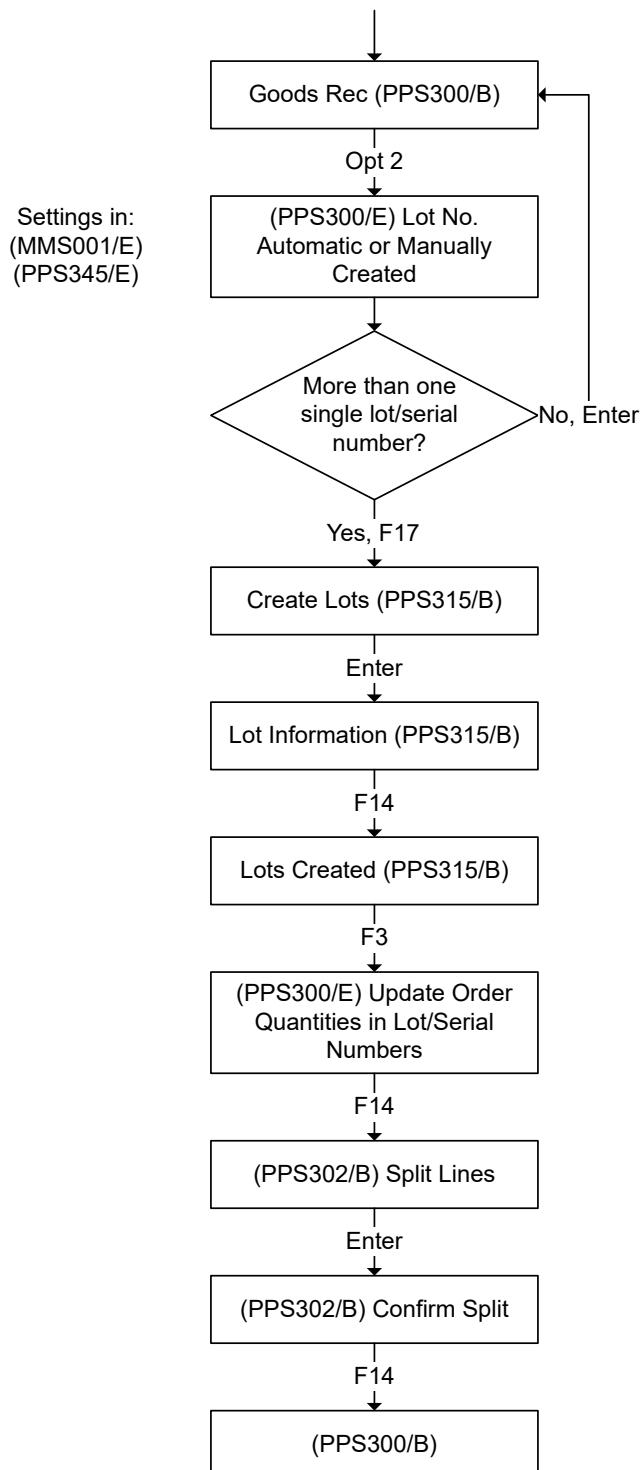
This process is used to handle lots and serial numbers in the purchasing flow.

An item with a lot number is stored in the MILOMA table. Transaction history about a lot is stored in the MITTRA table.

## Before you start

- The conditions in [Lot/Serial Number Settings](#) on page 172 must be fulfilled.
- A purchase order must have been created.
- You must be familiar with the purchasing flow to understand the concept of lots in purchasing.

## Follow These Steps



- 1 Goods receipt is performed in 'Purchase Order. Receive' (PPS300). A lot number is created automatically or has to be created manually.
- 2 In cases of serial number handling and/or lot splitting, then 'Purchase Order. Create Item Lots' (PPS315) must be started where lots/serial numbers are created. Information about lot and serial numbers is also specified here.
- 3 The next activity is to split the transaction quantity into the created lots or serial numbers. This is done in 'Purchase Order. Split Lines' (PPS302/B). Press F14 on the (PPS300/E) panel to start this program.
- 4 Note: The lot can be split later during quality inspection in 'Purchase Order. Inspect Goods' (PPS310) if this process is part of the goods receiving flow.
- 5 Press F14 on the (PPS302/B) panel to confirm and complete the goods receiving and lot handling, and return to the (PPS300/B) panel.

## Lot Handling in the Manufacturing Flow

This process document explains how lot control management is handled in the manufacturing flow.

### Outcome

A lot number or an item with a serial number is created when the manufactured product is put into stock. A quantity is split into the created lots.

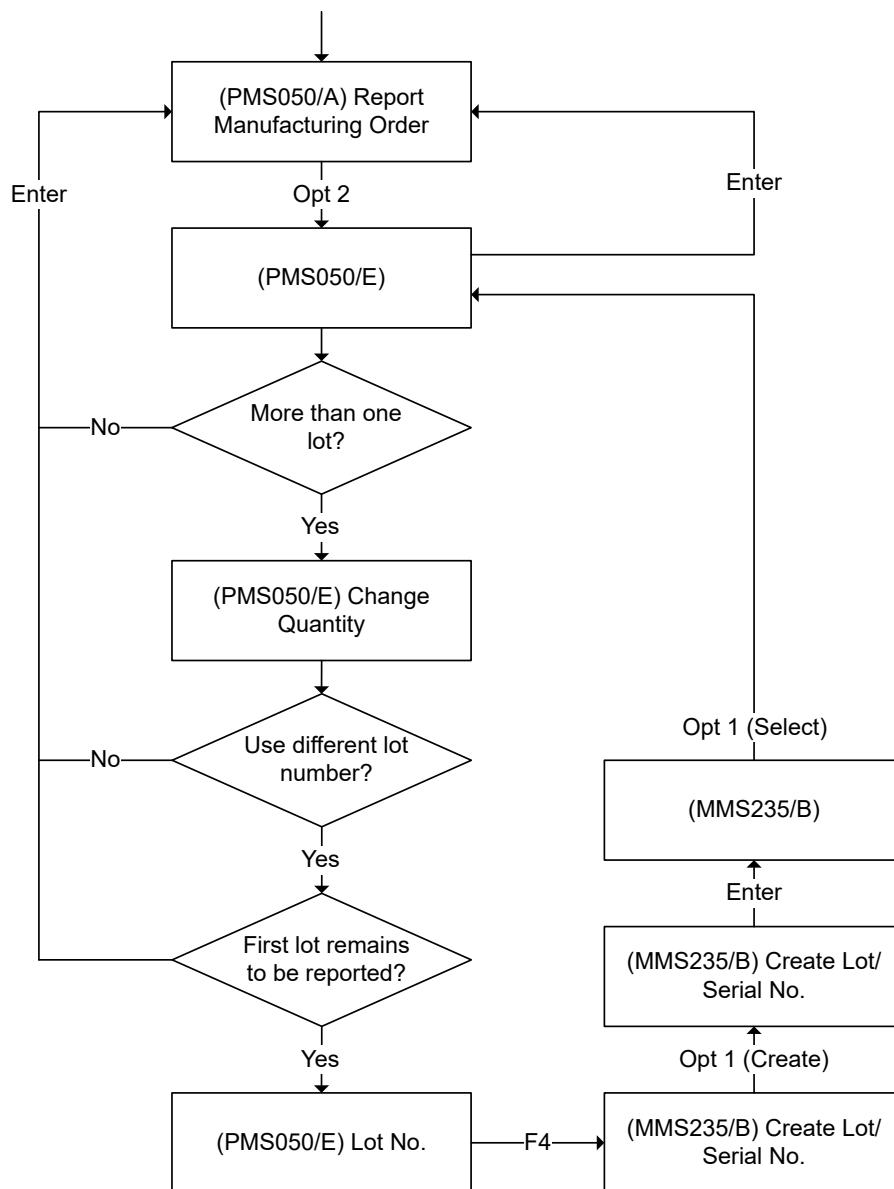
The process is used to handle lots and serial numbers in the manufacturing flow.

An item with a lot number is stored in the MILOMA file. Transaction history about a lot is stored in the MITTRA file.

### Before you start

- Basic item data is set.
- Basic data for inventory management is set.
- Lot settings are specified.
- A manufacturing order is created.
- You must be familiar with the manufacturing flow to understand the concept of lots in manufacturing.

## Follow these steps



- 1 When a receipt is reported in 'Manufacturing Order. Report Receipt' (PMS050/E), a lot number is created either automatically or manually, depending on which lot number method is selected on the E panel in 'Item. Open' (MMS001/E). For an item that has auto-lot numbering set up, a manual lot ID can be specified as long as the lot has not been previously attached to another order reference.
- 2 Lot numbers can be received and created on the (PMS050/E) panel if one lot is to be reported or if different lot numbers are to be reported and the created lot number method set to manual creation of lot numbers on the (MMS001/E) panel.

- 3 Lots have to be created in 'Lot/Serial Number. Open/Connect to Item' (MMS235) if more than one lot is to be reported or if different lot numbers are to be reported and the 'Lot number method' field is set to automatic creation of numbers on the (MMS001/E) panel.
- 4 After lots are created in (MMS235), the lot numbers can be reported on the (PMS050/E) panel.

## Lot/Serial Number Settings

This setting document explains how to enter the settings for the flow and the definition of lot handled and serial numbered items.

### Outcome

Basic settings for lot/serial numbered items are entered in the item master and in the product structure.

These settings determine the rules for defining and handling lot/serial numbered items.

These settings determine whether or not lot records are created in the lot master table (MILOMA).

The settings also determine whether or not lot records are created in the transaction history table (MITTRA).

Expiration date handling is stored in the MITLOC table.

### Before you start

- Basic data for inventory management is set.
- Number series are defined in 'Number Series. Open' (CRS165) for series 11.

### Parameters to set

Program ID/Panel	Field	The field indicates ...
(MMS001/E)	Lot control method	... whether and how lot control is to be applied for each item.

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS001/E)	Lot number method	<p>... how the lot or serial number is generated.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>0 = Manually entered</li> <li>1 = Automatically assigned according to YYMM + sequence number</li> <li>2 = Automatically assigned according to YY + sequence number</li> <li>3 = Automatically assigned with sequence number</li> <li>4 = Goods receiving number, which is generated automatically upon receipt of goods but must be manually entered</li> <li>5 = Order no. - only used in conjunction with manufacturing order.</li> <li>6 = Automatically, using YYMMDD + sequence number</li> <li>7 = Automatically, using the numbering rule defined in 'Item Type. Open' (CRS040)</li> <li>8 = Simple lot tracing for outbound deliveries, mandatory to fill in a lot reference when reporting pick lines</li> <li>9 = Simple lot tracing for outbound deliveries, optional to fill in a lot reference when reporting pick lines</li> </ul> <p>Lot or serial numbers can only be automatically generated in those cases where accounting is performed via the lot/serial number file, since this is the only location where new numbers can be generated.</p> <p>For method 1, 2, 3, and 6, the length of the sequence is controlled by the length of the final number in (CRS165). Minimum length is:</p> <ul style="list-style-type: none"> <li>• 6 for method 1</li> <li>• 8 for method 2</li> <li>• 7 for method 3</li> <li>• 4 for method 6</li> </ul>
(MMS001/F)	Inspection code	<p>... whether and how the item is inspected for quality.</p> <p>These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>0 = No</li> <li>1 = Yes, but without the Quality request</li> <li>2 = Yes, together with the Quality request</li> <li>3 = Yes, together with the Quality request. Automatic creation of records in (PPS300) and lots in (MMS235).</li> </ul> <p>Alternatives 0 and 1 apply only for quality inspection in the component for production activity control.</p> <p>Alternative 2 applies for both production control and purchasing.</p> <p>The Quality Control component must be installed if you want to perform a quality inspection using the quality request.</p>

Program ID/Panel	Field	The field indicates ...
MMS001/F)	Expire date method	<p>... how the expiration date is calculated. This expiration date is used in expiration date management. The main purpose of expiration date management is to get a correct priority date for the lots in Display Balance Identities (MMS060), which is what automatic allocation uses when allocating material in FIFO. This affects purchase orders, manufacturing orders and customer orders.</p> <p>These are the valid alternatives:</p> <p>0 = Expiration date missing. The receiving date is used as priority date for allocation if lot control is used. This method is chosen when handling items where there is no expiration date for the quality of the item.</p> <p>1 = The expiration date is calculated from the receiving/first receipt date using the item's expiration time. This date can be overridden in the purchase component's goods receiving routine and in receipt of products in manufacturing.</p> <p>2 = The expiration date is calculated from the production/first finish date specified in the purchase component's goods receiving routing or in the receipt routine in manufacturing.</p>
(MMS001/G)	Active/Catch weight item	<p>... whether the item is an active or a catch weight item.</p> <p>These are the valid alternatives:</p> <p>0 = Neither (normal item)</p> <p>1 = Active item</p> <p>2 = Catch weight item with control during receipt and delivery. Active or catch weight item.</p> <p>3 = Catch weight item with control during receipt</p> <p>4 = Catch weight item with control during delivery without lot control requirements.</p>
(MMS001/I)	Bulk item	<p>... whether an item is a bulk item/stored.</p> <p>These are the valid alternatives:</p> <p>0 = No</p> <p>1 = Yes</p> <p>When a quality-checked item is approved and the item is a bulk item, the original lot is reset to a lot number equal to 9999999999-99. This means that a mix of several lot numbers is assumed when approving the separate lot.</p>

Program ID/Panel	Field	The field indicates ...
(MMS002/G)	History storage method	<p>... whether and how stock transactions are stored in the stock transaction history file.</p> <p>These are the valid alternatives:</p> <p>0 = No storage. No item statistics are updated and no financial transactions created.</p> <p>1 = Detailed storage</p> <p>2 = Accumulated storage on daily level per order and transaction type</p> <p>3 = Accumulated storage on daily level per transaction type.</p> <p>For alternatives 1, 2 and 3, all receipts are stored on a detail level</p>
(MMS002/I)	Shelf life	<p>... the number of years, months and days used for calculating the expiration date (according to the method specified on the (MMS001/F) panel). When the system reaches this date, the balance identity is reclassified to status code 3 (=Rejected).</p>
(MMS002/I)	Reinspection days	<p>... the number of days counted from the last inspection date when a lot or serial number must be reinspected. When the system reaches this date, the balance identity is reclassified to status code 1 (=Under inspection).</p>
(MMS002/I)	Reinspection minutes	<p>... the number of minutes used to calculate the timing of the reinspection for the lot or serial number.</p>
(MMS002/I)	Sales time	<p>... the number of years, months and days used for calculating the last permitted sales date. When the system reaches this date, the balance identity is reclassified to status code 3 (=Rejected). This is a date that is earlier than the expiration date.</p>
(MMS235/E)	Create QI request	<p>... whether a new QI request should be created when the lot is created.</p> <p><b>Note:</b> This check box is visible only if the '407 Quality Management' field in 'Company. Connect Division' (MNS100/K) has been defined as 'Quality management system'.</p>

### Follow these steps

- 1 Open 'Item. Open' (MMS001/E). In the **Lot control method** field, there are four different types of methods, excluding lot control method 0 (=Lot control not used). These are the valid alternatives:
  - 0 = Lot control not used
  - 1 = Lot control used. Lots do not need to be defined in the lot master file.
  - 2 = Lot control used. All lots must be entered in the lot master file and each lot number is considered to be a serial number.
  - 3 = Lot control used. All lots must be entered in the lot master file.
  - 5 = Lot control used. All lots must be entered in the lot master file. A serial number specification is connected to each lot.
- 2 Specify the way a lot/serial number is to be created in the **Lot number methods** field.

- 3 Open the (MMS001/F) panel. The **Inspection code** field determines whether or not the item are quality inspected.
- 4 The **Expire date method** field can either be calculated from the date the items are received at the receiving warehouse (method 1), or from the manufacturing date (method 2). The expiration date is then calculated (according to the selected method above) by adding up the number of years, months and days that are preset in the **Shelf life**, **Reinspect time** and **Sales time** fields on the (MMS001/I) panel.
- 5 Open the (MMS001/G) panel. The **Active/Catch weight item** field indicates whether the item is an active or a catch weight item, or a normal item.

**Note:** Both active items and catch weight items require lot handling method 2–5 because potency and catch weight is stored in the MILOMA file.

Active item: An active item is an item that includes an active substance in a certain concentration and for which a normal potency must be entered. For each item, the normal potency indicates the concentration of the on-hand balance and other planning quantities. When active items are received, a potency value deviating from the normal potency can be entered for each lot. When active items are used in the bill of material, the quantity included should always be entered according to the normal potency.

Catch weight item: A catch weight item is an item stocked in one unit, such as pieces, but valued and priced in a weight unit, such as kilograms. This means that both the carrying unit and the catch weight unit are always requested when entering stock transactions.

- 6 Open the (MMS001/I) panel. The **Bulk item** field indicates that the item is received into a bulk (tank) and cannot be separated into different lots. The system automatically gives the item lot number 99999999.
- 7 The **Shelf life** field is the number of years, months and days used for calculating the expiration date (according to the method specified on the (MMS001/F) panel). When the system reaches this date, the balance identity is reclassified to status code 3 (=Rejected) by the night run.
- 8 The **Reinspection time** field is the number of years, months and days used for calculating the retest date used by laboratory inspection. When the system reaches this date, the balance identity is reclassified to status code 1 (=Under inspection) by the night run.
- 9 The **Sales time** field is the number of years, months and days used for calculating the last permitted sales date. When the system reaches this date, the balance identity is reclassified to status code 3 (=Rejected) by the night run. This is a date that is earlier than the expiration date.
- 10 Open 'Item. Connect Warehouse' (MMS002/G). The **History storage method** field should be set to **1=Detailed storing of stock transactions**. These are stored in the MITTRA table.

## M3 Fashion Matrix Plug-ins for Distribution Order

M3 Fashion Matrix plug-ins for distribution order provide an improved interface for distribution order processing in M3 BE for Fashion-related orders. It lets the user create and manage orders in matrix form, as well as attach images to be shown in the product through Infor Document Management (IDM).

### Adding a transaction to MDBREADMI

This process is required for M3 Fashion Matrix plug-ins to work properly.

- 1 Using the M3 BE programs, specify:

- 'MI Repository. Open' (MRS001)
  - 'MI Transaction. Open' (MRS002)
  - 'MI Transaction. Layout' (MRS003)
- 2** Add this transaction: MDBREADMI.LstMITMAH10.  
 Input: STYN (Mandatory), ITNO (Not mandatory)  
 Output: ITNO, STYN, SQNX, FTIX, OPTX, TX15, SQNY, FTIY, OPTY, TY15, SQNZ, FTIZ, OPTZ, TZ15, SQFX, SQFY, SQFZ, SECH

### Adding script to open the matrix

This procedure is required to initialize the button that will open M3 Fashion Matrix.

- 1** Open 'Req/Distr Order. Open' (MMS100)
- 2** Click Tools > Personalize > Scripts.
- 3** Create a new script by entering 'ViewMatrix' in the field 'Script' and click Add. Leave the field 'Argument' blank.

### Starting M3 Fashion Matrix

- 1** After M3 Fashion Matrix has been installed, the View matrix option is available in 'Req/Distr Order. Open' (MMS100/B).
- 2** Select a distribution order in the sub file and click View matrix to open the selected distribution order in M3 Fashion Matrix.  
**Note:** The distribution order must have an order type with transaction reason 51 - Distribution Order Issue. Otherwise, an error message is displayed when starting M3 Fashion Matrix plug-ins. Since a line must be selected in (MMS100), a distribution order head must be created in and outside M3 Fashion Matrix in 'Req/Distr Order. Open Lines' (MMS101).
- 3** From M3 Fashion Matrix, navigate back to (MMS100) by clicking Hide matrix.

### Information from the distribution order header

Information from the distribution order header is displayed in the upper section of M3 Fashion Matrix.

- Order number
- Order type
- Season or Project number
- Delivery window or Project element

### Handling style item – Visibility

On the left side of the middle section in M3 Fashion Matrix, there is a list that displays every combination of style number, delivery date and warehouse in a distribution order. This list is empty only if a distribution order header and no lines were created before launching M3 Fashion Matrix.

When selecting a line in this list, a matrix displays the Stock Keeping Units or SKUs with their corresponding style numbers, transaction dates, and warehouses. The dimensions X and Y are shown in the matrix, while the Z-option can be updated manually. The displayed information is retrieved from the style settings through

MI-transactions. Each matrix element represents an SKU of that specific style with a combination of an X-option and a Y-option.

The matrix also displays line total, column total, and the grand total quantities for the SKUs in the matrix. To only display the lines in the matrix that contain quantity, click Collapse. To expand the matrix, click Expand.

Select an SKU in the matrix to show detailed information such as status, to warehouse and from warehouse in the lower section of M3 Fashion Matrix. You can also use IDM to connect an image to a certain item based on style. The image is displayed when the item is highlighted in M3 Fashion Matrix.

### **Creating new distribution order lines**

A user can create new order lines using M3 Fashion Matrix plug-ins. To load the matrix, select a style number line in the list. The user can then update the quantity of an SKU, quantities in a current distribution order line in M3 BE, or add a new distribution order line in M3 BE.

To add a new distribution order line in M3 BE, specify a quantity to an SKU where the current quantity is zero. To update the quantity, select the matrix element and click Enter. The changed quantities will be marked in red. To generate the changes in the matrix, click Update matrix. This updates distribution order lines or generates new distribution order lines through MI-transactions.

### **Placing an order for new styles**

A user can also place an order for new styles that are not in the distribution order. Click New style to open a new window and select a specific style number, delivery date, and warehouse. Click Add to create a new line in the Style list. Select the line to display a matrix with zero quantities in all matrix elements. Specify the required quantities as necessary.

### **Handling normal items**

Normal items are discrete items that can be added to a distribution order in M3 Fashion Matrix. The order line that contains the normal item is displayed as a line in the list. If selected, detailed information about the normal item, such as status, to warehouse, and from warehouse are displayed in the lower section of M3 Fashion Matrix.

#### **Adding normal items to a distribution order**

- 1 In M3 Fashion Matrix, click New item to open a new window that shows the item number, quantity, delivery date, and warehouse. Specify the quantities for these fields.
- 2 Click Add to create a new order line through MI-transactions.

#### **Updating normal item quantities in a distribution order**

- 1 In M3 Fashion Matrix, select an order line, then specify the quantities for the normal item.
- 2 Click Update line to update the order quantity and delivery date through MI-transactions.

## Season handling

Season handling and season filters are not available for the distribution order process in M3 BE and M3 Fashion Matrix.

## Infor Document Management

You can use Infor Document Management to upload and connect images to the Fashion Matrix.

- 1 To start Infor Document Management in M3 H5/Infor Mingle, click the Application Menu icon and select Document Management.
- 2 Select Add Document, then select M3 Fashion from the list.
- 3 Drag the picture to Drop File Here. Optionally, you can click Drop File Here to upload the image through a standard file dialog.
- Note:** The resolution of uploaded images affects Infor Document Management performance. As image attribute, you need to specify the corresponding style to connect to the image. Even though the document type has color as an input field, M3 Fashion Matrix plug-ins browse the IDM based on only the style.
- 4 Click Save, then click Check in to upload the image.

# Manage Expiration Dates

Expiration dates in M3 affect purchase order processing, manufacturing order processing, and customer order processing.

Thus, you should use the expiration date management process with lot handling, preferably with a lot method that acquires all lots defined in the lot master file.

In addition, the Best before date, which is the last date recommended for the use of the product while it is at peak quality, is useful for ensuring the quality, not safety, of the product. While you may safely consume the product after the posted date, it may lack qualities such as taste, texture, appearance, or aroma. This is often referred to as a "Use By" date. It is selected by the manufacturer, packer or distributor of the product on the basis of product analysis through its shelf life, quality tests, or other information. It is also based on the conditions of handling, storage, preparation, and use printed on the label.

## Outcome

You obtain a correct priority date for lots in 'Balance Identity. Open Toolbox' (MWS068). This date, in turn, is used for automatic allocation when following first in, first out (FIFO) principles.

You can view the balance identities according to the expiration date in (MWS068). If a record exists in lot master table MILOMA, then you will find the information concerning the expiration date, sales date, best before date, and follow-up date on 'Lot/Serial Number. Open/Connect to Item' (MMS235/E). Option 5 is the view to search for follow-up dates. No printouts are available for this view. Dates can be changed in 'Balance Identity. Reclassify' (MMS130).

Where the Expiration date is read-only, there is no impact on the business logic for the calculation of the Expiration date, and Sales date. Best before date will follow the same business logic as Sales date, calculating

a value using Best before time (which is the number of days that the product retains its properties and quality) as the offset.

The system provides the ability to enter and change the Expiration date, Sales date and Best before date values. There is also system verification of expiration, sales, and best before dates. Warnings are given to the user if any date values appear invalid.

The 'Expiration date' field is conditionally an editable field in these programs:

- 'Manufacture Order. Report Receipt' (PMS050)
- 'Quality-Inspected Item. Put-away' (PMS130)
- 'Manufacture Order. Report By-product' (PMS080)
- 'Manufacture Order. Report Co-product' (PMS090)
- 'Manufacture Order. Report Order-less' (PMS260)
- 'Purchase Order. Receive Goods' (PPS300)

System validation of expiration, sales and best before date calculations are implemented on these programs:

- 'Manufacture Order. Report Receipt' (PMS050)
- 'Quality-inspected Item. Put away' (PMS130)
- 'Manufacture Order. Report By-product' (PMS080)
- 'Manufacture Order. Report Co-product' (PMS090)
- 'Manufacture Order. Report Orderless' (PMS260)
- 'Purchase Order. Receive Goods' (PPS300)

Warning messages are issued if conditions do not permit the entry of an expiration date by a user.

Warning messages are presented if a sales date value is greater than the expiration date.

Use expiration date management to obtain the correct priority date for the lots in (MWS068). This date is used by the automatic allocation when material is allocated based on FIFO. Order handling with the last sales date is an exception; here the automatic allocation works on the sales date (if used) instead.

The use of expiration dates in conjunction with sales dates and best before dates helps industries control the quality of a lot by recording these types of dates for usage, freshness and potency. The system provides flexibility for the input and calculation of the expiration and sales dates.

Expiration date, sales date, and best before date are stored in the lot master table MILOMA.

The expiration date method is stored in the item master table MITMAS.

The sales time and best before time are stored in the balance identity table MITBAL.

### **Before you start**

- Set the lot control method on 'Item. Open' (MMS001/E).  
To use all functionality (expiration date, sales date, and follow-up date), select methods 2, 3, or 5. They will add a record in the lot master table MILOMA when entered in the system.  
If only priority (expiration) date is used, you can use method 0 (no lot control) or 1 (lot control with no MILOMA record).
- On (MMS001/F), you can select inspection code 0, 1, or 2 for manufactured items.  
0 = No inspection

1 = Inspection

2 = Inspection with laboratory inspection.

- For purchased items, option 0 or 2 is valid. The goods receiving method determines whether an inspection is performed.
- On 'Item. Open' (MMS001/F), set the expiration date method to 0, 1, or 2, which indicates:
  - 0 = Expiration date not used. The receiving date will be set as the priority date.
  - 1 = Receiving date.
  - 2 = Production date.
    - For manufactured items, 1 means that the priority date equals the shelf life entry (MMS001) plus the manufacturing date.  
Follow-up date and sales date are calculated in the same way.  
If you have coded the item as inspected, you can override these dates in 'Quality-Inspected Item. Put-away' (PMS130).
    - For purchased items, 1 means that you can specify the expiration date for the item in 'Purchase Order. Receive Goods' (PPS300).  
The supplier's production date is specified and the expiration date is calculated.
- The Expiration Date may be specified or updated when receiving goods for a manufacturing order or a purchase order, assuming the item has these setup conditions:
  - In (MMS001), the Inspection code is defined as 0 or 1.
  - In (MMS001), the Expiration date method is 2 or 4.
- All dates, both purchased and manufactured, can be changed in (MMS130).
- On 'Item. Connect Warehouse' (MMS002/I), the shelf life, reinspect date, and follow-up date are entered as the sum of YY+MM+DD. This means that if the current date is 980101 and the shelf life is 00 01 01, then the expiration date (priority date) is set to 980202.
- The Expiration date can be calculated per bucket using point of time table in 'Point of Time Table. Open' (RPS080) with point of time type 50-'Expiry Date'.  
On (MMS002/I), the expiry date table is defined. If the field is blank, standard calculation of expiration date is used.
- The conditions in [Lot/Serial Number Settings](#) on page 172 must be met.

### Follow these steps

#### 1 **Expiration Date Management in Purchase Flow:**

- a** There are four different possibilities in this flow: with or without quality inspection, and expiration date method 1 or 2.

*No Quality Inspection (QI) and Expiration Date Method 1*

- b** On 'Purchase Order. Receive Goods' (PPS300/E), the expiration date will be proposed as the current date (transaction date) plus the shelf life. Both are editable fields.

Transaction date 980101

Expiration date 980202

*No Quality Inspection (QI) and Expiration Date Method 2*

- c** On (PPS300/E), the manufacturing date can be changed but is not proposed by default.

**d** Manufacturing date 980101

This will give the different dates calculated with the manufacture date as a base.

*With QI and Expiration Date Method 1*

**e** On (PPS300/E), the expiration, sales, and follow-up dates are proposed as transaction dates, along with the dates entered on (MMS002/I).

Expiration date 990230

Sales date 990215

Follow-up date 990201

*With QI and Expiration Date Method 2*

**f** On 'Purchase Order. Inspect Goods' (PPS310/E), the manufacturing date is proposed as the transaction date but can be overridden.

Manufacturing date 980101

**2 Expiration Date Management in Manufacturing:**

- a** When using the expiration date functionality on the manufacturing order (MO) header, an expiration date is calculated automatically and displayed on the MO. The date can also be manually overridden. For the functionality to work, activate the 'Keep expiry date decisions made on the MO' check box for the MO type in 'Manufacturing Order Type. Open' (PMS120). The expiration date method for the item on 'Item. Open' (MMS001/F) must also be set to 2 or 4.

Managing expiration date on the MO can be useful when the date is needed before reporting put-away, since the date is calculated already when the MO is created. This can be the case if the expiration date is used as a parameter during planning or if the date should be printed on the item during manufacturing.

The expiration date is calculated as the finish date on the MO plus the number of shelf life days. For example, MO finish date is 070601 and shelf life is 15 days. The expiration date will be set to 070616.

If the MO is re-planned or when it is reported as put-away in (PMS050), the expiration date is automatically recalculated.

You can also manually specify an expiration date on the MO. This date will then override the automatically calculated date.

- b** If not using the functionality on the MO header, the expiration date is calculated when the receipt is reported during put away in (PMS050).

The expiration date is calculated as the production date or receipt date, specified when reporting receipt, plus the number of shelf life days. Whether production date or receipt date is used, depends on the 'Expiration date method' field for the item on 'Item. Open' (MMS001/F).

- c** If not using the functionality on the MO header for an item that should be quality inspected, the date is calculated according to the step above. However, the date can be changed during reporting in (PMS130).

An item needs to be quality inspected if the 'Inspection code' field is set to 1 or 2 for the item on 'Item. Open' (MMS001/F).

**3 Expiration Date Management in Customer Order Flow:**

- a** If a sales item has a sales date and automatic allocation, a passed sales date ID will not be automatically allocated. It can be overruled by manual allocation. If the item has manual allocation, no warning will be issued if the sales date is passed.

- b** A user-defined matrix of allocation key fields can be set up in 'Alloc Control Selection Field. Enter' (MMS123). For the key fields used, you can define whether allocation should validate the sales or expiration (priority) date in 'Alloc Control Selection Table. Open' (MMS124).
- c** Simple allocation and last sales date will not work normally since the allocation is done differently (in MITBAL instead of MITLOC). The simple allocation will allocate for the balance on the item/warehouse combination. But when you start 'Picking List. Report' (MWS420) to select the balance identity to use, the auto-allocation will not allocate on a balance identity with a passed last sales date.

#### 4 Management of Expiration, Sales and Best Before Dates Upon Receipt:

**Note:** This functionality addresses only the assignment of dates to lots upon receipt. It does not apply to the usage of dates in Customer orders or Distribution orders.

- In (PMS050), you can specify or update the 'Expiration date' field if the item being received meets the setup requirements for Inspection code and Expiration date method. System validation ensures that 'Expiration date' is greater than the 'Sales date'. The new expiration date is saved.
- In (PMS130), you can specify values for 'Expiration date', 'Sales date' and 'Best before date' if the item being received meets the setup requirements related to the lot inspection method and expiration date method. The system performs validation that 'Expiration date' is greater than the 'Sales date'. The new values for 'Expiration date', 'Sales date' and 'Best before date' are saved.
- In (PMS080), you can specify or update the 'Expiration date' if the item being received meets the setup requirements for inspection code and expiration date method. The new expiration date is saved.
- In (PMS090), you can specify or update the 'Expiration date' if the item being received meets the setup requirements for inspection code and expiration date method. The new expiration date is saved.
- In (PMS260), you can specify or update the 'Expiration date' if the item being received meets the setup requirements for inspection code and expiration date method. The new expiration date is saved.
- In (PPS300), you can specify values for 'Expiration date' and 'Best before date'. When receiving goods for a purchase order, validation ensures that 'Expiration Date' is greater than the 'Sales Date'. The new expiration date and best before date are saved.
- In (MMS002), you can specify a 'Best before time' to calculate the Best before date. The field value will reflect the number of days. To allow the input of the 'Best before time' field, an item must be lot-controlled, and the 'Expiration date method' must be set to 1, 2, 3, or 4. The new best before time is saved.

**Note:** The system applies the same logic to the 'Best before time', as is used for the input of 'Sales time' and the calculation of the 'Sales date'.

- a** In 'Item Type. Select Fields' (MWS041), select the Field Control for (MMS002/I) and define the user access for 'Best before time' in Item Type. The access options for 'Best before time' are '0- No display', '1- Display' and '2- Editable'.
- b** In 'Interface Item. Connect Warehouse' (MHS002), you can enter a 'Best before time' to calculate the Best before date. The field value will reflect the number of days. To allow the input of the 'Best before time' field, an item must be lot-controlled, and the 'Expiration date method' must be set to 1, 2, 3, or 4. The new best before time is saved.
- c** In 'Lot/Serial Number. Open/Connect to Item' (MMS235), you can view the 'Best before date' for an item/lot combination.

The 'Best before date' uses the same logic as the display of the 'Sales date'.

- d** In 'Item. Open Toolbox' (MMS200), you can view the 'Best before time' for an item. The 'Best before time' uses the same logic as the display of the 'Sales time'.
- e** In 'Balance Identity. Analyze per Data Type' (MWS320), you can view the 'Best before time' for an item. The 'Best before time' uses the same logic as the display of the 'Sales time'.

## Manage Harvested Dates

Harvested dates in M3 affect manufacturing order processing and purchase order processing.

In certain industries, such as the poultry industry segment, there is a need to closely control the quality and freshness of products that are typically harvested or killed. In order to accomplish this, a concept called the Harvested date (also referred to as Kill date) may be used to further define an item.

The following Harvest method options are available for items: 0 (do not use the Harvested date), 1 (use a manually entered Harvested date), or 2 (inherit a Harvested date from transactions processed upstream).

You should use the Harvested date management process with lot handling.

A manufactured item that is produced from items, which are previously harvested, must have a mechanism to keep the traceability of what item-lot was used to make the item in addition to what was the Harvested date of that item-lot. Manufactured items with a Harvest method of 2 inherit their Harvested date as the earliest Harvested date from the QC lots of the ingredients that were issued to the order. The corresponding item and the lot are also captured on the manufactured item's lot record.

Because items that are purchased can have a Harvested date (provided by the vendor), there is a mechanism to capture this information. You may enter the Harvested date for purchased items with a Harvest method of 1 (where the Harvested date may be manually entered). The Harvested date cannot be entered during purchase receipt for items with a Harvest method of 2 (where the item's Harvested date is inherited from a source item).

### Outcome

Use Harvest method and Harvested date management to get an indication of the freshness of a particular item.

- The Harvested date may be manually entered upon receipt of the purchase order or manufacturing order (MO) if the Harvest method is 1.
- The Harvested date is calculated by the system upon MO receipt if the Harvest method is set as 2. The Harvested date field will inherit the earliest Harvested date from the related ingredients issued.
- In addition, if you need to perform reclassification through 'Balance Identity. Reclassify' (MMS130), the balance identity is impacted by the harvest method attributes of items that are being classified. This impact is restricted to the condition where the Reclassify Calculation method is 0 when a given item is re-classified into a new item.

The summary of the reclassification rules is that an item can be reclassified into another item with the same harvest method attribute. For a Harvest method of 1, the target item's Harvested date can be edited

if required. For a Harvest method of 2, both the source and target items must have a Harvest method of 2 for reclassification to occur. For a Harvest method of 0, the target item will not have any Harvested date saved.

The Harvest method is stored in the MITMAS table (item master). Harvested date is stored in the MILOMA table (lot master).

### Before you start

- Set the Harvest method in 'Item. Open' (MMS001/F).
 

**Note:** To set up an item with a Harvest method of '1 - Harvested date on record' or '2 - Harvested date inherited', the Expiry date method field must have a value other than 0.
- Select the 014 Panel Sequence – F&B check box in 'Purchase Order Type. Open' (PPS095/E) must be selected for the Harvested date functionality to take effect in the purchasing flow.
  - 1 Open 'Purchase Order Type. Open' (PPS095).
  - 2 In the Details section of the E panel, select the 014 Panel Sequence – F&B check box. Press Enter.
 

**Note:** This setting enables access to the E1 panel of 'Purchase Order. Receive Goods' (PPS300) where the Harvested date is entered.

### Follow These Steps

#### 1 The Purchase Flow for Harvested Date Management

If it is a purchased item (that is, an item with a Make/buy code of '2 – Purchased'):

- a After a purchase order has been created for an item with a Harvest method of '1 – Harvested date on record', open (PPS300).
 

**Note:** You cannot enter a Harvested date for any item with a Harvest method of '2 – Harvested date inherited'.
- b Highlight one of the lines to receive and select the Change option.
- c When the E1 panel appears, enter the Harvested date. Press Enter to save.
 

**Note:** You may inquire on the Harvested date for this lot on 'Lot/Serial Number. Connect to Item' (MMS235).

#### 2 The Manufacturing Flow for Harvested Date Management

- a If it is a manufactured item (that is, an item with a Make/buy code of '1 – Manufactured') and the Harvest method is '1 – Harvested date on record':
  - When you receive the finished goods through 'Manufact Order. Report Receipt' (PMS050), enter the Harvested date. Press Enter to save.
- b If it is a manufactured item (that is, an item with a Make/buy code of '1 – Manufactured') and the Harvest method is '2 – Harvested date inherited':
  - After all the ingredients and ingredient-lots have been issued using 'Manufact Order. Report Issue' (PMS060), report output through (PMS050).
 

**Note:** If the item has a Harvest method of 2, the item cannot be reported through (PMS050) unless all the harvest-managed ingredients have been issued first.
  - The system calculates the Harvested date and it cannot be changed.

# Manage Items in the Item Data Interface

This document explains how you manage items in the item data interface. The item data interface enables you to do the following:

- Receive large amount of structured or unstructured item-related data
- Work with item data manually in the item import user interface
- Import item data to M3 BE:
  - Status management in the item interface
  - Tracking errors in validation and import
  - Rules for item numbering
  - Rules when importing items
  - Warehouse selection table – principles
- Perform changes on item data through the item interface
  - Work with the change log
  - Approve or reject changes
- Receive and work with fashion item data
  - Manage styles and Stock Keeping Units (SKUs)
  - The connection between style and SKUs
  - Season definition per style or SKU

## Outcome

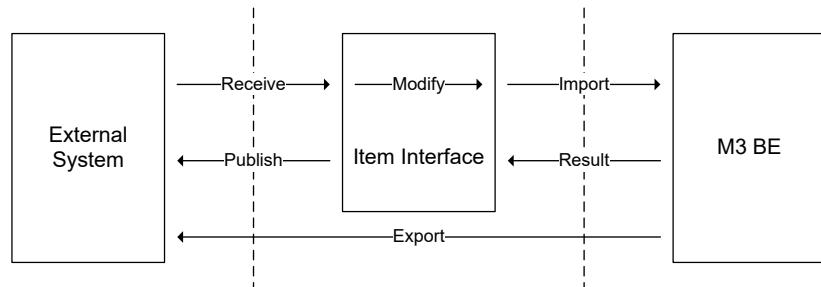
You can receive, process, and import items in M3 BE through the item data interface.

You can also perform changes and log changes for already imported items in the item import function.

The item data interface provides a solution in which item data can be exchanged and enriched between M3 BE and other applications or third-party products.

For further details, refer to the programs 'MI Repository. Open' (MRS001), 'MI Transaction. Open' (MRS002), and 'MI Transaction Layout. Open' (MRS003).

## Solution



### Receive large amounts of structured or unstructured item-related data to interface

An interface item master record is created by the API transaction MHS001MI.AddIntItmMst ('Add Interface Item Master'). The transaction contains all existing fields in table MHIMAS. Other 'Add' transactions are

- MHS002MI.AddIntItmWhs ('Add Interface Item/Warehouse')
- MHS003MI.AddIntItmFac ('Add Interface Item/Facility')
- MHS005MI.AddIntItmCus ('Add Interface Item/Customer')
- MHS040MI.AddIntItmSup ('Add Interface Item/Supplier')
- MHS015MI.AddIntItmAUM ('Add Interface Item/Alt U/M')
- MHS025MI.AddIntItmAli ('Add Interface Item/Alias')

The function program MHIMPITM imports the interface items and creates M3 BE items.

The item type is either entered manually or retrieved as the standard item type defined for the partner used. Mandatory fields are:

- Company
- Partner
- Interface item number
- Item type (if no standard item type exists)

All other attributes can be added through manual enrichment or through additions using the 'Add' or 'Chg' API transactions.

#### *Level of Processing*

By using a process flag in the API transactions, you can control whether interface item data is added only, whether it is added and validated, or whether it is added, validated, and imported into M3 BE. The valid process flags are as follows:

- blank - Data is only added. Validation and import to M3 BE is done manually.
- \*VAL - Data is added and validated. Import to M3 BE is done manually.
- \*IMP - Data is validated and, if there are no validation errors, imported to M3 BE.
- \*AUT - Same as \*IMP, but the processing is done through an auto start job, MHS250 (Interface Item Import), instead of interactively.

### Work with item data manually in the item interface

'Interface Item. Open toolbox' (MHS200) is the program from which all functions in the interface can be accessed.

Interface items and all related data can be searched and displayed.

The following options are available on the (MHS200/B) panel.

- Option 11 starts 'Interface Item. Open' (MHS001).
- Option 12 starts 'Interface Item. Connect Warehouse' (MHS002).
- Option 13 starts 'Interface Item. Connect Facility' (MHS003).
- Option 14 starts 'Interface Item. Connect Customer' (MHS005).
- Option 15 starts 'Interface Item. Connect Supplier' (MHS040).
- Option 16 starts 'Interface Item. Connect Alternate U/M' (MHS015).
- Option 17 starts 'Interface Item. Connect Alias Number' (MHS025).

- Option 20 starts 'Interface Item Change Log. Open' (MHS210).
- Option 21='Import' imports an interface item to M3 BE through the function program MHIMPITE.
- Option 22 starts 'Interface SKU. Connect Style' (MHS220).
- Option 25='Validate', lets you validate the record in all MHS programs (MHS001/002 etc). You can also validate the record in each MHS program. See [Statuses in the item interface](#) on page 188.
- Option 30 starts 'Item. Open' (MMS001).
- Function F14 starts 'Item. Open Toolbox' (MMS200).
- Function F16 starts 'Settings -Item Import' (MHS262).
- Function F17 starts a selection program where you can select records based on the different fields.
- Function F18 imports the currently selected interface items to M3 BE through the function program MHIMPITE.

All the interface item programs have normal detail panels where the data can be changed or enriched after being received from the external system. The following fields are added for the item import interface function:

All MHS programs have the following:

- Partner and Message type in the header.
- The 'Interface Item number' is the ID of an interface item. This number is received from the external system.
- 'Interface status', see [Statuses in the item interface](#) on page 188.
- 'Exists in BE' indicates whether the record has been successfully imported.

On (MHS001/E), 'External message number' indicates the sender's message number. This number can be used for traceability. 'Item number' indicates the number the item has in M3 BE if it is imported. Before the import, you can also manually enter the M3 BE item number here. 'Message ID' indicates an error message received when validating or importing items.

For more information about 'Lowest status', see [Statuses in the item interface](#) on page 188.

## Import interface item data to M3 BE

Item data can be imported to M3 BE in three different ways:

- One by one in (MHS200), option 21=Import
- A selection of items using an auto start job, (MHS200), Function F18='Import selected'
- Through a transaction in MHS200MI (process flag \*IMP or \*AUT)

For all three alternatives, the following is valid: If the item has lowest status < 40 then a validation is done before the import. If the validation is successful (lowest status = 40) then the item is imported. If the validation is not successful, the item is not imported.

### **Statuses in the item interface**

All of the eight MHS programs have an 'Interface status' field (STA1) with the status for the record in the current program. In addition to the interface status, the lowest status of the child tables is displayed in (MHS001), in the 'Lowest status' field (STOT). See the valid statuses in this table.

Status	Comment
20	Added or modified (valid status in all MHS programs)
21	Validation error in (MHS001) – Interface item

Status	Comment
22	Validation error in (MHS002) – Interface item/warehouse
23	Validation error in (MHS003) – Interface item/facility
24	Validation error in (MHS005) – Interface item/customer
25	Validation error in (MHS015) – Interface item/alternate U/M
26	Validation error in (MHS025) – Interface item/alias
27	Validation error in (MHS040) – Interface item/supplier
28	Validation error in (MHS220) – Interface SKU
40	Validation successful (valid status in all MHS programs)
41	Import error in (MHS001) – Interface item
42	Import error in (MHS002) – Interface item/warehouse
43	Import error in (MHS003) – Interface item/facility
44	Import error in (MHS005) – Interface item/customer
45	Import error in (MHS015) – Interface item/alternate U/M
46	Import error in (MHS025) – Interface item/alias
47	Import error in (MHS040) – Interface item/supplier
48	Import error in (MHS220) – Interface SKU/style
60	Import successful (valid status in all MHS programs below)

- Tracking errors in validation or import**

A message ID and message in full text are displayed at the bottom of the (MHS001/E) panel if there is a validation error.

If there are several validation errors, only the first error is displayed. When you correct the error and validate it again, the next is displayed, and so on.

- Rules for item numbering**

The creations of item numbers in the table MITMAS (MMS001) depend on the following parameters.

Interface item number exists (mandatory)	Item number specified in MHIMAS	Item numbering rule exists on item type	Manual override allowed on item type	Item number in MITMAS created according to...
X	X	X	X	Item number in MHIMAS
X	X	X		Numbering rule
X		X	X	Numbering rule
X		X		Numbering rule

Interface item number exists (mandatory)	Item number specified in MHIMAS	Item numbering rule exists on item type	Manual override allowed on item type	Item number in MITMAS created according to...
X	X			Item number in MHIMAS
	X			Interface item number

**Note:**

- Items marked with X set the item number in MITMAS.
- 'Interface item' is the number received from the external system.
- 'Item number specified in MHIMAS' is the item number field in (MHS001). The first time the item is received this field is open and empty. When the interface item has been imported, this field is entered with the M3 BE item number and cannot be modified.
- 'Item numbering rule exists on item type' indicates how to create a numbering rule and how to create items with templates on item type. Refer to these documents in the Related topics section:
  - Create an Item Numbering Rule and Connect It to an Item Type
  - Creating Items in Different Ways
- 'Manual override allowed on item type' – The 'Override with manual entered item number' field is activated on the (CRS040/E) panel.

- Rules when importing items**

For each interface item, one normal M3 BE item can be created. The same applies for the related data. For example, one (MHS040) record is used to create one (PPS040) record.

Item/warehouse and item/facility can be created by using separate selections of warehouses together with one generic (MHS002) record or one generic (MHS003) record in order to create several records in M3 BE.

All item-related data can be created automatically from template items the same way as for regular items, assuming a template item exists. For more information about how to create items, see [Creating Items in Different Ways](#) on page 836.

Any value provided from the item interface overrides the template value.

Item import control is available, which defines how the value zero (blank) should be managed in different fields when you import an item that has already been imported.

Generic interface records are allowed.

- Rules when importing item/warehouse**

The item types used must be correctly set up in 'Settings – Item Import' (MHS262).

Also, it is important to check parameter 'Lim itm/whs crt' (LMWH) for these items.

For alternative 'Lim itm/whs crt' (LMWH) = 0:

- 'Interface Item. Open toolbox' (MHS200) + Ctrl31. Only the specified warehouse will be imported.
- 'Interface Item. Open toolbox' (MHS200) + Ctrl21 (Sorting order based in MHIBAL, importing per warehouse). Only the selected warehouse will be imported.
- 'Interface Item. Open toolbox' (MHS200) + Ctrl21 (Sorting order based in MHIMAS, importing per interface item). All warehouses
  - with a record in 'Interface Item. Connect Warehouse' (MHS002)

- listed in 'Item type. Connect Warehouses' (MWS042) and existing in 'Item. Connect Warehouse' (MMS002) for the template item will be imported.
- MHS200MI.AddIntItmWhs. All warehouses
  - with a record in 'Interface Item. Connect Warehouse' (MHS002)
  - defined in 'Item type. Connect Warehouses' (MWS042) and existing in 'Item. Connect Warehouse' (MMS002) for the template item
 will be imported. The system does not take the specified warehouse in the API for the alternative LMWH=0 into account.
- For alternative 'Lim itm/whs crt' (LMWH) = 1:
  - 'Interface Item. Open toolbox' (MHS200) + Ctrl31. Only the specified warehouse will be imported.
  - 'Interface Item. Open toolbox' (MHS200) + Ctrl21 (Sorting order based in MHIBAL, importing per warehouse). Only the selected warehouse will be imported.
  - 'Interface Item. Open toolbox' (MHS200) + Ctrl21 (Sorting order based in MHIMAS, importing per interface item). All warehouses where a record in 'Interface Item. Connect Warehouse' (MHS002) exists will be imported.
  - MHS200MI.AddIntItmWhs. All warehouses where a record in 'Interface Item. Connect Warehouse' (MHS002) exists will be imported. The system does not take the specified warehouse in the API for the alternative LMWH=0 into account.
- For alternative 'Lim itm/whs crt' (LMWH) = 2:
  - 'Interface Item. Open toolbox' (MHS200) + Ctrl31. Only the specified warehouse will be imported.
  - 'Interface Item. Open toolbox' (MHS200) + Ctrl21 (Sorting order based in MHIBAL, importing per warehouse). Only the selected warehouse will be imported.
  - 'Interface Item. Open toolbox' (MHS200) + Ctrl21 (Sorting order based in MHIMAS, importing per interface item). Warehouses included in the warehouse table in 'Interface Item. Open' (MHS001) or 'Settings - Item Import' (MHS262) will be imported if they exist in 'Interface Item. Connect Warehouse' (MHS002).
  - MHS200MI.AddIntItmWhs. Only the selected warehouse in the field WHLO will be imported.

**Note:** Alternative '2' is the only way to import items from a selected warehouse, using an API transaction (MHS200MI.AddIntItmWhs). (It is a simulation of the related option Ctrl+31 in (MHS200)).

#### Warehouse selection table - Principles

The warehouse selection table works as a filter in these cases:

- A template item/warehouse exists – create only if warehouse is OK according to the item type and the selection table if 'Limit item/whs creation' = 2.
- An interface item/warehouse record exists – create only if warehouse is OK according to selection table and if 'Limit item/whs creation' = 2.

The warehouse selection table works as a selection when a generic interface item/warehouse record exists (warehouse is blank) – create item/warehouse for all the selected warehouses in table.

#### Perform changes through the interface

An interface item can be changed manually through the MHS programs or through the API transactions. When an interface item record is changed, the status of that record is lowered to 20. To make the changes take effect in M3 BE, the interface item needs to be validated and imported again.

A change log function is available. You can select the fields to be logged for changes. Any change to these fields made through the API will be stored in the change log instead of taking effect immediately.

### Using the change log

**Note:** You must first make the settings for the change log.

- 1 Start 'Interface Item Change Log. Open' (MHS210). On the B panel, the interface item and the tables that are affected by the change are displayed.  
Keys 1, 2, and 3 display the value for the table. For example, if the table is MHIBAL, key 1 is a warehouse. 'Field' is the field you have set for logging in (MHS264).
- 2 Display the E panel to check the changed values. The From value field indicates the value before the change. The To value field displays the new value.
- 3 Display the B panel again. To approve the change, select option 12='Approve'. To reject the value, select option 11='Reject'.  
You can also approve or reject all records for one interface item by using function F15='Reject all', and F16='Approve all'.
- 4 The Change log status can be one of the following:
  - 10 = A change log exists. The change log contains a record.
  - 15 = Rejected. The record will remain in (MHS210) for the number of days defined in (MHS262) before it is deleted.
  - 20 = Approved. The change takes effect. The record is updated in the interface program (in this example the purchase price is updated in (MHS001)) and can be imported to M3 BE. The record will remain in (MHS210) for the number of days defined in (MHS262) before it is deleted.

**Note:** You can manage receiving fashion item data through the item import interface.

- Receive styles into the interface
- Import style to M3 BE
- Ensure the features/options are in place and connected to the style in M3 BE (done automatically if created from style template)
- Create interface SKUs
- Send SKU/style relations to the interface (which style and which features/options combination is one SKU)
- Import SKUs and all SKU-related data in M3 BE is created (no difference to BE-created SKUs)
- Season functionality is supported from the interface

For details about creating settings for templates, refer to these documents in the Related topics section:

- Create Style and Stock Keeping Units
- Settings for Style and Stock Keeping Unit

- 5 The style is added in (MHS001) or API MHS001MI as a regular interface item but always with configuration code 6 on the (MHS001/F) panel.
- 6 The style is imported to M3 BE in the same way as a regular interface item. The style is created in (MMS001) or using API MHS001MI and (MMS016).

Features are automatically copied to (MMS017) if template data exists. If there is a need to add features and options from the external system, the APIs MMS017MI, PDS056MI, and PDS050MI should be used.

### The SKUs

The SKUs are added in (MHS001) or using API MHS001MI as a regular interface item but always with configuration code 7 on the (MHS001/F) panel.

### The style and SKU connection

A style/SKU relation must be created in order to specify the options of the features that apply for this SKU.

- 1 Start 'Interface SKU. Connect Style' (MHS220). Select the partner and enter an interface item (the SKU). Open the E panel.
- 2 The interface style number indicates the interface style that should be connected.
- 3 If working in (MHS220), you can press F14 to retrieve the features of the imported interface style.
- 4 Specify the options for the feature.
- 5 The 'Style' field at the bottom of the E panel indicates whether the style has been imported to M3 BE before. The first time the style is received, this field is open and empty. When the interface style has been successfully imported, this field is entered with the M3 style number and is not editable.
- 6 Open the (MHS220/B) panel again.

### The season definition per style or SKU

- 1 Select option 11='Style/season' on the (MHS220/B) panel. 'Interface Style. Connect Season' (MHS221) is started.
- 2 Specify an interface style number or an interface SKU. Season can be specified at either level.  
**Note:** Season control must be selected on (MHS001/F)
- 3 Specify a season. Seasons are defined in (CRS912).
- 4 Select 'Create' and click Next until the B panel is displayed again. Alias records with alias category 88 will now only be created for the connected season in (MMS025).

## Manage Field Lengths using (CRS735)

The purpose of this program is to give the user the possibility of increasing the field length for item name and item description on a company level in a configurable view.

### Limitations

The field length can only be increased, never decreased.

### Workflow

This table describes the purpose of each of the applicable fields in 'Settings - Field Length' (CRS735) and provides the names of the specific item name and item description fields that are impacted by the field length adjustment.

Field description	User guidance
Field without prefix	<p>...indicates a field that has been extended in the database and where the field length used in configurable views is available to increase.</p> <p>Alternatives:</p> <p>ITDS represents the Item name. This field controls all configurable views that include these fields:</p> <ul style="list-style-type: none"> <li>• ITDS (Item name)</li> <li>• PITT (Purchase order item name)</li> <li>• SITT (Supplier item name)</li> <li>• KTDS (Kit item name)</li> <li>• SVDS (Service expense name)</li> </ul> <p>FUDS represents the Item description. This field controls all configurable views that include these fields:</p> <ul style="list-style-type: none"> <li>• FUDS (Item description)</li> <li>• TEDS (Technical description)</li> <li>• PITD (Purchase order item description)</li> <li>• SITD (Supplier item description)</li> </ul>
Field length	<p>...specifies the field length that will be used as the default length in configurable views. This field also controls the length of the input fields on the detail panels.</p> <p>You must regenerate the configurable view using Related option 12='Regenerate' after increasing the field length to ensure that the new field length is available in the configurable view.</p> <p>Note that this field length does not control the field length on any output fields on the detail panels, nor on any fixed list views.</p>
Maximum field length	<p>...defines the maximum field length available to the configurable views where it appears.</p> <p>This corresponds to the database field length. This is not editable.</p>

## Managing Item Hierarchy Structure

This document explains item hierarchy structure.

There are several requirements on user defined item hierarchy and product catalog functionality. The main requirements are from two areas:

- E-business is focusing on product catalog.
- Distribution is focusing on item hierarchy.

Product catalog is not the same as item hierarchy. One difference is that item hierarchy is focusing on companies' internal business structures, while product catalog is a way to present information between customers and suppliers.

The scope for this design is item hierarchy structure, a flexible way to search items and new term for statistics and control.

One reason why the product catalog is excluded from this design is that the product catalog logic most likely will be placed on the web server not within the ERP application it self.

### Outcome

- An Item Hierarchy Structure is created. Vertical and a horizontal search can be done.
- Item hierarchy structure can be displayed in some programs.
- Item hierarchy structure is valid for the whole company.

The main use is to give possibility to search items in a structured way and to have statistics on other terms than we have today. Item hierarchy fields be used as a path for user-defined tables, and also to create the contents of user-defined files:

The following tables are updated:

- The Item master MITMAS table is changed.
- The System parameters CSYPAR table is changed.
- The Item hierarchy definitions MITHRY table is new.

### Before you start

Items are registered as described in [Create and Connect Item to a Warehouse Structure](#) on page 143.

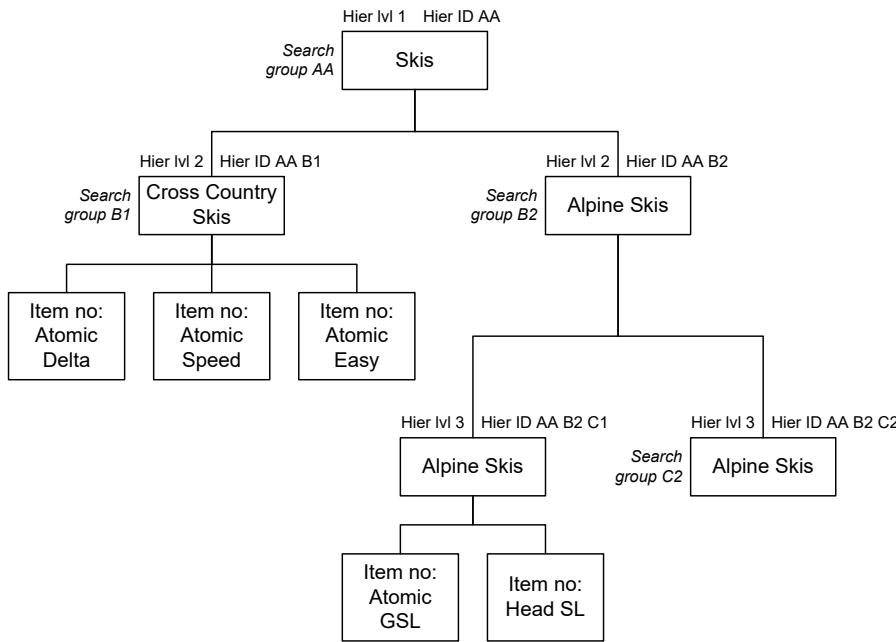
### Description

The main use is to allow to search items in a structured way and to have statistics on other terms what we have today.

### Structure

- Item Group Structure

This diagram shows an example of item group hierarchy. Note the difference between horizontal (search groups) and vertical (hierarchy ID) search.



The vertical search is based on the fact that each hierarchy level (Hier lvl) is represented as an iterative identity field that is repeated for each level. The approach is a drill down approach.

Each hierarchy level could also be unique. This makes it possible to do a horizontal search.

Since the item hierarchies and search groups are stored on the item master can this information be used in views from different programs like item toolbox (MMS200), item statistics (MMS090) etc.

- Some definitions

**Item Hierarchy** = A hierarchical search patch that reflect a companies business in a structure way. A drill down approach, called hierarchy id in the data base.

**Search group** = Could be used as a complement to do a horizontal search.

**Hierarchy level** = Defines on which level a hierarchy entity is defined. Value 1 to 5 is permitted. One is the top level.

**Upper level** = Defines the level above, used on keys for drill down purposes.

**Upper level identity** = Defines the hierarchy identity for the level above.

### Workflow in M3

- Field length for item hierarchy fields is set in 'Settings - Item Hierarchy' (CRS704).
- Allowed hierarchies and to build the vertical relations are defined in 'Item Hierarchy. Open' (MMS021).
- How to build the horizontal relations and the allowed search groups are defined in 'Search Group. Open' (MMS022).
- Item is connected to the item hierarchy structure in 'Item. Open' (MMS001), on the M panel.
- Item hierarchy structure can be displayed in some programs if an appropriate view is defined, and be selected for search paths for user-defined tables, and also to create the contents of user-defined files.

- In the warehouse area can item hierarchy structure be displayed in following programs, by creating a user defined view.

**Field group Program**

MM200 Item toolbox (MMS200)

MMKV1 Item toolbox (MMS200)

MMIT1 Views supply chain (MWS051)

MMPV5 Stock transactions (MWS070)

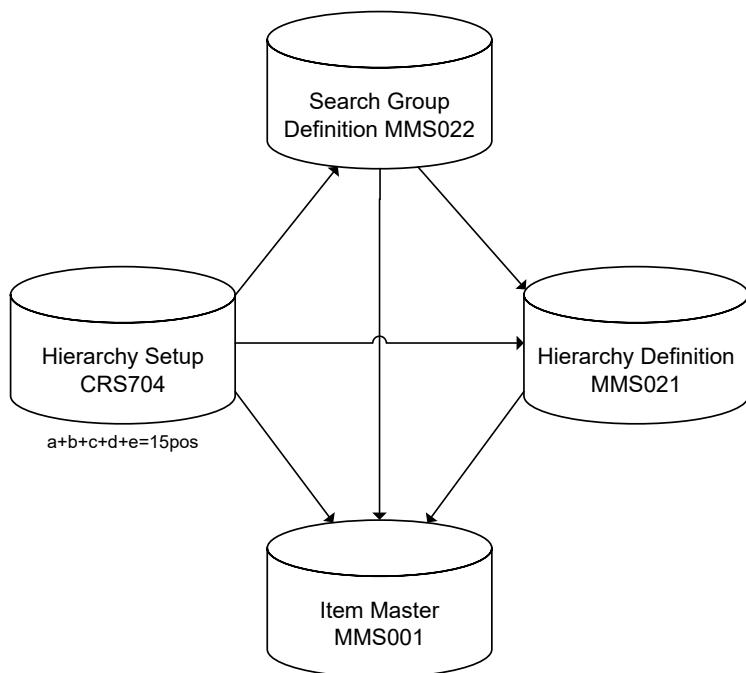
MWPV2 Balance id (MWS068)

In following programs can item hierarchy fields be used as a path for user-defined tables, and also to create the contents of user-defined files:

**Field group Program**

- MMAD1 Allocation control table (MMS123)
- MMAD2 Allocation control location (MMS124)
- MMAD3 Joint delivery rules, groups (CRS016/MWS125/E)
- MMAD4 Joint delivery rules (CRS016/MWS125)
- MMAD5 Cross dock location matrix (CRS016/MWS130)

This diagram shows the files and programs involved in the described workflow.



# Reclassify, Trace and Display Lot and Serial Number

This process document explains how to create, reclassify, trace and display a lot in the lot master table (MILOMA).

## Outcome

An item with a lot number is created or an item with a serial number is created. The lot is also reclassified, traced and displayed.

This process is used to control items in the material flow by setting unique identities such as lot numbers or serial numbers.

A lot master for the item must exist in order to be able to perform laboratory inspection (LI).

An item with a lot number is stored in the MILOMA table.

## Before You Start

The conditions in [Lot/Serial Number Settings](#) on page 172 must be fulfilled.

## Follow These Steps

- 1** Open 'Lot/Serial Number. Connect to Item' (MMS235). This is the program for creating a lot number. The lot number can be created either automatically or manually. This depends on the value in the 'Lot number method' field on the E panel in 'Item. Open' (MMS001/E).
  - If the lot is a serialized item and the 'Lot control method' field is set to 5 on the (MMS001/E) panel, then a serial number specification must be entered in 'Serial Number Specification' (MMS236). Option 11 in (MMS235) starts this program.
  - If the lot is a serialized item (the 'Lot control method' field is set to 2 on the (MMS001/E) panel), then serial number information can be entered in 'Serial Number. Connect to Item' (MMS240). Options 12 and 13 in (MMS235) start this program.
- 2** A lot/serial number is reclassified in 'Balance Identity. Reclassify' (MMS130). Option 38 from (MMS235) starts this program. This program allows to:
  - change or split the lot/serial number
  - give the lot a new item number and/or a new lot number
  - change the status code
  - change valid dates such as expiration date, follow-up date and sales date.
- 3** Lots are traced in 'Lot. Trace' (MMS140). The purpose of this is to trace an item through the entire material flow. For example, tracing can be used when a complaint is made or when an inventory variance occurs. Option 27 from (MMS235) starts this program.
- 4** Labels are printed in 'Label. Print' (LIS601). Option 26 from (MMS235) starts this program.
- 5** 'Balance Identity. Display' (MMS060) can be used to view the different lots that belong to one item. Select sorting order 9. Lots can also be displayed in 'Lot/Serial Number. Open/Connect to Item' (MMS235).

# Reclassification of Balance Identity for a Catch Weight Item

This document describes the internal warehouse activities involved in reclassification for balance ID.

The balance identity (balance ID) is the inventory record, defined by warehouse, location, item, lot, and container.

If necessary, reference the document for an introduction to the functionality available to support the concept of catch weight.

## Outcome

'Balance Identity. Reclassify' (MMS130):

- Status changed on a balance ID level. Parts of a lot can be reclassified to a new status or a whole lot.
- Status changed to '1-Under inspection', '2-Approved' or '3-Rejected'.
- Multiple statuses exist on the same lot.
- Reclassification to a new balance ID is performed.
- New lot, container and item number is created.

## Activities in this scenario:

- Reclassify status on part of a lot or a whole lot.
- Reclassify to new lot-number and item.
- Enter new lot-number for total quantity on the balance ID.
- Evaluate results in 'Balance Identity. Display' (MWS068) and 'Stock Transaction. Display History' (MWS070).

### Reclassify status on part of a lot or a whole lot

- 1 Two balance IDs for the same lot number exist on location 1 and 2. Both are in status '2-Approved'.
- 2 Open 'Balance Identity. Reclassify' (MMS130/A).
- 3 Select 'item', 'lot no', 'warehouse', 'location'.
- 4 Use Calculation Method 1 = 'Change status on location level' and press Enter.
- 5 E panel displayed. Change status to '3-rejected'.
- 6 Launch 'Balance Identity. Open Toolbox' (MWS068/B) where location 1 in status 2, and location 2 in status 3 is displayed. This set up allows multiple statuses per lot (in lot master).

### Reclassify to new lot-number and item

- 1 Start (MMS130/A). Use Calculation Method 0='New item / New lot'. Press Enter.
- 2 E panel displayed where new lot-number for 2 units of the 3 should be entered.
- 3 On (MWS068/B), the quantity on the old lot has been reduced by 2 and the catch weight on the old lot has been reduced by 2/3.

- 4 A new balance ID with the new lot number is created. The quantity is equal to 2 and the catch weight is equal to  $2/3 * 32 = 21,333 \text{ kg}$ .

#### Enter new lot-number for total quantity on the balance ID

- 1 Start (MMS130/A). Use Calculation Method 0='New item / New lot'. Press Enter.
- 2 On E panel specify new lot-number for total quantity on the balance ID = 2 units and for 21 kg.
- 3 The old lot-number is no longer found on (MWS068/B) and a new lot is created with 2 units and 21 kg.

#### Summary

- Status can be changed on parts of a lot.
- Where reclassification of full quantity results in a difference in catch weight, a CWA transaction is required to account for inventory loss or gain.
- Where reclassification is performed only for part of the total quantity, the same ratio of the catch weight will be reclassified.

## Reclassify Items and Lots

This instruction explains how to reclassify items and lots. The document consists of two workflows. The first workflow describes how to reclassify items that are not lot controlled. The second workflow describes how to reclassify items that are lot controlled. A variation of this workflow allows lot-controlled items (INDI value 3) to be reclassified into items with the lot control method (INDI) set to 1 or 0 (non-lot controlled) using the calculation method of 0 - 'New item/New lot'.

INDI stands for the Lot control method and can have the values:

- 0 - Lot control is not used, thereby the item is non-lot controlled
- 1 - Lot control is used. Lots do not need to be in the lot master table, therefore the lot exists only in the balance ID record.
- 3 - Lot control is used. All lots must be entered in the lot master table.

For items that are not lot controlled, the total quantity can be reclassified for each location where the item is stored. A partial quantity at one location cannot be reclassified unless the part to be reclassified is first moved to another location.

For items that are lot controlled, the reclassification will affect the total quantity at each storage location. The only way to reclassify part of the total on-hand balance is to split the lot into new lots.

#### Outcome

- The item/lot has a new item number and/or lot number
- The item/lot has a new quantity
- The status code changed
- For lots: valid dates such as expiration date, follow-up date and sales date are changed.

This process can be used for inventory management or, in case of lots, with the laboratory inspection (LI) routine. When the inspection is completed and the lot is approved, it is assigned a new status. To change the status after the lot has been stored in the warehouse, use 'Balance Identity. Reclassify' (MMS130).

In M3 BE, the MITLOC table is updated.

### Before you start

The conditions in [Lot/Serial Number Settings](#) on page 172 must be fulfilled.

### Follow these steps to reclassify items that are not lot controlled

- 1** To reclassify the total quantity at one location, open 'Balance Identity. Reclassify' (MMS130/A).
- 2** Specify the 'Item number', 'Warehouse', and 'Location' fields.
- 3** On the (MMS130/E) panel, specify these fields depending on the type of reclassification:
  - Status balance ID - the status of the balance identity can be reclassified
  - New item no. - change of item number
  - New quantity - new quantity if a new item number and/or a new lot number was also specified above.

**Note:** The same item numbers, which are not lot controlled and are stored at the same location, are not allowed to have different statuses on the same location.
- 4** To reclassify part of the total quantity at one location, the quantity that is going to be reclassified must be moved to another location before reclassification can be done. This is done in 'Movement. Change Loc - Balance ID' (MMS177). See [Change Location for Balance Identity](#) on page 19.
- 5** Reclassify by using program 'Balance Identity. Reclassify' (MMS130). See steps 6-12.
- 6** To reclassify part of the total quantity at one location for items coded as single stored, for example, the parameter 1='Single location' in the 'Storage method' field on the (MMS002/G) panel, the quantity that should be reclassified must be moved to another location before the reclassification can be done.
- 7** Open (MMS002/G) and change the 'Storage method' field to 2='Multiple location'.
- 8** Make the move in 'Movement. Change Loc - Balance ID' (MMS177). See [Change Location for Balance Identity](#) on page 19.
- 9** Reclassify by using program 'Balance Identity. Reclassify' (MMS130).
- 10** To reclassify items that are lot controlled, open 'Balance Identity. Reclassify' (MMS130). This program can also be started by using option 38 from the (MMS235/B) panel.  
**Note:** For items that are lot controlled, the reclassification will affect the total quantity at each location at which the items are stored. The only way to reclassify part of the total on-hand balance is to split the lot into new lots. Create new lots in 'Lot/Serial Number. Open/Connect to Item' (MMS235).
- 11** Specify the 'Item' and 'Lot number' fields on the (MMS130/A) panel. (You do not have to specify the 'Warehouse' and 'Location' fields.)
- 12** Reclassify on the (MMS130/E) panel. These fields are important:
  - Status balance ID - the status of the balance identity can be reclassified
  - Expiration date - if the item has an expiration date method set on the (MMS001/F) panel, then that date can be changed here
  - Follow-up date - if the item has an inspection code set on the (MMS001/F) panel, then this date can be changed here
  - Sales date - the last date on which the lot may be sold
  - New item no. - change of item number. This new item can have a lot control method (INDI) of 1 or 0. If the new item has a lot control method (INDI) = 1, then the resultant balance ID will have a lot

number either specified in the transaction, or through its auto-numbering method. If the new item has a lot control method (INDI) = 0, then the resulting balance ID will have no lot.

**Note:** No quality requests will be created for the target items when items with lot control method (INDI) = 3 are reclassified to items with lot control method (INDI) = 1 or lot control method (INDI) = 0. Also, subplot items with lot control method (INDI) = 3 cannot be reclassified to an item with a lot control method (INDI) value of 1 or 0.

- New lot no. - change of lot number. This field starts 'Lot/Serial Number. Open/Connect to Item' (MMS235), where you create a new lot.
- New quantity - new quantity if a new item number and/or a new lot number was also specified above.

**13** To manage items/lots where the Quality Management System (QMS) is used, refer to these procedures:

### Using (MMS130)

- 1** Start 'Balance Identity. Reclassify' (MMS130).
- 2** Specify the information in 'Item' and 'Lot number' fields on the (MMS130/A) panel. (You do not have to specify the 'Warehouse' and 'Location' fields.)
- 3** On (MMS235/ A), select Actions > QI Request to navigate to 'QI Request. Open' (QMS300).
- 4** Reclassify on the (MMS130/E) panel. This setting is important with respect to QMS:
  - QI request basis (QRBS) - select one of these options to determine which QI request to use when the balance ID is updated during the reclassification process in the case where there is more than one QI request open at a time:
    - 0 - Create a new QI request without results
    - 1 - Copy new results as a new test sequence on the existing QI request
    - 2 - Use the latest QI request recorded
    - 3 - Do not copy the QI request

**Note:** This field is only visible when the situation requires a location reclassification and not a status change.

### Using (MMS235)

**Note:** The '407 Quality Management' field in 'Company. Connect Division' (MNS100/K) must be defined as 'Quality management system' for QMS-related options to be available.

- 1** When creating new lots in 'Lot/Serial Number. Open/Connect to Item' (MMS235), select Related > Manage QI Request (or CTRL + 42).  
The 'QI Request. Manage' (QMS420) program is started.  
For information about using this program, see .
- 2** On (MMS235/B1), select Related > QI Request Certificate for Lot (or CTRL + 43) to generate a new standard QI request.
- 3** Select Related > QI Request (or CTRL + 46) to navigate to 'QI Request. Open' (QMS300).
- 4** Select Related > Reinspect QI Request (or CTRL + 44) to generate a retest type of QI request automatically.
- 5** Select Related > Reclassify QI Request (or CTRL + 45) to automatically generate a QI request with specifications that are marked for lot reclassification.

### Using API MMS130MI

API MMS130MI with transaction RclLotSts enables reclassification on lot level. It works the same way as 'Balance Identify. Reclassify' (MMS130) using calculation method 1-'Change status on location level'.

The transaction enables a change of potency on existing lot for active items. Reclassifications by API on balance ID level, or partial reclassification on balance ID level, must be performed using existing transactions on MMS850MI.

The API MMS850MI transaction AddReclass enables reclassification of items with a lot control method (INDI) value of 3 to an item with a lot control method (INDI) value of 0 or 1 when the calculation method (CALT) 0 is used. This value represents the reclassification to a new item or new lot.

## Sales Price Unit of Measure

A sales price unit of measure (U/M) is the U/M entered for the sales price. This is specified per item in 'Item. Connect Alternate U/M' (MMS015).

The sales price U/M for an item can be either fixed or dynamic. This is set in 'Item. Open' (MMS001/H).

### Dynamic sales price U/M

A dynamic sales price U/M can be changed for the item either in connection with customer order line entry or when a sales price is defined, for example in a price list.

If \*PRI is entered in the 'Sales price U/M' field in 'CO Type. Update Field Selection' (OIS014/J), the sales price U/M is retrieved from the price source when the CO line is created. See for more details.

### Fixed sales price U/M

A fixed sales price U/M cannot be changed from the U/M specified for the item in the item table.

## Settings for Style and Stock Keeping Unit (SKU)

This document explains how to make the settings for creating a style and associated Stock Keeping Units (SKUs).

### Outcome

Settings are done so style and SKUs can be created.

- Style is a comprehensive term for a number of similar items. Style is used in the fashion industry.
- SKU is the item(s) connected to a certain style.

An example of a style is Lewis 501 jeans. Three SKUs exists for this style:

- Lewis 501, size 32, color blue.

- Lewis 501, size 34, color blue.
- Lewis 501, size 34, color black

The style master is the MMODMA table.

### **Before you start**

No special settings required.

### **Follow these steps**

#### **Feature groups**

- 1 Start 'Feature Group. Open' (CRS582). Feature groups X, Y and Z must be created to use a matrix format for creating SKUs, entering orders etc.
- 2 Enter the 'Feature group' field with X.
- 3 The Language field specifies the language in which external documents should be printed, not the language on the screens. If you leave this field blank, the language on the documents will be the same as the system language.
- 4 Open the E panel and fill in the Description, Name, 'Long name' and 'Short name' fields with the same value.

#### **Features**

- 1 Start 'Feature. Open' (PDS055). Select Sorting order 2. Enter the Feature field. Normally the X-axis is 'Size' and Y-axis is 'Color' (but not always). The Z-axis can, for example, be 'Material' or 'Type'.
- 2 The Feature type field (to the right on the panel) should always be entered with 1.
- 3 The Attribute ID field is filled in. The field indicates the unique ID for an attribute. Normally attributes are used to store values that are connected to an item. Both the item and attribute are required to describe all the characteristics of the lot/balance identity.

Note: The attribute you select here must be connected to the same attribute model as the one you select in the 'Attribute model' field when you create style in (MMS001/G).

Example: In 'Attribute Model. Open' (ATS050) you define attribute model 'FASH1'.

In 'Attribute. Open' (ATS010) you define three attributes (attribute model lines) 'SIZE1', 'COLOR1' and 'MATERIAL1'.

In 'Attribute Model. Connect Attributes' (ATS051) you connect model FASH1 with the three attributes. On this panel (PDS055/E) you select attribute 'SIZE1'.

On the (MMS001/G) panel, when you create style, you must select attribute model 'FASH1'.

- 4 On the (PDS055/E) panel. select the feature group in the Feature group field to be connected to this feature.
- 5 The Option check field is entered with 1.

#### **Options**

In this program you define color sizes etc. The name is used as a heading in the matrix display

- 1 Start 'option. Open' (PDS050). Select Sorting order 2.

- 2 Select X, Y or Z in the 'Option group' field (the same as Feature group).
- 3 Enter the 'Sequence number for sorting' field. This indicates the sequence in which the options within a feature are displayed.
- 4 On the E panel. The first six characters of the Name field are used as option descriptions in matrix displays.
- 5 Make sure that you really express the option in the first six characters. Example: Write 'Yellow'. Don't write 'Color yellow'.
- 6 The 'Combination code' field is recommended to be entered with 0 = No.

### Connect options to feature

- 1 Start 'Feature. Connect Options' (PDS056). This program can also be started by option 12 = Options/Feature in (PDS050) and (PDS055).
- 2 Fill in the Feature field and select option in the Option field.
- 3 The Sequence number for sorting field is populated based on the following rules:
  - If the sequence number for the option (PDS050) exist then this will be used.
  - Otherwise the sequence number can be left blank and is then calculated automatically. The interval to use for auto created sequence numbers is entered on the P panel.
  - The sequence number can be entered manually.
- 4 On the E panel there are fields for printer settings.

### Create item types and numbering rules for style and SKUs

- 1 Start 'Item Type. Open' (CRS040). Create an Item type on the B panel.
- 2 On the E panel, fill in appropriate fields. Select a template item in the 'Item template' field.
- 3 Template item is created in (MMS001) as a normal item, but it must have status 05. For the template item following fields in (MMS001) must be entered with:
  - (MMS001/G) Configuration code 2 = Family item
  - (MMS001/G) Attribute managed 2 = Yes, the attribute panel is always displayed for receipt to stock.
  - (MMS001/G) Attributes model – Enter an attributes model (see example above in 'Features').
- 4 Connect the template item to warehouse in (MMS002) as usual, also here it must have status 05.

Note: The template item must have the same Item type connected as you will use when you create these items.

This means that you first have to create the item type, then create the item template using the created item type, then go back into the item type and connect the item template.
- 5 The Status field determines the default status for the created style.
- 6 Select a Numbering rule. This field is the numbering rule for the style. For more details, see document [Create an Item Numbering Rule and Connect It to an Item Type](#) on page 839.
- 7 The 'Variant numbering rule' field is the numbering rule for the SKUs. For more details, see document [Create an Item Numbering Rule and Connect It to an Item Type](#) on page 839.

### Complementing information about numbering rule for style and SKU's.

- 1 Here follows an example of how to define a numbering rule for a style and another numbering rule for SKUs.

An SKU code could be: VHF013-18-40-C0

VHF013 = the style code

- = separators

18 = the size code (X-axis)

40 = the color code (Y-axis)

CO = the material (Z-axis)

The numbering rule settings in (MWS050) and (MWS051) are the following for the style code – VHF013:

(MWS050/E)

Item number length = 6

Skip blanks = 1

(MWS051/E) VHF

Number qualifier = 2

From position = 1

To position = 3

Field = MMITNO

From position = 1

To position = 3

Skip blanks = 1

(MWS051/E) 013

Number qualifier = 4

From position = 4

To position = 6

No of sequence fig = 003

The numbering rule settings in (MWS050) and (MWS051) are the following for the SKU code –

VHF013-18-40-CO:

(MWS050/E)

Item number length = 15

Skip blanks = 1

(MWS051/E) VHF 013

Number qualifier = 02

From position = 1

To position = 6

Field = MMITNO

From position = 1

To position = 6

Skip blanks = 1

(MWS051/E) – (separator)

Number qualifier = 10

From position = 7

To position = 7

Sep character = -  
 (MWS051/E) X (18)  
 Number qualifier = 08  
 From position = 8  
 To position = 9  
 Feature group = X  
 From position = 2  
 To position = 3  
 Skip blanks = 1  
 Continue in the same way for the characters – 40 – CO.

- 2** Back to item type (CRS040/E). The 'Kits no of positions' field determines how long the kit number must be.

The kit number is a serial number for identifying a package of SKUs, which belongs to the same style. The kit number is always placed sequentially to the right in the item number.

- 3** Leave the fields on the (CRS040/F) panel blank. Press Enter and the B panel is redisplayed  
 If you will have (MMS002), (MMS003), and (MMS025) also auto created with values from the item template you have to do the following:

On the (CRS040/B) panel, select option 12=Item type/Warehouse. This starts 'Item types. Connect Warehouse' (MWS042). On the B panel, enter your Item type and the Warehouse, which should be auto created. On the E panel you activate the Auto creation field.

On the (CRS040/B) panel, select option 13=Item type/Alias. This starts 'Item types. Connect Alias' (MWS043). On the B panel, enter your Item type and the Alias category. On the E panel you have to select a Numbering rule for the alias number. This is created in 'Numbering rule. Open' (MWS050). Activate also the Auto creation field. More about this is on the next page.

### Create alias types and numbering rules for alias

- 1** Start 'Alias Type. Open' (MMS024).
- 2** This table summarizes the different types of aliases that can be generated for fashion and only for fashion.  
 Alias type - Parameters that can create the alias  
 84 - Style code + Z-option  
 85 - Item group  
 86 - Style name  
 87 - Style code + free options  
 88 - Style code – can not be entered, always generated
- 3** In the Alias type field you enter an ID for the type.
- 4** Open the E panel. In the Alias category field you enter 84, 85, 86 or 87.  
 If you want the alias to be an EAN or UPS code you enter this field with 02 = EAN number. You then have to fill in the Alias qualifier field with one of the alternatives from the field help.
- 5** In the Numbering rule field you select an alias-numbering rule. They are defined in (MWS050) and (MWS051).  
 See above 'Complementing Information about Numbering Rule for Style and SKUs'.

Note: Make sure that you on the (MWS050/E) panel in the Number type field select 2= Alias numbers.

- 6 Press Enter and you redisplay the (MMS024/B) panel.
- 7 You know have to connect the created alias type to your item type. Start 'Item Type. Open' (CRS040). On the B panel, option 13 = Item type/Alias, starts 'Item type. Connect Alias' (CRS043).
- 8 Enter the 'Alias type' field with your created alias type (browse with F4).
- 9 On the E panel you activate the 'Auto create' field. Now will the aliases be auto created when you create the SKUs.

### **Number series**

- 1 When generating SKUs for a style, the M3 Product Configurator is used. Start 'Number Series. Open' (CRS165), in the Number series type field select 18=Product Configuration Numbers. In the Number series field is entered with 1.
- 2 Fill in appropriate fields on the E panel.

### **User-defined style information**

- 1 On the (MMS016/E) panel, used when creating styles, you have the availability to define your own field headings. These fields can be used for reporting, grouping, washing instructions etc.
- 2 Start 'Settings - User-def Style Fld Headings' (CRS759). You have 20 user defined field headings available, each with 15 characters.

### **Item setting and product structure type**

- 1 Start 'Settings. Create Items' (CRS760). In the Create items field it is recommended that you set 1 = Yes, in this run.
- 2 You have to select at least one Product structure type. It should be a standard structure type. The product structure types are defined in 'Product Structure. Open' (PDS001). See documentation about Product Data Management.

### **Seasons**

- 1 Styles are attached to seasons. On the customer order type it is possible to set up season code and force a check that styles being ordered are attached to that season.
- 2 Start 'Season. Open' (CRS912). Enter the seasons you need. The Valid from and Valid to dates on the E panel are purely for information.

### **Compositions**

'Composition. Open' (MMS028) is used to enter compositions codes to describe different materials contents that can be printed on tags. A blank language for the codes and names is used for display, and language codes are used when printing the tags.

## **Settings for Item Data Interface**

This document explains how you define settings for the item data interface.

## Outcome

The item data interface provides a solution in which item data can be exchanged and enriched between M3 Business Engine and other applications or third-party products.

You can receive, use, and import items in M3 through the item data interface.

You can also perform changes and log changes for already imported items in the item import function.

For more details, see the API Repository in 'MI Repository. Open' (MRS001), 'MI Transaction. Open' (MRS002), and 'MI Transaction Layout. Open' (MRS003).

## Before you start

No prerequisites are needed.

## Follow these steps

### Basic Settings

**Note:** These settings are required.

**1** These basic settings are required:

- a Start 'Item Type. Open' (CRS040). Select the item type to be used in the item data interface. On the E-panel, select the 'Item interface controlled' field. For more information about the item type, see [Creating Items in Different Ways](#) on page 836
- b Start 'Stock Msg Partner. Open' (MMS865). Enter Message direction with I=Inbound messages. Specify a partner. Open the E-panel.
- c Start 'Stock Msg Partner. Open' (MMS865). Here you define external systems to M3.
- d On the B-panel, enter the message direction as I=Inbound messages. Specify a partner. Open the E-panel.
- e Open the E-panel. Two mandatory fields are displayed: '300 Partner manager' is the person responsible for the record, and '320 Default item type' is used if no other item type is entered when you create an interface item from APIs or manually.  
The F-panel is only for outbound messages.
- f Display the (MMS865/B) panel again. Option 12='Mail parameter' starts 'Stock Message Partner. Connect Msg Types' (MMS867). Activate the message types that should be sent for the defined external system (partner). You can also create standard messages by selecting F14=Create standard. This parameter is not used in IDI.

**2** These settings for Item Import are optional:

- a Start 'Settings – Item Import' (MHS262). Select Partner (external system) and select the item type. If you do not select an item type, the setting will be valid for all item types when used in combination with the selected partner/message type.  
Option 24=Delete change log deletes the processed change log records (status 15 or 20) (MHS262CL).
- b Open the E-panel and select the alternative in the 'Limit item/warehouse creation' field.
- c If you will import an Interface – SKU, select alternative in the 'Limit item/warehouse creation – SKU' field.

- d** Specify the number of days when the processed change log records will be saved before they are automatically deleted.
- 3** These settings are used for Change Log Control.
- Changes made to the fields that are selected for logging must be approved before they can be imported to M3. If a field is selected, any change completed through the MI program will be stored in the change log (MHS210).
- If the field is selected from the field group, changes to this field should be written to the change log.
- If the field is not selected from the field group, changes should not be written to the change log.
- a** On the (MHS262/E) panel, press F4 in the 'Change log control' field. This starts 'Interface Item Field Control. Open' (MHS263).
- Only records with control type 2=Change log control, are displayed.
- b** Enter 2 as the control type, and enter a control ID. Open the E-panel and provide a description. Display the B-panel again.
- c** Select Option 11='Control settings'. This starts 'Interface Item. Select Control Fields' (MHS264).
- d** Press F4 in the 'Field' field. You can now select a field that you want to be logged.
- The field group is ITIC2 (CRS109).
- e** When you have selected the fields to be logged, press Close. (MHS263) is displayed again.
- f** Select option 1 = Select for the created record. You return to the (MHS262/E) panel.
- g** Press Next to complete the settings.
- 4** These settings are used for Import Control.
- Item import control defines how the value zero (blank) should be managed in different fields when you import an item that has already been imported.
- If the field is selected from the field group, the value from the interface item should be used even if it is zero.
- If the field is not selected from the field group, the value zero should be considered as 'No input.' Use the template item value.
- For all values other than zero, a value from the interface item always overrides a value from the template item.
- a** On the (MHS262/E) panel, press F4 in the 'Item import control' field. This starts 'Interface Item Field Control. Open' (MHS263).
- Only records with control type 1=Item import control, are displayed.
- b** Enter 1 as the control type, and enter a control ID. Open the E-panel and provide a description. Display the B-panel again.
- c** Select Option 11='Control settings'. This starts 'Interface Item. Select Control Fields' (MHS264).
- d** Press F4 in the 'Field' field. You can now select a field that you want to be included in the item import.
- The field group is ITIC2 (CRS109).
- e** When you have selected the fields to be included, press Close. (MHS263) is displayed again.
- f** Close (MHS263). Return to the (MHS262/E) panel. Select the control ID that you created in the 'Item import control' field.
- g** Press Next to complete the settings.

**5** These settings are used for Warehouse Selection Table.

A warehouse selection table is used to define selection criteria for each warehouse indicating what should be imported and what should not be imported to M3.

The warehouse selection table can be specified for each:

- Interface item
  - Partner/Message type/Item type
  - Partner/Message type
- a On the (MHS262/E) panel, press F4 in the 'Warehouse table' field. This starts 'Warehouse Selection Table. Open' (MMS033). Set the panel sequence to E,1.
  - b Enter a table ID on the (MMS033/B) panel and open the E-panel. Provide a description and press Enter. This starts 'Warehouse Selection Table. Select Fields' (MMS034).
  - c Press F4 in the 'Field' field and select a field (field group MMWH1).
  - d Select the range (from/to) for the field and specify if the field should be included or excluded in the warehouse search.
  - e Close (MMS034) and return to (MHS262/E). Select the warehouse table that you have created.
  - f Press Next to complete the settings.

#### Parameters to set

Program ID/ Panel	Field	The field indicates ...
(CRS040/E)	Item interface controlled	Select the check box if items with this item type should be possible to control through the item interface.  If you do not select the check box, items cannot be controlled or imported through the item interface.
(MMS865/B)	Message direction	... the direction of the message. The valid alternatives are: I = Inbound O = Outbound.
(MMS865/B)	Partner	... the ID an external partner, for example with the internal number of the customer.

Program ID/ Panel	Field	The field indicates ...
(MMS865/B)	Message type	<p>... the message type, which should contain the name of the standard message to be processed.</p> <p>Examples:</p> <p>EDIFACT messages: ORDERS OR-DRSP, etc.</p> <p>ODETTE messages: DELINS AVI-EXP, etc.</p>
(MMS865/E)	300 Partner manager	<p>... a unique user ID.</p> <p>The ID is used for selection and sorting.</p>
(MMS865/E)	305 Override mail receiver This one is not used in IDI	<p>... whether overriding of an entered mail recipient is allowed.</p> <p>The valid alternatives are:</p> <p>0 = No, mail recipient will not be overridden.</p> <p>1 = Yes, mail recipient will be overridden using a value in (RSS015/310).</p>
(MMS865/E)	Filing Not used in IDI	<p>... whether the message should be archived.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes. This field is only valid for upload messages (MMS850) and (MHS850).</p>
(MMS865/E)	Days before archive/deletion Not used in IDI	<p>... the number of days after a received and executed inventory transaction that a message is archived. When a message is archived, it is removed from production files and stored in an archiving file.</p> <p>This field is only valid for upload messages (MHS850) and (MMS850).</p>
(MHS262/B)	Partner	<p>... the ID of an external partner or an external system, for example with the internal number of the customer.</p>

Program ID/ Panel	Field	The field indicates ...
(MHS262/E)	Change log control	<p>...the fields selected to be logged must be approved before they can be imported to M3. If the field is selected, any change made through the MI program will be stored in the change log (MHS210).</p>
		<p>If the field is selected from the field group, the record should be written to the change log.</p>
		<p>If the field is not selected from the field group, the record should not be written to the change log.</p>
(MHS262/E)	Item import control	<p>Item import control defines how the value zero (blank) should be managed in different fields when you import an item that has already been imported.</p>
		<p>If the field is selected from the field group, the value from the interface item should be used even if it is zero.</p>
		<p>If the field is not selected from the field group, the value zero should be considered as 'No input.' Use the template item value.</p>
		<p>For all values other than zero, a value from the interface item always overrides a value from the template item.</p>
(MHS262/E)	Warehouse table	<p>Changes in this help text: See below (MMS033).</p>
		<p>The warehouse selection table is used to define selection criteria for each warehouse, indicating what should be imported and what should not be imported to M3.</p>
		<p>The warehouse selection table can be specified for each:</p>
		<ul style="list-style-type: none"> <li>• Partner/Message type/Item type</li> <li>• Partner/Message type</li> <li>• Partner.</li> </ul>

Program ID/ Panel	Field	The field indicates ...
(MHS262/E)	Limit item/warehouse creation	<p>...whether to limit the creation of item or warehouse records to only certain warehouses when importing an interface item to BE, even if the item type and template item include more warehouses.</p> <p>Alternatives:</p> <p>0 = No, create item/warehouse records for all warehouses according to the item type (MWS042).</p> <p>1 = Yes, limit the creation of item/warehouse records to the warehouses where a record in (MHS002) exists. Disregard any entered warehouse selection table.</p> <p>2 = Yes, limit the creation of item/warehouse records to the warehouses selected in a warehouse selection table entered in (MHS001) or (MHS262).</p> <p><b>Note:</b> Regardless of the method chosen, any entered values in (MHS002) are used if a record with matching warehouse (or a blank warehouse) exists.</p>

Program ID/ Panel	Field	The field indicates ...
(MHS262/E)	Limit item/warehouse creation - SKU	<p>...whether to limit the creation of item or warehouse records to only certain warehouses when you import an interface SKU to M3 BE, even if the item type and template item include more warehouses.</p> <p>This field, in addition to 'Limit item/warehouse creation', is used to enable different settings for SKUs (configuration code 7) than for the styles (configuration code 6) or any other items.</p> <p>One typical scenario is when the style should be created in all warehouses, or a specific selection of warehouses, while the SKUs should only be created for a limited number of those warehouses.</p> <p>Alternatives:</p> <p>0 = No, create item/warehouse records for all warehouses according to the item type (MWS042).</p> <p>1 = Yes, limit the creation of item/warehouse records to the warehouses where a record in (MHS002) exists. Disregard any entered warehouse selection table.</p> <p>2 = Yes, limit the creation of item/warehouse records to the warehouses selected in a warehouse selection table entered in (MHS001) or (MHS262)</p> <p><b>Note:</b> Regardless of the method chosen, any entered values in (MHS002) are used if a record with a matching warehouse (or a blank warehouse) exists.</p>
(MHS262/E)	The number of days	...the number of days the processed change log records (status 15 or 20) will be saved before they are deleted.

Program ID/ Panel	Field	The field indicates ...
(MHS263/B)	Control type	<p>... the type of field control settings.</p> <p>Alternatives:</p> <p>1=Import control</p> <p>2=Change log control</p>
(MHS263/B)	Control ID	<p>... the ID of a field control setting. A field control setting can have different control types (see Control type).</p>
(MHS264/B)	Field	<p>...the ID of the field that is controlled.</p> <p><b>If the control type is 1 (Import control)</b></p> <p>If the field is selected from the field group, the value from the interface item should be used even if it is zero.</p> <p>If the field is not selected from the field group, the value zero should be considered as 'No input.' Use the template item value.</p> <p><b>Note:</b> For all values other than zero, a value from the interface item always overrides a value from the template item.</p> <p><b>If the control type is 2 (Change log control)</b></p> <p>If the field is selected from the field group, the record should be written to the change log.</p> <p>If the field is not selected from the field group, the record should not be written to the change log.</p>

Program ID/ Panel	Field	The field indicates ...
(MMS033/B)	Warehouse table	<p>The warehouse selection table is used to define selection criteria for each warehouse. The resulting warehouse selection determines for which warehouses to create item or warehouse records when importing interface items to BE. Entering a warehouse selection table only has effect in combination with 'Limit item/warehouse creation' = 2</p> <p>The warehouse selection table can be specified for each:</p> <ul style="list-style-type: none"> <li>• Interface item</li> <li>• Partner/Message type/Item type</li> <li>• Partner/Message type</li> <li>• Partner.</li> </ul> <p>If several settings exist, the priority is as listed above.</p>
(MMS034/B)	From value	...the From value for the specified object.
(MMS034/B)	To value	the To value for the specified object.
(MMS034/B)	Include/exclude object value	<p>Select the check box to exclude the specified selection from valid balance identities.</p> <p>If you do not select the check box, the specified selection from valid balance identities are included.</p> <p><b>Note:</b> You can exclude all identities if the selections are used incorrectly but it is not possible to choose include and exclude if you have the same object parameter.</p>

## Settings for Item Archiving and Deletion

This document explains how you define the settings for item archiving and deletion.

Items that are no longer in use will either be archived in a library or deleted.

## Outcome

These settings define if items should be archived or deleted.

You can also define check criteria before archiving and deletion in order to avoid archiving or deleting items that are in use.

- Items will be either archived in a library or deleted.
- Items are in status 90 (Item no longer stocked).

The settings for archiving and deletion are stored in the MMFADS archive.

## Before you start

No prerequisites needed.

## Parameters to Set

Program ID/Panel	Field	The field indicates ...
(CRS799/E)	To library	... in which library the archived records should be saved.
(MWS815/E)	Filing/deletion	<p>... whether to archive items or delete them. The archived items will be stored in the library specified in ‘Settings – Filing’ (CRS799). The valid alternatives are:</p> <p>1 = Filing 2 = Deletion.</p>
(MWS815/E)	Check lot master	<p>... whether a check for records in the lot master (MILOMA) for the selected items should be performed.</p> <p>If a record exists for an item, the item will not be archived or deleted.</p> <p>The valid alternatives are:</p> <p>0 = No 1 = Yes.</p>
(MWS815/E)	Delete item records	<p>... whether item records are archived and deleted when you run item archiving and deletion and have included a warehouse in your selection.</p> <p>The valid alternatives are:</p> <p>0 = No, item records (MITMAS) will not be archived and deleted. 1 = Yes, item records (MITMAS) will be archived and deleted even if a warehouse is selected.</p>

Program ID/Panel	Field	The field indicates ...
(MWS815/E)	Check serial number	<p>... whether a check for records in the serial number archive (MILOIN) for the selected items should be performed.</p> <p>If a record exists for an item, the item will not be archived or deleted.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p>
(MWS815/E)	Delete alias	<p>... how alias numbers are deleted.</p> <p>The valid alternatives are:</p> <p>0 = Delete alias numbers along with items</p> <p>1 = Delete alias only; do not delete items or styles.</p> <p>Alternative 1 can only be used when style and season are selected.</p>
(MWS815/E)	Check catch weight Archive	<p>... whether a check for records in the catch weight archive (MILOMC) for the selected items should be performed.</p> <p>If a record exists for an item, the item will not be archived or deleted.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p>
(MWS815/E)	Delete style	<p>... whether the style should be deleted when all items have been deleted.</p> <p>The valid alternatives are:</p> <p>0 = No, the style will not be deleted.</p> <p>1 = Yes, the style will be deleted.</p>
(MWS815/E)	Check order sales statistics	<p>... whether a check for records in the order sales statistics (OSASTD) for the selected items should be performed.</p> <p>If a record exists for an item, the item will not be archived or deleted.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p>
(MWS815/E)	Check stock transaction history	<p>... whether the movement of an item is checked. Movement is checked in the transaction history for the number of days specified in the 'Number of days' field. Note that this only checks the movements of an item.</p> <p>A check is always made to ensure that all accounting is done.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p>

Program ID/Panel	Field	The field indicates ...
(MWS815/E)	Check sales statistics	<p>... whether a check for records in the sales statistics (OSBSTD) for the selected items should be performed.</p> <p>If a record exists for an item, the item will not be archived or deleted.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p>
(MWS815/E)	Number of days	... how many calendar days back the transaction history should be checked.
(MWS815/E)	Check customer order lines	<p>... whether a check in the customer order line (OOLINE) for the selected items should be performed. The check is performed for orders with status 77 or higher.</p> <p>If a record exists for an item, the item will not be archived or deleted.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p>
(MWS815/E)	Status	<p>... the item's status. Items with an item status specified will be raised to status 90.</p> <p>Example:</p> <p>Item 7000 has status 20. If status 20 is entered, the item status for items that have status 20 will be raised to 90 when performing a filing and deletion round. Only items that have status 90 can be archived or deleted.</p> <p>The valid alternatives are:</p> <p>00–14 = User defined, unreleased item</p> <p>20 = Released item</p> <p>30 = Alternative items available</p> <p>40 = Low turn over—mass update can be done in (MMS530)</p> <p>80 = No longer in stock—returns are permitted</p> <p>99 = No longer in stock due to number change—the item is only in the item archive.</p>
(MWS815/E)	Check customer order return	<p>... whether a check for records in the customer order return (OC-HEAD) for the selected items should be performed. The check is performed for orders with status 99.</p> <p>If a record exists for an item, the item will not be archived or deleted.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p>

Program ID/Panel	Field	The field indicates ...
(MWS815/E)	Check distribution and requisition order lines	<p>... whether a check in the distribution or requisition order line (MGLINE) for the selected items should be performed. The check is performed for orders with status 77 or higher.</p> <p>If a record exists for an item, the item will not be archived or deleted.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p>
(MWS815/E)	Check purchase order lines	<p>... whether a check in the purchase order line (MPLINE) for the selected items should be performed. The check is performed for orders with status=99.</p> <p>If a record exists for an item, the item will not be archived or deleted.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p>
(MWS815/E)	Check work order header	<p>... whether a check in the work order header (MWOHED) for selected items should be performed. The check is performed for orders for which actual costing and production statistics have been calculated.</p> <p>If a record exists for an item, the item will not be archived or deleted.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p>
(MWS815/E)	Check alternative material Archive	<p>... whether a check in the alternative material archive (MWOMAA) for the selected items should be performed.</p> <p>If a record exists for an item, the item will not be archived or deleted.</p> <p>The valid alternatives are</p> <p>0 = No</p> <p>1 = Yes.</p>
(MWS815/E)	Check product data alternative material Archive	<p>... whether a check in the product data alternative material Archive (MPDMAA) for the selected items should be performed.</p> <p>If a record exists for an item, the item will not be archived or deleted.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p>

### Follow These Steps

- 1 Start ‘Settings – Filing’ (CRS799/E). Enter the library in which you want to save the archived records.
- 2 Start ‘Settings – Item Filing/Deletion’ (MWS815/E).

- 3 Select 1=Filing or 2 = Deletion in the 'Filing/Deletion' field.
- 4 Select which checks you want to be performed before the item can be archived or deleted.

## Simple Lot Tracking

This document explains simple lot tracking.

Simple lot tracking is where the user wants to track which lot number was sent to which customer, but does not want to track lot numbers in stock.

### Outcome

Settings for how to handle simple lot tracing are defined.

A lot number is entered during picking reporting. This number will be recorded in the 'Lot reference 1' field on the MITTRA table.

This process is used for tracking which lot numbers were delivered by which orders. Also, it can be used for customer orders, distribution orders and customer order returns.

### Follow these steps

#### Settings for simple lot tracking

- 1 Start 'Item. Open' (MMS001). Open the E panel. Select alternative 8 or 9 in the 'Lot numbering method' field.
- 2 You must enter 0='Lot control not used' in the 'Lot control method' field (you use simple lot tracking because you do not want to handle lots in your stock).

#### Reporting lots during picking reporting

- 3 On the (MWS420/A) panel, you can report a lot number in the 'Lot number' field. This panel is used for reporting a known picking identity.
- 4 On the (MWS422/E) panel, you can report a lot number in the 'Lot number' field. This panel is used for simultaneous picking and packing.

#### Reporting lots during entering of customer order returns

- 5 On the (OIS391/E) panel, you can enter a lot number in the 'Lot number' field.

#### Simple lot tracking

- 6 Start 'Stock Transaction. Display History' (MWS070).
- 7 To be able to search and select these 'simple' lot numbers (lot numbering method 8 and 9), you have to create a sorting order that includes the 'Lot reference 1'(MTBREF) field. Make sure that the sorting option and view include this field.
- 8 For further information, refer to these documents:

See

See

### See

- 9 Now you can use simple lot tracking and, for example, see which lot was delivered to which customer.

## Style Composition

Use this procedure to create a composition group containing different custom fields and custom field groups, connect them to an item in 'Item. Open' (MMS001), and input and maintain the composition information in 'Custom Field. Open' (CMS474).

### Overview

The composition group is created in 'Composition Group. Open' (MMS074). You can connect custom fields and custom field groups to the composition group using these programs:

- 'Custom Field. Open' (CMS470)
- 'Custom Field Group. Open' (CMS471)
- 'Custom Field Grp. Connect Field' (CMS472)
- 'Connect Custom Field Group. Open' (CMS473)

The composition group is added to the item record on (MMS001/G) or in 'Composition Group Selection Table. Open' (MMS075) during item creation. (MMS075) is started automatically after item creation if the composition group is blank on (MMS001/G).

Selecting related option 40='Composition Entry' in (MMS001) and 'Style. Open' (MMS016) opens (CMS474) to input composition information. This information is stored on the style or stock-keeping unit (SKU) level.

You can also change the composition information for several SKUs at the same time by starting (CMS474) from 'Style. Create Items by Matrix' (MMS077).

The default help provides a quicker, more convenient way to input the composition information in (CMS474). In 'Custom Field. Open' (CMS470) a custom field can be categorized in the 'Field category' field, which then affects the behavior of that field in (CMS474).

There are four different categories of fields apart from the blank alternative:

- **Composition**  
This results in an extra percentage field to the right of our field in (CMS474) when you specify the values, and enables you to browse to 'Composition. Open' (MMS028) for the field in (CMS474).
- **Scientific name**  
The scientific name on (MMS028/E) of the material content chosen in (CMS474) is by default taken from (MMS028) to (CMS474). This is controlled by the sequence number. The first field with field category 2 (Scientific name) after the field with field category 1 (Composition) is used.
- **Country**  
Starts 'Country. Open' (CRS045) when you browse in (CMS474).
- **Information**

The content of the Miscellaneous field on (MMS028/E) of the material content chosen in (CMS474) is taken by default from (MMS028) to (CMS474). This is controlled by the sequence number. The first field with field category 4 (Information) after the field with field category 1 (Composition) is used.

### Follow these steps

To set up a composition group:

- 1** Create custom fields in 'Custom Field. Open' (CMS470). The field category is important for default help when you specify the information in 'Custom Field. Update' (CMS474).
- 2** Create custom field groups in 'Custom Field Group. Open' (CMS471). The setting 'Used for composition group' in (CMS471) must be selected.
- 3** Connect custom fields to custom field groups in 'Custom Field Grp. Connect Field' (CMS472). It is important to consider the sequence the custom fields are connected to the custom field group with regards to how the default help in (CMS474) works. For each composition, it is recommended that the custom field with field category 1 (Composition) should be placed before the field with field category 2 (Scientific name) and 4 (Information).
- 4** Create a composition group in 'Composition Group. Open' (MMS074).
- 5** Connect custom field groups to a composition group in 'Connect Custom Field Group. Open' (CMS473).

To maintain the composition group on the style level and on the SKU level:

- 1** Use program 'Composition Group Selection Table. Open' (MMS075) to set up the rules for composition group defaulting.
- 2** Create a style in 'Item. Open' (MMS001). If the composition group field for the item is blank after item creation, a composition group is by default set to (MMS001/G) based on the information set up in (MMS075). The composition group can later be changed on (MMS001/G)
- 3** Open 'Style. Create Items by Matrix' (MMS007) to create SKUs for the style.
- 4** When the SKUs are created, they initially get the same composition group as the style. This can be changed.

To maintain the composition information on the style level:

- 1** Open (MMS001) or 'Style. Open' (MMS016).
- 2** Select related option 40='Composition Entry' for a style.
- 3** (CMS474) is opened. The field structure of the composition group of the item is shown.
- 4** You can specify composition information in these fields. If the default help should be used in (CMS474), the correct setup must be done in 'Composition. Open' (MMS028) and 'Country. Open' (CRS045). Also make sure to set up the correct custom field sequence in (CMS472). The default help is based on the field category in (CMS470/E).

This information is stored on the style level.

To maintain the composition information on the SKU level:

**Note:** The following procedure requires created SKUs. Created SKUs have value 2 in the 'Create code' field in the corresponding matrix element in program 'Style. List Create Items by Matrix' (MMS277), sorting order 1.

- 1** Open program (MMS277).
- 2** Specify the number 5 in 'Create code' in the matrix elements in order to select the number of SKUs in the matrix.
- 3** Select action F18='Crt cmp grp inf'.

- 4 A pop-up window appears in which you can change the composition group of the selection of SKUs. The default value is the composition group of the style. Click OK.
- 5 (CMS474) is opened. The field structure of the composition group selected in the pop-up window is shown. If the composition group is not changed and the style has composition information attached to it, then (CMS474) will have the composition information of the style as default.
- 6 You can specify composition information in these fields. If the default help should be used in (CMS474), the correct setup must be done in 'Composition. Open' (MMS028) and 'Country. Open' (CRS045). It is also important to set up the correct custom field sequence in 'Custom Field Group. Connect Field' (CMS472). The default help is based on the field category on 'Custom Field. Open' (CMS470/E).
- 7 The information is stored on the SKU level.
- 8 You can also maintain the composition information on the SKU level using related option 40='Composition Entry' in (MMS001).

## Trace and Display Lot/Serial Number

This instruction explains how to trace and display information about a lot.

The purpose of tracing is to see an item's lot through the material flow. Tracing can be used when a complaint is made or when an inventory variance occurs. A lot is traced in 'Lot. Trace' (MMS140).

### Outcome

- 'Consists' of analysis - tells which lot number has been used in this product.
- 'Included in' analysis - tells where this lot number has been used and in which product.

Lot tracing updates the transaction history table (MITTRA).

### Before you start

The conditions in [Lot/Serial Number Settings](#) on page 172 must be fulfilled.

### Follow These Steps

- 1 To trace a particular lot, open 'Lot. Trace' (MMS140).
  - 2 Select an available sorting order as follows:
    - 1 = Consists of analysis, where only receipts are displayed
    - 2 = Consists of analysis, where both receipts and deliveries are displayed
    - 3 = Included in analysis, where only deliveries are displayed
    - 4= Included in analysis, where both receipts and deliveries are displayed.
  - 3 Fill in the Item and Lot fields.
- The lines are displayed, starting with the latest transaction date and then in reverse chronological order. You can display transactions regarding goods receipts, deliveries, physical inventory variance and reclassification of status, item and/or lot number.

- 4 On panel B1 of MMS140, select Related > QI Request if you want to navigate to 'QI Request. Open' (QMS300).  
**Note:** The '407 Quality Management' field in 'Company. Connect Division' (MNS100/K) must be defined as 'Quality management system' for this related option to be available.
- 5 Select option 5 to see detailed information about each line, which starts the (MMS070/E) panel (the MITTRA table).
- 6 Open 'Lot. Print Tracing' (MMS660) to print information about tracing lots.
- 7 Use the E, F and G panels in (MMS660) to enter the settings for the printout.
- 8 To display the different lots belonging to one item, these options are available:
  - 'Balance Identity. Display' (MMS060) includes various sorting orders to select from. Each sorting order displays information about the lot.
  - Lots with number 88888888 indicate a dummy number for the lot, such as in a backflushing situation where no MITLOC record existed for the specific item.
  - Lots with number 99999999 indicate a bulk item. Bulk items are coded in 'Item. Open' (MMS001/I).
  - 'Lot/Serial Number. Open/Connect to Item' (MMS235) includes various inquiries. If the item is coded to use the lot number as a serial number, then options 12 and 13 start 'Serial Number. Open Specification' (MMS236).

## Transmission Lead Time

This document explains how transmission lead time is set. Transmission lead time is only active when the communication with the supplier is by paper. A check is done in the following priority order to find out which communication code the supplier has:

- 'Purchase Order Type. Open (PPS095/E)
- 'Supplier. Connect Item' (PPS045/E)
- 'Document. Connect Partner Reference' (CRS945/E)

If all three sources listed above are blank, the communication code is set to 1= Paper.

### Outcome

A lead time is set for mailing a letter (paper) to the supplier.

Transmission lead time is specified per supplier (IDPODA/CIDMAS)

Transmission Lead Time is used as a lead time component to calculate the total lead time per item/warehouse connection.

### Before you start

There are no prerequisites before starting.

### Follow these steps

- 1 Start 'Supplier. Open' (CRS620) and go to the E panel. Fill in the 'Transmission lead time' field. The value is entered in days.
- 2 The transmission lead time is displayed on the (MMS002/G) panel.

## Using Item Toolbox

This document explains how you can use 'Item. Open Toolbox' (MMS200) to display and search items.

### Outcome

You create, copy, change, search delete and display items in this function. You also start managing information connected to an item, such as a warehouse, alias, related items, forecasting, transaction history, etc.

The main program can be used to create, change, display and search items and related information..

These tables are updated:

- MITMAS Item Master(MMS001)
- MITBAL Item connected to Warehouse(MMS002)
- MITFAC Item connected to Facility (MMS003)
- MITPAC Bulk Item connected to Pack Item (MMS023)
- MITPOP Alias Number (MMS025)
- MITAUN Alternative Units (MMS015)
- MITMAH Style info (MMS016).

### Before you start

No prerequisites needed.

### Follow these steps

#### Panel Sequence, View and Sorting orders

- 1 Start 'Item Toolbox. Open' (MMS200). Open the P panel and enter the appropriate panels in the field.
- 2 The panel sequences in (MMS002) and (MMS003) are entered in the Default (MMS002) and (MMS003) 'Panel sequence' fields.
- 3 On the B panel if (MMS200) is opened from another program, a pre-defined information view could be displayed.
- 4 On the B panel the 'View' and the 'Sorting order' fields are user-defined. For further details on how to create view/sorting order, see . However there are also default (standard) sorting orders and views as shown:
  - Sorting order 1x reads over item (MITMAS):
    - 11 Item

- 12 Item type
- 13 Description
- 14 Alias
- 15 Style for fashion.

Sorting order 2x reads over item/warehouse (MITBAL):

- 21 Warehouse
- 22 Item, Warehouse.

Sorting order 3x reads over item/facility (MITFAC):

- 31 Facility, Item
- 32 Item, Facility.

**5** You have to generate these sorting orders by opening the P panel and pressing F14=Generate standard. When you select an sorting order, the corresponding view will also be automatically selected.

## **6 Options**

Start 'Item Toolbox. Open' (MMS200). On the B panel there are options for all item-related programs.

- 11=Items (MMS001)
- 12=Item/Warehouse (MMS002)
- 13=Item/Facility (MMS003)
- 14=Alias numbers (MMS025)
- 15=Related items (MMS020)
- 16=Alternative U/M (MMS015)
- 17=Balance Ids (MWS068)
- 18=Stock Trans Hist (MWS070)
- 19 = Material Plan (MMS080)
- 20 = Available all whs's (MMS081)
- 21 = Forecast (FCS001).

and so on up to option 46 = 'Availability. Simulate for Material' (MMS085).

## **7 Functions Keys**

These functions exist, among others:

F16 = Create items (MMS001)

F17 = Select fields (CRS170) is used for to select/deselect any of the already selected fields in your view. When this is activated, the F key is highlighted.

## **8 Panels**

These panels are available in the panel sequence:

E = (MMS001/E)

F = (MMS001/F)

G = (MMS001/G)

H = (MMS001/H)

I = (MMS001/I)

J = (MMS001/J)

K = (MMS001/K)

L = (MMS001/L)

M = (MMS001/M)

V = (MMS200/V) This displays summarized per item/warehouse.

W = (MMS200/W)

1 = (MMS001)

2 = (MMS002)

3 = (MMS003)

4 = (MMS025)

5 = (MMS020)

6 = (MMS015)

7 = (MWS068)

8 = (MWS070)

9 = (MMS080).

## Chapter 4: Receiving Inbound Goods

### Basic Settings for System-Directed Put-Away

This document explains the basic settings for system-directed put-away.

#### Outcome

Basic settings are done. System-directed put-away can be used.

System-directed put-away is used for goods receipt and put-away of all types of orders. It suggests the correct locations to place received goods in based on various criteria such as frequency of use and proximity to point of use.

See [System-Directed Put-Away](#) on page 256.

#### Before you start

- Basic data for items, stock zones, location types, locations, order types, and goods receiving are set.
- You should have planned your warehouse, including which types of items go where, slots for main picking locations, type of locations, etc.

#### Follow these steps

- 1 Start 'Item. Open' (MMS001/F).
- 2 The 'Distribution group technology' field must be filled in if Group type 2='Distribution group technology' in (MMS057/B) should be used.  
Distribution group technology is defined in 'Distribution Group Technology. Open' (MMS043).
- 3 Start 'Item. Connect Warehouse' (MMS002/F). Enter the 'ABC class – frequency code' field and 'ABC method – frequency' field.
- 4 On the G-panel, fill in the Location, 'Location type', 'Fill partly empty' and 'Stock zone' fields.
- 5 Start 'Item. Connect Stock Location Type' (MMS057).  
This program defines relations between the item and stock location types. You can also define relations between distribution group technology and stock location types.
- 6 Fill in the 'Group type', 'Minimum storage quantity' and 'Sequence number' fields.
- 7 Open the E-panel. Fill in the 'Maximum storage quantity' and 'Use at put-away' fields.  
For example: You want to put away a quantity of 120 pieces, of which 100 fit on one pallet. You can use this field to find a pallet location and a picking location for the 20 remaining pieces.

- 8 Start 'Stock Zone. Open' (MMS040/E). Fill in the 'Volume calculation' and 'Filling rate calculation' fields.
- 9 Start 'Stock Location. Open' (MMS010/E). Open the E panel. Fill in the 'Multi-storage location' field. Deactivate the 'Exclude system-directed put-away' field.
- 10 Open the F-panel. Fill in the 'Max volume', 'Max Weight' and 'Max fill rate' fields.
- 11 If you use distribution group technology, you must fill in the 'Distribution identity' field.
- 12 Fill in the 'Packaging length', 'Packaging width' and 'Packaging height' fields.
- 13 Start 'Packaging. Open' (MMS050/E). Fill in the 'Location type' field.

#### Parameters to set

Program ID/Panel	Field	The field indicates ...
(MMS001/F)	Distribution group technology	<p>.... the distribution group technology, which is used to group items according to their technical distribution characteristics relations. This field must be filled in if Group type 2='Distribution group technology' in (MMS057/B) and (MMS405) should be used.</p> <p>This is used to reduce administrative time by allowing you to enter common parameters for items with similar characteristics. It can be used for the setup of: Allocation/Put-away tables- Picking times- Order line completion limits - Material budgets in project planning.</p>
(MMS002/F) (MMS010/F)	ABC – Class frequency	<p>...the ABC class - frequency code is used for these main purposes:</p> <ol style="list-style-type: none"> <li>1. To group historical information on items.</li> <li>2. To guide System-Directed Put-away so it selects appropriate locations for the item. This guidance is based on the concept that high frequency items should be placed closest to the point of picking in order to minimize transport time. For this purpose the ABC code on the item/warehouse master (MMS002) indicates the highest priority locations the item will be placed in for that warehouse. For example, if the item/warehouse has ABC frequency code B, then System- Directed Put-away will only suggest that item be placed in locations with codes B-J in that warehouse. The ABC frequency selection is only done when looking for empty locations. It does not apply when searching for part empty locations (Example: locations that already have some of the item in them).</li> </ol>
(MMS002/F)	ABC – method frequency	<p>...the ABC method for each ABC class and warehouse/item. This method determines how the ABC class is updated.</p> <p>This is the valid alternative for system-directed put-away:</p> <p>0 = Manual update</p> <p>You update the ABC class in (MMS010) for each location.</p>
(MMS002/G)	Location	... the location that is used if no other location is found according to the location type lookup. This is also generally used as the primary picking location.

Program ID/Panel	Field	The field indicates ...
(MMS002/G)	Location type	... the location type that is used if no location type is found on the (MMS057) table.
(MMS002/G)	Fill partly empty	... whether system-directed put-away should attempt to fill partly filled locations with the same item number. Regardless of the value in this field, lot numbers will not be mixed by system-directed put-away.
(MMS002/G)	Stock zone	... a stock zone. If a stock zone is entered here, only locations from this stock zone will be retrieved.
(MMS057/B)	Group type	... whether the relations should be for an item or a distribution group technology.
(MMS057/B)	Minimum storage quantity	... the minimum permitted quantity that may be put away in a location that belongs to the specified location type. The system looks for the first record for the item/warehouse that has a quantity less than or equal to the quantity being put away.
(MMS057/B)	Sequence number	... the sequence number that can be used if you want to have more than one entry for the same key and minimum quantity. The sequence number will, under these circumstances, determine the sequence in which entries in this table are used. Note that the table is read backwards so that higher numbers are read first.
(MMS057/E)	Maximum storage quantity	... the maximum storage quantity and is used for fill rate calculation. The field also indicates the maximum storage quantity that may be put away at a location belonging to a specified location type. Fill rate=Qty in location / max storage quantity x 100
(MMS057/E)	Use at put-away	...whether this item is considered when looking for location types by quantity lookup. Otherwise, it is only used for allocation and for fill rate calculations.
(MMS040/E)	Volume calculation	<p>... whether a volume calculation should be performed for the locations within the area upon deliveries and receipts.</p> <p>Volume is dependent on the volume of the item in (MMS001).</p> <p>If item x has volume .003 and item y has volume .007, then the current volume in (MMS010) after the above two put-aways in (MMS010) will be <math>(.003 \times 150) + (.007 \times 20) = 0.59</math>.</p> <p>If location y is marked as having a max fill rate of 1, a warning will be given if the new current volume after a given put-away will be greater than 1.</p> <p>This is usually in cubic meters, but the unit of measure can be set by the user.</p>

Program ID/Panel	Field	The field indicates ...
(MMS040/E)	Filling rate calculation	<p>... whether the filling rate should be calculated at the locations within the zone for incoming/outgoing deliveries.</p> <p>Filling rate is dependent on the max quantity in (MMS057). The limit for filling rate is set in (MMS010).</p> <p>Example:</p> <p>Item x has a record in (MMS057) that indicates a max quantity of 200 for location type P1.</p> <p>If 150 of item x are placed in location y (which is location type P1), then location y will be given a current fill rate of 75 percent.</p> <p>Item z has a record in (MMS057) that indicates a max quantity of 100 for location type P1.</p> <p>If 20 of item z are now placed in location y, the fill rate will be changed to <math>(75 + 20) = 95</math> percent.</p> <p>If location y is marked as having a max fill rate of 120 percent, a warning will be given if the new current fill rate after a given put-away will be greater than 120 percent.</p>
(MMS010/E)	Multi-storage locations	<p>Take note that the following is implemented in Java 12.4 SP11:</p> <p>The field indicates whether the location may be shared by several balance identities.</p> <p>The valid alternatives are:</p> <p>0 = No. Only one balance identity is permitted at the location. An occupied location cannot be reused unless the stock being put there is the same item, lot and container.</p> <p>1 = Yes. Several balance identities may be stored at the location. There are no restrictions on the reuse of the location.</p> <p>2 = Yes. Different containers in the same location provided they are the same item and lot.</p> <p>3 = Yes. Different lot and/or container provided the item number is the same.</p> <p>Note that all put-aways are still subject to checks on weight, volume and fill rate, regardless of the value of this field.</p>
(MMS010/E)	Not system directed	<p>... whether this location should be excluded from system-directed put-away. For example, this location should never be used in the search logic for system-directed put-away.</p> <p>The valid alternatives are:</p> <p>0 = No, do not exclude this location for system-directed put-away. Use this location.</p> <p>1 = Yes, exclude this location for system-directed put-away.</p> <p>Specify 0 if this location should be used in the search logic.</p>

Program ID/Panel	Field	The field indicates ...
(MMS010/F)	Max - Volume - Weight - Fill rate	... a maximum for a location.
(MMS010/F)	Packaging - Length - Width - Height	... packaging dimensions that are used for a dimension check (such as with cubic scan) for a location.
(MMS050/E)	Location type	... the location type used for retrieving put-away locations for a packaging.

## Create Location Type Table (MMS057)

This settings document explains and exemplifies how to define different allocation tables that will be used to allocate to location type. This is done in 'Item. Connect Stock Location Type' (MMS057).

In (MMS057) you can also set up tables that will be used for system directed goods receiving and put away to location type. This is described in the document [Basic Settings for System-Directed Put-Away](#) on page 230.

### Outcome

The location type table determines allocation according to location type.

The location type table is stored in the MITWLT file.

Rules that can be determined per location type:

- Minimum quantity allocation
- Sequencing of location type searching
- Normal quantity determines the multiple used for allocation
- Remaining quantity: Used so certain quantity breaks only get allocated from their designated location type, even if it means waiting for more stock to arrive.
- Allocate to empty: Allocate only if the allocation will empty this balance ID's location.
- Exclude some order types: Do not allocate from certain location types for certain order types.

### Before you start

- Location types are defined.
- Basic settings for auto allocation must be done. See [Basic Settings for Automatic Allocation](#) on page 291.

### Examples for how to use (MMS057)

- **Minimum quantity**

Required quantity directs allocation to search certain location types according to this field.

Allocation:

- Try to allocate full pallets from location type P2.
- If there is remaining quantity to be allocated, try to allocate all of it in a location from location type P2.
- If there is still remaining quantity to be allocated, try to allocate from locations with type P1.

Min Qty	Seq	Locn Type	Normal Qty	Max Qty	Rem Qty Ctl	Use for Put-away	Alloc Empty	Exclude Ord Type
0	10	P1	120	130	no	no	no	
24	10	P2	120	120	no	yes	yes	
120	10	P2	120	120	no	no	no*	

\* This also means that only multiples are allocated.

- Sequencing of location type searching**

Enables a sequenced search among location types.

Allocation will first take place from drive-in pallet locations (DR), then from single pallet locations (P2).

Min Qty	Seq	Locn Type	Normal Qty	Max Qty	Rem Qty Ctl	Use for Put-away	Alloc Empty	Exclude Ord Type
0	10	P1	120	130	no	no	no	
24	10	P2	120	120	no	yes	yes	
120	10	P2	120	120	no	no	no	
120	20	DR	480	480	no	yes	no	

- Normal quantity determines the multiple used for allocation**

Normal quantity determines the multiple used for put away and allocation.

Maximum quantity determines the percentage filled (if the fill-rate calculation is activated).

Fill rate is used when checking capacity during put away.

Min Qty	Seq	Locn Type	Normal Qty	Max Qty	Rem Qty Ctl	Use for Put-away	Alloc Empty	Exclude Ord Type
0	10	P1	<b>120</b>	130	no	no	no	
24	10	P2	<b>120</b>	120	no	yes	yes	
120	10	P2	<b>120</b>	120	no	no	no	
120	20	DR	<b>120</b>	480	no	yes	no	

- Remaining quantity**  
Certain quantity breaks *only* get allocated from their designated location type—even if it means waiting for more stock to arrive.  
This can mean, for example, that if a full pallet is ordered, it will not be shipped as two halves.
- Allocate to empty: Allocate only if it will empty the location for this balance ID**  
Allocate only if it will empty the location for this balance ID, MMS057/E.
- Exclude certain order types**  
Do not allocate from certain location types for certain order types, that is never allocate replenishments from a picking location.

### Follow these steps

- 1 Start 'Item. Connect Location Type' (MMS057).
- 2 Specify the information in the fields belonging to Automatic Allocation Settings.

Program ID/ Panel	Field	The field indicates ...
(MMS057/B)	Sorting order	... how to display information on the panel by selecting an sorting order. There are three valid alternatives.
(MMS057/B)	Sequence number	... the sequence number that can be used if you want to have more than one entry for the same key and minimum quantity. The sequence number will, under these circumstances, determine the sequence in which entries in this table are used.
(MMS057/B)	Minimum storage quantity	... the minimum permitted quantity that may be put away in a location that belongs to the specified location type.  This quantity is used as the quantity key when determining which stock location type to use in both put-away and allocation.  If this quantity is 0, then multiples will be ignored during the allocation process, meaning that quantities other than multiples of the normal quantity may be allocated.
(MMS057/B)	Location type	... a group of locations based on characteristics (size etc.).

<b>Program ID/ Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS057/B)	Item no.	... an item number for group type 1 and a distribution group technology for group type 2.
(MMS057/B)	Group type	<p>... the group type that the group key refers to.</p> <p>The valid alternatives are:</p> <p>1 = Item number (MMS200)      2 = Distribution group technology (MMS043).</p>
(MMS057/E)	Normal storage quantity	<p>... the quantity that is the recommended storage quantity for this location type.</p> <p>If the minimum quantity is not 0 and the 'Allocate to empty' field is 0 (deactivated), then only multiples of this quantity will be allocated.</p>
(MMS057/E)	Remaining quantity allocation control	<p>... how to allocate the remaining quantity if the location type is already fully allocated.</p> <p>The valid alternatives are:</p> <p>0 = Try to allocate remaining quantity to next location type.      1 = Do not try to allocate remaining quantity to next location type.      See the example in the field help.</p>
(MMS057/E)	Use at put away	<p>... whether this table entry can be used for finding location types using quantity multiples for put-away.</p> <p>Regardless of the selected value for this field, all records will be considered during allocation if you are using allocation method 2.</p>

Program ID/ Panel	Field	The field indicates ...
(MMS057/E)	Allocate to empty location	<p>... whether balance IDs found during allocation should only be allocated if they will empty the location of the balance ID.</p> <p>The valid alternatives are:</p> <p>0 = No, allocate in any event</p> <p>1 = Yes, allocate only if balance IDs will empty the location.</p> <p>The field indicates also whether, when using this item-location connection entry, stock can only be allocated from a location of this location type if the allocation will be for more than or equal to the total quantity of the balance ID.</p> <p>If this flag is on, then allocation will ignore multiples, that is, less than multiple quantities can be allocated.</p>
(MMS057/E)	Exclude reference order category	<p>... the specific order type which is prevented from using this item-location connection entry.</p> <p>The following alternatives are valid:</p> <ul style="list-style-type: none"> <li>1 = Manufacturing order</li> <li>2 = Purchase order</li> <li>3 = Customer order</li> <li>4 = Requisition order</li> <li>5 = Distribution order</li> <li>6 = Work order</li> <li>7 = Service order</li> <li>8 = Project order</li> <li>9 = Claim order.</li> </ul> <p>This could be used, for example, to prevent customer orders from being picked from certain location types.</p>

## Cross-Docking and Extended Cross-Docking

Cross-docking in M3 identifies when stock being received is required for issue within a short time. It then directs the stock to the appropriate cross docking location instead of to the ordinary location. The triggers that cause cross-docking are demand in combination with a stock shortage.

Cross-docking results in an allocation to the demand order that caused the cross-docking.

The demands can be internal orders, external orders, or acquisition orders. Internal orders include material manufacturing orders, distribution orders, move orders, and requisition orders. External orders are customer orders. Acquisition orders can be manufacturing orders, purchase orders, distribution orders (receiving warehouse), and requisition orders (order category 40).

With extended cross-docking, you can automatically drive the outbound delivery further in the dispatch flow instead of stopping at having the goods allocated to the demand order. You can select which of the following picking list statuses the delivery should automatically receive after the extended cross-docking is performed:

- Picking (picking list status 40)
- Packing (picking list status 50)
- Docking (picking list status 60)
- Issue (picking list status 90)

The acquisition orders in extended cross-docking can be purchase orders and distribution orders.

### Limitation

The extended cross-docking is not compatible with two-step put-away.

### Outcome

- The goods connected to an acquisition order (PO, DO, RO, or MO material) are received, cross-docked, and put in a location where they are available for dispatch.
  - Details of performed cross-docks are stored in the MITTCD file.
  - Stock entrance allocation is executed in the MITALO file.
  - Certain details about the cross-docking are recorded in the MITTRA file.
- For extended cross-docking: The outbound delivery is taken to picking, packing, docking, or all the way through issue.

Cross-docking is used to shorten the time between the receipt of goods and their dispatch and to avoid unnecessary administrative work such as unpacking and packing and reporting picking lists.

### Before you start

- 'Material Plan. Open' (MMS080) must contain planned issues that are within the time fences set.
- The general settings for cross-docking must be defined. See [Define Cross-Docking Settings](#) on page 244.

### Purpose

- Cross-docking is used to shorten the time between the receipt of goods and their dispatch.

- With extended cross-docking, you can configure the system so that the outbound delivery is taken to picking, packing, docking, or all the way through issue.
- Extended cross-docking is also used to enable copying the package information from the inbound delivery to the outbound delivery.

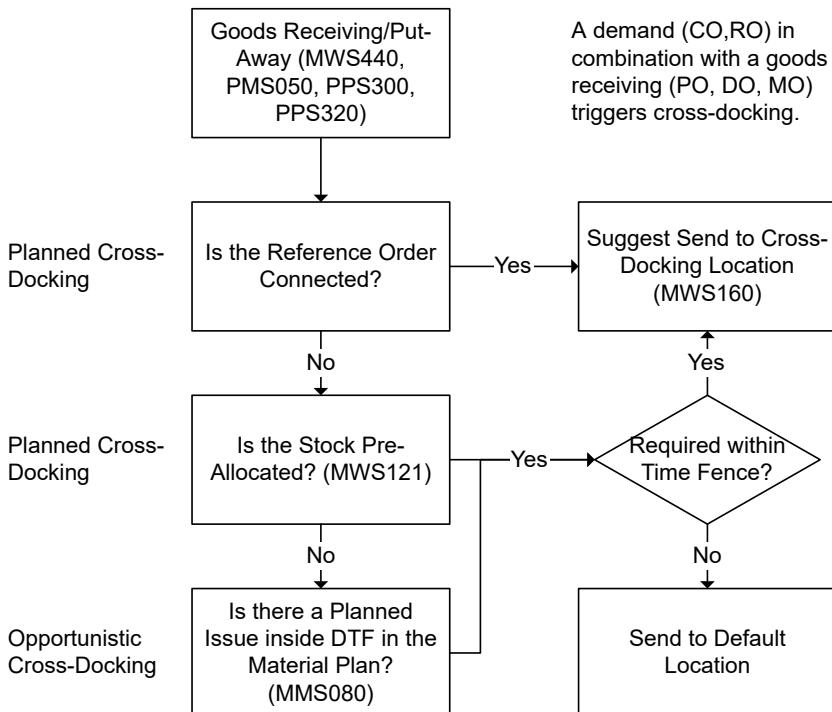
## When

It directs the stock to the appropriate cross docking location instead of to the ordinary location.

## How

M3 automatically selects defined cross-docking locations during goods receiving and allocates these goods to demand orders.

### Workflow for what to cross-dock



#### 1 Look for reference order number connected to the acquisition order

The cross-docking function first checks whether there is a reference order number connected to the acquisition order. If one is found, the system suggests putting that quantity in a cross-docking location in 'Cross-Dock Results. Open' (MWS160) when goods receiving is performed with cross-docking type 1.

##### *Short Description of Reference Order Number*

A purchase order, distribution order, or manufacturing order can be initiated from a customer order if there is a shortage when the customer order is created. Then the customer order number will appear as

the reference order number on the acquisition orders. This also applies to other demand orders (manufacturing, distribution, and so on.) that create acquisition orders.

### **Examples**

The following three scenarios trigger cross-docking when goods receiving is performed:

Purchase to customer order (PTO). This is done for items that have acquisition code 2 on the (MMS002/E) panel.

Manufacturing to customer order (MTO). This is done for items that have acquisition code 1 on the (MMS002/E) panel.

Distribute to customer order (DTO). This is done for items that have acquisition code 3 on the (MMS002/E) panel.

## **2 Look for preallocation connected to the acquisition order within the preallocation cross-docking time fence**

If there was no reference order number for the acquisition order, the cross-docking function checks whether there is a preallocation to be performed for the acquisition order line. Preallocation is done in 'Preallocation. Perform Detailed' (MWS121).

If so, the system suggests putting that quantity in a cross-docking location in 'Cross-Dock Results. Open' (MWS160) when goods receiving is performed with cross-docking type 2.

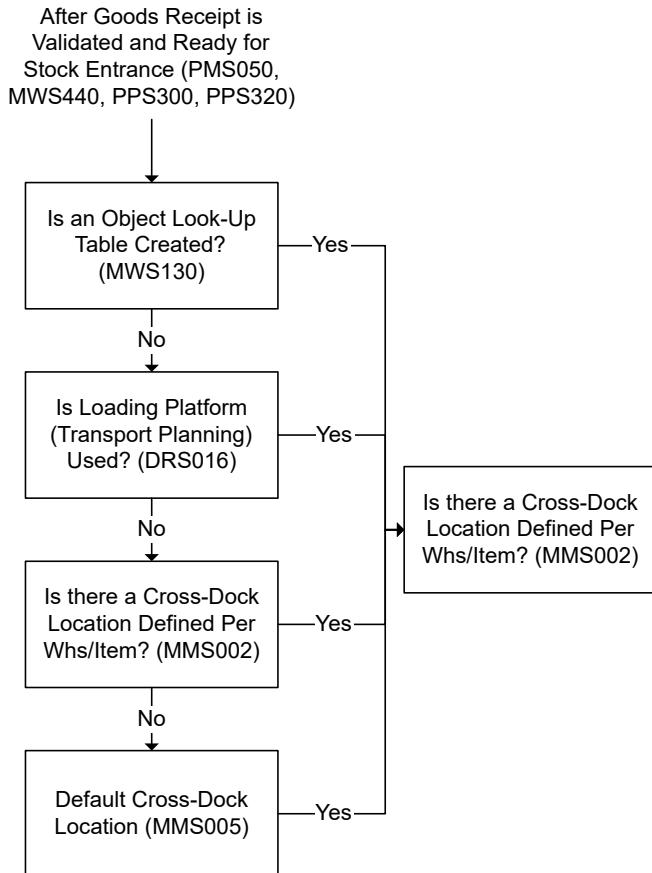
## **3 Look for demands in the material plan within the material plan time fence**

This is a scenario for cross-docking that is not planned. If there is no reference order number and no preallocation connected to the acquisition order, then it is not cross-docked automatically. However, the system looks for a demand (CO, RO) in combination with the material plan time fence and will suggest a cross-docking location in 'Cross-Dock Results. Open' (MWS160) when goods receiving is performed with cross-docking type 3.

## **4 Suggest to send to cross-docking location**

In 'Cross-Dock Results. Open' (MWS160), the quantity to put in the cross-docking location is suggested. You can also change the location before you update using F14.

## Workflow for where to cross-dock



### 1 Look for an object control table

These functions are designed to give maximum flexibility in selecting a cross-docking location. However, they are the most complex to set up so use them sparingly.

The setup is done in two steps:

- a Decide which objects or parameters control where you cross-dock to. This is done in 'Available Object Ctrl Parameters. Open' (CMS016).
- b Decide which values for those parameters lead to which cross-docking locations. This is done in 'Cross-Dock Put-Away Selection. Define' (MWS130).

You can specify multiple sets of rules, which are checked in priority sequence. This enables you to enter, for example, one set of rules for each type of order (customer order, manufacturing order, and distribution order). You then enter the locations for different combinations of values.

### 2 Look for a loading platform (Only when using transportation planning)

If no object control tables are found to match the stock entrance being performed, then the program searches for a loading platform.

If you use transportation planning, you will plan to load the shipment from a loading platform. Each loading platform can be assigned to a cross-docking location in 'Loading Platform. Open' (DRS016).

### 3 Look for a cross-docking location per warehouse/item combination

If no valid loading platform for cross-docking is found, or if transportation planning is not in use, then the docking/packing location in 'Item. Connect Warehouse' (MMS002) is used.

### 4 Look for the default cross-docking location defined per warehouse

If no valid location is found in (MMS002), the cross-docking location entered in 'Warehouse. Open' (MMS005) is used. This is set in (MMS005/G) and is a mandatory field if cross-docking is allowed for the current warehouse.

### 5 Suggest to send to cross-docking location

In 'Cross-dock Results. Open' (MWS160), the quantity to put in the cross-docking location is suggested. You can also change the location before you update using F14.

## Extended cross-docking

As described earlier, the result of cross-docking is that the goods become allocated to the demand order. However, to complete the outbound dispatch flow the regular dispatch activities (picking list printing, packing, pick reporting) must then be done before the goods are considered as issued. In an extended cross-docking scenario where the goods are moved from the inbound trailer directly onto the outbound trailer, those additional activities add unnecessary administrative processing.

With extended cross-docking, you can automatically drive the outbound delivery further in the dispatch flow instead of stopping at having the goods allocated to the demand order.

You can configure the system so that the outbound delivery is taken to picking, packing, docking, or all the way through issue.

You can trigger extended cross-docking at goods receiving by:

- Delivery line-by-line
- Package-by-package
- Delivery-by-delivery

In addition, you can transfer the package information from the inbound to the outbound delivery in order to eliminate time-consuming and costly repacking and relabeling activities. This is also a key enabler for package-based RFID handling.

## Extended cross-docking order types

Extended cross-docking for inbound deliveries (acquisition orders) can be used for purchase orders and distribution orders.

Extended cross-docking for outbound deliveries (demand orders) can be used for customer orders, distribution orders, and requisition orders.

## Limitations for extended cross-docking

Package-based and delivery-based extended cross-docking is only processed if all lines are cross-docked to the same delivery.

**Note:** Currently, package-based and delivery-based goods receiving is only introduced for distribution order receiving. Considering that a ship-via scenario typically involves a purchase order on the inbound delivery side of the cross-docking process, a requirement is to introduce package-based and delivery-based purchase order receiving.

**Line-by-line extended cross-dock:** Extended cross-dock is executed directly for each received line. Because of this package information cannot be transferred to the outbound delivery the line is cross-docked to.

**Package-by-package extended cross-dock:** Extended cross-dock is executed package by package. This means that the entire package on the inbound delivery must be cross-docked to the same outbound delivery for extended cross-dock to occur. When this condition is met the package information can be transferred to the outbound delivery.

**Delivery-by-delivery extended cross-dock:** Extended cross-dock is executed delivery by delivery. This means that the entire inbound delivery must be cross-docked to the same outbound delivery for extended cross-dock to occur. When this condition is met the package information can be transferred to the outbound delivery.

## Define Cross-Docking Settings

This document explains how you define settings for what to cross-dock and where to put it.

Cross-docking is performed in order to avoid putting stock away when it will be picked again within a short period of time.

### Outcome

- Basic cross-docking settings per warehouse and item/warehouse are defined.
- Cross-docking settings when transportation planning is used are defined
- Cross-docking settings for how an object control table should work are defined.

Depending on how you define the cross-docking settings, the system will suggest a cross-docking location when you perform goods receiving.

- Details of performed cross-docking are stored in the MITTCD file.
- Stock entrance allocation is executed in the MITALO file.
- Some details about the cross-docking are recorded on the MITTRA file.

### Before you start

- Basic settings for order types must be set.
- If you use transportation planning, the conditions listed in [Transportation Management](#) on page 533 must be met.

### Follow these steps

#### Basic settings per warehouse

- 1 Start 'Warehouse. Open' (MMS005). Open the G panel.

- 2** Activate the 'Cross-docking on/off' field.
- 3** Enter the number of days in the 'Planned cross-docking time fence – days' field.  
These are the days for future pre-allocations that should be considered for cross-docking.
- 4** Enter the number of days in the 'Opportunity CD time fence – days' field.  
The number of days in the future demands on the material plan (MMS080) should be considered for cross-docking.
- 5** Enter 2 in the 'Pack/Docking' field.  
2=Cross-docking location
- 6** Enter the location in the 'Docking location' field. This is retrieved from the location master (MMS010) that will be used for cross-docking.  
You do not have to fill in this field if you want to define your cross-docking location as below.  
The value in the 'Docking location' field is used as the last search path if none of the others below are defined. The cross-docking locations are retrieved in the following sequence:
  - 1 - From the cross-docking location retrieval table (MWS130)
  - 2 - From the loading platform (if transport planning is being used)
  - 3 - From the item/warehouse (MMS002)
  - 4 - From the warehouse master (this field).
- 7** Activate the 'Display MWS160' field if you want 'Cross-Docking Results. Open' (MWS160) to be displayed automatically during the goods receiving process.  
In (MWS160), you can change the suggested location and quantity and also update the put-away transaction.

### **Settings per item/warehouse master**

- 1** Start 'Item. Connect Warehouse' (MMS002/G).
- 2** Select the 'Pack location' or the 'Location' field. Any of these can be used for cross-docking.  
The selection between these is done in (MMS005).
- 3** Set the 'Cross-docking on/off' field to 'On.'

### **Settings when transportation planning is used**

If you use transportation planning, then you will plan to load the shipment from a loading platform. Each loading platform can be assigned to a cross-docking location.

- 1** Start 'Loading Platform. Open' (DRS016/E).  
Alternative: Start (DRS016) via option 12 in (MMS005).
- 2** Enter the location you want to use for cross-docking in the Location field.

### **Settings when an object control table is used**

These functions are designed to give maximum flexibility in choosing a cross-docking location, but are also the most complex to set up, so only use them if you must.

- 1** Decide upon the objects (fields/columns) that will control which location you will cross-dock to. Start 'Available Object Control Parameters. Open' (CMS016). Select the 'Cross dock location' parameter and select option 11=Object table detailed lines

- 2** Enter the values in 'Generic Object Control Table. Open' (CMS017).
- 3** Decide which parameter values lead to which cross-docking locations. Start 'Cross-Docking Put-Away Selection' (MWS130/B).
- 4** Select a priority.
- 5** Fill in the 'Start value 1' field. Also fill in 'Start value 2' and '3,' if they exist.  
Press Enter.  
The values selected on the B panel are displayed on the E panel.
- 6** Enter the cross-docking location.
- 7** Click Exit to end the program.

#### Parameters to set

Program ID/Panel	Field	The field indicates ...
(MMS005/G)	Cross-docking on/off	... whether cross-docking is to be used in this warehouse. Both this parameter and the one in (MMS002/G) must be selected for cross-docking.
(MMS005/G)	Planned cross-docking time fence days/hours	... the number of days forward that linked orders activate cross-docking. Linked orders or planned stock entrance allocations can be either order-initiated orders or pre-allocations.  If the value is left as 0, then only pre-allocations due to be shipped today or in the past will be considered.  If a negative value is used, then only overdue pre-allocations will be considered (overdue by the number of days specified).
(MMS005/G)	Opportunity cross-docking time fence days/hours	... the number of days ahead that demand in the material plan activates cross-docking. Cross-docking from the material plan is called opportunity cross-docking.  If the value is left as 0, then only pre-allocations due to be shipped today or in the past will be considered.  If a negative value is used, then only overdue pre-allocations will be considered (overdue by the number of days specified).
(MMS005/G)	Packing or docking location	... whether the location is used for packing or cross-docking. 1 = Packing location 2 = Docking location
(MMS005/G)	Cross-docking location	... the default docking location used for cross-docking. It is only used if all other cross-docking locations have been left blank in the setup.
(MMS005/G)	Display cross-dockings in (MWS160)	... whether cross-docking should be shown on (MWS160) after it is generated in MMMNGCDK.

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS002/G)	Packing location Docking location	... the locations specified in these fields can be used for cross-docking. The selection is made in (MMS005/G).
(MMS002/G)	Cross-docking on/off	... whether cross-docking is allowed in the warehouse. Both this parameter and the one in (MMS005/G) must be set to On for cross-docking.
(DRS016/E)	Location	... the location you use for cross-docking when you use the transportation planning function in M3.
(CMS016/B)	Object control parameter	... the available object control parameter, where you can define your objects and values.
CMS017/B	Program name	... the program that is used for the object control table. In this case, enter 'MWS130' here.
(CMS017/E)	Warehouse	... the warehouse for which this object control table is valid.
(CMS017/E)	Priority	... the sequence in which each information field should be displayed.  Switch the numbers to change the sequence. To add new information fields, enter the numbers and names of the desired information fields.  Example:  To add a new information field between 10 and 20, assign this new field a number between 11 and 19. Press Enter. The new field is then placed in the correct order.
(CMS017/E)	Fields 1, 2 ,3 ,4	... a field or data element from a specific file.  It is used to create keys or search paths for userdefined tables, and also to create the contents of userdefined files.  Note: These fields will be protected if entries are found on (MWS130). That means that you cannot fill in these fields if they are in use.
(CMS017/E)	Status	... the status for the generic object control table. The valid alternatives are:  10 = Preliminary 20 = Definite 90 = Blocked/expired.
(MWS130/B)	Priority	... the table priority from the table in (CMS017). The field indicates the table priority. When searching for cross-docking locations, the tables are searched in order of priority for a set of rules that corresponds to the specified object values. These sets of rules are displayed below as the 'Start value 1, 2, 3' fields.

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MWS130/B)	Start value 1 Start value 2 Start value 3	<p>... the first, second and third valid values to be compared with the contents of a control object. If the contents are greater than or equal to this start value, the record will be accepted.</p> <p>If there are several start values, the one that is the closest lowest value is valid.</p> <p>Example: Start value 1 could be 'Product group' Select a product group with F4=Prompt</p> <p>Start value 2 could be 'Item no.'. Select an item number with F4.</p> <p>Start value 3 could be 'Customer no.'. Select a customer number with F4.</p>
(MWS130/E)	Location	... cross-docking location used according these specified rules and values.

## Goods Receiving with Two-Step Put-Away

This document explains how you set up and perform two-step put-away.

Once two-step put-away is activated, an extra step is added to the inbound goods flow. This step comes after stock receipt and before the stock is available to allocate for picking.

Each pending put-away is listed in 'Pending Put-Away Process' (MWS460). The confirmation of the put-away confirms that the stock is in place, and checks that the location is the same as the expected location.

Staged two-step put-away: the received goods will be located at a receiving area, waiting to be directed to the correct put-away location during put-away confirmation.

### Limitations

- It is not possible to perform two-step put-away for replenishment (order category 92) orders.
- The extended cross-docking is not compatible with two-step put-away.

### Outcome

- A put-away task is created when stock is reported as received.
  - The goods are placed in a staging area for incoming goods before they are put away in the correct put-away location.
- The pending put-away table is called MPTAWY.
- The MMRTVPAL program retrieves a staging location.
- A confirmation is received stating that the stock has physically been placed in the correct location.

### Using two-step put-away:

- Prevents allocation/pick of stock before it is physically in place

- Enables decoupling of goods receipt from the retrieval of put-away location
- Improves stock accuracy
- Can be used for all order types (PO, RO, DO, MO and CO-returns).

### Before you start

No prerequisites needed.

### Settings for two-step put-away

- 1 Start 'Number Series. Open' (CRS165). Number series 13P='Put away number' must be created.
- 2 Start 'Stock Zone. Open' (MMS040/E) and select 1 in the 'Two-step put-away' field.  
Make sure that the location into which you will put the stock is connected to this two-step put-away stock zone.
- 3 For requisition and distribution, start 'Req/Distr Order Type. Open' (CRS200) and select 1 in the '360 Two-step put-away' field.
- 4 For manufacturing orders, start 'Manufacturing Order Type. Open' (PMS120) and select 1 in the 'Two-step put-away' field.
- 5 For purchase orders, start 'Goods Receiving Method. Open' (PPS345) and select 1 in the '140 Two-step put-away' field.
- 6 CO-returns pending put-away is only controlled by stock zone 'Stock Zone. Open' (MMS040/E). See step 2.

### Special settings for staged two-step put-away

If 'staged two-step put-away' is selected, the received goods will be located at a receiving area, waiting to be directed to the correct put-away location during put-away confirmation.

- 1 In 'Stock Zone. Open' (MMS040/E), you can select either 1 or 2 in the 'Two-step put-away' field. However, this changes when you perform two-step put-away for goods that should be cross-docked. If you select 2 the goods will be put on the staging area. If you select 1 the goods will be placed on the defined cross-dock location.
- 2 For requisition and distribution, start 'Req/Distr Order Type. Open' (CRS200) and select 2 in the '360 Two-step put-away' field.
- 3 For manufacturing orders, start 'Manufacturing Order Type. Open' (PMS120) and select 2 in the 'Two-step put-away' field.
- 4 For purchase orders, start 'Goods Receiving Method. Open' (PPS345) and select 2 in the '140 Two-step put-away' field.
- 5 Start 'Number Series. Open' (CRS165). Number series 13P='Put-away number' must be created.
- 6 The staging area (staging location) is defined in 'Warehouse. Open' (MMS005), in the 'To location' field.

### Work with two-step put-away

When you have received the goods and have reported the put-away in M3 BE, each pending put-away is listed in 'Pending Put-Away. Process' (MWS460). Start this program.

- 1 The view and sorting order are user-defined. For further details, refer to these documents:  
See  
See
- 2 You have to report that the stock is physically placed at the location in (MWS460). On the B panel, there are some options:  
Option 6='Print put-away label' (MWS450PF)  
'Option 16='Process' for processing of the put-away confirmation  
Option 2='Change' opens the E-panel, where you can change the new location, new quantity and pickers, as well as connect to a wave number before you report the physical put-away. The stock is allocable when the reporting is complete.
- 3 If you have opened the E-panel by option 2='Change', you can select F15='New location'. Then the correct put-away location will be displayed in the 'New location' field.  
If you will be splitting the put-away into more than one location, enter the quantity in the 'New quantity field' and press F15. The system will retrieve a location for this new quantity.  
If you press F15 a second time, the second-best put-away location will be retrieved. If F15 is pressed yet another time, the same location (the best) as is returned the first time will be retrieved. It will alternate between two different locations if you continue to press F15.
- 4 Click Next and the stock will be allocable when the reporting is complete.
- 5 The stock is allocable when the reporting is complete.

### Work with staged two-step put-away

When you have received the goods and have reported the put-away in M3 BE, each pending put-away is listed in 'Pending Put-Away . Process' (MWS460). Start this program.

- 1 The view and sorting order are user-defined. For further details, refer to these documents:  
See  
See
- 2 The goods are now placed on the staging location waiting to be directed to the correct put-away location.
- 3 You have to report that the stock is physically placed at the location in (MWS460). On the B panel, there are some options:  
Option 6='Print put-away label' (MWS450PF)  
Option 16='Process' opens the E-panel when you use two staging step put-away. The staging put-away location will be proposed automatically.  
Option 2='Change' opens the E-panel, where you can change the new location, new quantity and pickers, as well as connect to a wave number before you report the physical put-away. The stock is allocable when the reporting is complete.
- 4 If you have opened the E-panel by option 2='Change', you can select F15='New location'. Then the correct put-away location will be displayed in the 'New location' field.  
If you will be splitting the put-away into more than one location, specify the quantity in the 'New quantity field' and press F15. The system will retrieve a location for this new quantity.

If you press F15 a second time, the second-best put-away location will be retrieved. If F15 is pressed yet another time, the same location (the best) as is returned the first time will be retrieved. It will alternate between two different locations if you continue to press F15.

- 5 If you have opened the E-panel by option 16='Process' (which automatically propose the put-away location) it is not necessary to also use F15 on the E-panel.
- 6 Press Next and the stock will be allocable when the reporting is complete.
- 7 The stock is allocable when the reporting is complete.

#### **Receipt reversal when using two-step put-away**

If a receipt reversal is needed when using two-step put-away, the two-step put-away should be completed first. Then, the reversal should be performed.

## Goods Receiving DO/RO Using Different Methods

This document explains how you perform goods receiving for distribution and requisition orders.

### **Outcome**

- User-defined entry templates are set
- Receipt of a known identity
- Receive by delivery
- Receive by package
- Receive by package details
- Detailed receiving with updates

The process:

- Enables simple and accurate receiving of goods sent from another warehouse (DO) and goods that should simply be put away to stock (RO)
- Allows users to receive in a manner that reflects their business processes

The following are the effects on the system:

- Allows reporting of receipts on many levels:
  - Shipment
  - Delivery
  - SSCCID/EAN128
  - Delivery/Package
  - Order/Line
  - Item
- User-defined A panel for receiving
- Shares components so cross-docking and pre-allocation are automatically enabled
- Benefits from system-directed put-away functionality

## Before you start

- A distribution order must be created and issued from the delivering warehouse, or a requisition order (transaction type 40='Requisition order receipt') must be created and released.

## Follow these steps

### Define manual or automatic receive reporting

- In 'Dispatch Policy. Open' (MWS010), the '220 Auto DO receipt' field indicates whether receipt reporting at the receiving warehouse should be performed automatically for distribution orders.

The valid alternatives are:

0 = No, manual receipt reporting

1 = Yes, automatic receipt reporting at receiving warehouse when performing stock issues at shipping warehouse

2 = Yes, automatic receipt reporting at receiving warehouse when based on estimated receiving date (transaction date and time on the inbound delivery).

For further information, see [Settings for Distribution Orders](#) on page 110.

### Define whether over receipt is allowed

- In 'Dispatch Policy. Open' (MWS010), the '600 Allow distribution over receipt' field indicates whether it is permitted to receive more than what was sent on a DO line.

The valid alternatives are:

0 = No, it is not possible to receive more or other items than what was sent on the DO line.

1 = Yes, it is possible to receive more than what was sent on the DO line. Quantity difference must be within the tolerance defined in parameter 610. If tolerance percentage is 0, no limitation applies. It is not possible to receive other goods than the ones sent.

2 = Yes, it is possible to receive more than what was sent but the quantity must be within the tolerance defined in parameter 610. It is also possible to receive goods that were not sent.

Note that over receipt is not allowed for catch weight items, subplot items, or in-house package items.

Note also that under receipt is always possible, independently on above parameter.

- In 'Dispatch Policy. Open' (MWS010), the '610 Over receipt diff percentage' field indicates the percentage variance tolerated for the distribution over receipt and is considered if the parameter 600 ('Allow distribution over receipt') in (MWS010) is set to 1 or 2. If the value of the quantity received is higher than the specified percentage of the dispatched quantity, the receipt is not allowed. If the value is 0, no check for quantity variance is performed.

### Define whether return documents should be produced

- In 'Req/Distr Order Type. Open (CRS200)', the 'Return document control' field can be used to create a separate inbound delivery status (OQPGRS)=68.
- When the return document is printed (option 16 in (MMS100)), the status will be raised to 70='Shipped from consignor'. These statuses for inbound deliveries can be used for selection in the 'Inbound Delivery Toolbox. Open' (MWS442).

### Define whether put-away labels should be produced

- Specify the 'No put-away label' field on the E panel in 'Stock Zone. Open' (MMS040).

This field can be used to stop the put-away label from being produced when put-away is done into this stock zone.

The valid alternatives are:

0 = No

1 = Yes

If 0 is selected, the labels will be produced. If 1 is selected, the labels will not be produced.

### **Define entry templates**

An entry template is a predefined set of fields that is available when the (MWS440/A) panel is opened (receipt of a known identity). The template also sets where the cursor is when the panel is opened.

- 1 Start 'Goods Receipt DO/RO. Open Entry Template' (MWS441).  
The A panel or the B panel can be set as the opening panel.
- 2 Specify the 'Entry template' field with an ID for the template. Specify the 'Order category' field.  
The template can be valid either for requisition orders or distribution orders.
- 3 Start the E panel. The displayed field headings are the fields available on the (MWS440/A) panel. Specify the Used field for every field heading.
- 4 The 'Position' field determines where the cursor should be when (MWS440/A) is started or refreshed. This can only be set to 1='Yes' for one field in each entry template.

### **Receipt of a known identity**

#### *Settings*

- 1 Start 'Goods Receipt DO/RO. Report' (MWS440). The A panel is the opening panel.
- 2 Open the P panel with function key F13='Settings'. Specify entry templates for requisition orders and distribution orders in the 'Entry template cat 4' and 'Entry template cat 5' fields.  
If you leave these fields blank, all available fields will be displayed on the A panel.
- 3 Specify the 'Option' field with the option you want to be displayed by default on the A panel. It can be changed manually.
- 4 The 'Retrieve location for a package Auto' field indicates whether the put-away location is defaulted if the location field is empty and a full package is being received.

#### *Receiving*

- 5 Now you can receive a known identity: The reception is done on the A panel.

The following options are available:

- Options 2='Change' and 5='Display' start the E panel in 'Goods Receipt DO/RO. Open Toolbox' (MWS442), where information about the delivery status, etc. is displayed.
- Option 11='Report DO/RO' starts 'Goods Receipt DO/RO. Report Details' (MWS445).
- Option 12='Delivery packages' starts 'Goods Receipt DO/RO. Report Packages' (MWS443).
- Option 13='Delivery detailed' is also used for reporting packages, and starts 'Inbound Delivery Packages Details. Open' (MWS444).
- Option 30='Report' is used for reporting directly from the A panel.

### **Receive by delivery**

- 1 Start 'Inbound Delivery Toolbox. Open' (MWS442), where you can define sorting options, sorting order and view.

See

See

See

If you use the 'Return document control' parameter, it can be useful to sort out all deliveries with status 68='No return documents printed' on the panel. Then you build an sorting order with a selection table, such as OQPGRS delivery status from 70 to 89.

If you use auto-DO receipts (MWS010), the parameter '220 Auto Do receipts' must be set to 2='Yes', automatic receipt reporting at receiving warehouse' when goods receipt is based on the estimated receiving date (transaction date and time on the inbound delivery).

Then the view should include transaction date OQTRDT and time OQTRTM.

- 2** If (MWS442) is opened from another program via an option, a predefined information view can be displayed. Refer to .
- 3** The following options are available on the B panel:
  - Options 2='Change' and 5='Display' start the E panel, where information about the delivery status, etc. is displayed.
  - Option 11='Report DO/RO' starts 'Goods Receipt DO/RO. Report Details' (MWS445).
  - Option 12='Delivery packages' starts 'Goods Receipt DO/RO. Report Packages' (MWS443).
  - Option 13='Delivery detailed' is also used for reporting packages, and starts 'Inbound Delivery Packages Details. Open' (MWS444).

### Receive by package

- 1** Start 'Inbound DO Receipts. Process Packages' (MWS443), where you can define your own views.

The view can be set like this:

E = Package data

F = Package weight, volume data

T = Text

1 = Report receipt (MWS445)

3 = Package details (MWS444).

- 2** The following options are available:

- Options 2='Change' and 5='Display' show the valid panels according to the view.
- Option 11='Report DO/RO' starts 'Goods Receipt DO/RO. Report Details' (MWS445).
- Option 13='Delivery detailed' is also used for reporting packages, and starts 'Inbound Delivery Packages Details. Open' (MWS444).

### Receive by package details

- 1** Start 'Inbound DO Receipts. Process Packages - Details' (MWS444).

If you are not using packaging (view 1), you can use order view instead (view 2). Item view is also available to show incoming deliveries for an item (view 3). You can define your own views here.

- 2** The following options are available:

- Options 2='Change' and 5='Display' show the valid panels according to the view.
- Option 11='Report DO/RO' starts 'Goods Receipt DO/RO. Report Details' (MWS445).

### Detailed receiving with updates

- 1 Option 11='Report' in (MWS440), (MWS442), (MWS443), and (MWS444) starts 'Goods Receipt DO/RO. Report Details' (MWS445). This program can be used if you need to change something or enter something, such as catch weight.
  - 2 Specify the 'Catch weight', Location, 'Received quantity', 'Container ID' and 'Flagged as complete' fields on the B panel
 

Function 16='Confirm' reports all reports and all packages lines

Option 30='Report' reports selected line(s)

Option 16='Select location' starts 'Location. Select Available Locations' (MMS160).
  - 3 In (MMS160), press F15='Available locations' to display all the locations that are available.
  - 4 Select the location by using option 1='Select' and pressing Enter. The (MMS160/K) panel with selected locations is displayed.
  - 5 Specify the quantity in the 'Quantity' field. If you press Enter after each entry, the 'Remaining quantity' to the upper right is displayed. This is the remaining quantity to be put away.
  - 6 F14='Update' updates the quantities on the selected locations. The (MWS445/B) panel is refreshed.
- Cross-Docking*
- 7 If there is a demand order (CO, RO, MO, or a DO) released and there is a shortage in the stock for the item, 'Cross-Dock Results. Open' (MWS160) starts when you enter the receiving data on the (MWS445/B) panel and press Enter.

### Detailed receiving with deviation

- 1 To receive less than what was sent: In 'Goods Receipt DO/RO. Report Details' (MWS445), provide a smaller quantity and set 1 in 'Flagged as complete'. Note that you can always receive less than what was sent.
- 2 To receive more than what was sent: In 'Goods Receipt DO/RO. Report Details' (MWS445), provide a larger quantity. Alternatively, the API transaction AddDORecipe in MHS850MI can be used to receive more than what was sent.  
**Note:** The dispatch policy parameter 600 must be set to 1 or 2. Also, over receipt is not allowed for catch weight items, subplot items, or in-house package items.
- 3 To receive a different item, lot and/or container than the ones that were sent: In 'Goods Receipt DO/RO. Report Details' (MWS445), apply option 17='Add line' on one of the lines to be received.
  - On the E panel, specify the new item, lot, and container to be received.
  - Return to (MWS445/B) panel and specify 'Catch weight', Location, 'Received quantity', and 'Container ID' in their respective fields.
  - Use option 30='Report' to report selected line.

Alternatively, the transaction AddDORecOther in API MHS850MI allows the receipt of goods that were not sent. It uses qualifier '50VR' as defined in 'Internal Stock Trans Qualif. Open' (MHS860). The input data required is:

- Distribution order number
- Package number if it is received in a specific package
- Item/lot/container details and quantity to be received
- Location where it should be received.

The transaction adds a new line on the distribution order with quantity 0, and creates an inbound package line. It then picks the extra quantity from the deviating location (\*=>YYY), and the final receipt is performed using these details.

**Note:** The possibility to receive an item not included on the delivery is controlled by setting parameter 600 on the dispatch policy (MWS010/J) to 2. This is not allowed for catch weight items, subplot items, or in-house packages.

**Note:** To receive an item not included on the delivery, parameter 515 on the order type (CRS200/J) should also be activated to accept the distribution order line with zero quantity.

## System-Directed Put-Away

This document explains the concept of system-directed put-away.

The purpose of this method is to increase the efficiency in the warehouse by letting M3 BE search for, find, and suggest the best locations for goods put-away.

### Outcome

- Spreads the stock to minimize congestion and lower the risk associated with equipment breakdown
- Places reserve stock close to main picking locations
- Allows for mixes of location types and their automatic filling and allocation:
  - Single pallet
  - Multipurpose floor areas
  - Multi-pallet (such as drive-in or outside).
- Places high frequency items close to the usage point (such as buffer or packing location) Minimizes put-away time or maximizes space usage according to the chosen strategy
- Applies consistent location checks to ensure that rules (such as those for maximum weight, volume and fill rate) are obeyed.

The function program used for retrieving put-away locations is called MMRTVPAL.

This method uses a rule-based system to retrieve locations as a suggestion for putting stock away in the warehouse. The location retrieved will be dependent on the put-away strategy being used, the characteristics of the item (such as the ABC frequency class), and the quantity being put away. The same rules are used throughout the system regardless of the type of order being received.

Whenever a put-away location is suggested to a user in M3 BE, that location is found according to the rules of system-directed put-away. If a suitable location cannot be found, the location is left blank and the user must suggest a location, which will then be checked for limitations such as weight, volume and fill rate.

**Note:** If the quantity being received cannot be put into a single location (such as multiple pallets into a zone containing only single pallet racks), then no location will be suggested by the system. In this case, the user should start the 'Select Location' function, which is available from all stock receipt functions, usually by pressing function key F16.

### Before you start

Refer to the settings in [Basic Settings for System-Directed Put-Away](#) on page 230.

### Planning steps for put-away location setup

- Assign ABC codes to items based on frequency.
- Code locations according to usage for each ABC class.
- Classify locations by location type and location zone.
- Set controls by stock zone for item/warehouse combinations.
- Specify location weight/volume, fill rate, and cubic limitations.
- Specify group of specific preferred reserve locations for pick-face.
- Assign distribution code and transport flow to locations for stock spreading.
- Set up quantity break tables for the various items and location types.

### Stock Keeping Unit (SKU) storage methods

For each item, you can select from these storage methods:

- Single fixed location for an item
- Dynamic (multiple) locations for an item
- Dynamic locations with replenishment for an item.

### Methods for selecting put-away location

During put-away, you can select from three different methods to select a put-away location:

- User-directed put-away
- System-directed put-away
- Package- or item-based put-away.

### Selection logic

The system goes through five steps when searching for locations. The first two are only used if the quantity being put away is less than a multiple (that is, the normal quantity for the location found).

- 1 Try partly empty locations from connected location groups (current fill rate is < 100%). Return only a location if the full quantity or full multiple can be put away.
- 2 Try partly empty locations according to the normal location type and stock zone search. Return only a location if the full quantity or full multiple can be put away.
- 3 Try empty locations from connected location groups. Return a location according to the rules.  
Locations within each location group are searched by location type according to the setup in 'Item. Connect Stock Location Type' (MMS057).
- 4 Try empty locations according to the normal location type and stock zone search. Return a location according to the rules.  
Locations are searched by location type according to the setup in (MMS057)
- 5 Try the primary location from MITBAL.

The rules referred to are:

- Quantity multiple
- Weight, volume and fill rate limits
- ABC code restrictions

### Selection logic - Suggest empty location(s)

Regardless of the logic used for finding the empty location, this flow describes those criteria that is used to determine suggestions on Empty Location(s).

For more information, see [System-Directed Put-Away with Fill Partly Empty](#) on page 261.

### The use of multiples

Multiples are used during put-away to determine these:

- How many pallets to spread across each location when suggesting a spread (such as of multiple pallets) in 'Location. Select' (MMS160).
- Whether a single location can be suggested (such as directly into 'Purchase Order. Receive Goods' (PPS300)), or whether the user must trigger a spread manually in (MMS160).

### The methods to find a multiple's quantity

The multiple's quantity is found according to first of these methods that applies:

- 1 According to the normal quantity found for the location type in (MMS057)
- 2 According to the order multiple for the item/vendor combination (only applies to purchase order receipts)
- 3 According to the order multiple on 'Item. Connect Warehouse' (MMS002/F).

### Manual override of system-directed put-away

- Manual override is always possible using (MMS160) or simply by typing in the location you wish to use. In (MMS160), you search for locations when all normal locations are full.
- Note that even when using a manually specified location, or the item/warehouse default location, the weight volume and fill rate checks are still done if the parameters in 'Stock Zone. Open' (MMS040) are activated for the stock zone.

### Examples of system-directed put-away

These are examples of system-directed put-away:

- Preferred buffer location  
Receive full pallet
- Use distribution ID  
Receive full pallet
- Preferred buffer location  
Receive partly filled pallet  
Fill partly empty locations
- Location type sequences  
Receive partly filled pallet  
Fill partly empty locations
- Location type sequences

- Receive partly filled pallet
- Minimum quantity on location
- No requirements to fill partly empty locations
- Use primary (standard) location
- Receive partly filled pallet
- Minimum quantity on put-away location
- No requirements to fill partly empty locations
- Use primary (standard) location
- Receive full pallet plus partly filled pallet
- No items will need manual put-away.

#### **Settings in M3 - Valid for all the examples**

- 'Item. Connect Location Type' (MMS057) defines 100 as the normal quantity for location type PL, and 20 as the minimum.
- 'Item. Connect Warehouse' (MMS002) says filling of partly empty locations is allowed.
- Location 010101 is the item primary location defined in (MMS002).
- Location 010102 is the preferred buffer location for location 010101, as defined in 'Stock Location. Connect Location Groups' (MMS011).

#### **API MMS160MI**

The API MMS160MI contains a set of transactions that can be used by an external system to simulate the system-directed put-away logic.

##### RtvPutAwayLoc

RtvPutAwayLoc proposes a location that can be used to put away a given item quantity at a given stage of an order-related receiving workflow. The location is retrieved according to the order setup, item setup and system-directed put-away rules. MMS160MI RtvPutAwayLoc mimics the location proposal seen in interactive receiving functions.

Transaction inputs are:

- Warehouse
- Qualifier, used to invoke the standard component that will manage the location retrieval. The qualifier relates to the activity being made:
  - 10 for manufacturing order receive (will invoke PMS050BE)
  - 20 for purchase order receipt (will invoke PPS300BE)
  - 21 for purchase order inspection (will invoke PPS310BE)
  - 22 for purchase order put away (will invoke PPS320Fnc)
  - 40 for RO receipt
  - 50 for DO receipt
- Reference order number, the order number for which the put-away is made
- Reference order category, deducted from the qualifier
- Reference order line

- Reference order line suffix
- Receiving number. This only applies to qualifier 21 and 22. Receiving number is required to propose the correct location according to the goods receiving method. Message PP31014 'Receiving number is invalid - check your receipt documents' is returned if the qualifier does not match the next activity for the receiving number.
- Status, when looking for a specific location status. Status 3 will return the default reject location from the purchase settings and is applicable to qualifier 21 only (PO inspection). Status 1 will return default inspection location and is applicable for qualifier 20 only (PO receipt). If the status is not applicable, message WDS0101 'Status proposal is invalid' is returned.
- Transaction quantity, the quantity to put away
- Alternate unit of measure. If blank, MMS160MI considers that the quantity is expressed in basic unit. If an alternate unit is used, it must be defined for the item.
- Item number  
**Note:** The item number is retrieved from the order line or order head for manufacturing orders.

If one single location cannot be proposed, an error message is returned stating the reason why a location (single) could not be identified. For example, MM\_0057 'Qty stored exceeds max for the location found - use MMS160 to spread over multiple locations'. Alternatively, an output with a blank location is returned.

#### ChkPutAwayLoc

ChkPutAwayLoc is independent of any order, answering the question "Can this item quantity be put away in that location?", according to the rules and limitations defined in 'Item. Connect Location Type' (MMS057).

Transaction inputs are:

- Warehouse
- Location
- Item number
- Transaction Quantity
- Alternate units of measure. If blank, MMS160MI considers that the quantity is expressed in basic unit. If an alternate unit is used, it must be defined for the item.

If the location can accept the item quantity, the transaction output will relay the location and some of its properties.

If the location cannot fit the item quantity, an error message is returned stating the reason why not enough space is available. For example, MM90304 'Maximum filling rate exceeded' or XWS0101 'Location is occupied'.

#### LstPutAwayLocation

LstPutAwayLocation mimics what 'Location Select - Available Locations' (MMS160) would propose when spreading a quantity to put away to several locations. It is not related to any specific order.

The result can be filtered per the location properties: location's stock zone, type, status proposal, distribution ID, Location ABC class, transportation flow, group.

The item and quantity to put away must be provided.

Status of the balance ID to put away can be provided for a more accurate answer.

**Note:** If no status (balance ID status (STAS) or location status proposal (DEST)) is provided, the put-away location retrieval logic uses status 2 by default.

# System-Directed Put-Away with Fill Partly Empty

This document describes how the put-away location retrieval program searches partly empty locations by location type.

## Limitations

A location where there is a quantity stored of some other item, but nothing of the item to put-away, is neither considered partly empty, nor empty, and will therefore not be found when the system searches for put-away locations.

## Definitions

- Partly empty means that there is a quantity of the item to put-away stored on the location.
- Empty means that there is no quantity of any item stored at the location.
- A location where there is a quantity stored of some other item, but nothing of the item to put-away, is neither considered partly empty, nor empty, and will therefore not be found when the system searches for put-away locations.

## Search logic

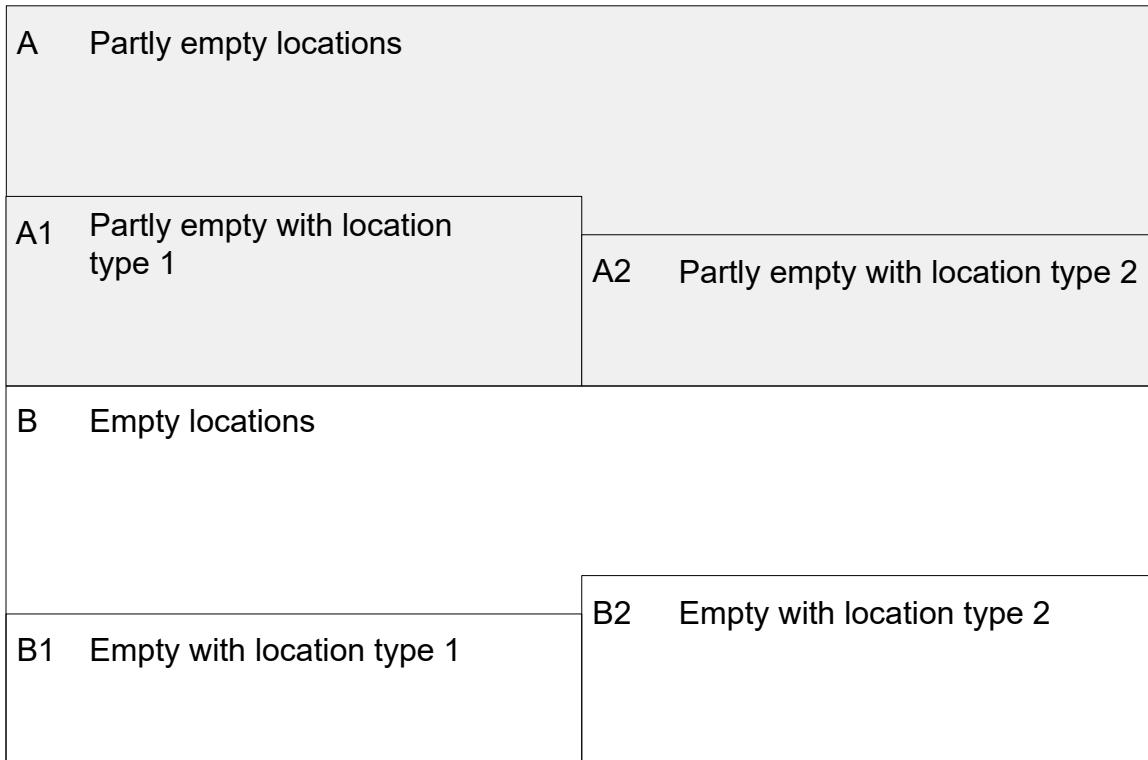
The 'Fill partly empty' and 'All partly empty' parameters are both found on 'Item. Connect Warehouse' (MMS002/G). Values 1 and 2 of the 'Fill partly empty' parameter activate search for partly empty locations with a location type set up in the item/location type relation table in 'Item. Connect Stock Location Type' (MMS057).

The difference between value 1 and value 2 is what is prioritized; the location being partly empty, or the location having the most suitable location type.

The parameter 'All partly empty' enables the search for partly empty locations that do not have a location type set up in the item/location type relation table (MMS057). It is also possible to decide when these locations should be searched, either before any empty locations are searched (value 1), or after empty locations are searched (value 2). By setting the parameter 'All partly empty' to 0 (zero), only search locations with location types set up in the item/location type relation table (MMS057) are searched.

## Example search

The partly empty locations are searched by location type, just as the empty locations. Among the partly empty locations, there are those with location type 1, represented by area A1 in the figure, and there are those with location type 2, represented by area A2. All other partly empty locations constitute the remaining part of area A.



The table shows the order in which the different types of locations are searched when putting away 10 pieces of item X depending on the value of the 'Fill partly empty' and 'All partly empty' parameters.

Quantity: 10 pieces

Search step	Fill partly empty=0 All partly empty=0	Fill partly empty=1 All partly empty=0	Fill partly empty=1 All partly empty=1	Fill partly empty=1 All partly empty=2	Fill partly empty=2 All partly empty=0	Fill partly empty=2 All partly empty=2
1	B2	A2	A2	A2	A2	A2
2	B1	A1	A1	A1	B2	B2
3		B2	A - (A1+A2)	B2	A1	A1
4		B1	B2	B1	B1	B1
5				B1	A - (A1+A2)	A - (A1+A2)

A - (A1+A2) means all partly empty locations of location type other than location type 1 and location type 2.

It is possible to make the system only search locations with location types set up in the item/location type relation table (MMS057), by setting the 'All partly empty' parameter to 0.

It is also possible to prioritize the most suitable location type and have the system select empty locations of that type before it selects any location of a less suitable location type.

The most suitable location type is considered the location type set up in the item/location type relation table (MMS057) with a minimum quantity closest to the quantity that is being put away. In the example, location type 2 is considered more suitable than location type 1 because the minimum quantity for location type 2 is 10, which is the same as the quantity being put away, whereas for location type 1 it is 1.

If the minimum quantity is blank for all records in the item/location type relation table (MMS057), there is no location type that is more suitable than another. The order in which the records in (MMS057) are searched when they have the same minimum quantity, is in descending sequence number order

### **Use of multiples**

A quantity that is greater than the normal storage quantity will be adjusted to a multiple of the normal storage quantity even when all remaining quantity can be stored at the location.

Example:

The remaining quantity is 24 pieces. The normal storage quantity is 10 pieces.

In this case the system suggests placing 20 pieces (twice the normal storage quantity) at location L1 and will go on to search a new location for the remaining 4 pieces, even if all 24 pieces can be stored at location L1. This is done to ensure that the items are stored in even quantities at the locations.

The effect may be that the system will not suggest any location for a small remaining quantity when it is less than the normal storage quantity for all of the location types in (MMS057). If there is no normal storage quantity set for the combination of item and location type, the system will suggest storing as much of the remaining quantity as can fit at the location and make no adjustment of the quantity to store.

### **Examples of search order with location group**

When location groups are set up and connected to the standard location of the item that has impact on the search order for the put-away location.

In the following sections, the sequence in which put-away locations are searched is described for the various permitted combinations of the values on the 'Fill partly empty' parameter and the 'All partly empty' parameter.

#### **Case 1 - Search only empty locations**

##### **Settings**

(MMS002)	Location group search sequence	Location type search sequence
'Fill partly empty' = 0	G1	BU
'All partly empty' = 0	G2	PI
	G3	

##### **Search sequence result**

Each cell in the table below represents a location.

If there is a number in the cell, the location is part of the search sequence and the number tells in which order those locations are searched. If there is no number in the cell, the location is not part of the search sequence and cannot be found with the current setup.

loc type\loc group	G1	G2	G3	no location group
FP-01 (part empty)				
FP-02 (empty)				
BU-01 (part empty)				
BU-02 (empty)	1	3	5	7
PI-01 (part empty)				
PI-02 (empty)	2	4	6	8
MP-01 (part empty)				
MP-02 (empty)				

#### Case 2 – Search only locations with location type in (MMS057) and prioritize partly empty locations

##### Settings

(MMS002)	Location group search sequence	Location type search sequence
'Fill partly empty' = 1	G1	BU
'All partly empty' = 0	G2	PI
	G3	

##### Search sequence results

Each cell in the table below represents a location.

If there is a number in the cell, the location is part of the search sequence and the number tells in which order those locations are searched. If there is no number in the cell, the location is not part of the search sequence and cannot be found with the current setup.

loc type\loc group	G1	G2	G3	no location group
FP-01 (part empty)				
FP-02 (empty)				
BU-01 (part empty)				
BU-02 (empty)	1	3	5	7
PI-01 (part empty)	9	11	13	15
PI-02 (empty)	2	4	6	8
MP-01 (part empty)	10	12	14	16
MP-02 (empty)				

**Case 3 – Search all partly empty locations before empty locations****Settings**

(MMS002)	Location group search sequence	Location type search sequence
'Fill partly empty' = 1	G1	BU
'All partly empty' = 1	G2	PI
	G3	

**Search sequence result**

Each cell in the table below represents a location.

If there is a number in the cell, the location is part of the search sequence and the number tells in which order those locations are searched. If there is no number in the cell, the location is not part of the search sequence and cannot be found with the current setup.

loc type\loc group	G1	G2	G3	no location group
FP-01 (part empty)	9	11	13	15
FP-02 (empty)				
BU-01 (part empty)	1	3	5	7
BU-02 (empty)	17	19	21	23
PI-01 (part empty)	2	4	6	8
PI-02 (empty)	18	20	22	24
MP-01 (part empty)	10	12	14	16
MP-02 (empty)				

**Case 4 – Prioritize partly empty locations by location type and search all partly empty locations****Settings**

(MMS002)	Location group search sequence	Location type search sequence
'Fill partly empty' = 1	G1	BU
'All partly empty' = 2	G2	PI
	G3	

**Search sequence result**

Each cell in the table below represents a location.

If there is a number in the cell, the location is part of the search sequence and the number tells in which order those locations are searched. If there is no number in the cell, the location is not part of the search sequence and cannot be found with the current setup.

loc type\loc group	G1	G2	G3	no location group
FP-01 (part empty)	17	19	21	23
FP-02 (empty)				
BU-01 (part empty)	1	3	5	7
BU-02 (empty)	9	11	13	15
PI-01 (part empty)	2	4	6	8
PI-02 (empty)	10	12	14	16
MP-01 (part empty)	18	20	22	24
MP-02 (empty)				

#### Case 5 – Prioritize location type over partly empty

##### Settings

(MMS002)	Location group search sequence	Location type search sequence
'Fill partly empty' = 2	G1	BU
'All partly empty' = 0	G2	PI
	G3	

##### Search sequence result

Each cell in the table below represents a location.

If there is a number in the cell, the location is part of the search sequence and the number tells in which order those locations are searched. If there is no number in the cell, the location is not part of the search sequence and cannot be found with the current setup.

loc type\loc group	G1	G2	G3	no location group
FP-01 (part empty)				
FP-02 (empty)				
BU-01 (part empty)	1	3	5	7
BU-02 (empty)	2	4	6	8
PI-01 (part empty)	9	11	13	15
PI-02 (empty)	10	12	14	16
MP-01 (part empty)				
MP-02 (empty)				

### Case 6 – Prioritize location type over partly empty and search all empty locations

#### Settings

(MMS002)	Location group search sequence	Location type search sequence
'Fill partly empty' = 2	G1	BU
'All partly empty' = 2	G2	PI
	G3	

#### Search sequence result

Each cell in the table below represents a location.

If there is a number in the cell, the location is part of the search sequence and the number tells in which order those locations are searched. If there is no number in the cell, the location is not part of the search sequence and cannot be found with the current setup.

loc type\loc group	G1	G2	G3	no location group
FP-01 (part empty)				
FP-02 (empty)				
BU-01 (part empty)	1	3	5	7
BU-02 (empty)	2	4	6	8
PI-01 (part empty)	9	11	13	15
PI-02 (empty)	10	12	14	16
MP-01 (part empty)				
MP-02 (empty)				

## Settings for System-Directed Put-Away for Preferred Buffer Locations

This document explains how to define preferred buffer locations to be used by system-directed put-away.

#### Outcome

Preferred buffer locations for system-directed put-away are defined.

This is used when you want to define preferred buffer (reserve) locations for a picking location.

For more information, see [System-Directed Put-Away](#) on page 256.

## Before you start

The settings in [Basic Settings for System-Directed Put-Away](#) on page 230 must be done.

## Follow these steps

- 1 Start 'Stock Location. Open' (MMS010). Open the E-panel for all the buffer locations that should be connected to a picking location. Fill in the 'Location group' field with the same value for all these buffer locations.
- 2 Start 'Location. Connect Location Groups' (MMS011/B). Fill in the Location field with the identity of the picking location.
- 3 Fill in the 'Sequence number' field for the location group you are to create.  
The system begins to look through the location group with the lowest sequence number and then in this location group next sequence number and after that, the system goes back and search for empty locations according to the normal location type and stock zone search.
- 4 Open the E-panel. Fill in the 'Location group' field and activate the 'Use at put-away' field.
- 5 If you have more location groups to connect to this picking location, fill in the 'Sequence number' field for the other location groups.

This table shows how to connect picking locations to preferred buffer locations using location groups and sequencing in (MMS011):

	<b>Location group 1</b>	<b>Location group 2</b>	<b>Location group 3</b>
Buffer locations	0104	0204	0304
	0103	0203	0303
	0102	0202	0302
Picking locations	0101	0201	0301

<b>Table for location 0101</b>		<b>Table for location 0201</b>		<b>Table for location 0301</b>	
Seq	Group	Seq	Group	Seq	Group
0010	1	0010	2	0010	3
0020	2	0020	1	0020	2
		0030	3		

Sorting orders in Stock Location. Open (MMS010)

The sorting order in (MMS010) can be used to show the sequence in which locations are retrieved according to the scenarios described in this table:

<b>Preferred buffer locations specified in MMS011 (Location Group)</b>	<b>Stock zone specified in MMS002/G</b>	<b>Sorting order</b>
Yes	Yes	5
Yes	No	6

<b>Preferred buffer locations specified in MMS011 (Location Group)</b>	<b>Stock zone specified in MMS002/G</b>	<b>Sorting order</b>
No	Yes	2
No	No	4

**Parameters to set**

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS010/E)	Location group	<p>... the locations referred to by the preferred location group table. This table is used during system-directed put-away to find locations close to the pick-face (defined in (MMS002/F), the Location field).</p> <p>When system-directed put-away is finding locations, it first looks for free locations that belong to the location groups defined for the pick-face in (MMS011). It does this in the sequence specified in (MMS011).</p> <p>Example:</p> <p>A typical example in a pallet rack area is that, for a given floor level pallet location, the best buffer locations are directly above it. The locations above it would be assigned the same location group and then the location attached to this location group by using (MMS011).</p> <p>System-directed put-away will then attempt to find a location for that location group and, if it cannot, it will then look for locations according to the normal system-directed put-away logic.</p>
(MMS011/B)	Location	... the picking location you want to connect to preferred buffer location(s).

Program ID/Panel	Field	The field indicates ...
(MMS011/B)	Sequence number	<p>... a part of the key identity for the look-up routine when finding location groups. The sequence number is specified manually and is four positions long.</p> <p>If you connect more than one location group to the picking location, the look-up routine will first look for buffer locations included in the location group with the lowest sequence number.</p>
(MMS011/E)	Location group	<p>... the location group, which is the key for all the buffer locations you want to connect to the picking location. The location group should be defined for each current buffer location in (MMS010/E).</p>
(MMS011/E)	Use at put-away	<p>... whether this table entry can be used for finding location types by quantity multiples for put-away.</p> <p>The field must be activated if you want this entry to be used when finding put-away locations.</p>

## Settings for System-Directed Put-Away for Location Weight Limit Management

This document explains how you set up a weight check. Weight checks prevent selection of put-away locations that will cause the total weight stored in an area to exceed the defined limits.

Weight check is a feature you can add as criteria for the search of location(s) when system-directed put-away is used.

### Outcome

Specified weight limits for groups of locations are set. These groups can be an entire stock zone, a vertical section or a horizontal section.

This is used to prevent overloading of locations.

For more information, see [System-Directed Put-Away](#) on page 256.

### Before you start

- Basic data for items, stock zones, location types, locations, order types, and goods receiving are set.
- You should have planned your warehouse, including which types of items go where, slots for main picking locations, type of locations, etc.
- The settings in [Basic Settings for System-Directed Put-Away](#) on page 230 must be done.

### Follow these steps

- 1 Start 'Stock Zone. Open' (MMS040/E) and fill in the 'Weight check' field for the current stock zone.
- 2 Specify the 'Weight check from/to', 'Horizontal axis from/to' and 'Vertical axis from/to' fields for this stock zone. This information will be used to identify which aisle/bin/level the item is located in the Warehouse.
- 3 Start 'Weight Limit. Open' (MMS045).  
This program connects stock zones with range identities for which a weight limitation check should be performed.
- 4 On the B-panel, fill in the 'Stock zone', 'Weight check type' and 'From/To weight check identity' fields.
- 5 Open the E-panel and fill in the 'Permitted weight' field.

### Parameters to set

Program ID / Panel	Field	The field indicates ...
(MMS040/E)	Weight check	<p>... how the weight check is used for this stock zone.</p> <p>These are the valid alternatives:</p> <p>0 = No check      1 = For each location and horizontal axis      2 = For each location and vertical axis      3 = For each location and both axes, as well as stock zone check.</p>

Program ID / Panel	Field	The field indicates ...
(MMS040/E)	Weight check from/to position	<p>... the maximum or minimum position for weight control per stock zone. The information is used to define the number of positions and where they are positioned in the location identity as the first part of the weight limitation identity.</p> <p>This value is used to update valid weight controls by the current weight during stock movements.</p> <p>Example:</p> <p>A location named (AF0302) means:</p> <ul style="list-style-type: none"> <li>AF = Shelf entrance</li> <li>03 = Horizontal axis</li> <li>02 = Vertical axis.</li> </ul> <p>The weight limitation prefix is from position 1 to 2.</p> <p>If A were the stock zone and F the shelf entrance, the weight limitation prefix would start at position 2.</p>
(MMS040/E)	Horizontal axis from/to position	<p>... the horizontal axis from and to position. The information is specified for each stock zone and is used to calculate weight stored on a defined horizontal axis for each weight limitation identity.</p> <p>Location identities must be logically constructed for positions so that the horizontal axis is always in the same position within the stock zone.</p>

Program ID / Panel	Field	The field indicates ...
(MMS040/E)	Vertical axis from/to position	<p>... the vertical axis from and to position, and is used to calculate weight stored on a defined vertical axis for each weight limitation identity.</p>
		<p>The vertical axis from and to position is specified for each stock zone.</p>
		<p><b>Note:</b> The location identities must be logically constructed for positions. Thus, the vertical axis is always in the same position within the stock zone.</p>
(MMS045/B)	Weight check type	<p>... the weight check type, and is used for each weight check to describe what the weight limitation refers to.</p>
		<p>These are the valid alternatives:</p>
		<p>1 = Horizontal check</p>
		<p>2 = Vertical check</p>
		<p>3 = Horizontal and vertical zone checks. These checks act as warnings. In the current release of M3, they are only activated for put-away in the purchasing component and in (MMS160).</p>
(MMS045/B)	From/To weight check identity	<p>... the first and the last identity of a range for which a weight limitation check should be performed.</p>
		<p>The weight limitation identity is obtained from positions of the location identity defined for each stock zone.</p>
		<p>Weight checks in the receipt functions are not active in the current releases of the system, but will be activated in the future.</p>

Program ID / Panel	Field	The field indicates ...
(MMS045/E)	Permitted weight	<p>... the permitted weight specified for each weight limitation identity, and is used to check whether stock entries that are too heavy have been performed for the identity.</p>
		<p>The weights check in the receipt functions are not active in the current releases of the system, but will be activated in the future.</p>
(MMS045/E)	Current weight	<p>... the current weight. The value in the field is automatically updated in the weight limitation file and is compared to the permitted weight. This prevents specifying stock that is too heavy.</p>
		<p>The weight checks in the receipt functions are not active in the current releases of the system, but will be activated in the future.</p>

## Chapter 5: Managing Outbound Goods

### Allocation and Cross-Docking Concepts

This document describes what allocation, pre allocation and cross docking are and when they are used.

#### Outcome

- Balance IDs are allocated to order lines.
- Orders are pre-allocated, which will be allocated during goods receipt flow.
- Goods connected to an acquisition order (PO, DO, RO or MO material) are received, cross-docked and put in a location where they are available for dispatch.

The following changes are done in M3:

- The allocated balance ID is stored in the MITLOC file.
- The allocated order, order line and so on are stored in the MITALO file.
- Soft allocated balance IDs (reserved) are stored in the MITBAL file.
- Details of performed cross-docks are stored in the MITTCD file.
- Stock entrance allocation is executed in the MITALO file.
- Some details about the cross-docking are recorded in the MITTRA file.

The primary use of allocation is to release orders for picking, packing and delivery to the customer as fast as possible and prioritize in shortage situations.

#### Automatic allocation

Automatic allocation can be divided into two parts:

- Completely automatic allocation, which is useful for medium volumes and standard products
- Automatic allocation with manual release, which is useful for high volumes and when wave picking is to be performed. (Wave picking is a collection of picking lists released at the same time.)

Automatic allocation can be used together with or without:

- **Location type table (MMS057)**

The location type table controls allocation according to location type.

Rules that can be determined per location type:

- Minimum quantity allocation
- Sequencing of location type searching
- Normal quantity determines the multiple used for allocation

- Remaining quantity: Used so certain quantity breaks only get allocated from their designated location type, even if it means waiting for more stock to arrive
- Allocate to empty: Allocate only if will empty location of this balance ID.
- Exclude some order types: Do not allocate from certain location types for certain order types.
- **Allocation table (MMS123, MMS124)**  
The allocation table controls which balance identities can automatically be allocated for a specific requirement, and from which locations.  
For example, customer orders could be allocated from one location and manufacturing orders from another location.  
You can also prevent larger requirements from allocating small quantities and, thus, block small orders from delivery.
- **Batch allocation**, but only if the subsystem is stopped in (MNS050).

For more details, refer to [Automatic Allocation](#) on page 279.

### Batch allocation

The purpose of batch allocation is to allocate stock according to priorities, or a fair share distributed among equal priorities when there is a stock shortage.

**Example:** At the end of the month you want to ship goods, but there is a stock shortage for some items. The existing stock for these items must be shipped to the most important customers. The batch allocation function enables you to de allocate the items from existing orders and to reallocate them for prioritized customers according to user defined rules.

### Fair Share, allocation priority rules and allocation priority with fair share

Current allocations are reallocated and distributed across demand order lines according to user defined rules. This is most likely to happen due to a shortage problem. Redistribution can be done in one of the following ways:

- Fair share, where a percentage of the original requirement is allocated to each record
- Allocation priority rules according to priorities.

This priority can be done in one of the following ways:

- Define the default priority for the order header.
- Define a default priority per customer.
- Define allocation priority in (MMS156, 157).
- Define an allocation priority model (MMS181, MMS182). This alternative is valid for customer, distribution and requisition orders.

- Allocation priority in combination with fair share.

This distribution method can only be used if allocation priority hierarchy 1 uses the allocation priority model. Demand order lines are grouped according to allocation priority from the model, while allocation is performed in allocation priority order. When the allocated net is not sufficient to cover all demand lines within an allocation priority group, fair share is used to distribute remaining available net quantity among demand lines within the priority group.

If check allocation limits is activated in batch allocation run, the allocated quantities will be validated after redistribution and adjusted if validation against limits failed.

### Allocation rules for a group of lines (Joint delivery rules)

Joint delivery rules check for allocation over a group of lines that are defined by an implied joint delivery code instead of a joint delivery code (joint delivery code=delivery together of several different order lines within a customer order). For example, these groups of lines may contain the same style and color.

Joint delivery rules can be used with automatic allocation or with batch allocation.

With this function, you can perform a check to see if a group of lines pass or fail for dispatch according to the joint delivery rules. These rules are user defined and do not necessarily have to be for 100% allocation. Instead, each line is for instance 60% allocated, or, in total, 80% of the group is allocated.

- The primary use of joint delivery is to ensure delivery according to a customers' requirements prior to the release of the order for picking, packing and delivery to the customer
- Joint delivery also frees up stock for other orders if joint delivery rules prevent shipment on the order that currently has the allocation.

### Manual allocation

Manual allocation can be used for certain products or for products that normally are automatically allocated, but occasionally need to be manually allocated.

### Pre-allocation

A pre-allocation is defined as being all or part of an acquisition order line (PO, DO and MO) that is promised to a demand order line (CO, RO, material MO and DO).

Pre-allocation can be done at any time providing that a demand order is released and that an acquisition order is firm planned (proposal with status 20) or released.

A pre-allocation becomes an allocation at the time when stock is reported as received.

### Soft allocation

Soft allocation is frequently used when there are many lots and it does not matter which one is picked. It can be performed with or without a check against allocable balance on warehouse level. Issued balance identities are specified manually when reporting picking lists.

It can be used:

- To enable pickers to select which specific balance ID is picked, instead of forcing them to find a specific balance ID.
- When it applies to an environment where lot control is used and many lots could be found in the same picking location and it does not matter which one is picked.
- When lot numbers are only needed for traceability. It should not be used when lots have expiry dates.

### Cross-docking

The cross-docking function in M3 identifies when stock being received is required for issue within a short time period. It then directs stock to the appropriate cross docking location instead of to the ordinary location. What activates cross-docking is demand in combination with a stock shortage.

Cross-docking results in an allocation to the demand order that caused cross-docking.

Demands can be internal or external orders, or acquisition orders. Internal orders include material manufacturing orders, distribution orders, move orders and requisition orders. External orders are customer orders. Acquisition orders can be manufacturing orders, purchase orders, distribution orders (receiving warehouse) and requisition orders (order category 40).

## Analyze Allocation Failure and Display On-Hand Balance

This document explains how you analyze allocation failure in terms of why stock has not been allocated or why an order line is being held due to allocation control.

It also describes how to display on-hand balance in various ways.

### **Outcome**

You obtain allocation information and can analyze what went wrong.

This function is used in connection with allocation.

Allocation analyzes logs information during the allocation or allocation check process. This is stored in the MMALAH and MMALAD file

### **Before you start**

- Allocation has been performed.
- Order lines are available that need to be allocated.

### **Follow these steps**

#### **Workflow for analyzing automatic allocation failure**

- 1 Start 'Material Plan. Open' (MMS080) or start 'Customer Order. Open Line Toolbox' (OIS301). With option 40='Allocation analyses' you start 'Allocation Analyses. Open' (MWS084).
- 2 The B panel contains information about the responsible individual, entry date, entry time, program (in which the allocation failed) and description (order type, order number, warehouse, and item number).
- 3 Option 11=Lines starts (MWS085/B). Here text messages about the allocation steps are displayed.

#### **Workflow for displaying on-hand balance information**

- 4 The on-hand balance per warehouse is displayed in 'On-Hand. Display Summarized Per Itm/Whs' (MMS200).
- 5 All locations where the items are stored are displayed in 'Balance Identity. Display' (MMS060) and also in 'Balance Identity. Open Toolbox' (MWS068).
- 6 Orders to which the on-hand balances are allocated are displayed in 'Balance Identity. Display Allocations' (MMS063).
- 7 In 'Material Plan. Open' (MMS080), sorting order 5 displays allocation information.

# Automatic Allocation

This document explains how to manage automatic allocation for all types of orders including manufacturing, distribution, customer and requisition orders.

Automatic allocation can be divided into two parts:

- Completely automatic allocation, which is useful for medium volumes and standard products
- Automatic allocation with manual release, which is useful for high volumes and when wave picking is to be performed. (Wave picking is a collection of picking lists released at the same time.)

Automatic allocation can be used with or without:

- Allocation table control for balance identities (MMS123, MMS124)
- Allocations control for location type with minimum and maximum quantities (MMS057)
- Joint delivery rules (CMS016, MWS125)

## Outcome

- Balance IDs are allocated to order lines.
- Allocated order lines get status 33=Allocated.

The primary use for automatic allocation is to be able to release orders for picking, packing and delivery to the customer as fast as possible. The process can also be used in any of the following cases:

- Prioritization in shortage situations
- More user defined rules for allocation of stock
- Customer orders can be allocated from one location and manufacturing orders from another location.
- The allocation table controls which balance identities can be selected for automatic allocation for a specific requirement based on location type.
- For the same item/warehouse: Order lines can be allocated in planning date or order priority/planning date sequence.
- The demand time fence can be overridden by order priority.
- Orders can be manually or automatically released for allocation.
- The allocation control selection tables control which stock can be allocated to specific requirements according to user defined rules.

The following changes are made in M3:

- Completely allocated order lines have their order status raised to 33.
- The allocated balance ID is stored in the MITLOC file.
- The allocated order, order line and so on are stored in the MITALO file.
- Soft allocated balance IDs (reserved) are stored in the MITBAL file.

## Before you start

Settings for allocations must be made according to the selected allocation method described in this document. For further information refer to the following documents:

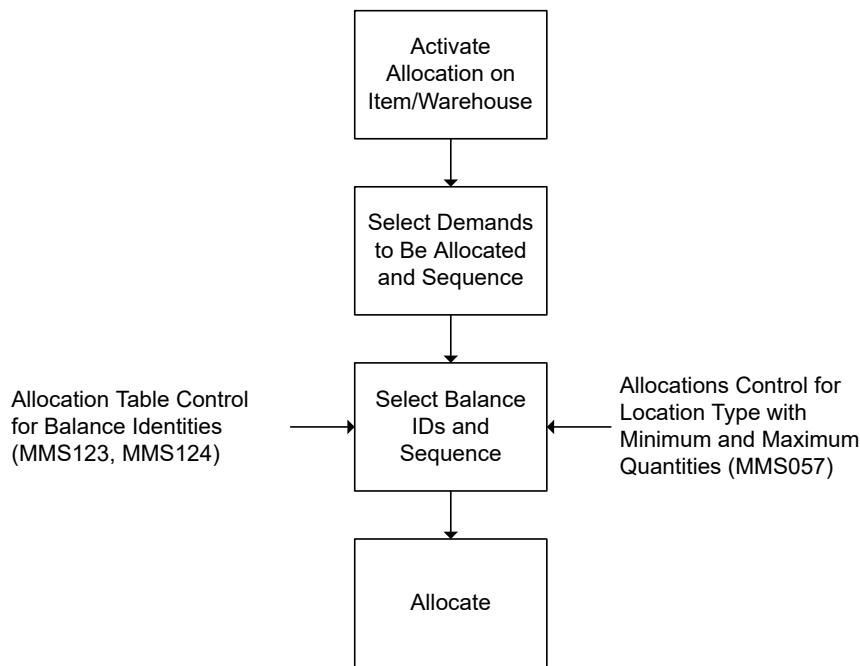
- [Basic Settings for Automatic Allocation](#) on page 291
- [Create View and Sorting Order in \(MWS410\)](#) on page 357

- [Create Location Type Table \(MMS057\) on page 234](#)
- [Settings for Allocation Control Per Balance ID \(Allocation Table Control\) on page 489](#)

### Purpose

The primary use of automatic allocation is to be able to release orders for picking, packing and delivery to the customer as fast as possible.

### Workflow in M3



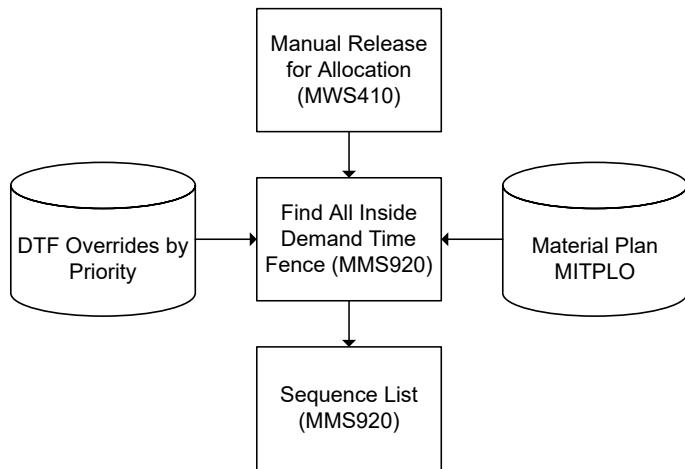
#### 1 Activate Allocation on Item/Warehouse

When entering an order into the system, a reservation of the ordered item and quantity is made.

Many events activate an auto-allocation. Among them are:

- A new requirement is entered.
- There is a change in the allocable balance.
- MRP detects that the DTF date has been reached or exceeded on a demand that was previously outside the DTF.

#### 2 Select Orders

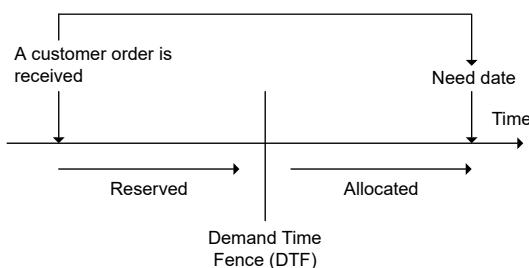


'Allocation' (MMS920) selects the records in the MITPLO file with the need date (delivery date) inside the demand time fence. Specific demand time fence lengths for different order priorities can also be specified. A third criterion for select orders is order sequence, which can be allocation by planning date or by order priority then planning date. All of these parameters are defined in 'Warehouse. Open' (MMS005).

If manual release for allocation is selected in 'Dispatch Policy. Open' (MWS010), then manual allocation release is done in 'Delivery Toolbox. Open' (MWS410).

Automatic allocation is done inside the demand time fence and according to specific rules such as priority and sequence. How this is done is explained in the Setting document for allocation.

Deallocation (MMS922) is now performed when the planning date is moved outside the demand time fence (DTF). Manual allocations and stock entrance allocations (order initiated, pre-allocations and cross-docking) are not taken into consideration. After the deallocation, the auto-allocation is triggered to allocate the deallocated quantity according to standard allocation rules.



### 3 Select Balance IDs and Sequence

In (MMS921), balance IDs are placed in the correct sequence depending on whether user defined rules have been specified in 'Item. Connect Stock Location Type' (MMS057) and/OR 'Allocation Control Selection Field. Open' (MMS123).

Balance IDs are then checked to see if they are valid for use for each requirement according to the rules set in 'Allocation Control Selection Field. Open' (MMS123). Also the various allocations methods are managed here. These methods are defined in (MMS002/G).

### 4 Allocate

Allocation is performed in 'Manage Allocation' (MMNGALO). This creates the allocation that updates balance IDs, the order lines and the material plan. The order status for a completely allocated order is 33.

#### Analyze allocation failure

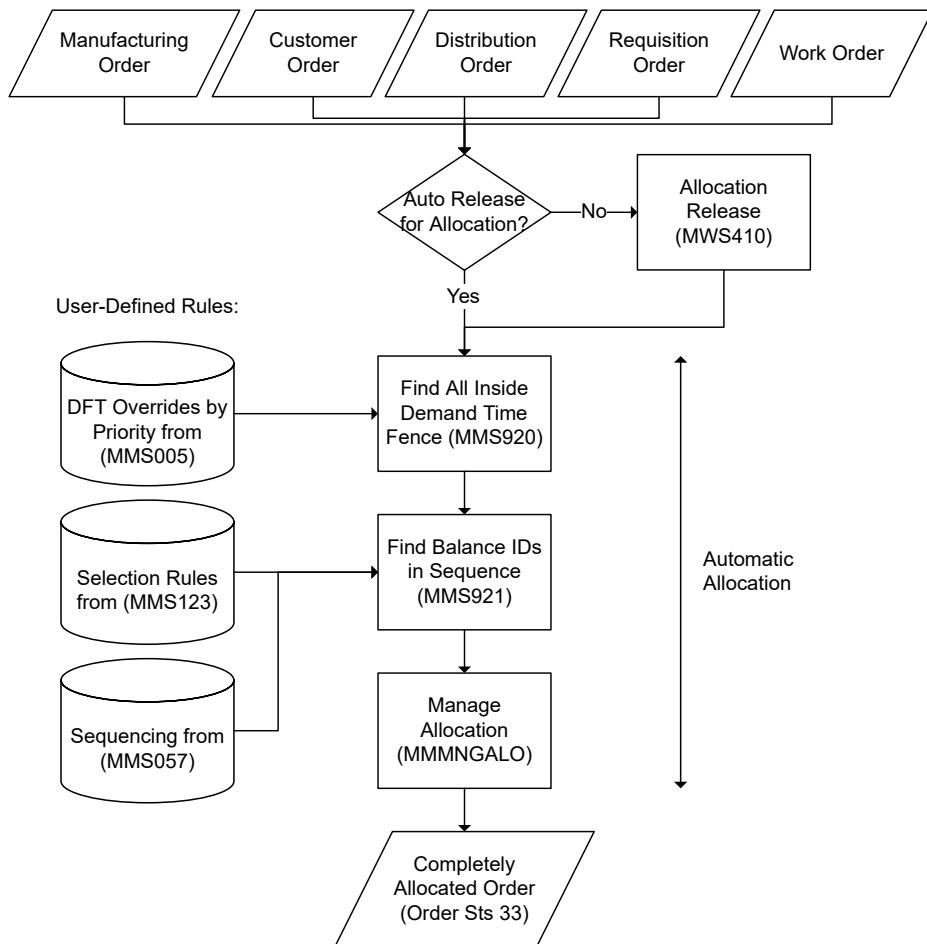
Allocation analysis for automatic allocation is available from (MMS080) and (OIS301) via option 40. Allocation analysis is done in 'Allocation Analysis. Open' (MWS084) and (MWS085). Here you can find why the stock has not been allocated or why allocation control has held an order line. The allocation log is stored in the MMALAH and MMALAD files.

#### Workflow for automatic allocation with automatic release for allocation

This workflow describes automatic allocation. It describes the same workflow as in the present chapter, but with a different figure.

No manual actions are needed for the functions described below.

Automatic allocation is done inside the demand time fence according to user defined rules such as priority and sequence, if there are any.



### 1 Find All Inside Demand Time Fence (MMS920)

'Allocation' (MMS920) calculates the demand time fence, activates automatic allocation and selects records to be allocated. This program also retrieves planning data from 'Material Plan. Open' (MMS080), the MITPLO file.

### 2 Find Balance IDs in Sequence (MMS921)

In (MMS921), balance IDs are placed in the correct sequence depending on whether user defined rules have been specified in (MMS057) and/or (MMS123).

### 3 Manage Allocation (MMNGALO)

Allocation is performed in (MMNGALO). Balance IDs, order lines and material plan are updated. The order status for a completely allocated order is 33.

## Auto Start Jobs in the Dispatch Flow

This document explains the auto jobs involved in the dispatch flow.

The dispatch flow can be purely manual, partially automatic or completely automatic, depending on the settings in 'Dispatch Policy. Open' (MWS010).

### Outcome

Auto start jobs perform the dispatch flow.

To control the dispatch of all orders that result in a stock issue

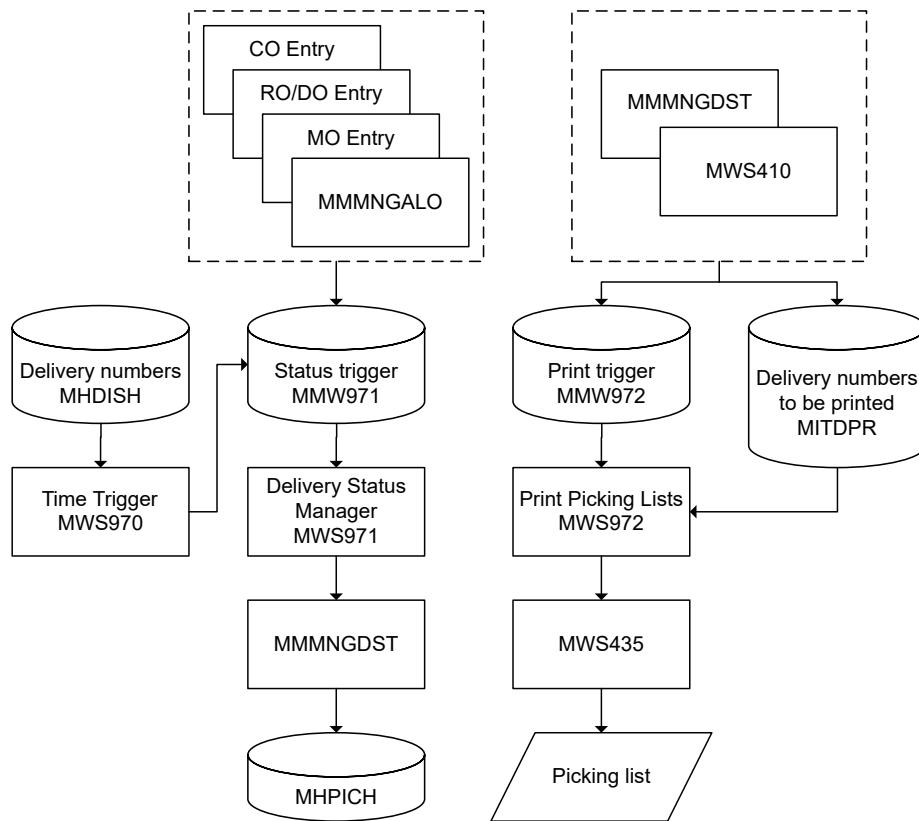
Dispatches are managed via MHDISH table.

Table	Description
MHDISH	Delivery numbers
DCONSI	Shipments
MHDIPO	Dispatch policy
MHPICH	Picking list header
MITTEM	Picking teams
MITPIC	Pickers per team
MITARE	Stock areas

### Before you start

For further information on how to manage and set up auto start jobs, refer to Administrator's Guide for Auto Start Jobs and Subsystems.

## Description



The Time Trigger job MWS970 monitors the transaction date and time for each delivery number, and creates a status trigger record, if required. The transaction date and time is equal to the date and time of creation of picking lists controlled by the dispatch policy.

The Delivery Status Manager MWS971 controls all automated steps in the dispatch flow. Triggering the Delivery Status Manager is performed by a creating record in the trigger file MMW971.

The Pick List Driver MWS972 performs the printing of picking lists. The Pick List Driver is triggered by creating one record for each delivery number in the MITDPR file, followed by creating a trigger record (job number) in the trigger file MMW972.

## Basic Batch Allocation Settings

This document explains how you define the basic settings for batch allocation.

## Outcome

Basic batch allocation settings are defined. This enables you to define the explicit settings for the different batch allocation methods.

Batch allocation is used for allocating stock to requirements when there is a shortage and also when more control is required than is feasible by using automatic allocation over which requirement gets the stock.

The allocated balance ID is stored in the MITLOC file.

The allocated order and order line are stored in the MITALO file.

## Before you start

No prerequisites.

## Parameters to set

Program ID/Panel	Field	The field indicates ...
(MMS002/E)	Demand time fence	<p>... the number of days from order registration to shipment of the item. The items with a defined demand time fence are generally included in the master schedule.</p> <p>The field also indicates the time for automatic allocation. If the field is blank, the value in (CRS701) is used.</p>
(MMS002/E)	Supply chain policy	<p>... how supply chain orders for the specific item/warehouse will be managed. If this field is set, the setting 'Include SCO' in (MMS189) will be important at each batch allocation run.</p> <p>Only demand order lines with a supply chain policy having the 'Link existing order' setting with value 1 or 2 will be included in the batch allocation run. This is done so that the normal supply chain order functionality does not create supply during a batch allocation. The creation of supply order lines should be triggered through normal MRP runs.</p>
(MMS002/G)	Allocation method	... how allocation is carried out for each item/warehouse combination.
(CRS701/E)	Allocation time fence	... the allocation time fence stated in days for automatic allocation. This value will be used in those cases where an item/warehouse is missing a demand time fence (blank field).
(CRS701/E)	Demand time fence type	<p>... how the demand time fence is specified. The valid alternatives are:</p> <p>0 = In calendar days 1 = In shipment days</p>
(MMS010/E)	Allocable	... whether the balance identities created for the respective location should be allocable.

Program ID/Panel	Field	The field indicates ...
(MMS005/G)	Demand time fence override by priority	... overrides to the demand time fence. There is one override for each order priority. The value entered extends or reduces (if negative) the demand time fence for orders with the selected order priority.
(CRS200) (OIS010)	Next manual function	<p>... which function in the allocation and dispatch flow is the next one to be carried out manually.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>1 = No more automatic steps</li> <li>2 = Release to allocate (MWS410)</li> <li>3 = Release to print (MWS410)</li> <li>4 = Report stock issues (MWS420)</li> <li>5 = Report stock receipt of DO (MWS440)</li> <li>6 = None, all completed with picking lists</li> <li>7 = None, all completed without picking lists.</li> </ul> <p>After the next manual function, other functions can be carried out either automatically or manually according to the settings in the order type.</p>
(CRS200) (OIS014) (PMS120)	225 Default priority	<p>... the priority to be used as the default when entering requisition and distribution orders.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>0–4 = High priority</li> <li>5 = Normal priority</li> <li>6–9 = Low priority.</li> </ul>
(CRS200) (OIS010) (PMS120)	255 Dispatch policy	... the design of the dispatch process. A dispatch policy is assigned to the created delivery when filling in order lines. Dispatch policy is created in 'Dispatch Policy. Open' (MWS010).
(CRS200)	320 Allow allocation below safety stock	... whether automatic allocation below safety stock level is permitted for a requisition or distribution order.
(MWS010)	Auto level	<p>... the auto level, which mainly regulates when stock issues are made. The valid alternatives are:</p> <ul style="list-style-type: none"> <li>1 = Reservation only, no allocation. This level is only relevant for ROs</li> <li>2 = Gross reservation for deduction, no allocation. This level is only relevant for ROs</li> <li>3 = Issue made automatically when picking list reported</li> <li>4 = Issue made automatically when picking list printed</li> <li>5 = Issue made automatically when order entry completed, picking list not printed. This level is not relevant for MOs.</li> </ul>

Program ID/Panel	Field	The field indicates ...
(MWS010)	030 Released for allocation	... whether the delivery (the delivery number) should automatically be released for allocation after being created.
(MWS010)	040 Released for picking	... whether the delivery (delivery number) is released to create picking lists. This must be set to 0 = Not released.  Note that this does not determine whether the picking list is printed. Parameter 100 in (MWS010) determines whether the picking list is printed.
(MWS010)	290 Allocation check	... whether an allocation check should be performed to determine if a picking list could be created for a delivery number.

### Follow these steps

- 1 Start 'Item. Connect Warehouse' (MMS002). Open the E panel.
- 2 Fill in the 'Demand time fence' field with the number of days that should be the time period for automatic allocation.  
  
This is the number of days before delivery that the order line should have been allocated to a specific item. If the field is blank, the value in (CRS701) is used.
- 3 Open the G panel. Fill in alternative 2-5 in the 'Allocation method' field, which indicates how allocation is carried out for each item/warehouse combination.  
  
*The following settings are valid for batch allocations methods as fair share, allocation priority, allocation control and joint delivery:*
  - Start 'Subsystem. Open' (MNS050). Here, you must stop the automatic start job 'Auto Allocation' (MMS920CL). This is done by selecting option 11=End subsystem, in front of the subsystem MVXCASJ. The subsystem type is ASJ = Subsystem for M3 database updates.
- 4 Start 'Settings - Allocation Control' (CRS701). On the E panel the 'Allocation time fence' field must be filled in. If the 'Demand time fence' field in (MMS002/E) is blank, then values from this field are used.
- 5 Fill in the 'Demand time fence type' field. This field indicates how the demand time fence is specified.
- 6 Start 'Stock Location. Open' (MMS010). On the E panel, check that the Allocable field is activated.
- 7 Start 'Warehouse. Open' (MMS005) and open the G panel.
- 8 Fill in the 'Demand time fence override by priority' fields. This function will be used if the 'Planning date' field in (MMS189/E) is left blank.
- 9 For the order types (CRS200, OIS010, PMS120), the following settings should be defined:
  - The 'Next manual function' field: Select 3, 4, 5, 6 or 7
  - The '225 Default priority' field: Select a default priority for the order type
  - The 255 'Dispatch policy' field: Select a dispatch policy that has its '040 Released for picking' field deactivated (No=0)
  - The '320 Allow allocation below safety stock' field: Activate this field (Yes=1)
- 10 Start 'Dispatch Policy' (MWS010):
  - The 'Auto level' field: Select 3 or 4.
  - The '030 Released for allocation' field: Select 1=No or 2=Yes.

- The '040 Released for picking' field: Deactivate (No=0). Important!
- The '290 Allocation check' field: Deactivate (No=0).

## Basic Delivery Value Check Settings

This document describes how to define the basic settings for a delivery value check.

Delivery value check can be used in different scenarios but is of the highest value in industries with long lead times between order date and delivery date for high value products or in situations where the payers ability to pay a specific delivery is uncertain.

The functionality of the delivery value check is used to prevent issue reporting of deliveries of reference order category 3 (Customer Order) unless the payer is solvent.

Basic delivery value check settings are defined. This enables you to create deliveries with the functionality of the delivery value check activated.

### Parameters to set

Program ID/Panel	Field	The field indicates...
(MWS010/I)	570 Delivery value check point	<p>...how and when the delivery value check is performed.</p> <p>0-Delivery value check not activated.</p> <p>1-Only manually triggered delivery value check.</p> <p>2-Delivery value check is triggered automatically when all goods on all picking lists for a delivery is moved to a dock location for the first time. The delivery value check can also be manually triggered.</p>
(MWS010/I)	580 Delivery value check method	<p>...how the delivery value is calculated.</p> <p>0-No calculation.</p> <p>1-Value calculated per line as sales price – line discounts, multiplied with transaction quantity (same logic as on a pro forma invoice). For more information about the net price calculation method, see (CRS701).</p>

Program ID/Panel	Field	The field indicates...
(MWS010/J)	540 Delivery Consolidation field 1	... which object to use as an additional field for use in delivery consolidation. In order to use the functionality of the delivery value check, there can only be customer orders with the same payer in one delivery. When activating the delivery value check, it is mandatory to use the OAPYNO object in either of the delivery consolidation fields: 1 or 2.
(MWS010/J)	545 Delivery Consolidation field 2	... see above.
(CRS610/J)	Credit Limit 2	...the highest credit limit permitted for outstanding invoices. The credit limit 2 amount is needed to verify that the payer is solvent to allow the specific delivery to be issued. A delivery will always pass the delivery value check if credit limit 2=zero.

### Follow these steps

- 1 Open 'Dispatch Policy. Open' (MWS010). Go to the I panel.
- 2 Set the 'Delivery consolidation field 1' or 'Delivery consolidation field 2' to OAPYNO to ensure that only customer orders with identical payers are connected to the same delivery.
- 3 Set the 'Delivery value check point'. Set alternative 1 or 2, which indicates how the delivery value check is triggered (0-'Delivery value check not activated', 1-'Only manually triggered delivery value check', 2-'Delivery value check is triggered automatically when all goods on all picking lists for a delivery is moved to a dock location for the first time').
- 4 Set the 'Delivery value check method'. Set alternative 0 or 1, which indicates how the delivery value is calculated (0-'No calculation', 1-'Value calculated per line as sales price deducts line discounts, multiplied with transaction quantity (same logic as on a pro forma invoice)'). See other settings in CRS701 and CRS729.
- 5 Three different application messages can be configured for usage based on the outcome of the delivery value check. These application messages are:
  - Application message type 276 – Delivery value check failed.
  - Application message type 277 – Delivery value check passed.
  - Application message type 278 – Delivery value check manually approved.
 Application messages are sent to the responsible set for the payer in 'Customer. Open' (CRS610).
 See for more information.

# Basic Settings for Automatic Allocation

This document explains how to define settings for automatic allocation. The settings are defined on the warehouse level.

## Outcome

Basic settings for allocation are defined.

Allocation settings are needed when an order is allocated to a specific item according to specific rules.

View and sorting orders in (MWS410) are used when manual release for allocation is used.

## Before you start

No prerequisites.

## Follow these steps for allocation settings

### Allocation rules for warehouse/item

- 1 Start 'Item. Connect Warehouse' (MMS002). Open the E panel.
- 2 Fill in the 'Demand time fence' field with the number of days that are the time for automatic allocation. This means the number of days before delivery the order line should be allocated to a specific item. If the field is blank, the value indicated in (CRS701) is used.
- 3 Open the G panel. The 'Allocation method' field indicates how allocation is carried out for each item/warehouse combination. Select one of the alternatives 2–5.
- 4 'Secondary allocation method' can be used if there are remaining quantities to allocate after allocation has been performed. Depending on whether there is a 2 entered in the 'Allocation method' field (see field to the left), remaining quantities can be allocated according to a secondary allocation method.  
Secondary allocation method can be:  
3 = Automatic allocation for the location. Over-allocation is permitted for the location, but not for the warehouse.  
6 = Soft automatic allocation with a check against allocable balance on warehouse.

### Allocation rules for company

Allocation rules can also be set on a company level in 'Settings. Allocation Control' (CRS701). If allocation rules are missing on the item/warehouse level (MMS002), then M3 uses parameters from (CRS701).

- 5 Start 'Settings. Allocation Control' (CRS701). The 'Allocation time fence' field on the E panel should be filled in. If the 'Demand time fence' field in (MMS002/E) is blank, then values from this field are used.  
Note: The DTF overrides by priority still apply to this default allocation time fence.
- 6 Fill in the 'Demand time fence type' field.
- 7 Start 'Stock Location. Open' (MMS010). Check that the 'Allocable' field on the E panel is activated. This is activated by default when balance IDs are created in this location.
- 8 The 'Status proposal' field is set to 2=Approved. Only items whose location status is 2 can be allocated. The Allocable field has to be active.

The 'Single allocation' field defines whether this location can be allocated to one order at a time or to several orders.

#### **Allocation rules for warehouse**

- 9 Start 'Warehouse. Open' (MMS005) and open the G panel. Fill in the 'Auto alloc sequence' field. This field determines in which sequence orders are allocated for this warehouse.
- 10 If there should be a different demand time fence for different priorities, then fill in the 'Demand time fence override by priority' fields.

#### **Allocation rules for order types**

- 11 The following settings should be set for the order types (CRS200, OIS010, PMS120):

The 'Next manual function' field: Select 2, 3, 4, 5, 6 or 7.

The '225 Default priority' field: Select a default priority for the order type.

The '255 Dispatch policy' field: Select a dispatch policy.

The '320 Allow allocation below safety stock' field should also be filled in.

#### **Allocations rules for dispatch policy**

- 12 Start 'Dispatch Policy. Open' (MWS010). Fill in the appropriate fields as follows:

The 'Auto level' field: Select 3 or 4.

The '030 Released for allocation' field: Select 1(=No) or 2 (=Yes).

The '290 Allocation check' field: Deactivate (0=No).

#### **Other optional rules for automatic allocation**

Create rules for how to allocate according to the location type. See [Create Location Type Table \(MMS057\)](#) on page 234.

Create rules for how to allocate according to certain balance identities and locations. See [Settings for Allocation Control Per Balance ID \(Allocation Table Control\)](#) on page 489 .

#### **Allocation rules for company**

Allocation rules can also be set on a company level in 'Settings. Allocation Control' (CRS701). If allocation rules are missing on the item/warehouse level (MMS002), then M3 uses parameters from (CRS701).

- 1 Start 'Settings. Allocation Control' (CRS701). The 'Allocation time fence' field on the E panel should be filled in. If the 'Demand time fence' field in (MMS002/E) is blank, then values from this field are used.  
**Note:** The DTF overrides by priority still apply to this default allocation time fence.
- 2 Fill in the 'Demand time fence type' field.
- 3 Start 'Stock Location. Open' (MMS010). Check that the 'Allocable' field on the E panel is activated. This is activated by default when balance IDs are created in this location.
- 4 The 'Status proposal' field is set to 2=Approved. Only items whose location status is 2 can be allocated. The Allocable field has to be active.  
The 'Single allocation' field defines whether this location can be allocated to one order at a time or to several orders.

#### **Allocation rules for warehouse**

- 1 Start 'Warehouse. Open' (MMS005) and open the G panel. Fill in the 'Auto alloc sequence' field. This field determines in which sequence orders are allocated for this warehouse.

- 2 If there should be a different demand time fence for different priorities, then fill in the 'Demand time fence override by priority' fields.
- 3 To set **Allocation Rules for Order Types**, the following settings should be set for the order types (CRS200, OIS010, PMS120):
  - The 'Next manual function' field: Select 2, 3, 4, 5, 6 or 7.
  - The '225 Default priority' field: Select a default priority for the order type.
  - The '255 Dispatch policy' field: Select a dispatch policy.
  - The '320 Allow allocation below safety stock' field should also be filled in.

### **Allocations rules for dispatch policy**

- 1 Start 'Dispatch Policy. Open' (MWS010).
- 2 Fill in the appropriate fields as follows:
  - The 'Auto level' field: Select 3 or 4.
  - The '030 Released for allocation' field: Select 1(=No) or 2 (=Yes).
  - The '290 Allocation check' field: Deactivate (0=No).

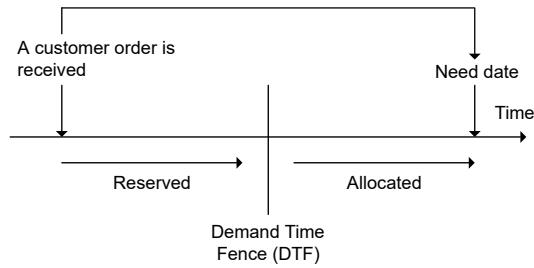
### **Other optional rules for automatic allocation**

Create rules for how to allocate according to the location type. See [Create Location Type Table \(MMS057\)](#) on page 234.

Create rules for how to allocate according to certain balance identities and locations. See [Settings for Allocation Control Per Balance ID \(Allocation Table Control\)](#) on page 489 .

### **Parameters to set for automatic allocation**

<b>Program ID/ Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS002/E)	Demand time fence	<p>... the number of days from order registration to shipment of the item. Items with a defined demand time fence are generally included in the master schedule.</p> <p>The field also indicates the time for automatic allocation. If the field is blank, the value indicated in (CRS701) is used.</p>



### Demand Time Fence

Program ID/ Panel	Field	The field indicates ...
(MMS002/G)	Allocation method	... how allocation is carried out for each item/warehouse combination.

Program ID/ Panel	Field	The field indicates ...
(MMS002/G)	Secondary allocation method	<p>... the secondary allocation method. If there are remaining quantities to allocate after allocation has been performed according to allocation method 2 (see field to the left), then remaining quantities can be allocated according to a secondary allocation method.</p> <p>The secondary allocation method does not apply for replenishment orders.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>0 = No secondary allocation is done.</li> <li>3 = Automatic allocation for the location entered per item/warehouse. Over-allocation is permitted per location but not per warehouse. This method may not be used if the item is lot controlled.</li> <li>6 = Soft automatic allocation with a check against the balance that can be allocated on the warehouse level. See note 1.</li> </ul> <p>The primary allocation method must be 2 to allow use of the secondary allocation method.</p> <p>The purpose of this field is to allow over-allocation of the primary picking location on the assumption that replenishments will be done when needed. Since secondary allocation methods 3 and 6 do not allow over-allocation at the warehouse level, there should always be sufficient stock to perform replenishments.</p>

Program ID/ Panel	Field	The field indicates ...
(MMS002/G)	Quantity controlled allocation	The information is maintained automatically by connecting a quantity-controlled allocation table to the item/warehouse. The table is maintained in (MMS057). See document: <a href="#">Create Location Type Table (MMS057)</a> on page 234
(MMS002/G)	Allocate non-approved balance IDs	<p>... whether automatic allocation can take place for non-approved balance IDs, for example balance IDs with status 1</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p> <p>Automatic allocation of non-approved balance IDs applies only to order lines connected to a distribution order.</p>
(MMS002/G)	Minimum remaining quantity	<p>... the minimum quantity that should be left on a balance ID after a stock issue (allocation).</p> <p>This enables you to check that an unusable quantity is not left in stock after issuing. This control is performed during allocation. Cables and floor coverings are examples of the types of items that can use this.</p>
(CRS701/E)	Allocation time fence	<p>... the allocation time fence stated in days for automatic allocation. This value will be used in those cases where the demand time fence for an item/warehouse is missing (blank).</p>
(CRS701/E)	Demand time fence type	<p>... how the demand time fence is specified. The valid alternatives are:</p> <p>0 = In calendar days</p> <p>1 = In shipment days.</p> <p>Shipment days refer to delivery days, as defined in the system calendar, 'System Calendar. Open' (CRS900).</p>

Program ID/ Panel	Field	The field indicates ...
(MMS010/E)	Allocable	... whether the balance identities created for the respective location should be allocable.
(MMS005/G)	Automatic allocation sequence	<p>... the sequence in which orders are allocated in the warehouse.</p> <p>The valid alternatives are:</p> <p>0 = By planning date 1 = By order priority then planning date.</p>
(MMS005/G)	Demand time fence override by priority	... overrides the demand time fence. There is one override for each order priority. The value entered extends or reduces (if negative) the demand time fence for orders with the selected order priority.
(CRS200) (OIS010)	Next manual function	<p>... which function, in the flow of allocation and dispatch, is the next one to be done manually. This determines also which dispatch policy can be selected in (MWS010).</p> <p>The valid alternatives are:</p> <p>2 = Release to allocate (MWS410) 3 = Release to print (MWS410) 4 = Report stock issues (MWS420) 5 = Report stock receipt of DO (MWS440) 6 = None, all completed with picking lists 7 = None, all completed without picking lists.</p> <p>After the next manual function, other functions can be performed either automatically or manually according to the settings in the order type.</p>
(CRS200)	055 Status check at transaction	... whether a requisition or distribution order line can be created for a stock status other than approved (2).

Program ID/ Panel	Field	The field indicates ...
(CRS200) (OIS014) (PMS120)	225 Default priority	<p>... the priority to be used as the default when entering requisition and distribution orders.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>0–4 = High priority</li> <li>5 = Normal priority</li> <li>6–9 = Low priority.</li> </ul>
(CRS200) (OIS010) (PMS120)	255 Dispatch policy	<p>... the design of the dispatch process. A dispatch policy is created and assigned to the delivery when entering order lines. Dispatch policies are created in 'Dispatch Policy. Open' (MWS010).</p> <p>The '<b>Next manual function</b>' field in (CRS200, OIS010) has an impact on the policies you can select.</p>
(CRS200)	320 Allow allocation below safety stock	<p>... whether automatic allocation below safety stock level is permitted for a requisition or distribution order.</p>
(MWS010)	Auto level	<p>... the auto level, which mainly regulates when stock issues are made. The valid alternatives are:</p> <ul style="list-style-type: none"> <li>1 = Reservation only, no allocation. This level is only relevant for ROs.</li> <li>2 = Gross reservation for deduction, no allocation. This level is only relevant for ROs.</li> <li>3 = Issue made automatically when picking list reported.</li> <li>4 = Issue made automatically when picking list printed.</li> <li>5 = Issue made automatically when order entry completed, picking list not printed. This level is not relevant for MOs.</li> </ul>
(MWS010)	030 Released for allocation	<p>... whether the delivery (the delivery number) should automatically be released for allocation after being created or manually released.</p>

Program ID/ Panel	Field	The field indicates ...
(MWS010)	040 Released for picking	... whether the delivery (delivery number) is automatically or manually released to create picking lists.
(MWS010)	290 Allocation check	... whether an allocation check should be performed to determine if a picking list could be created for a delivery number.
(MMS057)	Program: 'Item. Connect Location Type'	<p>... whether you can set up more rules for how to allocate according to the location type. Following, for allocation, can be set up in 'Item. Connect Stock Location Type' (MMS057):</p> <ul style="list-style-type: none"> <li><b>1</b> Minimum quantity allocation</li> <li><b>2</b> Sequencing of location type searching</li> <li><b>3</b> Normal quantity governs the multiple used for allocation</li> <li><b>4</b> Maximum quantity the percentage filled</li> <li><b>5</b> Remaining quantity: Used so certain quantity breaks only get allocated from their designated location type, even if it means waiting for more stock to arrive.</li> <li><b>6</b> Allocate to empty: Allocate only if it will empty the location for this balance ID.</li> <li><b>7</b> Exclude some order types: Do not allocate from certain location types for certain order types.</li> </ul> <p>See Create Location Type Table (MMS057) <a href="#">Create Location Type Table (MMS057)</a> on page 234</p>

Program ID/ Panel	Field	The field indicates ...
(MMS123)	Program	... whether you can set up more rules for how to allocate according to certain balance identities and locations.
(MMS124)	'Allocation Control.Selection Table. Open'	<p>The allocation table controls which balance identities can automatically be allocated for a specific requirement, and from which locations.</p> <p>For example, customer orders could be allocated from one location and manufacturing orders from another location.</p> <p>See <a href="#">Settings for Allocation Control Per Balance ID (Allocation Table Control)</a> on page 489 .</p>

## Basic Settings for Dispatch Handling

This document describes how to set the parameters for dispatch handling.

### Outcome

Settings are defined to enable you to control the following:

- Release delivery for picking
- Basic settings for picking resource planning
- Basic settings for pack deliveries and report packing
- Report picking lists (make a stock issue)
- Report wave picking lists.

The dispatch settings control the dispatch for all orders that result in a stock issue.

The dispatch policy is stored in the MHDPO table.

### Before you start

No prerequisites except the basic settings for the warehouse structure.

### Follow these steps

#### Basic settings

- 1 Open 'Item. Connect Warehouse' (MMS002/G). Enter a value in the 'Warehouse equipment'.

This field is used to separate picking lists when, for example, special equipment is required for an inventory issue.

Warehouse equipment can also be specified for each location on the F panel in (MMS010). The separator used for the warehouse of the item has a higher priority than the separator on the location.

**2** Enter the stock zone on the E panel in (MMS010).

Among other things, this controls which printer to use for the picking list.

**3** Open 'Stock Zone. Open' (MMS040/E). Enter values in the 'Printer', 'Picking team', and 'Sorting' fields.

The 'Printer' field indicates the printer to use for the printout.

The 'Picking team' field indicates a pick team connected to the stock zone. This will be connected to all picking lists created for the stock zone.

The 'Sorting' field is used to determine the sorting order on picking lists created by manually entered location movements.

**4 Parameters in dispatch policy**

Open 'Dispatch Policy. Open' (MWS010/B). Set the panel sequence to BEFG.

Browse through the panels. Read the field helps carefully before you define the parameters (fields).

**5 Settings for packaging**

The primary setting for how to perform packaging is set on the G panel in (MWS010) panel in the '240 Packing reporting method' field.

Packing can be performed in two different ways:

- Simple packing.

Simple packing involves packages and weight only. You cannot predefine certain items for certain packages, etc.

Set the '240 Packing reporting method' field to 1-'Manual simple packing'.

- Advanced packing.

Advanced packing is when all picking lines are packed in one or several packages, with defaults according to the table in 'Item. Connect Packaging' (MMS053).

The advanced packing alternatives in the '240 Packing reporting method' field are:

2-'Manual advanced packing'

3-'Automatic advanced packing when picking list is moved to packing location' (delivery status must be 50)

4-'Automatic advanced packing when picking list is printed'

The packaging management settings are defined in these programs:

'Packaging. Open' (MMS050)

'Item. Connect Packaging' (MMS053)

'Package Type. Open' (DRS080)

The settings in these functions for controlling packing and packaging actions are described in [Define Settings for Packing](#) on page 374.

**Parameters to set**

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
(MMS002/G) (MMS010/F)	Warehouse equipment	<p>... the warehouse equipment used inside a warehouse.</p> <p>The information is used when special equipment is required for in-house movements of certain items, or to/from certain locations.</p> <p>Warehouse equipment can be specified for each item/warehouse (MMS002/G) and location (MMS010/F). Out of these two, the item/warehouse has the highest priority.</p> <p>Different warehouse equipment will create separate picking lists in M3 when, for example, special equipment is required to perform an inventory issue.</p>
(MMS010/E)	Stock zone	<p>... the ID of a stock zone, which is used to divide a warehouse into different areas.</p> <p>Picking list printers are connected to stock zones.</p> <p>Wave picking lists are created by a combination of stock zone, warehouse equipment and item number.</p>
(MMS040/E)	Printer	... the printer used to print the picking list.

Program ID/Panel	Field	The field indicates...
(MMS040/E)	Sorting	<p>... the sorting order on picking lists created by manually entered location movements.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>1-By location</li> <li>2-By transportation flow stated for each location record in (MMS010).</li> </ul> <p>Manual entry of location movement is performed in (MMS175) (moving a single balance ID to a new location), or (MMS180) (moving all balance IDs at a location to a new location).</p>
(MWS010)	Dispatch policy – All fields	... the dispatch policy. Read the field helps carefully for further information.
<b>Settings for Packing and Packaging</b>		
(MWS010/G)	240 Packing reporting method	<p>... whether and how packing processing is used.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>0-Packing not used</li> <li>1-Manual simple packing</li> <li>3-Automatic advanced packing when picking list is moved to packing location</li> <li>4-Automatic advanced packing when picking list is printed.</li> </ul>
	Packing and Packaging Actions	The settings for how to control packing and packaging actions are described in <a href="#">Define Settings for Packing on page 374</a> .

## Basic Settings for Dispatch Policy

This table describes the parameters in 'Dispatch Policy. Open' (MWS010):

<b>Program panel</b>	<b>Settings</b>	<b>Field name</b>	<b>Description</b>
E	010	Delivery number series	The field indicates the ID of the number series used for delivery numbers. The number series must be of type 07 = Delivery numbers.
E	020	One order per delivery number	<p>The field indicates whether a separate delivery number is created for each order.</p> <p>Select the check box if a separate delivery number should be created for each order.</p> <p>If you do not select the check box, an existing delivery number can be accumulated if it involves:</p> <ul style="list-style-type: none"> <li>• Same direction (inbound or outbound)</li> <li>• Same dispatch policy</li> <li>• Same order category (CO, DO, RO, MO, and such)</li> <li>• Same consignee (customer/address ID for CO)</li> <li>• Distribution orders have the same receiving warehouse</li> <li>• Same estimated dispatch date &amp; time</li> <li>• Same terms of delivery</li> <li>• Same transportation method</li> <li>• Same delivery note reference (CO through delivery schedule).</li> </ul>
E	030	Released for allocation	<p>The field indicates whether the delivery number is automatically released for allocation after it is created.</p> <p>Select the check box if the delivery number should be automatically released for allocation after it is created.</p> <p>The allocation method determines how allocation is done. Settings are done in 'Item. Connect Warehouse' (MMS002).</p>
E	040	Released for picking	<p>The field indicates whether the delivery is released to create picking lists.</p> <p>Select the check box if the delivery should be released to create picking lists.</p> <p>This does not set whether the picking list is printed. The parameter 100 in 'Dispatch Policy. Open' (MWS010) determines whether the picking list is printed.</p>
E	050	Planning days for picking release	<p>The field indicates the number of days before the planned picking date that picking lists are created.</p> <p>The date is calculated when the delivery status is 01 (Released for auto-allocation, but nothing allocated).</p>

<b>Program panel</b>	<b>Settings</b>	<b>Field name</b>	<b>Description</b>
E	060	Planning hours for picking release	The field indicates the number of hours before the planned picking date that picking lists are created. The date and time are calculated when the delivery status is 01 (Released for auto-allocation, but nothing allocated).
E	070	Credit check at picking release	The field indicates whether a credit check is done when picking lists are created for customer orders. Select the check box if a credit check should be done when picking lists are created for customer orders. If several customer orders are planned for the same delivery number, all the COs must clear the check.
E	080	Calculate estimated picking time	The field indicates whether estimated picking times should be calculated and saved when a picking list is created. The calculation is based on the picking time table in 'Item. Connect Picking Time' (MMS405).
E	090	Picking resource planning	The field indicates whether picking resource planning is used. Select the check box if picking resource planning is used. If picking resource planning is used, picking lists are assigned status 30 when created. The picking resource planner can then change these to status 40 in 'Picking List. Plan Pickers' (MWS415). If picking resource planning is not used, picking lists are assigned status 40 when created and so are ready to pick and report immediately.
E	100	Auto print of picking lists	The field indicates whether picking lists are printed automatically when they are created. Select the check box if picking lists should be printed automatically when they are created. Printing of picking lists also could be manually triggered by using option 6 on 'Picking List. Report' (MWS420).

Program panel	Settings	Field name	Description
E	110	Printer control	<p>The field indicates how picking lists are split, as well as the printer used to print picking lists.</p> <p>The picking list is always printed on the printer set for the stock zone unless there are multiple stock zones.</p> <p>Alternatives:</p> <ol style="list-style-type: none"> <li>1 No split by zone or warehouse equipment. The printer with the highest priority is selected.</li> <li>2 The picking list is split by stock zone, but not by warehouse equipment. The picking list is split and printed on the printer for each zone respectively.</li> <li>3 The picking list is split by stock zone and warehouse equipment. The warehouse equipment used is as defined per item/warehouse in 'Item. Connect Warehouse' (MMS002) or location in 'Stock Location. Open' (MMS010). The picking list is printed on the printer for each zone respectively.</li> <li>4 The picking list is split by warehouse equipment. The warehouse equipment used is as defined per item/warehouse (MMS002) or location (MMS010). The picking list is printed on the printer with the highest priority.</li> </ol>
E	115	Picking capacity split	<p>Select the check box to indicate that the picking capacity should be split.</p> <p>If this option is selected, the picking release activity attempts to split one picking list into several ones based on the capacity constraints defined in 'Picking List Capacity. Open' (MWS175).</p>
E	120	Document variant	<p>The field indicates the document variant used when a picking list is printed.</p> <p>These standard variants are valid.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• Blank = Lines</li> <li>• 01 = Lines and unallocated lines are printed at the end of the list when only one order number is attached to the delivery. If several orders are attached to the delivery, then this alternative works as the Blank alternative above.</li> <li>• 10 = Labels</li> <li>• 20 = Matrix.</li> </ul>

<b>Program panel</b>	<b>Settings</b>	<b>Field name</b>	<b>Description</b>
E	130	Sorting order - picking list	<p>The field indicates the sorting sequence used when picking lists are created and printed.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 1 = By location or transportation flow code, depending on the field in 'Stock Zone. Open' (MMS040)</li> <li>• 2 = By item priority (fragility level) from the item file</li> <li>• 3 = By item number</li> <li>• 4 = By order and order line.</li> </ul>
F	140	Print weight and volume	<p>This field is not used in M3.</p> <p>Weights &amp; volumes are always printed on the picking lists, and adjustments must be done using M3 Output Management.</p>
F	150	Print alias number	<p>This field is not used in M3.</p> <p>Alias numbers are always printed on picking lists and adjustments must be made using M3 Output Management.</p>

Program panel	Settings	Field name	Description
F	160	Shipment consolidation point	<p>The field indicates the planned time for manual shipment consolidation (except for alternative 8, see Note) and can be used for the selection and grouping of delivery numbers in 'Delivery. Open Toolbox' (MWS410).</p> <p><b>Alternatives:</b></p> <ul style="list-style-type: none"> <li>• 0 = Shipment consolidation is optional and can be performed at any time</li> <li>• 1 = Before a picking list is created</li> <li>• 2 = After a picking list is created</li> <li>• 3 = After packing is completed</li> <li>• 4 = After goods are moved to docking location</li> <li>• 5 = After final report of the picking list</li> <li>• 8 = Automatic connection failed - handle as alternative 1</li> <li>• 9 = Shipment consolidation is not used.</li> </ul> <p><b>Note:</b></p> <p>Alternative 8 is used when an automatic connection to a shipment is initiated and has failed. You can select setting 330 in (MWS010) for automatic connection to shipment. Automatic connection to shipment is always initiated when a new delivery number is created. Deliveries that are not connected to a shipment cannot be released for picking if this value is 1 or 8.</p>

Program panel	Settings	Field name	Description
F	170	Partial reporting allowed	<p>The field indicates whether picking lists can be partially reported during pick line reporting on 'Picking List. Report Lines' (MWS422) and, if so, in which packed status.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = Not applicable. Full reporting only</li> <li>• 1 = Partial reporting (unpacked)</li> <li>• 2 = Partial reporting (unpacked) when entered from (MWS422)</li> <li>• 3 = Pick deviation by planning date and time</li> <li>• 4 = Pick deviation by planning date and time when entered from (MWS422)</li> <li>• 5 = Pick deviation by order priority, planning date and time</li> <li>• 6 = Pick deviation by order priority, planning date and time when entered from (MWS422).</li> </ul> <p>Partial reporting allows different lines from a picking list to be reported at different times.</p> <p>Pick deviation reporting occurs when a packed picking list line is reported with a deviating quantity and/or deviating balance ID. Deallocation and reallocation occurs when the picked balance ID is allocated by other demands or other picking lists. The deallocation continues until the allocatable inventory covers the reported quantity of the current picking list line.</p> <p>Options 2, 4, and 6 allow the user to bypass the F19 key on (MWS422/E).</p> <p><b>Note:</b> If activated, the completion flag automatically overrides options 1 and 2. The pick line is fully reported.</p>

Program panel	Settings	Field name	Description
F	175	Pick reporting level	<p>The field indicates the level on which pick reporting is done.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 1 = Picking line level. The picking lines are presented and reported for each allocated picking line.</li> <li>• 2 = Package-based level. The presentation and reporting function is performed for each package detail line. This alternative assumes that pack reporting is done prior to pick reporting.</li> </ul>
F	180	Allow overissues	<p>The field indicates whether overissue is permitted during picking reporting.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes</li> <li>• 2 = Yes + additional allocation at movement.</li> </ul> <p>When the parameter is set to 2, additional allocation is enabled at the movement stages during pick reporting. The process is available when all the existing allocation lines on the picking list are located at the pack or docking location.</p> <p>All existing allocation lines must have the same pick status, either 50 (all at the pack location) or 60 (all at the docking location).</p> <p>The issue method must equate to the current location (50 for 'Move to Pack Location' or 60 for 'Move to Docking Location'). The 'To location' for the movement being reported must be identical to the pack or docking location for the existing allocations.</p>
F	190	Flag as compl permitted when reporting picking list	<p>The field indicates whether the completion flag field is activated during picking list reporting.</p> <p>Select the check box to activate the completion flag during picking list reporting.</p>

Program panel	Settings	Field name	Description
F	200	Create accounting entries for stock transactions	<p>The field indicates whether financial transactions are created from stock transactions.</p> <p>Select the check box if financial transactions are created from stock transactions.</p>
F	210	Check order completion limits	<p>The field indicates whether limits for completion flagging are checked against the table when reporting picking lists.</p> <p>Select the check box to check against the table when reporting picking lists.</p> <p>If you select the check box, one or more lines can be automatically flagged as complete if remaining quantities are within the limits set in the table, see 'Item. Connect Order Line Compl Limit' (MMS425).</p>
F	215	DO receipt - stock location status	<p>The field indicates whether distribution order receipts use the status proposal on the stock location when new balance identities are created.</p> <p><b>Note:</b> The 'DO receipt - stock location status' setting can only be used for a distribution order without a reference order number. The status of the From location must be 2 (Approved), and the status of the To location must be 3 (Rejected).</p>
F	220	Auto DO receipt	<p>The field indicates whether receipt reporting at the receiving warehouse is done automatically when issuing stock at the delivering warehouse. Note that this applies only to distribution orders.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No, manual receipt reporting</li> <li>• 1 = Yes, automatic receipt reporting.</li> <li>• 2 = Yes, automatic receipt reporting at receiving warehouse based on an estimated receiving date (transaction date and time of the inbound delivery). This date is calculated as being the departure date and time of the outbound delivery + the transportation time defined in the distribution relation master 'Distribution Relation. Open' (DPS001).</li> </ul> <p><b>Note:</b></p> <p>Alternative 2 requires that the autojob (MWS973) is up and running.</p>

Program panel	Settings	Field name	Description
F	225	Create inbound delivery	<p>The field determines how inbound deliveries are created.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = An inbound delivery is created when the outbound delivery for the distribution order is dispatched. For purchase orders, the inbound deliveries is created immediately when purchase order lines are released.</li> <li>• 1 = Inbound deliveries are created using autostart job (MWS975). Inbound deliveries can at the earliest be created after the user has exited the order entry.</li> </ul> <p><b>Note:</b> Inbound deliveries for distribution orders can be received only after the outbound delivery has been dispatched.</p>
F	230	Create stock transaction for DO receipt variance	<p>The field indicates whether variances created during manual receipt of distribution orders, are displayed in 'Stock Transaction. Display History' (MWS070). Variances are logged in the stock transaction history file with transaction type 53.</p> <p>Select the check box if variances should be displayed in (MWS070), even if 'Dsp all transaction' is off on (MWS070/P).</p>
F	235	Normal picking sequence	<p>The field indicates whether variances created during manual receipt reporting of DOs are logged in the stock transaction history file with transaction type 53.</p> <p>Select the check box if variances should be logged in the stock transaction history file with transaction type 53.</p>
F	236	Retrieve picking sequence	<p>Select the check box to override the Normal picking sequence (parameter 235) with values from generic object control table. Setup the generic object control table using the programs 'Available Object Ctrl Parameters. Open' (CMS016), 'Generic Object Control Table. Open' (CMS017), or 'Picking List Sequence. Open' (MWS178). If the check box is selected, but no value can be retrieved, the Normal picking sequence is used.</p>

<b>Program panel</b>	<b>Settings</b>	<b>Field name</b>	<b>Description</b>
G	240	Packing reporting method	<p>The field indicates whether packing processing is used and how.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = Packing not used</li> <li>• 1 = Manual simple packing</li> <li>• 2 = Manual advanced packing</li> <li>• 3 = Automatic advanced packing when picking list moved to packing location</li> <li>• 4 = Automatic advanced packing when picking list is created.</li> </ul> <p>Simple packing involves entering packages and weights only in 'Delivery. Connect Packages' (MWS423).</p> <p>Advanced packing is when all picking lines are packed in one or several packages, with defaults according to the table in 'Item. Connect Packaging' (MMS053).</p> <p>For alternative 3, the automatic advanced packing is done in 'Picking List. Report' (MWS420) when the dispatch order is assigned status 50.</p>
G	245	Cartonization	<p>Select the check box to enable cartonization.</p> <p>To enable cartonization, an advanced packing reporting method must be selected, that is, alternative 2, 3, or 4 must be selected in field 240.</p> <p>You can enable or disable cartonization manually on the delivery as long as the packaging status is lower than 30 in 'Delivery. Open Toolbox' (MWS410).</p>

Program panel	Settings	Field name	Description
G	250	Allow packing of different items in the same package	<p>The field indicates whether different items can be packed in the same package for automatic advanced packing.</p> <p>Default settings for packaging are defined in 'Item. Connect Packaging' (MMS053).</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes</li> <li>• 2 = Yes, if they have the same commodity code. This alternative is valid for installations using bill of lading documents.</li> </ul> <p>Cartonization is not affected by this parameter. Different item numbers are then always packed together unless the system is set up to start a new package when the item number changes. Such setup is made in 'Cartonization Selection Table. Open' (MWS185).</p>
G	255	Allow packing of soft allocation	<p>Select the check box to enable the packing of picking list lines that are soft allocated.</p> <p>When the check box is selected, both hard allocated and soft allocated picking list lines are packed in automatic packing and can be packed during manual packing.</p> <p>When the check box is not selected, only hard allocated picking list lines are packed in automatic packing and can be packed during manual packing.</p>

Program panel	Settings	Field name	Description
G	260	Package numbering method	<p>The field indicates whether automatic package numbering is used continuously per delivery number.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = Continuous package numbering is used. Numbers are retrieved from number series (type 08, series A in 'Number Series. Open' (CRS165)).</li> <li>• 1 = Sequential package numbering is used. Numbering is restarted from 1 for every new delivery.</li> <li>• 2 = Formatting rules in 'Package Number. Create Formatting ID' (MMS044) are used to retrieve package numbers. Each packaging in 'Packaging. Open' (MMS050) can have its own formatting rule, through the connected packaging type in 'Packaging Type. Open' (DRS080).</li> </ul> <p><b>Note:</b> Package numbers can always be set manually in (MMS424) and (MWS422) regardless of the value of this parameter.</p>
G	265	Automatic execution of packaging actions	<p>The field indicates whether packaging actions should be executed automatically as soon as a delivery is fully packed.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No, packaging actions are performed manually by option 39 in 'Delivery. Open Toolbox' (MWS410)</li> <li>• 1 = Yes, packaging actions are performed automatically when fully packed</li> <li>• 2 = Yes, packing actions are performed automatically when the delivery is confirmed as shipped.</li> </ul> <p>The packaging actions are controlled by package type in 'Packaging Type. Open' (DRS080) and can consist of:</p> <p>Adding a charge to the CO - Updating 'Packaging. Open Ledger' (MWS080).</p>

Program panel	Settings	Field name	Description
G	270	Log internal movements	<p>The field indicates whether transactions are created in the stock transaction history file when an order line is moved between picking locations, packing locations, and docking locations.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes, one transaction (from location)</li> <li>• 2 = Yes, two transactions (from and to location).</li> </ul> <p>This only applies to items that update the history file. See the Stock history field on 'Item. Connect Warehouse' (MMS002/G).</p>
G	280	Transaction time for delivery	<p>The field indicates the default transaction time (departure time) during the day that is used when creating delivery numbers. This is used only when a departure time cannot be found for the order line during entry, and for finding the planned departure time for routes with type 1, 2 or 3 where no route departures are connected.</p>
G	290	Allocation check	<p>The field indicates whether an allocation check must be done before picking lists within a warehouse can be created for a delivery.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes, all order lines with the same joint delivery code and warehouse must be fully allocated before picking lists can be created.</li> <li>• 2 = Yes, all order lines within the same warehouse must be fully allocated before picking lists can be created.</li> </ul>
G	300	Closing point	<p>The field indicates when a delivery number is closed. When a delivery number is closed, no more order lines and picking lists can be added, and remaining quantities not released for picking is transferred to another delivery.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = Close when all delivery lines are delivered</li> <li>• 1 = Close when all picking lists are delivered</li> <li>• 2 = Close when the first picking list is created.</li> </ul> <p><b>Note:</b> Delivery numbers can also be manually closed by selecting option 37 in 'Delivery. Open Toolbox' (MWS410).</p>

Program panel	Settings	Field name	Description
G	305	Delivery regrouping	<p>The field indicates if the delivery regrouping process is activated.</p> <p>Select the check box to enable a controlled delivery regrouping process. All delivery lines and deliveries are created as preliminary at order entry with one order per delivery. Later process steps perform the delivery consolidation and transform these preliminary deliveries into firm.</p> <p>If the check box is left blank, the delivery consolidation is performed as an integrated part of the order line entry. All delivery lines and deliveries are created as firm at order line entry and no delivery regrouping is performed.</p> <p>For delivery regrouping to take place, this setting must be selected in 'Dispatch Policy. Open' (MWS010). If delivery regrouping is also selected for the consignee in 'Customer. Open' (CRS610) or 'Warehouse. Open' (MMS005), then the delivery regrouping process is automatically initiated.</p> <p>Delivery regrouping can be manually changed in 'Customer Order. Open' (OIS100) and in 'Req/Distr Order. Open' (MMS100) at order entry. It can be displayed in 'Delivery. Open Toolbox' (MWS410) and via the view in 'Delivery. Open Line Toolbox' (MWS411).</p>
G	310	Next delivery released for allocation	<p>The field indicates whether the next delivery, or the backorder delivery (BO-delivery), should be released for allocation.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = Not released for allocation</li> <li>• 1 = Released for allocation</li> <li>• 2 = Not released for allocation, but also reset the original delivery to Not released if the field 'Closing point' = 1 in (MWS010), see parameter 300.</li> </ul> <p><b>Note:</b></p> <p>Value=2 (original delivery not released for further allocation) is only relevant if the field 'Closing point' = 1 (see parameter 300 in (MWS010)).</p> <p>A BO-delivery is automatically created when a delivery is closed if remaining quantities exists to deliver.</p>

<b>Program panel</b>	<b>Settings</b>	<b>Field name</b>	<b>Description</b>
G	320	Next delivery released for picking	<p>The field indicates whether the next delivery, or the backorder delivery (BO delivery), should be released for picking.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = Not released for picking</li> <li>• 1 = Released for picking</li> <li>• 2 = Not released for picking, but also reset the original delivery to 0 = Not released for picking if the field 'Closing point' = 1 in (MWS010), parameter 300.</li> </ul> <p><b>Note:</b></p> <p>Value = 2 (original delivery not released for further picking list creation) is only relevant for 'Closing point' = 1 (see parameter 300 in (MWS010)).</p> <p>A BO delivery is automatically created when a delivery is closed if remaining quantities exist.</p>

Program panel	Settings	Field name	Description
G	330		Automatic connection to shipment

Program panel	Settings	Field name	Description
			<p>The field indicates under what conditions new deliveries are to be automatically connected to a shipment.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No automatic connection</li> <li>• 1 = Automatic connection to next open shipment if transport capacity is sufficient</li> <li>• 2 = Automatic connection to next open shipment. If transport capacity not is sufficient, no connection is made. If no open shipment exists, one is created automatically.</li> <li>• 3 = Automatic connection to next open shipment regardless of transport capacity</li> <li>• 4 = Automatic connection to next open shipment regardless of transport capacity. If no open shipment exists, one is created automatically.</li> <li>• 5 = Automatic connection to next open shipment. If transport capacity not is sufficient, or no open shipment exists, a new shipment is created for the next possible departure time.</li> <li>• 6 = Automatic connection to next open shipment regardless of transport capacity. If no open shipment exists, a new shipment is created for the next possible departure time.</li> <li>• 7 = Automatic connection to next open shipment. If transport capacity not is sufficient, or no open shipment exists, a new shipment is created for the same departure time and with the best possible route/departure.</li> <li>• 8 = Automatic connection to next open shipment regardless of transport capacity. If no open shipment exists, a new shipment is created for the same departure time and with the best possible route/departure.</li> </ul> <p><b>Note:</b></p> <p>Alternatives 5 and 6 are for situations where the warehouse sends the next delivery on if the truck is full. Alternatives 7 and 8, on the other hand, are for situations where the warehouse finds another truck to depart the same time if the current truck is full.</p> <p>Automatic connection only applies to route types with scheduled route departures (that is, route type 4-6), and to those that allow automatic connection to shipment (see 'Route. Open' (DRS005/F)).</p>

<b>Program panel</b>	<b>Settings</b>	<b>Field name</b>	<b>Description</b>
			<p>Deliveries are only connected to shipments with matching place of loading, route/route departure, and departure date/time. Closed shipments, shipments that are past deadline, or shipments that are manually prevented from being used for automatic connection (see 'Shipment. Open Toolbox' (DRS100/E)) are not considered.</p>
G	340	When to connect delivery documents	<p>The field indicates if and when delivery documents are automatically selected for a delivery.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No documents automatically connected</li> <li>• 1 = Yes, when the delivery is created</li> <li>• 2 = Yes, when packing for the delivery starts</li> <li>• 3 = Yes, when packing for the delivery ends</li> <li>• 4 = Yes, when the delivery number is blocked for use during order line entry.</li> </ul> <p>In all cases, you can still manually select or remove delivery documents in 'Delivery. Connect Delivery Documents' (MWS260).</p>
G	350	Delivery receipt confirmation	<p>The field indicates whether the delivery receipt confirmation should be used and how for a delivery. This confirmation enables tracking of deliveries and packages after they have been issued from the warehouse. Delivery receipt confirmation can be done by delivery number or the highest level of a SSCC number.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = Delivery receipt confirmation not used</li> <li>• 1 = Simplified delivery receipt confirmation used. Delivery receipt confirmation done on delivery head level</li> <li>• 2 = Detailed delivery receipt confirmation used. Delivery receipt confirmation done on delivery line level and can be confirmed on different dates</li> <li>• 3 = Same as 2, but mandatory to perform detailed receipt confirmation.</li> </ul> <p>Alternative 3 is not selectable. It is only set if delivery is sent from an EU country to an EU country and the check box of parameter 'Tax Delivery Confirmation' (TDLC) in 'Country. Open' (CRS045) is activated.</p>

<b>Program panel</b>	<b>Settings</b>	<b>Field name</b>	<b>Description</b>
H	360	Print fixed customer text	<p>The field indicates whether fixed document texts per customer in 'Document Text. Open' (OIS035) is printed on picking lists and delivery notes for outbound deliveries.</p> <p>Select the check box to print fixed document texts per customer.</p> <p>This parameter is only relevant for documents initiated by customer orders.</p>
H	370	Print fixed item text	<p>The field indicates whether fixed item texts in (OIS035) is printed on picking lists and delivery notes for outbound deliveries.</p> <p>Select the check box to print fixed item texts.</p>
H	380	Print fixed document text	<p>The field indicates whether fixed document texts in (OIS035) is printed on picking lists and delivery notes for outbound deliveries.</p> <p>Select the check box to print fixed document texts.</p> <p>This parameter is only valid when document 120 (picking list), or document 900 (delivery note) is stored in (OIS035).</p>
H	390	Extra days for delivery stop	<p>The field indicates the number of days after the last delivery date that a delivery line is automatically held. This means that auto-allocation is prevented, and release for picking and reporting is only possible after releasing a hold flag on the delivery line 'Req/Distr Order. Open Lines' (MWS301/E).</p> <p>This only applies to customer orders since only customer orders have a last delivery date.</p> <p>A value of 999 in this field indicates that this function is disabled; that is, auto-allocation is performed regardless of the last delivery date on the customer order, and no hold is placed on the lines during release for pick and report.</p>
H	400	User-defined program, freight charges	<p>The field indicates a program that is called when the delivery status is greater than 50 (issued from stock) and the packing status is greater than or equal to 30 (fully packed).</p> <p>The intention is to enable you to design a program to add customer order charges based on the delivery totals and packing details. In addition, the program is to be called at the point in the dispatch flow where all required information is available.</p>

<b>Program panel</b>	<b>Settings</b>	<b>Field name</b>	<b>Description</b>
H	420	Picking list status at extended cross-docking	<p>The field indicates the status of a picking list that is automatically assigned when extended cross-docking is in use. This field is only valid for CO and outbound DO (the sending warehouse).</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 00 = Not activated</li> <li>• 40 = Ready for reporting</li> <li>• 50 = All lines reported as moved to packing location</li> <li>• 60 = All lines reported as moved to docking location</li> <li>• 90 = All lines issued.</li> </ul>
H	430	Type of check with extended cross-docking	<p>The field indicates how advanced cross-docking is to be performed. This field is only valid for inbound DO (receiving warehouse).</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = Not activated</li> <li>• 1 = Line by line</li> <li>• 2 = By delivery</li> <li>• 3 = By package.</li> </ul> <p>When method 1 is used, each line that is cross-docked is checked to see if advanced cross-dock should apply. It is not possible to copy packaging with this method of advanced cross-docking. When method 2 is used, the whole outbound delivery must be cross-docked from the same inbound delivery. The advanced cross-docking is not performed until the last delivery line is cross-docked.</p> <p>When method 2 is used, the entire inbound delivery must be cross-docked to the same outbound delivery to be qualified for extended cross-docking. The extended cross-docking is performed when the last delivery line of the inbound delivery is cross-docked.</p> <p>When method 3 is used, the entire inbound delivery package must be cross-docked to the same outbound delivery to be qualified for extended cross-docking. The extended cross-docking is performed when the last package line of the inbound delivery package is cross-docked.</p>

<b>Program panel</b>	<b>Settings</b>	<b>Field name</b>	<b>Description</b>
H	440	Packaging transferred at extended cross-docking	Select the check box to copy packaging details from the inbound delivery to the outbound delivery when advanced cross-docking is performed. This field is only valid for CO and outbound DO (the sending warehouse).  This field only applies if the extended cross-docking check type (setting 430) is 2 (By delivery) or 3 (By package).
H	450	Download deliveries	Select the check box to enable deliveries to be downloaded to an external system for transportation planning via the M3 Transportation Operational Interface.
H	460	Move in partial mode	Select the check box to move a picking list line to a packing or docking location in 'Picking List. Report Lines' (MWS422) in partial mode. If the check box is not selected, the quantity that is not moved (the remaining quantity) is considered as a backorder quantity.

Program panel	Settings	Field name	Description
H	470	Ship via control	<p>The field indicates if the ship-via address is retrieved automatically and how it is retrieved. The ship-via address is the address the goods are transported through before they arrive at the final address.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No ship-via address is retrieved automatically when the delivery is created. The ship-via address is maintained manually from (MWS410/F).</li> <li>• 1 = The address is retrieved automatically from the consignee. Either the customer delivery address in 'Customer. Connect Addresses' (OIS002) or the customer in 'Customer. Open' (CRS610) is used to propose the ship-via address. Applies only to order category 3 (customer order).</li> <li>• 2 = The address is retrieved automatically from the route. The place of unloading that is connected to the delivery 'Delivery. Open Toolbox' (MWS410) and route 'Route. Connect Unloading Places' (DRS021) is used to default the ship-via address.</li> <li>• 3 = The address is retrieved automatically from the generic object control. The ship-via address in 'Available Object Ctrl Parameters. Open' (CMS016), 'Generic Object Control Table. Open' (CMS017) and 'Ship-via Address. Define' (MWS190) is used to propose the ship-via address.</li> </ul>
H	480	Commodity code control	<p>Select the check box if freight commodity code is to be retrieved automatically to the package details during packing. The freight commodity code is only required when bill of lading documents are to be created.</p>
H	490	Accessorial pre-selection	<p>Select the check box to enable pre-selection of freight accessorials when deliveries and delivery lines are created.</p> <p>This setting must be enabled both on the dispatch policy and in (Settings - TPL Standard values) to enable retrieval of pre-selection of freight accessorials on the delivery and delivery line level.</p> <p>To activate retrieval of the freight accessorial pre-selection on the shipment level, only the setting in (Settings - TPL Standard values) must be enabled.</p>

Program panel	Settings	Field name	Description
H	495	Checkpoint for freight cost control	<p>The field indicates at which step in the dispatch flow that freight cost control is activated.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No control.</li> <li>• 1 = Yes, a control is performed at release for allocation.</li> <li>• 2 = Yes, a control is performed at release for picking</li> <li>• 3 = Yes, a control is performed at issuing.</li> </ul> <p>Alternative 1 activates a control at release for allocation, at release for picking and at issuing.</p> <p>Alternative 2 activates a control at release for picking and at issuing.</p> <p>Alternative 3 activates a control only at issuing.</p> <p>If the freight cost setup has changed between the steps, this avoids any incorrect invoices being sent to customers and payments to forwarding agents and internal accounting.</p> <p>If stopped at release for allocation, the delivery status is set to 00-'Not released for allocation'. If stopped at release for picking, the delivery status is set to 03-'CO stop'. For both scenarios, a stop code is stated on the delivery.</p> <p>This parameter only defines the point in time when controls is performed, and not what to control. To set what to control, see 'Freight cost control' in the delivery terms.</p>

**Note:**

Alternative 1 is not permitted when released for allocation is activated.

For auto-level 4, alternative 3 is not permitted.

For auto-level 5, alternatives 1, 2, and 3 are not permitted.

<b>Program panel</b>	<b>Settings</b>	<b>Field name</b>	<b>Description</b>
	500	Retrieve transportation service from	<p>The field indicates how the transportation service is retrieved. The transportation service is the specific service that the forwarder provides.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No transportation service is retrieved automatically when the delivery is created. The transportation service is maintained manually from 'Delivery. Open Toolbox' (MWS410/F).</li> <li>• 1 = The transportation service is retrieved automatically first from the route departure in 'Route. Connect Departures' (DRS006) and then from the route in 'Route. Open' (DRS005).</li> <li>• 2 = The transportation service is retrieved automatically from the selection program 'Customer/Warehouse. Connect Tran Service' (DRS030) per customer (only for reference order category 3) or per delivering warehouse</li> <li>• 3 = First according to value 1 (route departure then route), and then if no match is found according to value 2 (from selection program).</li> <li>• 4 = First according to value 2 (from selection program), and then if no match is found according to value 1 (route departure then route).</li> </ul>
	510	Initiate simple packing at issue	<p>Select the check box to start simple packing when the picking list is issued.</p> <p>If you select this option, program 'Delivery. Connect Packages' (MWS423) is displayed with sorting order 3 when the picking list is issued.</p> <p>You can only use this option if the packing reporting method is set to manual simple packing.</p>
	511	Use reporting version	<p>Select the check box to use a reporting version.</p> <p>If you select the check box, one reporting version number is stored on the picking list headers and the packages created each time one or more picking lists are issued simultaneously. This enables you to display and print address labels for packages for each reporting version as a subset of the packages connected to the delivery.</p> <p>You can only select this check box if the packing reporting method is manual simple packing.</p>

Program panel	Settings	Field name	Description
I	512	Auto create package	<p>The field indicates if a package is automatically created when simple packing is automatically started during picking list issue.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No package is created. At least one package must be created manually in 'Delivery. Connect Packages' (MWS423).</li> <li>• 1 = One package is automatically created.</li> </ul> <p>If the value is set to 1, then the 'Standard package to use' must be entered.</p>
	513	Standard packaging to use	<p>The field indicates the ID of the packaging to use during the automatic creation of packages when simple packing is initiated during picking list issue.</p> <p>The packaging is defined in 'Packaging. Open' (MMS050).</p>

Program panel	Settings	Field name	Description
I	520	Soft allocation transfer level	<p>The field indicates if and when soft allocation is automatically transferred to hard allocation.</p> <p>During certain events, soft allocated lines can automatically be transferred to hard allocation. When these events take place, the standard allocation rules select the balance identity and perform hard allocation if possible.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 00 = There is no automatic transfer from soft allocation to hard allocation.</li> <li>• 10 = Transfer from soft allocation to hard allocation is done immediately when the allocation is done. This means that hard allocation is done immediately at allocation.</li> <li>• 20 = Transfer from soft allocation to hard allocation when the picking list is generated.</li> <li>• 30 = Transfer from soft allocation to hard allocation when the picking list is printed or downloaded to the M3 Warehouse Interface.</li> </ul> <p>Note that the transfer from soft allocation to hard allocation can also be triggered manually by using option 38 in 'Allocation. Prepare Picking Release' (MWS413) OR 'Picking List. Report' (MWS420).</p>

Program panel	Settings	Field name	Description
	530	Chronological delivery note, number series ID	<p>The field indicates the ID of the number series used to generate chronological delivery note numbers when a delivery note is printed for a delivery with the current dispatch policy. The number is also printed per invoice line when invoicing the customer order.</p> <p>The first time a delivery note is printed for a delivery, the functional program MMS480 (Print delivery note) generates a chronological delivery note number and stores it in the delivery header in the deliveries table, MHDISH, together with the date and time of creation in the time zone of the delivering warehouse.</p> <p>If a delivery note has been printed with a chronological delivery note number for a delivery and this delivery note is later deleted, the chronological delivery note number saved in the delivery header is used when a new delivery note is created for the delivery, so that there are no gaps in the number series.</p> <p>The optional number series must belong to number series type 'DT' (Chronological delivery note number) in 'Number Series. Open' (CRS165).</p> <p>When the parameter 'Nbr ser per div' is activated in 'Settings - Deliveries' (CRS721) you only get a chronological delivery note number for the specific division. If there is no setup of a chronological delivery note number for the division, no chronological delivery note number is created for the delivery note.</p>
	531	Transaction reason	<p>The field indicates a user-defined reason code 'Transaction Reason. Open' (CRS103). The description for the reason code is printed on the delivery note.</p> <p>To be able to enter a reason code for the dispatch policy, the chronological delivery note number series ID must be entered.</p>

Program panel	Settings	Field name	Description
	540	Delivery consolidation - field 1	<p>The field indicates the first user-defined field to use during delivery creation.</p> <p>This field is used to consolidate or split delivery numbers as the user prefers. If the field is filled in, it is used as extra criteria together with system-defined values when deliveries are created.</p> <p>The main purpose is to be used for delivery regrouping to further split a preliminary delivery into firm deliveries.</p> <p>Other specific processes that require specific values in delivery consolidation field 1 or 2:</p> <ul style="list-style-type: none"> <li>Prepayment – Value: OBTEPY</li> <li>Internal Sales – Value: OAICTR</li> <li>Pick-up delivery – Value: &amp;PUDL</li> </ul>
	545	Delivery consolidation - field 2	<p>The field indicates the second user-defined field to use during delivery creation.</p> <p>This field is used to consolidate or split delivery numbers as the user prefers. If the field is filled in, it is used as extra criteria together with system-defined values when deliveries are created.</p> <p>The main purpose is to be used for delivery regrouping to further split a preliminary delivery into firm deliveries.</p> <p>Other specific processes that require specific values in delivery consolidation field 1 or 2:</p> <ul style="list-style-type: none"> <li>Prepayment – Value: OBTEPY</li> <li>Internal Sales – Value: OAICTR</li> <li>Pick-up delivery – Value: &amp;PUDL</li> </ul>
	550	Allocation-based packing activated	<p>Select the check box to activate the transfer of a fully allocated package in stock to a package for a specific delivery.</p> <p>When this check box is selected, the system tries to transfer a hard-allocated package in stock to a package for a specific delivery in the following cases:</p> <ul style="list-style-type: none"> <li>When the packing reporting method is 4 and the picking list is printed.</li> <li>When the packing reporting method is 2, 3 or 4 and option 22 (Autopack) is used on 'Picking List. Report' (MWS420/B).</li> </ul>

Program panel	Settings	Field name	Description
I	555	Package-based receipt	<p>Select the check box to enable package-based receipt.</p> <p>If this check box is selected, you can perform receipt when working with packages in stock and still keep the package structure and content from the supplying order. The external package information is then transferred to become in-house package information.</p> <p>Package-based receipt is done for each shipment, delivery, or package number for a distribution order. Receipt can be performed from 'Goods Receipt DO/RO. Report' (MWS440) or from API MHS850MI.</p> <p>Package-based receipt is done for each delivery note number and package number for a purchase order. Receipt can be performed from 'Supplier Delivery Note. Open' (PPS360) or from API PPS360MI.</p>
I	560	Create physical inventory during picking	<p>Select the check box to create a stock count task in 'Physical Inventory. Perform' (MMS300) when sending a pick message in 'Order Init Stock Msg. Manage' (MHS850) or using API MHS850MI. The stock count task is created if the on-hand balance is equal to zero when pick reporting is done.</p> <p>The following MI transactions are included in the create physical inventory process:</p> <ul style="list-style-type: none"> <li>AddCOPick Report CO</li> <li>AddMOPick Report MO</li> <li>AddDOPick Report DO</li> <li>AddROPICK Report RO</li> <li>AddReplPick Report replenishment order (TTYP 92)</li> <li>AddPickviaRepNo Report via reporting number</li> <li>AddPickviaPack Report full package (can contain more than one item)</li> <li>AddPickviaPacStk Report soft allocated package</li> </ul> <p>This check box must be selected both for the location (MMS010) and for the dispatch policy (I).</p>

Program panel	Settings	Field name	Description
I	570	Delivery value check-point	<p>The field indicates if and how the delivery value check should be triggered. A triggered delivery value check performs an evaluation if the payer of the delivery is solvent, to let the delivery be issue reported. The result of the delivery value check is shown via the issue reporting status of the delivery. The issue reporting status is validated at issue reporting to only allow deliveries that have passed the delivery value check or have been manually approved for issue reporting. Deliveries without a performed delivery value check or a failed delivery value check is prevented from being issue reported.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = Not used</li> <li>• 1 = Only manually</li> <li>• 2 = Manually and automatically when goods are on dock location for the first time.</li> </ul> <p><b>Note:</b></p> <p>Alternative 1 means that the delivery value check must be manually triggered. Alternative 2 means that the delivery value check is automatically triggered the first time all picking lists are on dock location. It's also possible to manually trigger the delivery value check.</p> <p>It is always possible to manually approve the delivery for issue without performing the delivery value check.</p> <p>The delivery value check functionality is only valid for deliveries with reference order category 3 (customer order).</p>
I	580	Delivery value check method	<p>The field indicates how the delivery value is calculated.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = Not used</li> <li>• 1 = Value calculated per line as sales price - line discounts, multiplied with transaction quantity.</li> </ul> <p><b>Note:</b> Alternative 1 uses the same method as the one used when the value is calculated on a proforma invoice in 'Proforma invoice' (MWS630).</p> <p>The delivery value check functionality is only valid for deliveries of reference order category 3 (customer order).</p>

Program panel	Settings	Field name	Description
I	585	Pick-up delivery type	<p>The field indicates if a pick-up delivery should be created and which address information that should be used as the end destination for the pick-up delivery. Note that pick-up deliveries for transportation orders are used for transportation planning purposes regarding the empty vehicle leaving the warehouse. A pick-up delivery only incorporates the planning of the first part of the transportation from the M3 BE warehouse to either the departure address or the delivery address entered on the transportation order.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No creation of pick-up delivery</li> <li>• 1 = Yes, use departure address information as end destination for pick-up delivery</li> <li>• 2 = Yes, use delivery address information as end destination for pick-up delivery.</li> </ul>

**Note:**

Pick-up delivery type 1 can be used in scenarios when a transportation task between two locations and the vehicle needs to be planned for the M3 BE warehouse (according to order line).

Pick-up delivery type 2 can be used in scenarios when a vehicle needs to arrive at a specific address without any further transportation task to perform. One example could be if transportation planning is required for a vehicle that must go to a specific address to perform other services such as a car wash or repair.

When pick-up delivery type 2 is selected, the departure address information is retrieved from the M3 BE warehouse.

<b>Program panel</b>	<b>Settings</b>	<b>Field name</b>	<b>Description</b>
J	590	Propagate delivery changes	<p>Select the check box to enable propagation of delivery changes to order lines.</p> <p>When propagation is activated and a change is made to a delivery, all order lines connected to the delivery are updated with the same values as the ones set on the delivery.</p> <p>Propagation is limited to customer orders. Only departure date, departure time, and final delivery terms are propagated. Propagation is only performed while a delivery is open (the delivery status is below 50).</p> <p>The change of departure date and time on the connected order lines updates the planned date and time as well as the confirmed delivery date and time.</p> <p>A change of departure date or time on a shipment is always propagated to the deliveries connected to it. This is not dependent on the propagation parameter, but when the propagation parameter is activated on the dispatch policies on the connected deliveries, the changed departure date or time on the shipment is propagated all the way to all the order lines connected to the deliveries.</p> <p>If the final delivery terms on a delivery are changed and if that leads to the delivery terms on all of the order lines of an order are updated through propagation, the delivery terms on the order header are also updated with the same value.</p>

Program panel	Settings	Field name	Description
J	600	Allow distribution over receipt	<p>The field indicates whether it is permitted to receive more than what is registered to be sent on a distribution order (DO) line.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No, you cannot receive more items than what is registered to be sent on the DO line or to receive a different item.</li> <li>• 1 = Yes, you can receive more than what is registered to be sent on the DO line. The quantity difference must be within the tolerance defined in parameter 610. Observe that if the tolerance percentage is 0, no limitation applies. You cannot receive other items than the ones registered in the DO.</li> <li>• 2 = Yes, you can receive more than what is registered to be sent on the DO line, if that quantity is within the tolerance defined in parameter 610. You can also receive items that were not in the DO.</li> </ul> <p><b>Note:</b> You cannot use over receipt for catch weight items, subplot items, or in house package items. Under receipt is always possible.</p>
J	610	Over receipt difference percentage	<p>The field indicates the percentage variance tolerated for the distribution over receipt and is considered if the parameter 600 ('Allow distribution over receipt') in (MWS010) is set to 1 or 2.</p> <p>Two decimal places are used.</p> <p>This percentage is used for checking if the value is reasonable when registering the distribution order receipt.</p> <p>If the value of the quantity received is higher than the entered percentage of the dispatched quantity, the receipt is not allowed.</p>

Program panel	Settings	Field name	Description
J	630	Delivery Approval Activation	<p>The field indicates if approval from legal authorities is necessary for delivery. If activated, the delivery note is not printable before approval has been received.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = Not used</li> <li>• 1 = Mandatory approval - digital only</li> <li>• 2 = Mandatory approval, digital or manual.</li> </ul> <p>Alternative 0 means that no approval is required.</p> <p>Alternative 1 means that digital approval from a legal government portal should be received. This alternative is suitable for a BOD-integrated solution when the progress of the approval is managed by the integration to Localization Services Platform (LSP).</p> <p>Alternative 2 means that approval from a legal government portal must be received before the delivery note can be printed. The approval can be received digitally or be performed manually.</p>
J	640	Non-sales transit doc – number series ID	<p>The field indicates the ID of the number series used to generate a freight document alias ID when the non-sales transit document is created.</p> <p>A new freight document alias ID is retrieved every time a new non-sales transit document is created per delivery. The number series ID must belong to number series type DC (Non-sales transit document number).</p> <p><b>Note:</b> The number series DC is maintained per division in (CRS165).</p>

Program panel	Settings	Field name	Description
J	650	Non-sales transit document - variant	<p>The field indicates which variant of the non-sales transit document that should be used for a delivery with the specific dispatch policy.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = Not used</li> <li>• 1 = Internal DO</li> <li>• 2 = Claim</li> <li>• 3 = Subcontract</li> <li>• 4 = Repair</li> </ul> <p>Alternative 0 means that some detailed values but no rates are retrieved when printing the non-sales transit document.</p> <p>Alternative 1 means that information on the non-sales transit document is retrieved from the delivery that originates from a distribution order.</p> <p>Alternative 2 means that information on the non-sales transit document is retrieved from the delivery that is created for the requisition order that manages goods transported back to the supplier.</p> <p>Alternative 3 means that information on the non-sales transit document is retrieved from the delivery that is created for the requisition order that manages goods transported to the supplier for subcontracting operations.</p> <p>Alternative 4 means that information on the non-sales transit document is retrieved from the delivery that is created for the replenishment order that manages goods to be moved to supplier location in the maintenance repair process.</p> <p><b>Note:</b> These are the four supported scenarios (1-4) for the non-sales transit document.</p>

## Basic Settings for Requisition and Distribution Order

This settings document explains how to make the settings in 'Req/Distr Order Type. Open' (CRS200).

The requisition/distribution order types are user defined. Many default values are set, for example, the view that should be used in the order flow.

There are four valid stock transaction types, which constitute the foundation for creating user defined requisition/distribution order types. These are:

- 40 = Requisition order receipt (put into stock)
- 41 = Requisition order issue (take out from stock)
- 51 = Distribution order (movement between warehouses)
- 92 = Replenishment (movement within a warehouse)

The stock transaction types are not user defined. They are retrieved from 'Stock Transaction Type. Open Standard' (CRS205).

#### Allocation and dispatch settings

The allocation and the dispatch handling should also be set up for these order types. This can be done in several ways and are described in these documents:

See [Allocation and Cross-Docking Concepts](#) on page 275

See [Dispatch Handling](#) on page 403

More special settings for Distribution order are described in [Settings for Distribution Orders](#) on page 110.

#### Outcome

Requisition and distribution order types are defined in 'Req/Distr Order Type. Open' (CRS200). Order types are saved in the (MGTYPE) table.

This process is used in requisition and distribution orders to manage the order flow and the views.

#### Before you start

- A number series is created from number series type 14 in 'Number Series. Open' (CRS165).
- If a user defined view is used, a view is created in 'View. Open' (CRS020).
- If transport planning is used (TPL), then the settings for that must be specified.

#### Follow these steps

The (CRS201/F/G/H) panels

These panels define how each field is used when working with requisition and distribution order entry. The F panel is for the order head fields. The G and H panels are for the order line fields.

- 1 Open 'Req/Distr Order Type. Open' (CRS200). Use the B panel as opening panel.
- 2 Set the panel sequence to EFGHIJK.
- 3 Define an order type in the 'Order Type' field. Select a stock transaction type in the 'Stock transaction type' field. These are the valid alternatives
  - 40 = Requisition order receipt (put into stock)
  - 41 = Requisition order issue (take out from stock)
  - 51 = Distribution order (movement between warehouses)
  - 92 = Replenishment (movement within a warehouse)

These stock transaction types are retrieved from 'Stock Transaction Type. Open Standard' (CRS205).

- 4** The 'Next manual function' field indicates which function, in the flow of allocation and dispatch, is the next one to be performed manually. Depending on the combination of transaction type and next manual function, these will be the number of fields in the order type detail panels:

- Defaulted
- Defaulted and protected
- Default protected and hidden.

This prevents invalid combinations of parameters and makes it easier to create distribution and requisition order types.

**Note:** The next manual function for transaction type 40='Requisition order receipt' is set to 5, 6, or 7.

- 5** Click F13 on the (CRS200/B) panel, followed by F14 on the (CRS200/P) panel. 'Requisition/Distr Order Authority . Open' (CRS202) is displayed.

**Note:** The (CRS202/B) Panel Authority for Order Types program is only used if you want to set authorization per order type(s) for users. If you do not specify authorization, users have access to all order types.

Authorization is defined per order type, facility and warehouse. The table can either include or exclude authorization for order type(s).

- 6** Specify the Authorized field on the (CRS202/B) panel. This field activates a list in 'User . Open' (MNS150).

- 7** Specify the (CRS202/E) panel and the 'Order type' field for which the user should, or should not, be authorized to use. Specify one of these values in the 'Include/Exclude order type' field:

- 1 = The order types listed can be used, but no other types
- 2 = The order types listed cannot be used, but all other types.

- 8** For the statistical fields, specify an explanation for the order type in the Name field. Example: Req Ord – Not Rel for Alloc or Distr Ord – Pick List Printed.

- 9** The 'Transaction sign' field displays how each standard transaction type affects stock. It is retrieved from (CRS205) and cannot be changed.

- 10** The 'Affect statistics' field's deviation field is a code for how transactions for this transaction type should affect the item statistics field in question. This is user defined and can override the 'Affect statistics' field's standard fields, which are retrieved from (CRS205).

Example for a requisition order issue:

- B) Transaction sign – (minus) = The physical stock is decreased with the entered positive quantity, and is increased if the entered quantity is negative.
- C) Used quantity – (minus) = The Statistical field for used quantity is decreased. If the quantity is negative the statistical field is increased.

**Note:** The transaction sign field = minus and the 'Used quantity' field = minus. Minus plus minus is equals plus. This means that the 'Used quantity' field is in fact increased when a positive quantity is entered, which is correct when items are taken out of stock.

Example for a requisition order receipt:

- Stock transaction type 40 = 'Requisition order receipt' (put into stock)
- B) Transaction sign + = The physical stock is increased with the entered positive quantity, and decreased if the entered quantity is negative.
- Used quantity – (minus) = The statistical field for used quantity is decreased, if the quantity is negative the statistical field is increased.

**Note:** The transaction sign field = + (plus) and the used quantity field = minus. This means that the Used quantity field is decreased when a positive quantity is specified. This is correct because when items are put into stock, used quantity will decrease.

**The (CRS200/F) panel**

010	Print transaction log whether and how a list of transaction records should be printed when requisition or distribution orders are entered.
015	Proposed status on stock transaction header must be set to 15 for allocation to be possible.
035	Allow order line entry for several warehouses indicates whether requisition or distribution order lines can be created for more than one warehouse on the same order.
040	Propose quantity when entering bill of material (BoM) issue transaction specifies if the transaction quantity (order quantity * quantity in the BoM) should be proposed automatically when order lines are created for material in product.
045	Check availability upon line entry specifies if a check should be made against the available to promise (ATP) upon order line entry.
055	Allow balance status other than 2='Approved' indicates whether order lines could be created for item balances other status than approved (status 2).
065	Type of order number check specifies whether an order needs to be related to a specific order number (manufacture, purchase, and maintenance, service or project order) Alternative 0 indicates that no check is performed.
070	Allow issue of non-stocked items indicates whether order lines can be created for non-inventory items (with or without picking list reporting). Order lines with non-inventory items are printed at the end of the picking or distribution lists if they are included.

**The (CRS200/G) panel**

Reference text type defines what additional information that would be given in the material plan and the (MITTRA) file.

For distribution orders (51) this is set to 1 = From to warehouse.

For stock movement orders (92) this is set to 2 = From to location.

110	<p>Number series indicates the identity of the number series used when automatically generating an order. A number series is user defined in 'Number Series. Open' (CRS165). For Req and Distr orders, number series type 14 = Req and Distr orders must be used when creating a new number series.</p> <p>The 'Block Manually Entered Order Number' (BMON) parameter controls if it is permitted to enter order number manually. Alternatives are:</p> <ul style="list-style-type: none"> <li>0 = Allow manual entry of order number</li> <li>1 = Block manual entry of order number. Order number is automatically generated according to number series.</li> </ul>
115	Allow different dates on lines, is used for allowing different receipt dates at the receiving warehouse per distribution line (active, 1) or only be allowed to be changed on the order header (non-active, 0). This is only for distribution orders (51).
140	Apply message if quantity on-hand becomes zero after transaction specifies whether a message should be displayed on the entry record and whether it should have an asterisk printed on the picking list and distribution list.
145	Apply message for items with issue message controls if a message should be created for issue message controlled items in accordance with the 'Issue message' field on the (MMS001/F) panel.
150	Update log when order lines are changed indicates if transaction quantity, date and responsible user should be stored when an order line is changed.
155	Permit use of alternative units of measure, if alternative unit of measurement are allowed on the item, in accordance with the 'Alternate U/M in use' field on the (MMS001/E panel) then it can be overridden here.
160	<p>Facility owner, indicates which facility is used to be the owning facility and populate the order header (MGHEAD) when manually raising a distribution order in (MMS100) or from a proposal in (DPS170).</p> <p>blank = The facility of the 'from' warehouse TF = The facility of the 'to' warehouse</p>

**The (CRS200/H) panel**

205	<p>Packaging Action indicates if any packaging action should be taken.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes.</p> <p>See <a href="#">Performing Packaging Actions</a> on page 467.</p>
225	<p>Default priority indicates the priority to be used as the default when entering requisition and distribution orders. The priority can be as high (0–4), normal (5) or low (6–9). The priority is displayed in the availability survey.</p>
250	<p>Credit order account entry must be active for cost accounting to work. If the accounting for a distribution order should be treated as a credit order for the supplying warehouse, parameter 250 must be activated.</p>
255	<p>Dispatch policy indicates the design of the dispatch process. A dispatch policy is assigned the delivery created when entering order lines. Dispatch policy is set in (MWS010).</p> <p>See <a href="#">Basic Settings for Dispatch Handling</a> on page 300.</p>
260	<p>Reschedule when pre-allocation supply side indicates whether a change of date for the pre-allocation acquisition order line will result in the confirmed delivery date on the pre-allocated demand order line being rescheduled.</p>
265	<p>Pre-allocation maintenance on quantity change indicates whether the pre-allocation maintenance program (MWS121) should be triggered by a change of quantity on a pre-allocated order.</p> <p>0 = No</p> <p>1 = Only for change of quantity on the acquisition order</p> <p>2 = Only for change of quantity on the demand order line</p> <p>3 = For any change of quantity.</p> <p><b>Note:</b> You will always get a warning if a pre-allocation exists. If you ignore the warning and this parameter is 1, 2 or 3, then (MWS121) will start automatically so you can maintain the pre-allocation quantity changes</p>

320	Allocation below safety stock defines whether it should be allowed to reduce the on-hand balance for the supplying warehouse below safety stock.
335	Representative transaction indicates whether the order should update the statistics and history (normally activated).
350	Auto-deletion of order after final reporting controls if the order automatically should be deleted when it is closed.
360	Two-step put-away indicates whether two-step put-away is activated.
370	Return document control. Return document control can be used to create a separate inbound delivery status (OQPGRS)=68. When the return document is printed (option 16 in MMS100) the status will be increased to 70. These statuses can be used for selection in the 'Goods Receipt Toolbox' (MWS442).

#### The (CRS200/I) panel

500	New order per product when BoM requisitioning indicates if a new order should be created for each product when requisitioning via a bill of material.
505	Accumulate requisition order value indicates whether to accumulate the requisition value on the order header.
525	Default purchase order type indicates the default purchase order type used when purchase requisitions are created.
540	Update lowest picking location indicates whether the lowest stock location should be updated for a picking list.
555	Default view is user defined and determines what fields are to be displayed as well as how the data is to be calculated. This is the view in 'Order Lines' (MMS101).
560	Default panel sequence for order lines in (MMS101).

# Batch Allocation

This document explains how to manage batch allocation for all types of orders including manufacturing, distribution, customer, and requisition orders. The purpose of batch allocation is to share stock when there is a shortage. You can do this either by allocating stock according to priorities or distributing a fair share among all selected order lines or by using a combination of allocation priority and fair share for the allocation priority group where the allocatable net cannot fulfill the required quantity.

**Example:** At the end of the month you want to ship goods, but there is a stock shortage for some items. The existing stock of these items must be shipped to the most important customers. The batch allocation function enables you to de-allocate items from existing orders and to reallocate them to prioritized customers according to user defined rules.

## Outcome

Stock allocations are distributed according to priorities or a fair share transferred to each requirement.

Batch allocation is used for allocating stock to requirements when there is a stock shortage. It is also used when more control is needed over which requirements get the stock than is possible by using automatic allocation.

Allocating as late as possible leaves stock free for other orders.

As an outcome of this process, the following changes are made in M3:

- The completely allocated order raises order status to 33=Allocated.
- The allocated balance ID is stored in the MITLOC table.
- The allocated order and order line are stored in the MITALO table.

## Before you start

The settings for batch allocation must be defined. For further details, refer to these documents in the see also section:

- Batch Allocation
- Batch Allocation Settings
- Settings for Fair Share, Allocation Priority Rules and Allocation Priority with Fair Share
- Define settings for Allocation Priority Model
- Define Settings for Batch Allocation Limits

## Batch allocation workflow

### 1 On the E panel, select 'Order lines'

In 'Allocation. Distribute Quantities' (MMS189), select the Items and Style numbers that should be de-allocated.

It is possible to use the dynamic selection ID field in addition to the normal selection fields (From and To) in (MMS189/E), in order to set up more complex selection rules. The records are filtered by using the rules set up by the regular selection fields (From and To) first and the result of that filtration is filtered once more by the rules set up with the dynamic selection ID. The dynamic selection ID field is visible in

(MMS189/E) if (MMS189) is opened with the B panel and a report version is selected. The field is not visible if the E panel is used as the opening panel.

**2** On the F panel, select Distribution Method

Select 'Distribution method', which indicates whether distribution should be a calculated percentage of the selected order's quantity (equal share) or should be according to allocation priority and allocation order (priority). The third method how to perform the distribution is according to allocation priority with fair share

**3** Select 'Allocation priority hierarchy'

If you selected allocation priority in step 2, then you should also select 'Allocation priority hierarchy'. This field controls the sequence in which item requirements are reallocated. If distribution method allocation priority with fair share is selected in step 2, the first allocation priority hierarchy must be set to allocation priority model.

**4** Activate/deactivate batch allocation limits

Select if batch allocation limits should be applied, i.e. adjust allocated quantity according to the minimum and maximum limits setup in 'Allocation Min/Max Limits Sel Table. Open' (MMS154).

**5** Activate/Deactivate the 'Include SCO' check box

Select whether included demand order lines with supply chain order (SCO) connections should be included in the batch allocation run. If the setting 'Include SCO' is activated, this means that demand order lines with existing SCO links are included in both deallocation and allocation according to settings for the specific run.

**Note:** This is only applicable for SCO links with the setting 'Link existing order' that has value 1 or 2 on the supply chain policy.

The following is done automatically in (MMS190) and (MMS191)

**1** De-allocate selected order lines

Order lines that contain the selected items and style numbers are de-allocated. Allocation stop is added to prevent autostart job from allocating in conflict with the batch run. Allocation stop is removed at end of batch run.

**2** Redistribute allocations to selected order lines

De-allocated items and style numbers are redistributed to allocation according to batch allocation rules.

**3** Allocate selected order lines

Selected items and style numbers are allocated to order lines according to batch allocation rules.

Allocation is performed in 'Manage Allocation' (MMNGALO). This updates balance IDs, order lines and the material plan. The order status for a completely allocated order is 33.

If the setting 'Include SCO' is activated, the SCO links for the demand order line will be updated at the end of allocation. Since a completed allocation will reduce the pre-allocated quantity for the demand, it is important to update SCO links so that the supplied quantity is made available for other demand order lines with the same item/warehouse.

**Note:** Order lines with an overriding allocation method not equal to 0 (equal to 1, 2 or 3) will not be affected for batch allocation via (MMS189). The result will be that if the line has a quantity of 0 allocated and the overriding allocation method is 1, 2 or 3, then batch allocation will not increase the allocation regardless of how much stock is available.

The 'Overriding allocation method' (NOAA) field setting is located in 'Allocation. Perform Detailed' (MMS121/B1).

# Batch Allocation Using Fair Share, Allocation Priority Rules or Allocation priority with Fair Share

This instruction explains how you work with batch allocation. Using batch allocation, you can reallocate and distribute current allocations among demand order lines according to user defined rules. This is most likely to be necessary because of shortage problems. Redistribution can be done in one of the following ways:

- Fair share - in which a percentage of an original requirement to the customer is allocated to each selected order line
- Allocation priority rules - according to priorities
- Allocation priority with fair share – demand lines are prioritized and grouped to be able to distribute remaining available quantity among the demand lines within the allocation priority group where the remaining available quantity will not be able to fulfill demand quantity of the allocation priority group.

For each demand line that is selected for allocation, a validation is performed that the remaining allocatable net is enough for all demand lines within the allocation priority group (all demand lines having the same priority in the allocation priority model). If the allocatable net is sufficient, all demand within the allocation priority group will be allocated and the first demand line from the next allocation priority group is validated. If the allocatable net is not enough to fulfill demand quantities within the allocation priority, the remaining allocatable net will be distributed according to fair share among the demand lines within the allocation priority group tested. All the following demand lines that belong to a lower prioritized allocation priority group will not be allocated.

Batch allocation limits can be activated in batch allocation run to validate and adjust the redistributed allocated quantities.

## Outcome

Orders are reallocated based on the specified rules.

Certain customers are given priority when shortages occur.

The completely allocated order raises order status to 33.

The allocated balance ID is stored in the MITLOC file.

The allocated order and order line are stored in the MITALO file.

## Before you start

Before this instruction can be used, the following prerequisites must be met:

- An order with automatic allocation (allocation method 2 – 5) control is created. The automatic start job function must, in this case, also be stopped in 'Subsystem. Open' (MNS050).
- The settings for batch allocation must be defined. Refer to:

[Batch Allocation Settings](#) on page 350

[Basic Batch Allocation Settings](#) on page 285

[Settings for Fair Share, Allocation Priority Rules and Allocation Priority with Fair Share](#) on page 502

### Follow these steps for using fair share

- 1** Start 'Allocation. Distribute Quantities' (MMS189) and fill in the following fields.
  - Enter the actual warehouse or warehouses that should be selected in the Warehouse field.
  - The 'Style no.' field indicates a comprehensive term for numbers of similar items. This is not mandatory and is frequently used in the fashion industry.
  - Enter the actual item or items that should be batch allocated in the 'Item no.' field.
  - The 'Planning date' field indicates the date when a scheduled transaction is expected to take place. You can use it to override the demand time fence. If you leave this field blank, the demand time fence is used for calculating the planning date.
  - Enter the appropriate priority retrieved from the customer order in the Priority field. The priorities are displayed in the material plan (MMS080). Priority selection is used in the case of shortages.
  - Select 'Check allocation limits' if validation and adjustment of redistributed allocated quantities should be included according to batch allocation limits
  - Enter 1=According to a calculated percentage of ordered quantity (fair share) in the 'Distribution method' field.
- 2** Press Enter. Fair share is calculated as:

(Selected requirements total allocated quantity + Allocable net)

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(Selected requirements planned quantity)

### Follow these steps for using allocation priority rules

- 1** Start 'Allocation. Distribute Quantities' (MMS189). Fill in the fields according to the steps for using Fair Share.
- 2** In the 'Distribution method' field, set 2=According to allocation priority.
- 3** The 'Allocation priorities hierarchy' field is set as a sequence.

The field indicates the order in which item requirements are reallocated. Requirements with the highest priority are allocated first, so they run the least risk of shortage.

The valid alternatives are:

0 = As in M3 standard (planning date/order received date)

1 = Customer order header priority

2 = Customer priority

3 = Allocation priority (according to MMS156, 157, 159)

4 = First ship date

5 = Last ship date.

6 = Allocation priority model (according to CMS016, CMS017, MMS181, MMS182).

For example, if the hierarchy is set as 2 1 0, M3 will allocate according to customer priority; then, if there is not enough stock for a particular priority, it allocates according to customer order header priority and then by standard M3 allocation rules.

**Note:** Allocation priorities hierarchy value 2, 3, 4, 5 is only valid for Customer orders while hierarchy values 0,1 or 6 is valid for customer orders, distribution orders and requisition orders.

- 4** Press Enter.

Selected requirements will be processed according to the hierarchy, and full allocation will be carried out as much as possible.

**Note:** If allocation control rules are defined in (MMS123) and (MMS124), they will influence the distribution of allocated items in the same way as in automatic allocation.

If joint delivery rules are defined in (CMS016, CMS017) and (MWS125), they also may influence this function if (MWS180) is subsequently run.

**Note:** Order lines with an overriding allocation method not equal to 0 (equal to 1, 2, or 3) will not be affected for batch allocation via (MMS189). The result will be that if the line has a quantity of 0 allocated and the overriding allocation method is 1, 2 or 3, then batch allocation will not increase the allocation regardless of how much stock is available.

The 'Overriding allocation method' (NOAA) field setting is located in 'Allocation. Perform Detailed' (MMS121/B1).

### Follow these steps for allocation priority with fair share

A correct allocation priority model must exist. This model will be used to prioritize selected demand lines. All demand lines that get the same allocation priority belongs to the same allocation priority group. Fair share will only be calculated among demand lines having the same priority.

- 1** Start 'Allocation. Distribute Quantities' (MMS189).
  - Enter the actual warehouse or warehouses that should be selected in the Warehouse field.
  - The 'Style no.' field indicates a comprehensive term for numbers of similar items. This is not mandatory and is frequently used in the fashion industry.
  - Enter the actual item or items that should be batch allocated in the 'Item no.' field.
  - The 'Planning date' field indicates the date when a scheduled transaction is expected to take place. You can use it to override the demand time fence. If you leave this field blank, the demand time fence is used for calculating the planning date.
  - Enter the appropriate priority retrieved from the customer order in the Priority field. The priorities are displayed in the material plan (MMS080). Priority selection is used in the case of shortages.
  - Select 'Check allocation limits' if validation and adjustment of redistributed allocated quantities should be included according to batch allocation limits
  - Enter 1=According to a calculated percentage of ordered quantity (fair share) in the 'Distribution method' field.
- 2** In the 'Distribution method' field, set 3=According to allocation priority model with fair share
- 3** The 'Allocation priorities hierarchy' field is set as a sequence.  
The valid alternatives are for first allocation priority hierarchy:  
6 = Allocation priority model (according to CMS016, CMS017, MMS181, MMS182). Following allocation priority hierarchy fields can use all available alternatives,
- 4** Press Enter.

# Batch Allocation Settings

This document explains how you define batch allocation settings.

## Outcome

Batch allocation is used for allocating stock to requirements when there is a stock shortage and when more control than is feasible by using automatic allocation is needed over which requirement gets the stock.

The allocated balance ID is stored in the MITLOC file.

The allocated order and order line are stored in the MITALO file.

## Before you start

The settings for batch allocation must be defined. Refer to these documents:

See [Settings for Fair Share, Allocation Priority Rules and Allocation Priority with Fair Share](#) on page 502

See [Define Settings for Allocation Priority Model](#) on page 360

## Workflow for setting batch allocation

### 1 Create basic settings for batch allocation

Define basic allocation settings in:

- 'Item. Connect Warehouse' (MMS002)
- 'Warehouse. Open' (MMS005)
- 'Req/Distr Order Type. Open' (CRS200)
- 'CO Type. Update Field Selection' (OIS014)
- 'Manufacturing Order Type. Open' (PMS120)
- 'Dispatch Policy. Open' (MWS010)

### 2 Select a batch allocation method: Fair share, allocation priority rules or allocation priority with fair share

The primary use of fair share is to distribute stock fairly to equal priorities. Fair share calculation rules are coded in the system.

There are no particular settings for fair share except for the basic settings listed above. A number of fields must be filled in during the fair share batch allocation run in 'Allocation. Distribute Quantities' (MMS189).

If you use allocation priority rules or allocation priority with fair share, you have to follow the steps below.

### 3 Define order types priority

Define the default priority for the order header. This is done per order type in:

'Req/Distr Order Type. Open' (CRS200)

'CO Type. Open' (OIS010)

'Manufacturing Order Type. Open' (PMS120).

### 4 Define customer priority

Define a default priority per customer in 'Customer. Open' (CRS610).

## 5 Define allocation priority

Define allocation priority in:

- 'Settings - Allocation Priority' (MMS156)
- 'Allocation Priority. Calculate' (MMS157)
- 'Allocation Priority. Open' (MMS159)
- 'Allocation Prio Model. Open' (MMS181)
- 'Alloc Prio Model Selection Table. Open' (MMS182)

## 6 Define batch allocation limits

Define batch allocation limits in 'Allocation min/max limits Sel Table. Open' (MMS154).

## 7 Define settings by each batch allocation run

Some settings are defined every time you run batch allocation in 'Allocation. Distribute Quantities' (MMS189).

If Distribution method allocation priority with fair share is selected, then the first allocation priority hierarchy must have value 6 (allocation priority model) and a valid allocation priority model must be configured and selected in MMS189/F.

# Create Formatting ID for Package Number

This document explains how to create a formatting ID that determines the rule for generating package numbers in 'Package Number. Create Formatting ID' (MMS044).

A formatting ID is associated with the formatting rule to be used for a package number as new package numbers are created automatically for packages with an assigned packaging type.

## Outcome

After you create one or more formatting IDs and associate them with specific packaging types, the formatting rule is applied for the auto-creation of package numbers with the corresponding packaging type.

## Before You Start

No prerequisites exist.

## Follow These Steps

- 1** Start 'Package Number. Create Formatting ID' (MMS044).
- 2** On the B panel, enter a value in the 'Formatting ID' field and select the Create option.
- 3** On the E panel, enter these values:
  - a** Description
  - b** Name
  - c** Formatting rule - determines the variable values to be used from different fields to create package numbers.

- d** Number series - is required when a number series is part of the selected formatting rule.
  - e** Alphanumeric prefix - a 3-character prefix must be defined when an alphanumeric prefix is part of the formatting rule.
  - f** Number of characters &1 - determines how many characters to use in the warehouse ID when a warehouse is part of the formatting rule.
  - g** Number of characters &4 - defines how many characters to use in the warehouse ID when a sequence number is part of the formatting rule.
  - h** Date format - indicates which date format to be used.
- 4** Click Next to save the record.

## Create Location Type Table (MMS057)

This settings document explains and exemplifies how to define different allocation tables that will be used to allocate to location type. This is done in 'Item. Connect Stock Location Type' (MMS057).

In (MMS057) you can also set up tables that will be used for system directed goods receiving and put away to location type. This is described in the document [Basic Settings for System-Directed Put-Away](#) on page 230.

### Outcome

The location type table determines allocation according to location type.

The location type table is stored in the MITWLT file.

Rules that can be determined per location type:

- Minimum quantity allocation
- Sequencing of location type searching
- Normal quantity determines the multiple used for allocation
- Remaining quantity: Used so certain quantity breaks only get allocated from their designated location type, even if it means waiting for more stock to arrive.
- Allocate to empty: Allocate only if the allocation will empty this balance ID's location.
- Exclude some order types: Do not allocate from certain location types for certain order types.

### Before you start

- Location types are defined.
- Basic settings for auto allocation must be done. See [Basic Settings for Automatic Allocation](#) on page 291.

### Examples for how to use (MMS057)

- **Minimum quantity**

Required quantity directs allocation to search certain location types according to this field.

Allocation:

- Try to allocate full pallets from location type P2.
- If there is remaining quantity to be allocated, try to allocate all of it in a location from location type P2.
- If there is still remaining quantity to be allocated, try to allocate from locations with type P1.

Min Qty	Seq	Locn Type	Normal Qty	Max Qty	Rem Qty Ctl	Use for Put-away	Alloc Empty	Exclude Ord Type
0	10	P1	120	130	no	no	no	
24	10	P2	120	120	no	yes	yes	
120	10	P2	120	120	no	no	no*	

\* This also means that only multiples are allocated.

- Sequencing of location type searching**

Enables a sequenced search among location types.

Allocation will first take place from drive-in pallet locations (DR), then from single pallet locations (P2).

Min Qty	Seq	Locn Type	Normal Qty	Max Qty	Rem Qty Ctl	Use for Put-away	Alloc Empty	Exclude Ord Type
0	10	P1	120	130	no	no	no	
24	10	P2	120	120	no	yes	yes	
120	10	P2	120	120	no	no	no	
120	20	DR	480	480	no	yes	no	

- Normal quantity determines the multiple used for allocation**

Normal quantity determines the multiple used for put away and allocation.

Maximum quantity determines the percentage filled (if the fill-rate calculation is activated).

Fill rate is used when checking capacity during put away.

Min Qty	Seq	Locn Type	Normal Qty	Max Qty	Rem Qty Ctl	Use for Put-away	Alloc Empty	Exclude Ord Type
0	10	P1	<b>120</b>	130	no	no	no	
24	10	P2	<b>120</b>	120	no	yes	yes	
120	10	P2	<b>120</b>	120	no	no	no	
120	20	DR	<b>120</b>	480	no	yes	no	

- Remaining quantity**  
Certain quantity breaks *only* get allocated from their designated location type—even if it means waiting for more stock to arrive.  
This can mean, for example, that if a full pallet is ordered, it will not be shipped as two halves.
- Allocate to empty: Allocate only if it will empty the location for this balance ID**  
Allocate only if it will empty the location for this balance ID, MMS057/E.
- Exclude certain order types**  
Do not allocate from certain location types for certain order types, that is never allocate replenishments from a picking location.

### Follow these steps

- 1 Start 'Item. Connect Location Type' (MMS057).
- 2 Specify the information in the fields belonging to Automatic Allocation Settings.

Program ID/ Panel	Field	The field indicates ...
(MMS057/B)	Sorting order	... how to display information on the panel by selecting an sorting order. There are three valid alternatives.
(MMS057/B)	Sequence number	... the sequence number that can be used if you want to have more than one entry for the same key and minimum quantity. The sequence number will, under these circumstances, determine the sequence in which entries in this table are used.
(MMS057/B)	Minimum storage quantity	... the minimum permitted quantity that may be put away in a location that belongs to the specified location type.  This quantity is used as the quantity key when determining which stock location type to use in both put-away and allocation.  If this quantity is 0, then multiples will be ignored during the allocation process, meaning that quantities other than multiples of the normal quantity may be allocated.
(MMS057/B)	Location type	... a group of locations based on characteristics (size etc.).

Program ID/ Panel	Field	The field indicates ...
(MMS057/B)	Item no.	... an item number for group type 1 and a distribution group technology for group type 2.
(MMS057/B)	Group type	<p>... the group type that the group key refers to.</p> <p>The valid alternatives are:</p> <p>1 = Item number (MMS200) 2 = Distribution group technology (MMS043).</p>
(MMS057/E)	Normal storage quantity	<p>... the quantity that is the recommended storage quantity for this location type.</p> <p>If the minimum quantity is not 0 and the 'Allocate to empty' field is 0 (deactivated), then only multiples of this quantity will be allocated.</p>
(MMS057/E)	Remaining quantity allocation control	<p>... how to allocate the remaining quantity if the location type is already fully allocated.</p> <p>The valid alternatives are:</p> <p>0 = Try to allocate remaining quantity to next location type. 1 = Do not try to allocate remaining quantity to next location type.</p> <p>See the example in the field help.</p>
(MMS057/E)	Use at put away	<p>... whether this table entry can be used for finding location types using quantity multiples for put-away.</p> <p>Regardless of the selected value for this field, all records will be considered during allocation if you are using allocation method 2.</p>

Program ID/ Panel	Field	The field indicates ...
(MMS057/E)	Allocate to empty location	<p>... whether balance IDs found during allocation should only be allocated if they will empty the location of the balance ID.</p> <p>The valid alternatives are:</p> <p>0 = No, allocate in any event</p> <p>1 = Yes, allocate only if balance IDs will empty the location.</p> <p>The field indicates also whether, when using this item-location connection entry, stock can only be allocated from a location of this location type if the allocation will be for more than or equal to the total quantity of the balance ID.</p> <p>If this flag is on, then allocation will ignore multiples, that is, less than multiple quantities can be allocated.</p>
(MMS057/E)	Exclude reference order category	<p>... the specific order type which is prevented from using this item-location connection entry.</p> <p>The following alternatives are valid:</p> <ul style="list-style-type: none"> <li>1 = Manufacturing order</li> <li>2 = Purchase order</li> <li>3 = Customer order</li> <li>4 = Requisition order</li> <li>5 = Distribution order</li> <li>6 = Work order</li> <li>7 = Service order</li> <li>8 = Project order</li> <li>9 = Claim order.</li> </ul> <p>This could be used, for example, to prevent customer orders from being picked from certain location types.</p>

# Create View and Sorting Order in (MWS410)

This document explains how to set the view and sorting order for an allocation view in (MWS410). This is only necessary when manual release for automatic allocation is used.

**Note:** Selecting too many records when you create views and sorting orders in (MWS410) and (MWS411) can cause performance issues.

## Outcome

A user-defined view and sorting order is available in 'Delivery. Open Toolbox' (MWS410).

View and sorting orders in (MWS410) are used when manual release for automatic allocation is used.

## Before You Start

No prerequisites are needed.

## Follow These Steps

### Generate Standard Views and Sorting orders

The view sets the sorting order and column layout. The sorting order sets the selections available as specified in the Sorting order field.

- 1 Start 'Delivery. Open Toolbox' (MWS410), open the P panel.
- 2 Press F14=Generate standard. This generates a number of pre-defined views with their sorting orders.
- 3 Redisplay the B panel.

**Note:** If you have made changes in the pre-defined views and press F14=Generate standard, you will lose all your changes.

If you first have generated the pre-defined views and then have made new views and again press F14, the new ones will still be there.

### Create View

- 1 Start 'Delivery. Open Toolbox' (MWS410); select the B panel.
- 2 Start 'View. Open' (CRS020) by pressing F4 twice when filling in the 'View' field.
- 3 Enter MWS410 in the 'Program name' field. This indicates the program in which the view should be used.
- 4 Enter the name of the view in the 'View' field, for example, REL ALLOC.
- 5 Open the E panel and enter the database fields included in the view for the delivery file (MHDISH) in the 'Field' fields.

Here is a useful example for allocation release (MHDISH file):

Field	Text
OQDLIX	delivery number
OQDPOL	dispatch policy
OQRLFA	released for allocation

Field	Text
OQRLTD	released for picking
OQPGRS	progress status
OQWHLO	warehouse

These are retrieved from (CRS109) and are the database fields included in the delivery file (MHDISH).

- 6 Open the F panel and fill in the Description and Name fields. Press Enter.
- 7 (MWS410/B) is redisplayed. Select the view created, for example, REL ALLOC.

#### Create Sorting order

- 1 On the (MWS410/B) panel, press F4 twice in the 'Sorting order' field. This starts 'Sorting order. Open' (CRS022). Define an sorting order in the 'Sorting order' field.
- 2 Open the E panel and fill in the Description and Name fields.
- 3 Fill in the 'Sorting option' field. Press F4 twice to start 'Sorting Option. Open' (CRS021). Be sure that MHDISH is displayed in the File field.
- 4 Fill in the sorting option in the 'Sorting option' field.
- 5 Open the E panel and fill in the Description and Name fields.
- 6 Enter OQCONN (shipment)in the 'Key 1' field.
- 7 Enter OQDLIX (delivery number) in the 'Key 2' field.
- 8 There is nothing to enter on the F and T panels.
- 9 After pressing Enter, (CRS022/E) is redisplayed. Select the created sorting option in the 'Sorting option' field.

#### Open Created View

- 1 Start 'View. Open' (CRS020) by pressing F4 twice in the 'View 1' field. Select the created view, for example, REL ALLOC.
- 2 Press Enter, and (CRS022/E) is redisplayed.
- 3 Open the (CRS022/F) panel.
- 4 Create a selection table by pressing F4 twice in the 'Selection table' field. This starts 'Selection Table. Open' (CRS023). Define a selection table and redisplay (CRS022/F) with the created selection table.
- 5 In the 'Sequence number' field, enter 0 for 'From value' and 'To value'.
- 6 Press Enter until the (CRS022/B) panel is redisplayed.
- 7 Select the created sorting order by selecting option 1. (MWS410) is redisplayed with the created view and sorting order.

**Parameters to Set**

<b>Program ID/ Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MWS410/B)	View	<p>... the view (information) displayed from the delivery number file (MHDISH).</p> <p>The sorting order specified in the 'Sorting order' field determines sorting order and search capabilities.</p>
(CRS020/B)	Program name	... the program in which the view is used.
(CRS020/E)	Field	<p>... the information from the file to be displayed.</p> <p><b>Example:</b> The following two fields are selected in a view from the delivery (MHDISH) file: OQDLIX delivery number OQRLFA released for allocation.</p>
(MWS410/B)	Sorting order	<p>... the sorting order used to view information. The sorting order determines the sorting order and search possibilities.</p> <p>The information displayed on the panel is controlled by the view entered.</p>
(CRS022/E)	Sorting option	<p>... the ID of a unique setup that is used to sort a file. Sorting options can be used to create user-defined sorting orders.</p> <p>Sorting is controlled by selected sorting fields and by their order (that is, how they are related to each other).</p> <p>When a sorting option is activated, a logical file is created for the selected physical file.</p>
(CRS022/F)	Selection table	... which field values in a file should exist to qualify a record for different purposes.
(CRS022/F)	Sequence number	... the sequence in which the information should be displayed.

# Define Settings for Allocation Priority Model

This document explains how you create and maintain the allocation priority model.

## Before you start

The settings for batch allocation must be defined. Refer to these documents:

See [Batch Allocation Settings](#) on page 350

See [Basic Batch Allocation Settings](#) on page 285

## Follow these steps

### Create an object control table

- 1 Start 'Available Object Control Parameters. Open' (CMS016). Select Allocation Priority and select option 11=Object table detailed lines.
- 2 'Generic Object Control Table. Open' (CMS017/B) is started.  
Set the 'Panel sequence' field to E (T) 1.
- 3 Enter program ID (MMS182).
- 4 On the E panel enter:
  - The valid allocation priority model for this object table.
  - Status 20.
  - Priorities from 0 to 9 in the Sequence field. By default, sequence 10 corresponds to priority 0, 20 to priority 1, and so on up to sequence 100, which corresponds to priority 9.
  - The 'Field 1 (2, 3, 4 or 5)' fields with the selected fields from the field group. Press F4 twice to select fields. This starts 'Field Group. Display Permitted Fields' (CRS109).
- 5 On the (CRS109/B) panel, in the 'Field group' field, enter MMAP2 – Allocation prio model. Selection.
- 6 Select fields and redisplay (CMS017/E).
- 7 Press Enter until you start 'Allocation Priority Model Selection Table. Open' (MMS182).

### Create values for the object control table

- 1 On the (MMS182/B) panel, define values for the fields in each priority.
- 2 The 'Start value 1 (2, 3, 4 and 5)' fields are the first, second, third, fourth and fifth values to be compared with the contents of a control object. Fill in these fields and open the E panel.
- 3 If applicable, enter a valid to date on the E panel.
- 4 Enter the allocation priority that should be used for start values.

**Parameters to set**

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
(MMS181/B)	Alloc prio mod	...is the ID of a specific allocation priority model. The ID must first be created in MMS181 to be able to be used in CMS017.
(CMS016/B)	Object control parameter	...the available object control parameter, where you can define your objects and values.
(CMS017/B)	Program name	... the program that is used for the object control table. In this case, enter MMS154 here.
(CMS017/E)	Alloc prio mod	...is the allocation priority model ID. Must exist in MMS181.
(CMS017/E)	Priority	<p>... the sequence in which each information field should be displayed.</p> <p>To change the sequence, switch the numbers. To add new information fields, enter the numbers and names of the desired information fields.</p> <p>Example:</p> <p>To add a new information field between 10 and 20, assign this new field a number between 11 and 19. Press ENTER. The new field is then placed in the correct order.</p>
(CMS017/E)	Field 1, 2, 3, 4, 5	<p>... a field or data element from a specific file.</p> <p>It is used to create keys or search paths for user-defined tables and also to create the contents of user-defined files.</p> <p>These fields will be protected if entries are found in (MMS182). That means that you cannot enter these fields if they are 'in use'.</p>

Program ID/Panel	Field	The field indicates...
(CMS017/E)	Status	<p>... the status for the generic object control table.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>10 = Preliminary</li> <li>20 = Definite</li> <li>90 = Blocked/expired.</li> </ul>
(CRS109/B)	Field group	<p>... a grouping of several fields from different files that regulate matrix entries. In this case, the MMAP2 field group will be selected.</p> <p>Field groups are system-defined and cannot be changed.</p>
(MMS182/B)	Priority	<p>... the table priority from the table in (CMS017). When searching for allocation priority, tables are searched in order of priority for a set of rules that correspond to the specified object values. These sets of rules are displayed below as 1, 2 or 3 fields called the 'Start value 1, 2, 3, 4, 5' field.</p>
(MMS182/B)	Start value 1, 2, 3, 4, 5	<p>... the first, second, third, fourth and fifth valid value to be compared with the contents of a control object. If the contents are greater than or equal to this start value, the record will be accepted.</p> <p>If there are several start values, the one that is the closest to the lowest value is valid.</p> <p>Example: Start value 1 could be 'Product group'. Select a product group by pressing F4=Prompt. Start value 2 could be 'Item no'. Select an item number by pressing F4. Start value 3 could be 'Customer no.' Select a customer number by pressing F4.</p>

Program ID/Panel	Field	The field indicates...
(MMS182/E)	Allocation priority	<p>...is a value that sets the order of performing allocation between selected demand lines in a specific batch allocation run.</p> <p>Example 1:</p> <p>Demand order line 1 will get allocation priority 4000 from one record in MMS182 while demand order line 2 will get allocation priority 2000 from another record in MMS182. The result will be that demand order line 2 will be selected for allocation before demand order line 1.</p> <p>...is also to be seen as allocation priority group. If distribution method 3 (allocation priority with fair share) is selected in MMS189, then the allocation priority is used as both a priority value (see above) but also as an allocation priority group value.</p> <p>Example 2:</p> <p>All demand order lines with the same allocation priority will be seen as one allocation priority group. When batch allocation is run, a validation is performed if allocatable net is enough to fulfill all demand lines within an allocation priority group. If so, all demand lines will be fully allocated as normal. If not, then fair share distribution will be used among these demand order lines to spread the remaining allocatable net. For the following demand order lines (connected to a lower prioritized allocation priority group) will not be allocated at all.</p> <p><b>Note:</b> The allocation priority group functionality is only valid if distribution method 3 (allocation priority with fair share) is used.</p>

## Outcome

A generic object control table is created with allocation priority.

The following tables are updated:

- The CROBJC table in 'Generic Object Control Table. Open' (CMS017).
- The MITAPD table in 'Allocation Priority Model Selection Table. Open' (MMS182).

A generic control table is used to set an allocation priority for each demand order line that is selected to be included in a batch allocation run. These rules are user defined.

# Define Settings for Batch Allocation Limits

This document explains how you create and maintain the minimum and maximum allocation limits.

## Limitations

Allocation limits are only considered when performing batch allocation. You can use the limits for customer orders, distribution orders, and requisition orders only.

Automatic release for picking is not supported, since validation of the limits cannot be performed before actual allocation takes place, and deallocation might be needed if validation fails.

## Before you start

The settings for batch allocation must be defined. Refer to these documents:

See [Batch Allocation Settings](#) on page 350

See [Basic Batch Allocation Settings](#) on page 285

## Follow these steps

### Create an object control table

- 1 Start 'Available Object Control Parameters. Open' (CMS016). Select Allocation limits and select option 11=Object table detailed lines.
- 2 'Generic Object Control Table. Open' (CMS017/B) is started.  
Set the 'Panel sequence' field to E (T) 1.
- 3 Enter program ID (MMS154).
- 4 On the E panel enter:
  - Status 20.
  - Priorities from 0 to 9 in the Sequence field. By default, sequence 10 corresponds to priority 0, 20 to priority 1, and so on up to sequence 100, which corresponds to priority 9.
  - The 'Field 1 (2, 3, 4 or 5)' fields with the selected fields from the field group. Press F4 twice to select fields. This starts 'Field Group. Display Permitted Fields' (CRS109).

- 5 On the (CRS109/B) panel, in the 'Field group' field, enter MMAL1 – Allocation min/max limits. Selection.
- 6 Select fields and redisplay (CMS017/E).
- 7 Press Enter until you start 'Allocation Min/Max Limits Sel Table. Open (MMS154)'.

#### Create values for the object control table

- 1 On the (MMS154/B) panel, define values for the fields in each priority.
- 2 The 'Start value 1 (2, 3, 4 and 5)' fields are the first, second, third, fourth and fifth values to be compared with the contents of a control object. Fill in these fields and open the E panel.
- 3 Enter the limit quantity, allocation deviation type, and deallocation rule on the E panel.
- 4 If the deallocation rule is set to 3 (Deallocation group), also enter the 'Deallocation group' field. This starts 'Field Group. Display Permitted Fields' (CRS109). The valid fields are contained in the MMAL1 field group.

#### Parameters to set

Program ID/Panel	Field	The field indicates...
(CMS016/B)	Object control parameter	... the available object control parameter, where you can define your objects and values.
(CMS017/B)	Program name	... the program that is used for the object control table. In this case, enter MMS154 here.
(CMS017/E)	Priority	<p>... the sequence in which each information field should be displayed.</p> <p>To change the sequence, switch the numbers. To add new information fields, enter the numbers and names of the desired information fields.</p> <p>Example:</p> <p>To add a new information field between 10 and 20, assign this new field a number between 11 and 19. Press ENTER. The new field is then placed in the correct order.</p>

Program ID/Panel	Field	The field indicates...
(CMS017/E)	Field 1, 2, 3, 4, 5	<p>... a field or data element from a specific file.</p> <p>It is used to create keys or search paths for user-defined tables and also to create the contents of user-defined files.</p> <p>These fields will be protected if entries are found in (MMS154). That means that you cannot enter these fields if they are 'in use'.</p>
(CMS017/E)	Status	<p>... the status for the generic object control table.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>10 = Preliminary</li> <li>20 = Definite</li> <li>90 = Blocked/expired.</li> </ul>
(CRS109/B)	Field group	<p>... a grouping of several fields from different files that regulate matrix entries. In this case, the MMAL1 field group will be selected.</p> <p>Field groups are system-defined and cannot be changed.</p>
(MMS154/B)	Priority	<p>... the table priority from the table in (CMS017). When searching for batch allocation min/max limits, tables are searched in order of priority for a set of rules that correspond to the specified object values. These sets of rules are displayed below as 1, 2 or 3 fields called the 'Start value 1, 2, 3, 4, 5' field.</p>

Program ID/Panel	Field	The field indicates...
(MMS154/B)	Start value 1, 2, 3, 4, 5	<p>... the first, second, third, fourth and fifth valid value to be compared with the contents of a control object. If the contents are greater than or equal to this start value, the record will be accepted. If there are several start values, the one that is the closest to the lowest value is valid.</p>
		Example:
		Start value 1 could be 'Product group'. Select a product group by pressing F4=Prompt.
		Start value 2 could be 'Item no'. Select an item number by pressing F4.
		Start value 3 could be 'Customer no.' Select a customer number by pressing F4.
(MMS154/B)	Limit type	<p>... defines minimum or maximum allocation limit</p> <p>0 = Min</p> <p>1 = Max</p>
(MMS154/E)	De-allocation group	<p>... a set of object values to be used to determine which group of order lines will be affected if the group allocation test fails. Allocated quantity is also aggregated on these values if 'Alloc dev type' is set to 2-Group</p> <p>These grouping parameters only apply if the 'Dealloc rule' is set to 3 (MMS154/E).</p>
(MMS154/E)	Limit quantity	<p>... the allocation limit quantity. Quantity from a single demand line or aggregated quantity for a group of demand lines within the same order is validated against this limit depending on 'Alloc dev type'.</p>

Program ID/Panel	Field	The field indicates...
(MMS154/E)	Allocation deviation type	<p>... defines limit applies to a single demand order line or to a group of demand order lines</p> <p>1 = Line 2 = Group</p>
(MMS154/E)	Deallocation rule	<p>... defines the demand order lines that are affected if the limit validation fails</p> <p>1 = Only the line tested 2 = The entire order 3 = The deallocation group</p>

#### Outcome

A generic object control table is created with allocation min/max limits.

The following tables are updated:

- CROBJC in 'Generic Object Control Table. Open' (CMS017)
- MITALD in 'Allocation min/max limits Sel Table. Open' (MMS154)

A generic control table is used to set allocation limits for each demand order line that is selected to be included in a batch allocation run. These rules are user defined.

## Define Settings for Joint Delivery Rules

This document explains how you define settings for joint delivery rules.

#### Outcome

A generic object control table is created with joint delivery rules.

A generic control table is used to check if a group of order lines pass or fail for dispatch according to the joint delivery rules. These rules are user-defined.

The following tables are updated:

- The table in 'Generic Object Control Table. Open' (CMS017) (CROBJC).
- The table in 'Joint delivery Rules' (MWS125) (MADJNT).

## Before you start

Program ID/Panel	Field	The field indicates ...
(MMS002/G)	Allocation method	... how allocation is carried out for each item/warehouse combination. When you use joint delivery rules you can select allocation method 1–5 (manual allocation and automatic allocation)
(CMS016/B)	Object control parameter	... the available object control parameter, where you can define your objects and values.
(CMS017/B)	Program name	... the program that is used for the object control table. In this case, enter MWS125 here.
(CMS017/E)	Warehouse	... the warehouse for which this object control table is valid.
(CMS017/E)	Priority	...the sequence in which each information field should be displayed. To change the sequence, switch the numbers. To add new information fields, enter the numbers and names of the desired information fields. Example: To add a new information field between 10 and 20, assign this new field a number between 11 and 19. Press ENTER. The new field is then placed in the correct order.
(CMS017/E)	Field 1, 2 ,3 ,4	... a field or data element from a specific file. It is used to create keys or search paths for user-defined tables and also to create the contents of user-defined files. <b>Note:</b> These fields will be protected if entries are found in (MWS125). That means that you cannot enter these fields if they are 'in use'.
(CMS017/E)	Status	...the status for the generic object control table. The valid alternatives are: 10 = Preliminary 20 = Definite 90 = Blocked/expired.
(CRS109/B)	Field group	...a grouping of several fields from different files that regulate matrix entries. In this case, the MMAD4 field group will be selected. Field groups are system-defined and cannot be changed.
(MWS125/B)	Priority	... the table priority from the table in (CMS017). When searching for joint delivery rules, tables are searched in order of priority for a set of rules that correspond to the specified object values. These sets of rules are displayed below as 1, 2 or 3 fields called the 'Start value 1, 2, 3, 4' field.

Program ID/Panel	Field	The field indicates ...
(MWS125/B)	Start value 1, 2, 3, 4	<p>... the first, second, third and fourth valid value to be compared with the contents of a control object. If the contents are greater than or equal to this start value, the record will be accepted.</p> <p>If there are several start values, the one that is the closest to the lowest value is valid.</p> <p>Example: Start value 1 could be 'Product group'. Select a product group by pressing F4=Prompt.</p> <p>Start value 2 could be 'Item no'. Select an item number by pressing F4.</p> <p>Start value 3 could be 'Customer no.'. Select a customer number by pressing F4.</p>
(MWS125/E)	De-allocation group	<p>... a set of object values to be used to determine which group of order lines will be de-allocated or held if the group allocation test fails.</p> <p>These grouping parameters only apply if the 'Dealloc rule' is set to 3 (MWS125/E).</p>

### Follow these steps

#### Create an object control table

- 1 Start 'Available Object Control Parameters. Open' (CMS016). Select Joint delivery rule and select option 11=Object table detailed lines.
- 2 'Generic Object Control Table. Open' (CMS017/B) is started.  
Set the 'Panel sequence' field to E (T) 1.
- 3 Enter program name MWS125.
- 4 On the E panel enter:
  - The valid warehouse for this object table
  - Status 20
  - Priorities from 0 to 9 in the Sequence field.

By default, sequence 10 corresponds to priority 0, 20 to priority 1 and so on up to sequence 100, which corresponds to priority 9.

  - The 'Field 1(2, 3 and 4)' fields with the selected fields from the field group. Press F4 twice to select fields. This starts 'Field Group. Display Permitted Fields' (CRS109).
- 5 On the (CRS109/B) panel, in the 'Field group' field enter MMAD4 – Joint delivery rules.
- 6 Select fields and redisplay (CMS017/E).
- 7 Press Enter until you start 'Joint Delivery Rule. Open' (MWS125).

#### Create values for the object control table

- 1 On the (MWS125/B) panel, define values for the fields in each priority.

- 2** The 'Start value 1, (2, 3 and 4)' fields are the first, second, third and fourth values to be compared with the contents of a control object. Fill in these fields and open the E panel.
- 3** Enter a description field on the E panel.
- 4** Press F4 twice in the 'De allocation group' field. This starts 'Field Group. Display Permitted Fields' (CRS109). The valid fields are contained in the MMAD3 field group.

## Create Packaging Group

This document explains how to create and maintain packaging groups in 'Packaging Group. Open' (MMS047).

The packaging group is used in the process of packaging items into cartons. It controls which type of packaging the system may select.

### Outcome

The packaging group associated with a warehouse/dispatch policy combination determines how the cartonization is handled. Only packaging associated with the packaging group defined in the Cartonization settings in 'Cartonization Selection Table. Open' (MWS185) may be selected.

### Before You Start

No prerequisites exist.

### Follow These Steps

- 1** Start 'Packaging Group. Open' (MMS047).
- 2** On the B1 panel, enter an identifier in the 'Packaging group' field and select the Create option.
- 3** On the E panel, enter a description and name in the respective fields.
- 4** Click Next to save the record.
- 5** Start 'Cartonization Selection Table. Open' (MWS185) to associate the desired packaging group to warehouse/dispatch policy combination.
- 6** Enter the Warehouse and Dispatch Policy in the respective fields and select the Create option.
- 7** On the E panel, select the desired 'Packaging group' ID and click Next to save.

## Connect Item to Standard Packaging

This document explains how to connect an item ID to a standard packaging ID in 'Item. Connect Standard Packaging' (MMS055).

## Outcome

After a packaging ID has been defined in 'Packaging. Open' (MMS050), (MMS055) allows you to connect it to any existing Item ID as defined in 'Item. Open' (MMS001). For example, an item ID for juice could be connected to a standard packaging ID that represents a carton.

## Before You Start

Refer to these documents on how to create items and packaging IDs:

- [Creating Items in Different Ways](#) on page 836
- [Define Settings for Packing](#) on page 374

## Follow These Steps

- 1 Start 'Packaging. Open' (MMS050).
- 2 On the B1 panel, enter or select an existing identifier in the 'Item number' and the 'Packaging' fields respectively.
- 3 Select the Create option.
- 4 On the E panel, enter a value in the 'Packaging quantity' field.  
This field represents the quantity of the item which can be included for the associated packaging ID. It is used for informational purposes only
- 5 Click Next to save the record.

# Define Settings for Managing Crates

This document describes the settings that you must define to manage crate on deliveries.

## Outcome

Crates can be registered on an outbound delivery.

## Before You Start

No prerequisites.

## Follow These Steps

- 1 In 'Packaging Type. Open' (DRS080), define a type for crate with parameter "Crate" set to 1. Crates can be included in packaging ledger and packaging actions. For crates, auto "create packaging" cannot be activated, package numbering method and formatting ID cannot be used.
- 2 In 'Packaging. Open' (MMS050), define a crate packaging using the above type. Packaging group cannot be provided. If the packaging type has an order line creation method, provide an item that will represent

the packaging for the packaging actions. If an item is connected to the packaging, it cannot be lot managed. The item should not be defined with container management in the warehouses it is used.

- 3 In 'Dispatch Policy. Open' (MWS010), set the '240 Packing reporting method' field to 1, 2, 3 or 4.

#### Parameters to Set

Program ID/ Panel	Field	The field indicates...
(DRS080)	Crate	<p>... if the packaging is a crate.</p> <p>Alternatives</p> <p>0 = No</p> <p>1 = Yes</p> <p>Crates are cases used to ease the manipulation of goods during the outbound delivery. Crates are identified per delivery by a packaging and a quantity. Crates do not have a package number, package label and any content in M3.</p>
(DRS080)	Order line creation method	<p>... the action to take to create an order line.</p> <p>Alternatives</p> <p>0 = None</p> <p>1 = Add line to order (CO/DO/RO)</p> <p>2 = Create new requisition order</p> <p>For alternative 1, the packaging is added as an order line on the first order for the delivery. The added order line will be automatically issued.</p> <p>For alternative 2, a requisition order is created for the packaging regardless whether the packaging was used for a CO, DO or RO. The requisition order will be created using the order type specified for the packaging type.</p>
(DRS080)	Include in packaging ledger	<p>... whether the packaging of this packaging type is included in the packaging ledger.</p> <p>Select the check box to include in the packaging ledger.</p>
(MMS050)	Packaging Type	<p>The packaging type is used to group different packagings or containers.</p> <p>Select one that is activated for crate management.</p>

Program ID/ Panel	Field	The field indicates...
(MWS010)	Packing reporting method	<p>...whether packing processing is used and how.</p> <p>The valid alternatives for crate management are:</p> <p>1 = Manual simple packing. Simple packing involves packages and weight only. You cannot predefine certain items for certain packages, etc.</p> <p>Advanced packing is when all picking lines are packed in one or several packages with defaults according to the table in (MMS053).</p> <p>2 = Manual advanced packing</p> <p>3 = Automatic advanced packing when picking list moved to packing location. Delivery status must be 50=Moved to packing location.</p> <p>4 = Automatic advanced packing when picking list printed.</p>

## Define Settings for Packing

This document describes the settings that you must define for manually or automatically packing goods for outbound dispatching.

### Outcome

- The goods can be reported as packed.
  - The packages can be packed into other packages.
- Packages are stored in the MITPAC file.

Packing is used for safe shipping and unitizing one or more items for an order. It is also used for placing items into an appropriate container package, and marking and labeling the container or package with customer shipping destination data, as well as other required information, such as delivery documents.

### Before You Start

No prerequisites.

### Follow These Steps

#### Packing Settings for Divisions

- 1 Start 'Settings - Packing' (CRS706/E). Enter the company unique UCC/EAN code.
- 2 If you will use advanced packing (see below) you also fill in the 'Package content', 'Find existing package no for manual pack' and 'Warning closed delivery' fields.

#### Settings for Simple Packing

Simple packing involves packages and weight only. No details are entered or kept of the contents of the packages, only what packages are in the delivery and their weight and volume, etc.

- 1** In 'Dispatch Policy. Open' (MWS010), you must set the '240 Packing reporting method' field to 1-'Manual simple packing'.
- 2** Define a type of packaging in 'Packaging. Open' (MMS050). Enter an ID in the 'Packaging' field. On the E panel, enter a packaging name and the location type.
- 3** The 'Packaging type' field must also be filled in with a packaging type that is defined in 'Packaging Type. Open' (DRS080). Read more about (DRS080) in [Define Settings for Packaging Actions](#) on page 379.
- 4** During the dispatch flow, simple packing involves entering only packages and weights in 'Delivery. Connect Packages' (MWS423).

### Settings for Advanced Packing

Advanced packing is when all picking lines are packed in one or several packages, with defaults according to the table in 'Item.Connect packaging' (MMS053). With advanced packing, both the packages and their contents are known. Weights are estimated based on tare and the weight of the contents.

- 1** There are three variants of advanced packing to select between in 'Dispatch Policy. Open' (MWS010) in the '240 Packing reporting method' field. Select 2, 3, or 4.
- 2** Specify the 'Allow packing different items in the same package' field.
- 3** The 'Automatic execution of packaging actions' field indicates whether packaging actions should be executed automatically as soon as a delivery is fully packed or is confirmed as shipped.
- 4** You define a packaging type in 'Packaging. Open' (MMS050). Enter an ID in the Packaging field. On the E panel, enter a packaging name and the location type.
- 5** The 'Packaging type' field must also be filled with a packaging type that is defined in 'Packaging Type. Open' (DRS080).
- 6** Specify the Weight, Volume, Length, Width and Height fields for the packaging.
- 7** In advanced packing, you must connect the packaging per item and/or customer to have the item, lot number and/or order line packed in a specific type of packaging. Start 'Item. Connect Packaging' (MMS053).
- 8** On the (MMS053/B) panel, specify the sorting order as 1=Per item or 2=Per item group.  
Alternative 3 is only used if a package should be packed in another package. See further down in this document for more information.
- 9** Specifying packaging terms on the (MMS053/B) panel is optional. Packaging terms are printed on the picking list to inform the packing personal about the conditions. You must, however, specify item number and/or customer number. You must also specify the quantity, which indicates the maximum total quantity of the items to be packed, expressed in basic of U/M.

M3 searches for packaging set up in this sequence:

- Customer – Delivery address – Item
- Customer – Delivery address – Item group
- Customer – blank – Item
- Customer – blank – Item group
- Blank – blank – Item
- Blank – blank – Item group
- Customer – Delivery address – blank
- Customer – blank – blank

Blank – blank – blank

**10** On the E panel, press F4 in the 'Packaging' field. This starts 'Packaging. Open' (MMS050). Select a type of packaging to connect to the item/customer.

**11** You can define a customer packaging ID to be printed on labels, as well as a packaging code.

The 'Standard quantity' field is used to calculate the number of packages when performing automatic packing.

The 'Minimum quantity' field controls the minimum quantity to be packed during manual packing.  
The 'Maximum quantity' field indicates the maximum quantity that is usually handled for the item/package combination, which is checked during manual packing.

Example: You have set automatic packing, have 14 items to pack and the minimum quantity is set to 12. M3 automatically packs 12 items. You have to pack the remaining 2 items manually.

### **Settings for Packing Packages into Other Packages**

You have the possibility to pack packages into other packages. For example, items are packed in boxes and the boxes are packed on pallets. This can be done by using manual advanced packing (packing reporting method 2) or by using automatic advanced packing (packing reporting method 3 or 4). If you want to use method 3 or 4, you must define some additional settings in (MMS053).

#### **Note:**

- First level of packing (for example, items packed in boxes) can be performed automatically (method 3 or 4) or manually (method 2).

• Second level of packing (for example boxes packed on pallets) is always performed manually in (MWS423).

**1** When you have connected packaging to an item, you have to also connect packaging to the packaging. For example, you have to connect the boxes to the pallets. On the (MMS053/B) panel, select sorting order 3-'Per package'.

**2** Press F4 in the 'Packaging' field. This start (MMS050), where you select the packaging (such as boxes) to which you connected the item. Enter a quantity in the Quantity field, for example 999999.

**3** In the 'Packaging' field on the E panel, start (MMS050) again and select another type of packaging to pack this packaging into. For example, if you want to pack items in boxes on pallets, then you should select a type of packaging called Pallets.

**4** Enter the quantity to be packed in each type of packaging in the 'Standard quantity' field.

This could, for example, be that the items should be packed in boxes and the boxes should be packed on pallets. There should be 5 items in each box and 10 boxes on each pallet.

**Parameters to Set**

<b>Program ID/ Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(CRS706/B)	Division	<p>..the division for which these packing settings applies to. Division 'blank' means that the settings applies fore the whole company.</p> <p>Example: Company 100. Divisions AAA and BBB</p> <p>If you first create settings for company 100, division blank (valid for the whole company) and then the different settings for division AAA, then the settings for division AAA will override the settings for division blank.</p>
(CRS706/E)	UCC/EAN company number	<p>...the company-unique UCC/EAN number required to create SSCC (Serial Shipping Container code) numbers.</p> <p>SSCC numbers are used to identify packages and are automatically assigned to a package when it is created.</p>
(CRS706/E)	Package content	<p>...if the package content indicator should be updated for each package. The package content indicates that different item numbers are packed in the package.</p> <p>The alternatives are:</p> <p>0 = No, do not update package content.</p> <p>1 = Yes, update package content if different items exists in the same package.</p> <p>This parameter could affect the system performance when packaging structures are used, otherwise it is irrelevant.</p>

Program ID/ Panel	Field	The field indicates ...
(CRS706/E)	Find existing package no for manual pack	<p>...how the package number should be found when performing manual pack. It only applies when the package number is left blank and option 16 is used to pack a line.</p>
		<p>When switched on, the package number will be found by searching for suitable packages that still have space in them. Suitable packages are those with the correct packaging code and standard quantity as set in (MMS053).</p>
		<p>When left off the last package used will continue to be used.</p>
		<p>An order contains 4 lines for the same item, each with quantity 1. The packing instructions point to packaging BOX with a standard quantity of 3. I go to manual pack (MMS424) and am presented with the 4 lines to be packed. I take option 17 on the 1st line, option 16 on the 2nd, option 17 on the 3rd and option 16 on the 4th. The results will be like this:</p>
		Line 1 2 3 4
		Flag On 1 1 2 1
		Flag Off 1 1 2 2
(CRS706/E)	Warning closed delivery	<p>...if a warning will be issued if a user tries to change details of a package that belong to a delivery that has already been issued. A delivery is considered to have been issued if its status is greater than or equal to 60.</p>

Program ID/ Panel	Field	The field indicates ...
(MWS010/G)	240 Packing reporting method	<p>...whether packing processing is used and how.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>0 = Packing not used</li> <li>1 = Manual simple packing. Simple packing involves packages and weight only. You cannot predefine certain items for certain packages, etc.</li> <li>Advanced packing is when all picking lines are packed in one or several packages with defaults according to the table in (MMS053).</li> <li>2 = Manual advanced packing</li> <li>3 = Automatic advanced packing when picking list moved to packing location. Delivery status must be 50=Moved to packing location.</li> <li>4 = Automatic advanced packing when picking list printed.</li> </ul>
(MMS050)	Packaging	This is the packaging master where you define your packaging. It is used for both simple and advanced packing.
(DRS080)	Packaging type	Packaging is connected to a packaging type.
(MMS053)	'Item. Connect Packaging'	This connection should be set when using advanced packing.

## Define Settings for Packaging Actions

This document describes settings for packaging actions. Packaging actions are actions performed based on the packaging used.

Packaging actions are useful for:

- Returnable packaging
- Packaging charged to the customer
- Tracking inventory levels of returnable packaging and corresponding inventory balances

Packaging actions can be divided into two parts:

- Creating customer delivery charges automatically, based on the actual packaging used for the delivery. This only applies to customer orders.
- Managing the packaging ledger and inventory of the returnable packaging, tracking your own and external parties' returnable packaging, as well as identifying who holds them.

You can track both as packaging and as stock.

## Outcome

You have defined settings for packaging charges and the packaging ledger.

## Follow these steps

### Creating customer order charges for packaging

- 1 In 'Packaging Type. Open' (DRS080), to specify which customer order charges are applied, use the **Apply CO charge** to select option **1-Yes or 2-Yes, multiply the charge amount by the number of packages**.
- 2 In 'Packaging. Open' (MMS050), define your packaging and connect a packaging type activated for order charges. Connect the packaging to an item that has this setup:
  - The cost price is specified.
  - The item is a sales item.
  - The item exists in the warehouses where the packaging will be used.
  - The country of origin exists.
- Packaging charges only apply to customer orders (CO).
- 3 In 'Dispatch Policy. Open' (MWS010), select a packing reporting method. You may also select the automatic executions of packaging actions.
- 4 Define the charges and the related amount in 'CO Charge. Open' (OIS030).
- 5 Define which charges are added to a delivery in 'Packaging Charges Selection Table. Open' (MWS135). The objects used for controlling charges in (MWS135) are set per packaging type in 'Generic Object Control Table. Open' (CMS017) for the program (MWS135). You can start (CMS017) from 'Available Object Control Parameters. Open' (CMS016).
- 6 In (MWS135), define the rules for the selection of the charge to apply. The applicable charge is retrieved per priority and the value of the selected objects.
- 7 Select the **Packaging act** check box for the CO order type in 'CO Type. Open' (OIS010).

### Setting up packagings for packaging actions and packaging ledger

During dispatch, when goods are packed, two updates occur:

- The packaging ledger is updated to reflect the balance for each holder, such as a warehouse, customer, supplier, or forward agent.
- The stock levels for the packaging item are updated.

Follow these steps to set up packagings for packaging actions and packaging ledger:

- 1 In (MWS010), select a packing reporting method and optionally specify an automatic execution of packaging actions.
2. In (DRS080):

- a Select the **In pckng ledger** check box.
  - b Specify the order line creation method.
  - c Specify the document text, the general packaging type and the general item type.
- 3 In (MMS050), select the packaging type as described above and connect the packaging to an item representing it. The item must have this setup:
- The cost price is specified.
  - The item is a sales item.
  - The item exists in the warehouses where the packaging will be used.
  - The country of origin exists.
- 4 Select the **Packaging act** check box for the CO order type in (OIS010), 'RO/DO Order Type. Open' (CRS200) and 'PO Type. Open' (PPS095).

### Defining rules for the holder control

On a customer delivery transported by a forwarding agent, the parties holding the packaging can differ. For example, small boxes can stay with the customer, while the large pallets may be held by the forwarding agent. This section explains how to set up rules to control the holder of the packaging.

- 1 In 'Generic Object Control Table. Open' (CMS017), create a record for 'Packaging holder selection table. Open' (DRS081) and specify the packaging type (rules for controlling the holder are defined per packaging type).
- 2 In (CMS017/E), specify the object that will be used to define the rules. Priority 1 is the highest priority. Set status to **20-Active**.
- 3 In (DRS081), for each packaging type, define the rules that apply to select the holder. The rules are defined per priority, using the objects setup in (CMS017).

In the **Holder type** field you can select who holds the packaging: **1-Forwarder OR 2-Consignee**.

You can overrule the packaging type settings for **Order line creation method**, **Order type** and **Apply CO Charge** fields.

For example:

- (CMS017) - For packaging PAL, the holder is selected depending on the **Consignee** field value
- (DRS081) - If the consignee is CUSTOMER A, the forwarder keeps the packaging, and a charge is applied. Order line creation method **2** is applied, so that the packaging item is issued with a requisition order.
- (DRS081) - If the consignee is WAREHOUSE B, the consignee keeps the packaging. Order line creation method **1** is applied, so that the packaging item is also distributed to warehouse B.

### Defining an owner

- 1 In 'Item Owner. Open' (CRS685), specify a code for the owner or holder of the packaging materials. Option **11='M3 ID'** opens 'Owner. Connect Identity' (CRS686).
  - 2 Specify the owner type: **1** for a supplier, **2** for a customer, **3** for a warehouse.
  - 3 Specify the related M3 ID from 'Supplier. Open' (CRS620), 'Customer. Open' (CRS610) OR 'Warehouse. Open' (MMS005).
- Note:** You can connect several owner types and M3 IDs to one owner.

### Parameters to set

**Table 1: Settings for packaging charges**

Program ID/ Panel	Field	The field indicates ...
(MWS010/G)	240 Packing reporting method	... the packing reporting method. Simple packing (method 1) or advanced packing (methods 2, 3 and 4) work together with customer charges.
(MWS010/G)	265 Automatic executions of packaging actions	... whether packaging actions should be executed automatically as soon as a delivery is fully packed or fully issued. 0 = No, packaging actions are performed manually by using option 39 in (MWS410) 1 = Yes, packaging actions are performed automatically when fully packed 2 = Yes, packaging actions are performed automatically when the delivery is confirmed as shipped.
(MMS050/E)	Packaging type	... the packaging type used to group different packaging or containers to be printed on freight documents. You must select a packaging type that has the 'Apply CO charges' field activated (1 or 2) in (DRS080).
(DRS080/E)	Apply CO charges	... whether packaging is charged to the order. This applies to customer orders only, transaction type=31 (TTYP=31). For alternative 1 and 2, the cost of the packaging is added to the order. You must select alternative 1 or 2.
(OIS030/B)	Charge	... the unique ID of a charge.

Program ID/ Panel	Field	The field indicates ...
(OIS030/E)	Internal charge	<p>... whether the charge is internal.</p> <p>The valid alternatives are:</p> <p>0 = No, external charge 1 = Yes, internal charge.</p> <p>An internal charge is added to the total order cost when the contribution margin is calculated. The customer is always invoiced for external charges, while internal charges are not invoiced.</p> <p>Select external charge (0).</p>
(CMS016/B)	Object control parameter	.. the available object control parameter, where you can define your objects and values.
(CMS017/B)	Program name	... the program that is used for the object control table. In this case, fill in 'MWS135' here.
(CMS017/E)	Warehouse	... the warehouse for which this object control table is valid.
(CMS017/E)	Priority	<p>... the sequence in which each information field should be displayed.</p> <p>To change the sequence, switch the numbers. To add new information fields, enter the numbers and names of the desired information fields.</p> <p>Example:</p> <p>To add a new information field between 10 and 20, assign this new field a number between 11 and 19. Press Enter. The new field is then placed in the correct order.</p>

Program ID/ Panel	Field	The field indicates ...
(CMS017/E)	Field 1, 2 ,3 ,4	<p>... a field or data element from a specific file.</p> <p>This field is used to create keys or search paths for user defined tables and also to create the contents of user defined files.</p>
		<p><b>Note:</b></p> <ol style="list-style-type: none"> <li><b>1</b> The 'OATEPA=Packaging terms' field can only be used if a separate delivery number is always created for one customer order. The '020 One order per delivery number' field in (MWS010) must be activated.</li> <li><b>2</b> You have to finish the packaging type entry in (DRS080) before you can connect the packaging type to an object table in (CMS017). When this is done, you start (MWS135) from the (DRS080/E) panel by using F14=Packaging charges.</li> </ol>
(CMS017/E)	Status	<p>... the status of the generic object control table. The valid alternatives are:</p> <p>10 = Preliminary 20 = Definite 90 = Blocked/Expired.</p>
(CRS109/B)	Field group	<p>... a grouping of several fields from different files that regulate matrix entries. In this case, the MMAD6 'Packaging Charges Selection' field group will be selected.</p> <p>Field groups are defined by the system and cannot be changed.</p>

Program ID/ Panel	Field	The field indicates ...
(MWS135/B)	Priority	... the table priority from the table in (CMS017). When searching for packaging charges, the tables are searched in order of priority for a set of rules that correspond to the specified object values. These sets of rules are displayed below as 1, 2 or 3 fields called the 'Start value 1, 2, 3' field.
(MWS135/B)	Start value 1, 2, 3	<p>... the first, second and third valid value to be compared with the contents of a control object. If the contents are greater than or equal to this start value, the record will be accepted.</p> <p>If there are several start values, the one that is the closest to the lowest value is valid.</p> <p>Example:</p> <p>Start value 1 could be 'Product group'. Select a product group by pressing F4=Prompt.</p> <p>Start value 2 could be 'Item no.'. Select an item number by pressing F4.</p> <p>Start value 3 could be 'Customer no.'. Select a customer number by pressing F4.</p>
(MWS135/E)	Charge	... the unique ID of a charge. This is the charge you defined in (OIS030), and you connect it here to the object control table.
(OIS010/J)	Packaging action	... whether a packaging action is taken for the customer order type. You must select alternative 1=Yes.

**Table 2: Settings for packaging ledger management**

Program ID/ Panel	Field	The field indicates ...
(MWS010/G)	240 Packing reporting method	... the packing reporting method. Simple packing (method 1) or advanced packing (methods 2, 3 and 4) work together with packaging ledger management.

Program ID/ Panel	Field	The field indicates ...
(MWS010/G)	265 Automatic execution of packaging actions	<p>... whether packaging actions should be executed automatically as soon as a delivery is fully packed or fully issued.</p> <p>0 = No, packaging actions are performed manually by using option 39 in (MWS410)</p> <p>1 = Yes, packaging actions are performed automatically when fully packed</p> <p>2 = Yes, packing actions are performed automatically when the delivery is confirmed as shipped.</p>
(DRS080/E)	Include in packaging ledger	<p>... whether packaging of this packaging type is included in the packaging ledger. Select alternative 1=Yes.</p>
(DRS080/E)	Method create order lineq	<p>... the method for creating a new order line. Select 1=Add line to order (CO/DO/RO), or 2=Create new requisition order. If you want the packaging transactions to be included in the inventory balance and history ((MWS068) and (MWS070)), you must select alternative 1 or 2.</p> <p>For alternative 1, the packaging is added as an order line on the first order for the delivery. The added order line will be automatically issued.</p> <p>For alternative 2, a requisition order is created for the packaging regardless of whether the packaging was used for a CO, DO or RO. The requisition order will be created using the order type specified for the packaging type.</p>
(DRS080/E)	Document text General packaging type General item type	<p>... the three fields for the text on the packaging documents.</p>

Program ID/ Panel	Field	The field indicates ...
(MMS050/E)	Item number	<p>... the item number connected to this packaging. If packaging actions are activated for this packaging's packaging type, then an item number must be entered. The item number entered here cannot be used for another packaging.</p> <p>When the packaging ledger is to be updated for inbound goods, this item number is used to find which packaging should be used to update it. For the packaging ledger to be updated, the packaging type must have this action activated and the order type (for example, PO type) must have packaging actions activated. Under these conditions, a receipt of the item entered here will result in the packaging ledger being updated for the relevant owner/holder.</p>
(OIS010/J) (CRS200/H) (PPS095/I)	Packaging action	<p>... whether a packaging action is taken for the order type. You must select alternative 1=Yes.</p>
CRS685/B)	Owner	<p>... the owner or holder of stock or packaging materials.</p> <p>This field is used as the identity against which the packaging ledger (MWS080) is updated.</p>
(CRS686/B)	Owner type	<p>... the type of M3 identity that is associated with the owner.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>1 = Supplier</li> <li>2 = Customer</li> <li>3 = Warehouse.</li> </ul> <p><b>Note:</b> You can have several owner types connected to one owner.</p>

Program ID/ Panel	Field	The field indicates ...
(CRS686/B)	M3 ID	<p>... the M3 ID that is connected to an owner. The M3 ID is controlled by the owner type.</p> <p>M3 ID starts (CRS620) for owner type 1, (CRS610) for owner type 2 and (MMS005) for owner type 3. Select the appropriate M3 ID.</p> <p><b>Note:</b> You can have several M3 IDs connected to one owner.</p>

**Table 3: Settings for defining rules for the holder control**

Program ID/ Panel	Field	The field indicates ...
(CMS016/B)	Object control parameter	... the available object control parameter, where you can define your objects and values.
(CMS017/B)	Program name	... the program for the object control table. In this case, specify <b>DRS081</b> here.
(CMS017/E)	Packaging type	... the packaging type for which this object control table is valid.
	Sequence	<p>... the sequence in which each the table is read when trying to identify an applicable rule. Sequence 10 is read before sequence 90.</p> <p>The field priority is in line with the sequence.</p>
	Field 1, 2 ,3	<p>... a field or data element from a specific file.</p> <p>This field is used to create keys or search paths for user defined tables and to create the contents of user defined files.</p>
	Status	<p>... the status of the generic object control table. These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>• <b>10 = Preliminary</b></li> <li>• <b>20 = Definite</b></li> <li>• <b>90 = Blocked/Expired</b></li> </ul>

Program ID/ Panel	Field	The field indicates ...
(CRS109/B)	Field group	... a grouping of several fields from the delivery head (MHDISH) that regulate matrix entries. In this case, the PKHST <b>Packaging Holder Selection</b> field group is used. Field groups are defined by the system and cannot be changed.

Program ID/ Panel	Field	The field indicates ...
(DRS081/E)		The right section of the screen displays the original setup from the packaging type. The left section of the screen displays the overriding parameter.
	Holder type	<p>... the parties that will be the holder of the packaging after packaging actions are executed.</p> <p>These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>• <b>1–Consignee</b> - The recipient of the delivery holds the packaging. It can be a customer, a warehouse, or a supplier.</li> <li>• <b>2–Forwarder</b> - The forwarding agent used for the transport of the delivery holds the packaging.</li> </ul>
	Order line creation method	<p>You can overrule the (DRS081) setup for the order line creation method.</p> <p>The field indicates the action to take to create an order line.</p> <p>These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>• <b>0– None</b></li> <li>• <b>1– Add line to order (CO/D0/R0)</b></li> <li>• <b>2– Create new requisition order</b></li> </ul> <p>For alternative 1, the packaging item is added as an order line on the first order for the delivery. The added line is issued automatically.</p> <p>For alternative 2, a requisition order is created for the packaging item, using the order types below.</p>
	Order type	

Program ID/ Panel	Field	The field indicates ...
		Order type for requisition order issue and requisition order receipt must be provided for line creation method 2. If the holder type is <b>2-Forwarder</b> , a requisition order issue is mandatory even for method 1, as in the context of distribution where the packaging is kept by the holder: the line creation is replaced by a requisition issue.
	Apply CO charge	... if packaging is charged to the order. This only applies to customer order (TTYP= 31).

## Define Settings for Picking Resource Planning

This document explains how you define the settings for picking resource planning.

### Outcome

- Picking teams are assigned to stock zones.
- A zone's picking lists may be split according to equipment required.
- Default picking times are set by various objects such as warehouse, location type, item and so on.

Picking work is directed to the required resources.

The following tables are updated:

- Picking teams are stored in the MITTEM table.
- The connection between item and picking time is stored in the MITPTI table.

### Follow these steps

#### Create Picking Teams and Connect Pickers

- Start 'Picking Team. Open' (MWS038/B).  
Set the panel sequence to E1, where 1=(MWS039).
- Fill in the current warehouse.
- Define a picking team.
- Open the E panel and fill in the Name and Description fields. Press Enter and 'Picking Team. Connect Pickers' (MWS039/B) starts.
- Select the created picking team and specify a picker.

Press F4 on the Picker field to display a list of M3 user names, retrieved from 'User. Open' (MNS150). You can also enter any name you want. You will then get a warning message that says that the picker does not exist. Press Enter again to override the warning message.

- 6 Open the E panel and fill in the 'Picking skill' field. Picking skill is user defined in 'Picking Skill. Open' (CRS005).

### **Connect Picking Times per Item and Quantity**

- 1 Start 'Item. Connect Picking Time' (MMS405/B).
- 2 Select a warehouse and item.  
It is optional to fill in the 'Normal quantity' and 'Location type' fields.
- 3 Fill in the appropriate picking time fields on the (MMS405/E) panel.

### **Set Default Picking Team per Stock Zone**

- 1 Start 'Stock Zone. Open' (MMS040/B). Select the appropriate warehouse. Select the stock zone you will connect to a picking team.
- 2 Open the E panel. Fill in the 'Picking team' field.

### **Set Warehouse Equipment by Item/Warehouse or Location**

- 1 Start 'Item. Connect Warehouse' (MMS002). Open the G panel.
- 2 Fill in the 'Warehouse equipment' field. Use F4 to browse for the existing equipment.
- 3 Connect warehouse equipment for a location in 'Stock Location. Open' (MMS010). Open the F panel, where you also fill in the 'Warehouse equipment' field.

### **Parameters to set**

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MWS038/B)	Picking team	... a team identity. A picking team consists of a number of pickers. Each picker can be a M3 user defined in (MNS150) or a non-M3 user. A picking team can be connected to a stock zone (MMS040) and will be attached to all picking lists created for that stock zone. The picking team can be changed in (MWS415) as long as the picking list is not printed.
(MWS039/B)	Picker	... a picker. Each picker can be a M3 user defined in (MNS150) or a non-M3 user.
(MWS039/E)	Picking skill	... a userdefined skill level.
(MMS405/B)	Normal quantity	... a normal quantity, which is used in 'Item. Connect Stock Location Type' (MMS057) and in 'Item. Connect Picking Time' (MMS405). In (MMS405), the 'Normal quantity' field is used to distinguish between different picking times within the same location type. For example, this can be useful for a picking location that also contains broken packages.

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS002/G) (MMS010/F)	Warehouse equipment	<p>... warehouse equipment used inside a warehouse.</p> <p>This information is used when special equipment is required for in-house movements of certain items, or to/from certain locations.</p> <p>Warehouse equipment can be specified for each item/warehouse (MMS002/G) and location (MMS010/F). Of the two, the item/warehouse has the highest priority.</p> <p>Different warehouse equipment will create separate picking lists in M3 when, for example, special equipment is required to perform an inventory withdrawal.</p> <p>Warehouse equipment is defined in 'Warehouse Equipment. Open' (MWS023).</p>

## Delivery Receipt Confirmation

This document explains how you perform delivery confirmations.

The simple delivery receipt confirmation permits reporting of delivery receipt, with no details on dates and quantities.

The detailed receipt confirmation permits reporting at a detailed level in 'Delivery Receipt Confirmation. Report' (MWS429). In (MWS429), received quantity and receiving date can be reported.

### Background

Simple delivery receipt confirmation is for users that require a final step in the dispatch handling, confirming receipt of a delivery by a receiver.

Detailed delivery receipt confirmation is for users that must provide the tax authorities with documentation on the receipt of goods by a receiver in another EU country for the tax authorities to accept invoices without VAT.

Detailed delivery receipt confirmation enables more detailed reporting of received deliveries. In M3 BE the step is called 'Delivery Receipt Confirmation' because it can be used even when it is not required for tax purposes.

### Limitations

For detailed delivery receipt confirmation, there cannot be several dates reported on one and the same delivery line.

Text cannot be specified manually in (MWS429) and then transferred into the confirmation document.

Detailed delivery receipt confirmation cannot be performed from 'CO Delivery. Approve' (OIS155).

## Workflow for simple delivery confirmation

This workflow includes these programs:

- 'Dispatch Policy. Open' (MWS010)
- 'Delivery. Open Toolbox' (MWS410)
- 'CO Delivery. Open' (OIS150)
- 'CO Delivery. Approve' (OIS155).

If the 'Delivery receipt confirmation' field is set to 1-'Simplified' in (MWS010), a confirmation that delivery is received is required on the delivery before it is closed.

After pick reporting is completed, the delivery progress status is set to 60-'Not received'.

The delivery is closed and reaches status 90-'Completed' only when the delivery is received by the receiver. This is reported during the delivery receipt confirmation using one of these options:

- Using option 41='Confirm Receipt' in (MWS410).
- Using API MWS410MI, transaction CnfRcptDlx.
- Approving the proof of delivery in (OIS150) or (OIS155). This is only possible for simplified delivery receipt confirmation, and authorized by the dispatch policy parameter 'Synchronization with proof of delivery' in (MWS010). This applies only to customer orders.

Receipt quantity and receiving date are not reported.

When the delivery receipt confirmation is made, the delivery status is set to 90-'Completed'.

This table shows delivery status of the delivery header:

Status	Description
60	Fully reported, not received.
90	Closed receipt, fully reported.

## Workflow for detailed delivery confirmation

This workflow includes these programs:

- 'Dispatch Policy. Open' (MWS010)
- 'Delivery. Open Toolbox' (MWS410)
- 'Delivery. Connect Packages' (MWS423)
- 'Country. Open' (CRS045)
- 'Delivery Receipt Confirmation. Report' (MWS429)

When a delivery is created, M3 BE verifies that 'Tax delivery confirmation' in (CRS045) is enabled for a specific country.

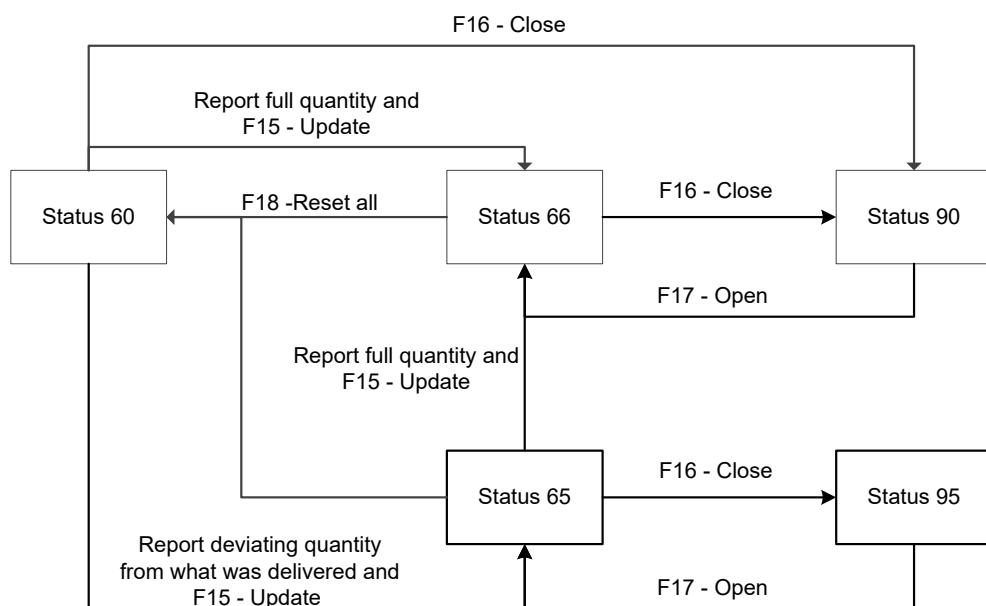
If fiscal representation is used, this will affect which country the tax delivery confirmation is read from. If fiscal representation is not used, the country of the sending warehouse is used.

If 'Tax delivery confirmation' is enabled, function program CCHKIFV (Check if VAT) verifies that the delivery is tax free. If it is, the 'Delivery receipt confirmation' field is set to 3-'Mandatory' on (MWS410/E) after pick reporting is completed. The field is not editable. It displays that a detailed delivery receipt confirmation is required.

If the delivery is not tax free, the 'Delivery receipt confirmation' field keeps the initial value from parameter DLCN in (MWS010) after pick reporting. When DLCN in (MWS410) is set to 2-'Detailed', it is editable. This enables you to choose between detailed, simplified or no confirmation at all.

If 'Delivery receipt confirmation' has value '2' or '3', you must perform a detailed delivery receipt confirmation in (MWS429). By selecting option 41 on a delivery in either (MWS410) or (MWS423), you proceed to (MWS429). In (MWS429), receiving quantity and receiving date are reported. By selecting option 41 in (MWS423), you filter a delivery by package in (MWS429). Depending on how many quantities are reported and how detailed reporting is done in (MWS429), the statuses of the lines will be updated differently and the delivery status in (MWS410) will be updated accordingly.

This flowchart illustrates how the statuses are updated when different actions are selected, and what the different statuses mean:



This table shows delivery status of the lines:

Status	Description
60	Not received. No receipt reporting has been done. (RCQT=0) Status is set back to 60 when a line is reset.
65	Deviating quantity reported. More, or less than delivered quantity has been reported as received quantity. (RCQT<>0 and <>DLQT)
66	Full quantity reported. (RCQT=DLQT)
90	Full quantity reported and closed.
95	Deviating quantity reported and closed.

This table shows delivery status of the delivery header:

Status	Description
60	Not received. No detailed receipt reporting has been done on any line. (RCQT=0)
62	The delivery receipt confirmation document has been printed.
65	Deviating quantity reported on at least one line. More, or less than delivered quantity has been reported as received quantity. (RCQT<>0 and <>DLQT)
66	Full quantity reported on all lines. (RCQT=DLQT)
90	Full quantity reported on all lines and all lines are closed.
95	Deviating quantity on at least one line and all lines are closed.

## Outcome

When using detailed delivery confirmation, a delivery sent to a customer is closed with the reported quantity received and receiving date specified. The delivery is tax free.

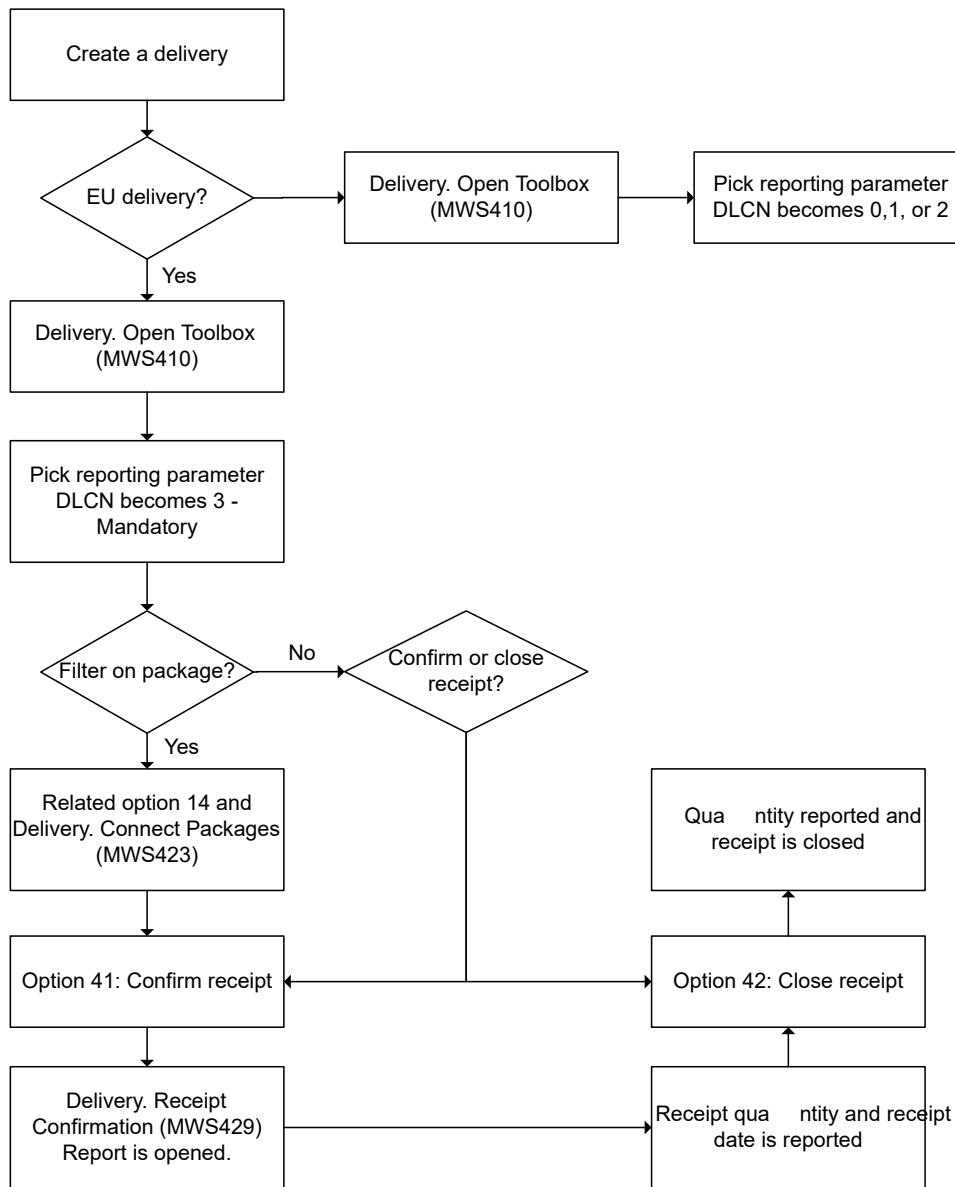
## Before you start

- Check box TDLC on 'Country. Open' (CRS045/E) must be selected for the country where the sending warehouse is located.
- For customer orders, the supplier must be set on the sending warehouse.
- For distribution orders, the supplier must be set on the sending warehouse and customer must be set on the receiving warehouse.
- VAT registration number (field VRNO) must be specified for the supplier on the sending warehouse on 'Supplier. Open' (CRS620/E).
- Tax applicable (field TXAP) must be set to 1-'Yes, from item/whs' on the supplier set on the sending warehouse on 'Supplier. Define Purchase & Financial' (CRS624/F).
- VAT registration number (field VRNO) must be specified for the customer on 'Customer. Open' (CRS610/J). For distribution orders, it must be specified for the customer on the receiving warehouse.
- Tax applicable (field TXAP) must be set to 1-'Yes' on the customer on (CRS610/J). For distribution orders, it must be set for the customer on the receiving warehouse.

## Follow these steps

- Create a customer order or a distribution order.
- Open 'Delivery. Open Toolbox' (MWS410).
- Report the delivery as picked. This sets the delivery status to 60-'Not received'. Depending on the status of the delivery, you may need to allocate, release for pick, or pack.
- Select related option 41='Confirm receipt'. 'Delivery Receipt Confirmation. Report' (MWS429) is opened.
- Select related option 14='Packages'. 'Delivery. Connect Packages' (MWS423) is opened.
- Select related option 41='Confirm receipt' for a package. 'Delivery Receipt Confirmation. Report' (MWS429) is opened.
- Report the receipt quantity and receiving date.
- Select related option 42='Close receipt' in (MWS410) or F16='Close' in (MWS429).

This flowchart illustrates the steps and their outcome:



This table shows the settings descriptions:

Program ID	Field heading	Description
(CRS045/E)	TDLC	Select the check box if deliveries from the specific base country should include a tax delivery confirmation.
(MWS410/E) (MWS010/G)	DLCN	The field indicates whether the delivery receipt confirmation should be used and how for a delivery.

## Delivery Status

The delivery status describes the progress of a delivery in the customer order flow. The valid alternatives are:

05 = Picking lists to report

60 = Delivery ready for invoicing

61 = Delivery approval required in 'CO Delivery. Approve' (OIS155)

62-67 = Delivery not ready for invoicing. Status set automatically, but can be changed

68 = Delivery not to be invoiced

69 = Invoicing in progress

70 = Invoiced

75 = Invoiced and recorded

80 = Accounts Receivable and General Ledger are updated.

## Delivery Stop

A delivery can be stopped for different reasons and at different steps in the delivery flow if parameter 'freight cost control' is activated on the delivery terms. At delivery stop, the delivery status displayed in 'Delivery. Open Toolbox' (MWS410) indicates at which step the flow has been stopped.

For example:

When the checkpoint for freight cost control is at release for allocation, delivery status '00-Not released' is displayed.

When the checkpoint for freight cost control is at release for picking, delivery status '03-CO stop' is displayed.

At issue, delivery stop can display various statuses.

### Delivery stop codes

In (MWS410), field 'Delivery stop code' will display a stop code indicating why a delivery was stopped. The stop code contains a letter followed by two digits. This field also exists in field group MWPV5 for views in (MWS410).

List of delivery stop codes:

- A - Allocation checks
- A01 - Allocation check failed. All lines with the same joint delivery code are not fully allocated.
- A02 - Allocation check failed. All lines on the delivery are not fully allocated.
- B - Freight Cost checks
- B01 - Freight Cost not activated in CRS728
- B02 - Forwarding agent missing on delivery

- B03 - Forwarding agent not active
- B04 - Agreement missing on delivery
- B05 - Freight agreement not valid
- B06 - Freight cost distribution not activated on agreement head
- B07 - CO charge id missing on agreement head
- B08 - No valid transportation id found (wrong status, invalid date)
- B09 - No freight cost element with CO charge id.
- B10 - CO charge missing on order
- B11 - CO charge is not preliminary.
- B20 - Freight cost is not confirmed.
- B21 - Amount for freight purchase order is zero.
- C - CO stop
- C01 - Credit limit 1
- C02 - Credit limit 2
- C03 - Credit limit 3
- C04 - Credit limit 4
- C05 - Connected to LOC
- C06 - Credit limit
- C07 - Manually set stop
- C08 - Manually set stop
- C09 - Payer on order is blocked.
- C10 - Delivery not fully paid.
- D - Order authorization
- D01 - Authorization required on order.
- E - Transportation interface checks
- E01 – Transportation interface stop. Transportation indicator on the shipment, to which this delivery is connected, suggests a delivery stop at this step.
- E02 – Delivery disconnected from shipment. The shipment to which this delivery was disconnected from had a transportation service with parameter 'Transportation interface control' activated at the moment of disconnection. The purpose of this stop code is to inform the user that a delivery has been disconnected from a shipment and may be missing freight cost. This stop code will be set on a delivery even though another stop code exists on the delivery.

If a disconnection of shipment occurs due to related option '26 – Disconnect from shipment' in (MWS410), the delivery remains the same delivery as before and the delivery stop code E02 will also remain. Because changing order line information will lead to a new delivery, delivery stop code E02 will not be on the new delivery.

### Delivery stop on shipment

This section describes the process by which deliveries, connected to a shipment are stopped.

- Several deliveries can be connected to a shipment and it is possible for one or many of these to be stopped, so the field 'number of stopped deliveries' (&NBDS) exists in field group DRPV4, and is used on (DRS100) to display the number of stopped deliveries on a specific shipment.

- If performing issue on a shipment, and only some of the deliveries on that shipment receive a stop code, none of the deliveries will be issued. However, performing issue on those deliveries that did not receive a stop code on delivery level will lead to issue.

## Delivery Value Check

This document describes how and when the delivery value check is controlled for customer order deliveries.

### Outcome

When this functionality is activated, the expected outcome is a customer order delivery either ready for issue reporting or not. If the delivery value check is successful or if the delivery is manually approved the delivery is ready for issue reporting, but if the delivery value check is not performed or failed, issue reporting will not be available for the delivery.

### How the system is affected

- When a delivery is created, it is set to issue reporting status=10 (delivery check not performed). This will prevent the delivery from being issue reported without a passed delivery value check or a manually approved delivery value check.
- When all active picking lists are moved to a dock location, a delivery value check can be performed, either triggered manually using option 75 in (MWS410)/(DRS100) or automatically using the auto start job (MWS976). The result will be a delivery of issue reporting status=30 (failed) or 80 (passed via delivery value check).
- A failed delivery value check must either be manually approved by the use of option 76 in (MWS410) (issue reporting status=90) or pass a manually triggered delivery value check in order for the delivery to be issue reported.

### Before you start

Delivery value check must first be activated in 'Dispatch policy. Open' (MWS010), using these parameters:

- The OAPYNO object must be used either in the parameter 540, Delivery consolidation field 1, or the parameter 545, Delivery consolidation field 2
- Parameter 570, Delivery value check point, must be activated (value 1 or 2)
- Parameter 580, Delivery value check method, must have a value of 1.

The payer responsible must be specified in 'Customer. Open' (CRS610/F).

Credit limit 2 must be specified per payer in (CRS610/J).

The proper settings for a dispatch process must have been made, including the move to dock step.

## Purpose

The functionality of the delivery value check is used to reduce the risk of providing high value deliveries to customers whose payers are not solvent. To achieve this, issue reporting of a delivery (or part of it) is prevented if the delivery value check has failed or not been executed.

## When

The delivery value check functionality is activated in (MWS010/I).

Delivery value check point – decides how and when a delivery value check should be triggered.

The delivery value check could be triggered manually after all goods have been moved to a dock location. It can also be triggered either manually or automatically when all goods are moved to a dock location for all active picking lists.

The automatically triggered delivery value check is controlled by using ASJ in (MWS976). Each time a picking list suffix is set to status 60 (on a dock location), a record is controlled by ASJ. If all active picking list suffixes are set to picking status=60, a delivery value check is triggered.

**Note:** When a picking list suffix is deleted or zero-reported (set to picking status =60), an additional validation is triggered. If the remaining picking list suffixes are set to picking status=60 and the delivery value check has not been performed, the delivery value check is performed.

## When validated

The result of a delivery value check is an update of the field issue reporting status.

These are the possible values:

- 00-Not activated
- 10-Activated, not performed
- 30-Performed, failed delivery value check
- 80-Performed, passed delivery value check
- 90-Manually approved delivery value check

If the functionality of the delivery value check is activated, the field issue reporting status is validated when any goods on a customer order delivery are reported as issued. This means that when a part of a delivery, a full delivery, or even a shipment including a delivery with this functionality activated is issue reported, the issue reporting status is validated. If the issue reporting status is not 00 (not activated), 80 (passed), or 90 (manually approved), issue reporting is not allowed.

The same validations are implemented when reporting issue through APIs.

## How

To perform the delivery value check, these parts are required:

- Actual delivery value – controlled by the method for delivery value check using a parameter specified in (MWS010/I). This parameter controls how the value of the actual delivery is calculated. In the current solution, the only available option is to use the net price method. This method calculates the value per line as a sales price deducts line discounts, multiplied with the quantity moved to a dock location. The calculated values will be summarized for all lines on all active picking lists.

- Active credit limit 2 for the payer of all customer orders grouped on the same delivery.  
**Note:** To activate the functionality of the delivery value check, only customer order lines with identical payers can be grouped in the same delivery. This is performed by enforcing the use of the OAPYNO field as a delivery consolidation field.
- Information collected about outstanding invoiced amounts for payers in the payers currency.

A delivery will pass the delivery value check if the following is fulfilled for the payers:

- Credit limit 2 – Outstanding invoiced amount  $\geq$  Actual delivery value

For issue reporting of goods from a delivery that failed a delivery value check, only these alternatives are available:

- Manually approve the delivery

There are many reasons for a manual approval of a specific delivery for issue reporting. This could be a delivery to a strategic, important consignee or the payer could be considered trustworthy at the moment.

- Manually trigger a delivery value check

After reducing the delivery content/value or changes of payers credit limit 2 or invoiced outstanding amount, a manually triggered delivery value check will perform a new check and update the issue reporting status according to the result.

## Application messages

The result of a delivery value check can trigger different application messages:

- Application message 276 – Delivery value check failed  
Message sent to the customer responsible set for the payer's record including details like delivery number, calculated delivery value, delivery value variance, payer currency.
- Application message 277 – Delivery value check passed  
Message sent to the customer responsible set for the payer's record including details like delivery number, calculated delivery value, delivery value variance, payer currency.
- Application message 278 – Delivery value check passed  
Message sent to the customer responsible set for the payer's record including details like delivery number, issue reporting status, payer.

## Limitations

Before activating the functionality of the delivery value check, note these limitations:

- The functionality is only valid for customer order deliveries.
- The functionality is only valid for dispatch policies with auto level (TRLV)=3.
- The delivery consolidation object OAPYNO must be used for delivery consolidation field 1 or 2.
- Credit limit 2 must be active ( $>0$ ) in order for the value check to be performed. A delivery will always pass the delivery value check if credit limit 2=zero.
- All active picking list suffixes must be moved to a dock location before a delivery value check can be performed. The delivery value check is assumed to be one of the final steps to be performed before goods are loaded on a truck and/or reported as issued.

- The delivery value of a picking list line is calculated using the same logic as is used today when calculating the pro forma value of a delivery. A value calculated per line as a sales price deducts line discounts, multiplied with the quantity for goods on a dock location for all delivery lines. No order charges, invoice discounts, or VAT are included in the delivery value amount
- A delivery value check performed will close the delivery, regardless whether it has failed or passed. The reason for this is to prevent any additional goods to be added to the delivery after a delivery value check.
- No automatic changes of the delivery value or issue reporting status is performed caused by changes of delivery contents, changes of prices/discounts on the included order lines, or changes of outstanding invoiced amounts for payers.
- An automatically triggered delivery value check will only be performed the first time all active picking list suffixes are set to picking status (PISS)=60 (on dock location).
- The existing M3 functionality to add customer order lines directly to existing picking lists cannot be used when a delivery value check has been performed.
- If the load building functionality is active, a delivery value check must be performed prior to the goods being loaded to the shipment.
- Packages in a delivery with the functionality of the delivery value check activated cannot be connected to a shipment package, for example using (DRS150).

## Dispatch Handling

This document describes what dispatch handling is and how it works.

Use dispatch handling to control the dispatch of all orders that result in a stock issue.

### Outcome

An order is released for picking, picked, packed, reported and shipped.

The following tables are updated in this process:

Table	Description
MHDISH	Delivery numbers
DCONSI	Shipments
MHDIPO	Dispatch policy
MHPICH	Picking list header
MITTEM	Picking teams
MITPIC	Pickers per team
MPICAP	Picking capacity
MITARE	Stock zone
MITEQU	Warehouse equipment
MITBAL	Item per warehouse

Table	Description
CSYPAR	Pack parameters
MPTRNS	Packages
MFTRNS	Package lines
CRPIAC	Picking activities
MPIGLD	Picking guideline data
DRCLFC	Calculated freight costs
OCHEAD	Customer return header
MHDISA	Additional Delivery information

### Before you start

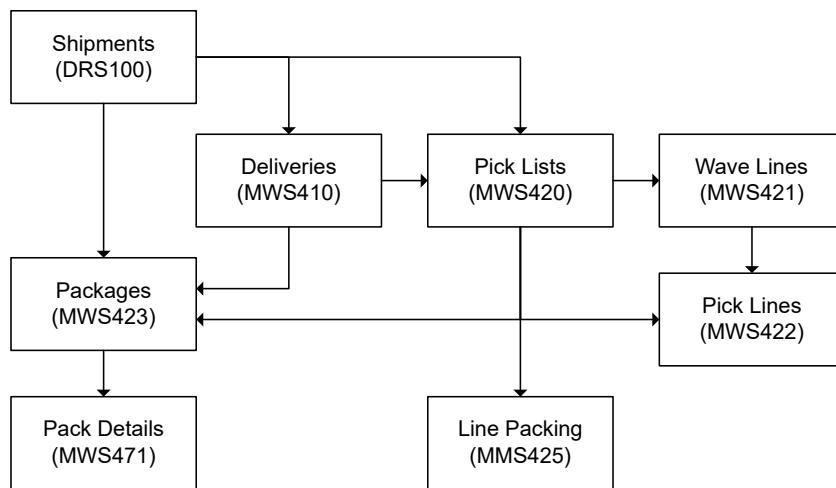
- Ensure that an order exists with the order status set to 33-'Completely allocated' or 23-'Partially allocated'.
- The conditions listed in [Basic Settings for Dispatch Handling](#) on page 300 must be met.
- Depending on how the dispatch will be performed (by delivery, by wave, by shipment and whether you will use packing and packaging actions), the conditions listed in the applicable instructions must be met.

### Description

Dispatch handling controls the dispatch of all orders that result in a stock issue.

Dispatch handling includes the following steps:

- Picking release
- Picking resource planning
- Picking activities planning
- Printing the picking list
- Picking
- Package-based picking
- Packing
- Packaging actions
- Freight cost management
- Stock issues
- Picking deviation reporting
- Delivery receipt confirmation.



The activities in the dispatch handling process are controlled by the dispatch policy, which among other things, determines these procedures:

- Automatic, semi-automatic or manual handling of the dispatch flow
- Included or excluded packing
- Simple or advanced packing
- Delivery connected to a shipment or disconnected
- Picking resource planning used or not
- Automatic or manual packaging actions
- Activated or deactivated delivery value check
- System-guided picking activities
- Package-based picking
- Freight cost management

The logistic identity during the dispatch flow is the delivery number. The delivery number is created or updated during order line entry.

'Shipment' is a number of delivery numbers connected to one shipment. If shipment is used, the dispatch flow (a number of delivery numbers) will be controlled by the shipment. This is known as transportation management and is described in the Transportation Management documentation.

### Follow these steps

The rules governing the following flow are controlled by the dispatch policy, which determines whether and how the included parts of the flow should be performed.

- 1** To pick a release, open 'Delivery. Open Toolbox' (MWS410).  
In (MWS410), you can also allocate a release, specify a shipment assembly, control freight documents and carry out packaging steps.
- 2** Optional: To plan picking resources, start 'Picking List. Plan Pickers' (MWS415).
- 3** To print a picking list, open (MWS415).

- You can also print a picking list from 'Picking List. Report' (MWS420).
- 4 Optional: Packing can be performed in (MWS420) or in 'Delivery. Connect Packages' (MWS423).
- 5 Depending on your settings, you can continue your picking reporting in (MWS420). For more details on reporting, see [Wave Picking](#) on page 539.

### Delivery numbers

The delivery number is the unique identity of a delivery and is created or updated automatically when entering order lines in M3.

- Delivery numbers separate the logistical (delivery number) part of an order from the commercial (order numbers) part.
- Use a unique delivery number and not a delivery index. The delivery number is always created/updated online during maintenance of order lines. The primary keys are consignor (warehouse), consignee (receiver), dispatch policy, planned departure time and transportation requirements.
- All further dispatch activities (allocation, picking, packing and shipment assembly) will be controlled by the delivery number instead of the order index.
- The delivery number contains all required data for dispatch handling (consignee, date and time, weight, volume, transport method and term, etc.).

Several orders can be attached to the same delivery number, if the dispatch policy (MWS010) allows for this. When entering new order lines, M3 will reuse an existing delivery number provided that the delivery is:

- Not blocked (when an existing delivery is found with other keys matching)
- Set to the same direction (outbound or inbound transportation)
- From/To the same warehouse/customer/address
- Included in the same dispatch policy
- Included in the same shipment (only applicable if automatic connection to shipment is selected in (MWS010), parameter 330, alternatives 1–8)
- Of the same order category (CO, DO, MO and so on)
- Set to the same planned departure date
- Set to the same planned departure time
- Using the same requested delivery method
- Defined by the same delivery terms
- Of the same delivery note reference category (COs via delivery schedule only)
- Using the same delivery note reference (COs via delivery schedule only)
- Set to the same requested route (CO and DO)
- Set to the same requested route departure (CO and DO).

If you have specified, in (MWS010), that a separate delivery number must be created for each order, M3 will reuse the existing delivery number, only if the order number is identical.

**Note:** For the pick-up delivery functionality, specific rules apply depending on the origin of the pick-up delivery (customer return or a transportation order line).

## Shipment

'Shipment' is a number of delivery numbers connected to one shipment. If shipment is used, this means that the dispatch flow (a number of delivery numbers) is controlled by the shipment. This is known as transportation management and is described in the [Transportation Management](#) on page 533 documentation.

As the dispatch flow is controlled by the shipment, the functionality in 'Shipment. Open Toolbox' (DRS100) enables the same dispatch handling steps (described in the previous section) for multiple delivery numbers at the same time. Releases will also be controlled by the shipment (instead of individual delivery numbers).

## Picking resource planning

Picking resource planning is an optional step in the dispatch flow, which includes these functions:

- Assigning picking teams to stock zones
- Splitting the picking list of one zone according to the equipment required
- Defaulting picking times by various objects such as warehouse, location type, item, distribution technology code, and quantity
- Tracking picking lines and picking time
- Creating user-defined views

## Picking list management

This is the purpose of picking list management:

- Stock issue reporting for all order categories
- Logging of stock transactions
- Packing reporting
- Performing reallocations between locations for storage, packing and docking
- Reporting a complete list or a wave (a collection of picking lists)
- Creation of an invoice base for customer orders
- Adding non printed order lines to a picking list

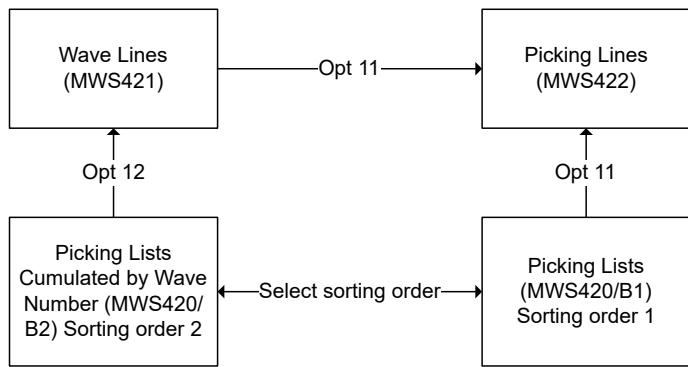
## Wave picking list management

This is a picking tool for large volumes.

A wave picking list is created by a combination of warehouse, stock zone, and warehouse equipment.

A wave picking list line has the same item number, location, and lot number.

To enable wave picking, a wave number must exist. This is created in (MWS410) when you release deliveries for picking and have defined the settings on the P panel in (MWS410).



### Picking list lines

A picking line is defined as a record in MITALO that is equal to a picking line after being released for picking.

A wave line is defined as the accumulated quantity of several picking lines. A wave line is a combination of wave, item, location, and lot number.

### System-guided pick and pack

The purpose of system-guided pick and pack is to guide the user through selected parts of the dispatch flow. This reduces the variability and makes it possible to create a dispatch flow suitable for reporting picking activities in a mobile picking scenario.

### Packing and packaging actions

Packing is used for safe shipping and dividing of one or more items on an order into units, placing them into an appropriate container package, and marking and labeling the container or package with shipping destination data of the customer, as well as other required information such as, delivery documents.

Packaging actions are useful for various actions:

- Returnable packaging
- Packaging that should be charged to the customer
- Tracking inventory levels of returnable packaging

Packaging actions can be divided into two parts:

- Creating customer charges for the packaging
- Managing the packaging ledger according to returnable packaging

### Simplified pack processing

Simplified pack processing is intended for customers running M3 BE with a simple packing process where the most common scenario is that the delivery is packed in a package and the customers want to state the weight for the packages only. This type of processing can be used when more than one package is created. However, this will require more input during the packing routine.

Simplified pack processing also enables printing of CMR documents directly from the packing process (MWS423) and it enables the use of configurable number to be used to identify a CMR-document or a package label. The configurable number can be connected per route, route departure, customer, customer address, or delivering warehouse by using the transportation services.

### **Package-based picking**

Package-based picking is a process where the picking is performed based on picking of ready-packed packages or of individual items building a package during the picking process.

The customers that require the package-oriented picking process can be divided in two major groups:

- Customers dealing with large volumes of split picks
- Customers dealing with large volumes of full pallet or full package picks

### **Freight cost management**

Freight calculation can be performed upon request at any stage before issuing a delivery or shipment. When a delivery or shipment is issued, an automatic recalculation is performed. The calculation is performed according to the freight agreement and transportation service connected to the delivery or shipment and with the information known at the moment of the calculation. The calculation can be re-run whenever requested before the delivery is issued.

### **Delivery value check**

When the functionality of the delivery value check is activated for a customer order delivery, issue reporting is not allowed unless the delivery has passed the delivery value check or the delivery has been manually approved for issue reporting. The delivery value check is triggered either manually or automatically for a delivery. In both cases, all active picking lists must be moved to a dock location to enable the delivery value check. The automatic delivery value check is triggered, by the auto-start job in (MWS976), when the last active picking list suffix is moved to a dock location.

A prerequisite that must be fulfilled is that the free consolidation fields in the dispatch policy must contain a value for payer (field OAPYNO). The reason for this is that only customer orders with the same payers are allowed when the delivery value check is activated.

A delivery value check is performed by the use of payers credit limit 2 reduced by the outstanding invoiced amount compared to the value of the actual delivery. The purpose of this is to meet the requirements for allowing issue reporting of deliveries of less values, while high value deliveries can be held.

The value of a current delivery is calculated according to same principle as is in use in M3 BE today for the calculation of a pro forma invoice. The value is calculated as the net price on the order line multiplied by the allocated quantity at the dock location. The calculated values are then totaled for all included lines in a delivery.

If the delivery value is higher than the result of credit limit 2 minus the outstanding invoiced amount for the payer, the delivery will fail the delivery value check and the issue reporting will not be allowed. If failed, the delivery value check may be manually re-run in cases where any amounts or quantities used in the calculation have been changed. A delivery can also be manually approved for issue reporting, if the delivery is considered as delivered regardless of the outcome of the delivery value check.

### Progress status for the delivery

This status is stored in the MHDISH table and can be displayed in (MWS410).

#### **Outbound deliveries:**

00-Not released for auto allocation.

01-Released for auto allocation. Picking lists could exist if blocking point=1 in the dispatch policy (MWS010).

02-Failed due to allocation control. The status will be reset to 01 when an order line is changed or when an allocation is performed.

03-Stopped due to credit check or customer stop. The status is reset to 01 when the customer order stop is changed (OIS120), or when the customer stop is changed in (CRS610). This status is only relevant for customer orders.

05-Allocation control passed, ready to be released for picking.

50-Picking list(s) created, delivery blocked from further additions.

90-Fully reported.

**Note:** For an outbound pick-up delivery, status 50 means that the delivery is created and can be planned on a shipment. Status 90 means that it has been reported as started.

#### **Inbound deliveries:**

70-Shipped from consignor.

75-Partly received.

90-Fully received.

### Packing status for the delivery

This status is stored in the MHDISH table and can be displayed in (MWS410).

These are the valid alternatives:

00-Packing not used.

10-Packing not started.

20-Packing started but not completed.

30-Packing completed.

### Picking status for the picking list

This status is stored in the MHPICH table and can be displayed in (MWH415) and (MWS420).

These are the valid alternatives:

30-Not ready for printing and reporting

40-Ready for reporting

50-All lines reported as moved to pack location

- 60-All lines reported as moved to dock location
- 70-All lines in transit, not received (only for distribution orders)
- 90-All lines reported as issued from inventory

#### **Planning status for the delivery**

This status is stored in the MHPICH table and can be displayed in (MWS410).

These are the valid alternatives:

- 00-Not started
- 10-Planning 1
- 20-Planning 2
- 30-Planning 3
- 40-Planning 4
- 60-Firm
- 80-Aborted
- 90-Complete

This status can be used to keep track of planning activities. There is no functionality behind this status, and it is therefore available for flexible use. It can be updated at any time manually on (MWS410/F), or using API transaction UpdPlanSts in API MWS410MI. It is integrated with the Transportation Operational Interface MYS450MI so that field values can be sent and updated by an external transport planning program.

## Display and Change Customer Priority Rules

This document explains how to display the results of the allocation priority calculation and how to change the calculated allocation priority value.

#### **Outcome**

A customer's allocation priority is displayed or changed based on several customer-specific factors.

This priority is used to ensure that allocation to "good" customers is prioritized when a shortage of items exists. It is used in batch allocation.

Allocation priority calculations are stored in the MAPRCP file.

#### **Before you start**

The settings for batch allocation must be defined. Refer to these documents:

See [Batch Allocation Settings](#) on page 350

See [Basic Batch Allocation Settings](#) on page 285

See [Settings for Fair Share, Allocation Priority Rules and Allocation Priority with Fair Share](#) on page 502

### Follow these steps

- 1 Start 'Allocation Priority. Open' (MMS159).

On the (MMS159/B) panel, the following information is displayed in a list:

Sorting order 1: Records per customer (customer is entered in the header), sorted in reverse date order (with the latest record first). The from date and priority value are displayed.

Sorting order 2: Records for all customers in a specific date range (from and to date can be entered in the header), sorted in customer number order. The from date, customer number and priority value are displayed.

Sorting order 3: Records for all customers in a specific date range (from and to date can be entered in the header), sorted in descending order of priority. The from date, customer number and priority value are displayed.

- 2 On the (MMS159/E) panel, the result and calculation used are displayed.

**Note:** Only the retrieved value, not the fields used, is displayed.

The 'Allocation priority' field indicates the calculated value according to the rules set in (MMS124). The value can be changed manually to override the calculation.

The 'Allocation priority method' field indicates if the values are maintained manually (active=1) or automatically (not active=0).

**Note:** The 'Allocation priority' field is only used in 'Allocation. Distribute Quantities' (MMS189).

## Event Based Document Control

This document explains the concept of Event Based Document Control (EDC).

**Note:** This document does not explain the concept of TEI (Transportation Execution Interface) which use the EDC functionality for creating documents. This is explained in the TEI documentation.

The overall purpose with EDC is to be able to have certain documents produced at the appropriate time with no user intervention.

Documents are printed automatically when certain events occur. The valid events are:

- Picking list or a group of picking lists are created (pick list has status 40=Ready for reporting, or greater)
- Delivery is issued (delivery has status 60= Fully reported, or greater)
- Shipment is issued and the deadline has passed (shipment has status 60/60=Shipment reported).

### Outcome

A document is produced when a given event occurs. The document media is defined (printed, sent by mail etc) and also if the document should be produced immediately (synchronous) or sent to a queue and produced

later, via an auto start job (asynchronous). The reason for sending the job to a job queue is to gain performance in M3.

EDC can be used in the dispatch flow to produce:

- Picking list
- Address label
- Package label
- Delivery note
- Dispatch advice
- Loading list
- Unloading list

The following files are affected:

- CREVNT – Document Events  
This file contains a list of the events to which documents can be attached for automatic creation and printing.
- MDOCEV – Event Controlled Documents  
This file is used to define that when a given event occurs, and the context matches the stored object values, the defined list of documents/variants will be produced according to the corresponding media definition.
- MDOCEO - Documents to produce for an Event Occurrence  
This file will store all data needed to produce any of the triggered documents for a given event occurrence, when the document is to be produced synchronously.

### Before you start

- See the document [Settings for Event Based Document Control](#) on page 492
- Settings for the dispatch flow must be defined.

### Overview

- Various documents can be produced automatically when various events occur, for example
  - Delivery Note when the delivery is issued
  - Address label when Picking Lists are released
  - Loading list when shipment is issued and past deadline

**Note:** There are more documents that can be produced, which are only used together with TEI. These are described in the TEI documentation.

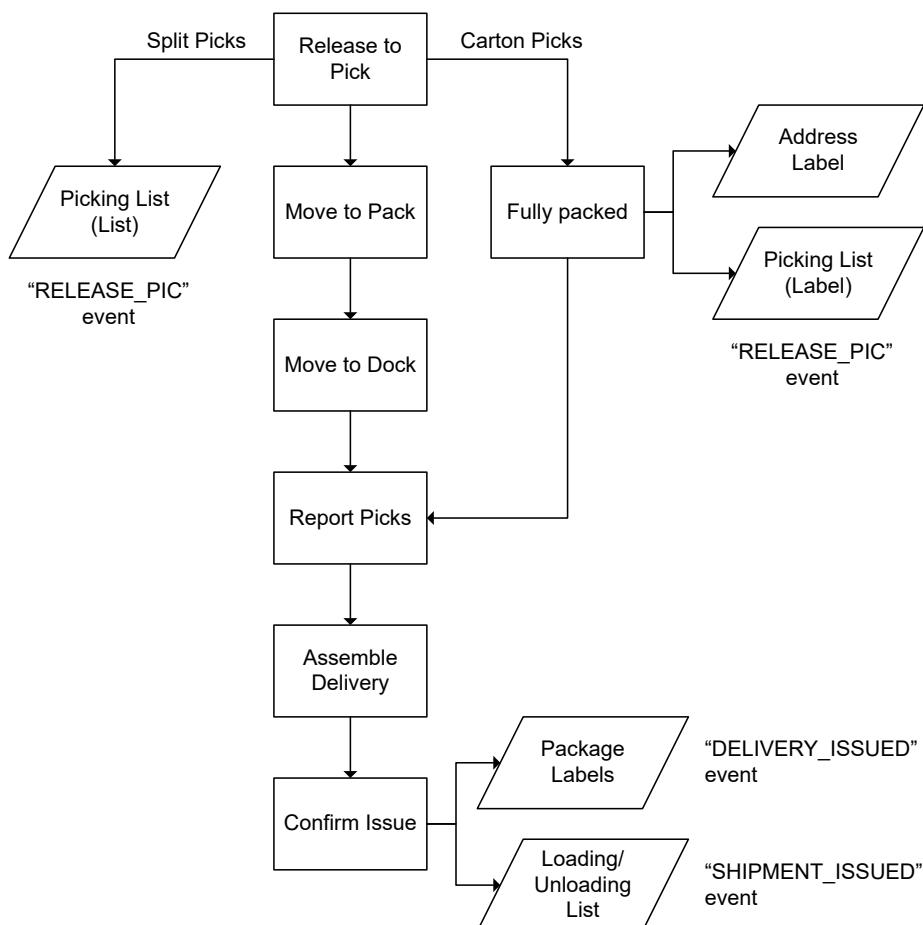
- Documents can be produced using specific media controls
- Documents may be produced synchronously or asynchronously
  - Synchronously means wait until the document has been produced before doing the next task on the computer.
  - Asynchronously means the document will be sent to a queue and produced by an auto start job. The reason for sending the job to a job queue is to gain performance in M3.

A batch job can also be a part of a mainly interactive job, where the interactive part submits the batch part with specific settings attached to it. The batch job performs in that way as an extension of the interactive environment, to obtain better performance in the time-critical operations

### Valid events

**Note:** The events, below, are valid when you don't use the TEI functionality. If you use the TEI functionality there are more events that can be used. These are described in the TEI documentation.

- **RELEASE\_PICK** This event occurs when a picking list or group of picking lists is created after a delivery is released for pick. Note that this event may occur more than once depending on the closing point of the delivery. The event applies to pick lists that attain a status of 40= Ready for reporting, or greater for the first time. This means that the event is deemed to have occurred for picking lists going through pick resource planning only after release from pick resource planning. This event occurs after packing has been done.
- **DELIVERY\_ISSUED** This event occurs when the status of a delivery becomes greater than or equal to 60=Delivery fully reported.
- **SHIPMENT\_ISSUED** This event occurs when a shipment is in status 60/60=Shipment reported AND the shipment deadline has passed. That is, when all deliveries within the shipment are fully issued and no more deliveries may be automatically added to the shipment.



## Valid documents

**Note:** The documents, below, are valid when you don't use the TEI functionality. If you use the TEI functionality there are more documents that can be used. These are described in the TEI documentation.

The document that may be triggered for each of these events is as follows:

Event	Allowed documents	Scope
RELEASE_PICK	Picking list (120) Address labels (913) Package labels (912)	Range of Pick List Suffixes for a Delivery
DELIVERY_ISSUED	Delivery Note (900) Dispatch Advice (901) Address labels (913) Package labels (912)	Delivery
SHIPMENT_ISSUED	Loading list (909/00) Unloading list (909/01) Dispatch Advice (901) Delivery Note (900)	Shipment

In 'Event.Open' (CRS019) you can display all valid events and documents allowed for them.

## Examples

Examples of EDC might be:

- When a pick list has been created and packed in warehouse xxx, for zone yy and warehouse equipment zz, a picking list document of label format should be printed on device PRINTER1.
- When a shipment for route 123 in warehouse xxx has been completely picked, and the deadline for the shipment has passed, the loading and unloading list documents should be printed on device PRINTER2.
- When all of a delivery for loading dock DOCK01 in warehouse xxx has been fully issued the delivery note document should be produced in package based format and sent to xyz@an.address.com as a PDF file.

## Example of setup for delivery process documents

Example	Event	Controlling values	Printing documents
When picking list is released, if warehouse 005 equipment is forklift, zone is dry goods.	Release Pick	Warehouse = 005 Equipment = forklift Zone = dry goods	Picking List (Label)
If sending on our own trucks, print loading/unloading list, no transport labels required.	Shipment Issued	Carrier = our own trucks	Loading/ Unloading List

Example	Event	Controlling values	Printing documents
If customer 002344, order type AH1, then print package oriented delivery note.	Delivery Issued	Customer = 002344 Order Type = AH1	Delivery Note
		Settings in M3 BE for each project	Default documents

## File and Delete Delivery Data

This document explains how you file and/or delete delivery (dispatch) data. These files increase in size with the number of dispatch transactions. For large customers with many transactions, these files become very large.

### Outcome

Delivery data are filed or deleted. They are saved in a user-defined library.

For large customers with many transactions, these files become very large and a need to file or delete them will occur.

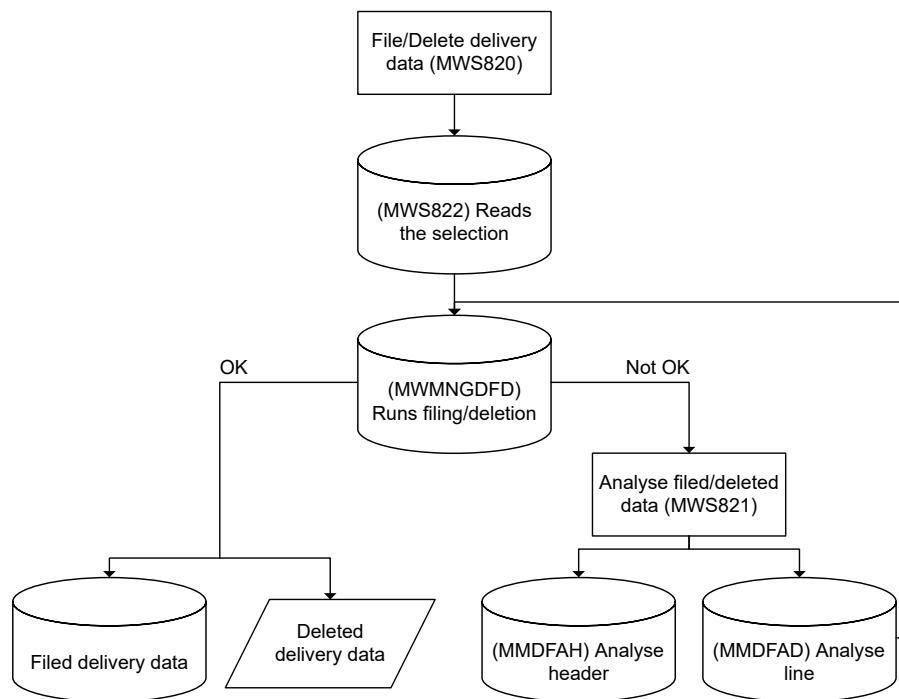
The following M3 programs are used in this process:

- (MWS822) - The purpose of this program is to have a component that reads the selection of delivery data for filing/deletion. It should then call (MWMNGDFD) for each selection twice: first with a check operation code; then, if OK, call again with a file or delete operation code.
- (MWMNGDFD) - The purpose of this program is to have a component that handles filing and deletion of delivery data. The component consists of three sections: check, file and delete.

### Before You Start

- A number series (43) should be added in 'Number Series. Open' (CRS165).
- A delivery number (MHDISH) qualifies for filing/deletion if its status is 90=Closed receipt, fully reported or 95=Closed receipt, not fully received.
- A shipment number (DCONSI) qualifies for filing/deletion if its status is 60=Shipment reported or 90=Shipment cancelled.
- If a delivery number with status 90 or 95 is connected to a shipment number, the shipment number must also qualify for filing/deletion.

## Outline



## Solution

Delivery data filing/deletion is divided into two steps. The first step includes the selection of the data to file/delete. The second step is done by a batch job, which executes the filing/deletion. The filed data will be archived in a user-defined library.

The first step is to qualify dispatch data for filing/deletion. The main file will be the MHDISH file. If the selected delivery numbers qualify for filing/deletion, their status will be updated to status 99=Qualified for filing/deletion.

A delivery number qualifies for filing/deletion if its status is 90=Closed receipt, fully reported or 95=Closed receipt, not fully received, and if the shipment number is blank. If a shipment number exists, DCONSI must also qualify for deletion.

DCONSI qualifies for deletion if its status is 60=Shipment reported or 90=Shipment cancelled. If DCONSI does not qualify for filing/deletion, the status in MHDISH will not be updated.

Selection on the (MWS820/E) panel has to be made either on delivery numbers or shipments. It is also possible to enter a From and To selection, such as any number from 1 to 999999999.

Filing/deletion when selecting on delivery numbers is only possible for deliveries with no shipment number. If a shipment number exists, the only possible way of filing is to select on shipments. On the (MWS820/E) panel, a check is made so that selection is only possible for either delivery numbers or shipments.

When selection is made on shipments, the only other possible selection is the 'To date' field. When selection is made on delivery numbers, it is possible to fill in selection criteria in the Warehouse, 'Dispatch policy' and 'Transaction type' fields.

**How****File/Delete Delivery Data**

- 1 Start 'Delivery Data. Filing/Deletion' (MWS820). Go to the P panel. The 'Number of days' field indicates how many days back in time a warning will be given when you are going to file/delete. For example, this number of days can be used to ensure that financial transactions for the dispatch data are done. The default is 60 days, which means that a warning will be given when you are going to file/delete for all dispatch data from today and 60 days back in time.
- 2 Redisplay the B panel. Create a new filing/deletion number. Note that the number is created automatically when you go to the E panel.
- 3 On the E panel, the Status field is set to 10=New. Status 20 is temporary while the filing deletion is running and the result will be 30='Completed, with errors' or 90=Completed, no errors.
- 4 Fill in the 'Filing/Deletion' field with 1=Filing or 2=Deletion. The 'Delete all' field indicates 0='File/Delete only selected dispatch data' or 1=File/Delete all dispatch data.  
If you selected Delete all=0, you select the data to be filed/deleted in the following fields:  
Delete packaging, Delete picking (list), Delete document and Delete download data (used when using the Warehouse Integration interface).
- 5 Fill in the 'To date' field with the date back in time to which the filing/deletion applies. Depending on the value in the 'Number of days' field (on the P panel), a warning may be displayed (see above). This warning is overridden by pressing Enter.
- 6 You must select either Shipment(s) or Delivery(ies) for the filing/deletion. If you selected Shipment, no more selections are allowed.  
If you selected Delivery, you can also select Warehouse(s), Dispatch policy(ies) and Transaction type(s).
- 7 The 'To library' field is user defined.
- 8 Press Enter and the B panel is redisplayed. Select option 9=Run. The status will be raised to 20, and thereafter to 30 or 90.

**Analyze Errors on Filing/Deletion**

- 9 If the status on a Filing/Deletion number is 30='Completed, with errors', then you can analyze the run. To do so, you select option 21=Analyze on the (MWS820/B) panel.
- 10 'Delivery Data. Analyze Filed/Deleted' (MWS821) is started. The current filing/deletion number and the deliveries that have the errors from the run are displayed on the B panel. You also see the direction on the delivery - inbound or outbound.
- 11 A message ID with a message text is displayed for each delivery.

Example:

The text says 'Deletion is not permitted - shipment number 1736 exists on delivery'. In this case, the current delivery had status 90, but the connected shipment only had status 10, and was thus not qualified for filing/deletion.

# Full Balance ID Control

This document describes the functionality of full balance ID control.

When a quantity is reported for move to pack, move to dock or issue, the system validates that the full quantity of the allocated balance ID is reported. If not, a stop message will prevent splitting or merging balance IDs.

When performing a hard allocation, a validation secures that only the full quantity of a balance ID is allocated. If not, a stop message will prevent partial allocation of a balance ID.

## Outcome

When this functionality is activated, it is:

- not possible to allocate part of a balance ID
- not possible to move to pack part of a balance ID
- not possible to move to dock part of a balance ID
- not possible to issue part of a balance ID
- not possible to merge two balance IDs with the above transactions.

## Before you start

Full balance ID control must first be activated on 'Dispatch policy. Open' (MWS010/J) using parameter 620 'Full balance ID control'.

This parameter will activate the full balance ID control for a specific delivery header.

These are the possible values:

0 = Not used.

1 = Used. Validations to prevent split or merge of allocated balance IDs are performed at move to pack, move to dock, or issue reporting.

This parameter will impact items that are set up with Full balance ID control on 'Item. Connect Warehouse' (MMS002/G), using parameter 'Full balance ID control'.

These are the possible values:

0 = Not used.

1 = Used. Validations to prevent split or merge of allocated balance IDs are performed at move to pack, move to dock, or issue reporting of outbound transactions and the in-house move process.

2 = Used. Only for outbound reporting.

## Purpose

The functionality of the full balance ID control is to support business scenarios where one balance ID should not be split or merged during outbound reporting or reporting of replenishment move orders (transaction types 92/93). For example, if a roll of paper is allocated to be delivered to a customer, the full balance ID control will prevent you from reporting parts of the roll.

## When

The full balance ID control will mainly be activated in two different scenarios:

The first scenario is when allocating a balance ID to a specific demand. If full balance ID control is activated on 'Item. Connect Warehouse' (MMS002/G), the system will guide you to allocate no less than the full quantity of a balance ID. In 'Allocation. Perform Detailed' (MMS121), the validations prevent allocation of a partial balance ID.

The second scenario is when outbound reporting on a delivery is performed. If full balance ID control is activated in 'Dispatch Policy, Open' (MWS010) and on (MMS002/G), the system will guide you to only report full balance IDs. At reporting (move to pack, move to dock and issue), the validations prevent merge or split of a balance ID.

## How

- At manual allocation, a validation ensures that the quantity allocated from a balance ID is equal to the full quantity of that balance ID.  
**Note:** A demand line can allocate several balance IDs to fulfill the requirement, but no allocations of partial balance IDs will be allowed.
- At picklist reporting, a validation ensures that only the full quantity of each balance ID is allowed.  
When a delivery is created, the parameter 'Full balance ID control' on the delivery header is set with the value retrieved from the dispatch policy. At the point of reporting, the parameter on the dispatch header will be validated and the control will be performed accordingly.

**Note:** The parameter on the delivery header can be manually set to '9' to circumvent the validation at reporting.

## Full balance ID control and overallocation of demands

Although only allocations of the full quantity of a balance ID are allowed, overallocation of a specific demand is allowed.

You cannot allocate a higher quantity of a specific balance ID than exists on that balance ID, but it is possible to allocate a larger quantity than the ordered quantity on a demand. For example, a demand order line has an ordered quantity of 1000 pieces but the balance ID that is manually allocated includes 1050 pieces.

Overallocation is not infinite; once a demand has been overallocated, it is not possible to allocate additional balance IDs.

## Limitations

Before activating the functionality of full balance ID control, note these limitations:

- Full balance ID control can only be activated on the item warehouse for lot-controlled items.
- The functionality is only valid for items using manual or soft allocation methods.
- The functionality is not valid for items using container method=7 (Packages in stock).
- The functionality is not valid for combinations with cartonization or picking capacity split.
- Automatic advanced packing will not be executed for items with Full balance ID control. These items will be left unpacked if automatic packing is performed. Full balance ID items must be manually packed into one single package and cannot be split into several packages.

- Advanced packing for soft allocated demand lines is not possible for items with Full balance ID control activated.
- Using Pickup delivery functionality in combination with Full balance ID is not recommended.
- Highly automated replenishment orders, using for example option 24 (Move to another location) or option 25 (Issue from location) from 'Balance Identity. Open Toolbox' (MWS068), are not allowed for full balance ID control activated items.
- Parameter Flow Order planning on 'Item. Connect Facility' (MMS003/F) must be set to 0.
- Stock entry allocations, as other inbound activities, does not protect or support full balance ID control settings. Full balance ID control functionality only affects manual allocations and outbound reporting.
- The API transaction MMS120MI.PerfDetAllocation is not recommended to change overallocations of full balance ID control managed items.
- When overallocation is performed, the material plan is updated accordingly only for order categories 31, 51, 41, and 92.

## How to Manage Crates

This document describes how to manage crates on a delivery.

### Outcome

Crates are added to an outbound delivery.

Crates are stored in the MHCRT table.

### Before You Start

The settings in Define Settings for Managing Crates must be completed.

We recommend that in the view for 'Delivery. Connect Packages' (MWS423), these fields are added:

- EPPKCR Crate
- ORPACT Packaging
- ORCRTQ Crate quantity

An outbound delivery exists and has packing activated.

### Follow These Steps

On the (MWS410/B) panel, locate the delivery and select option 14'Packages'. Alternatively, on the (MWS420/B) panel, locate the picking list and select option 15='Package'. This starts (MWS423).

In (MWS423), add crates to a delivery by filling a crate packaging and the quantity of packages in the bottom of the panel MWS423/B.

Crates are identified for a delivery by a packaging. Crates have no package number.

Crates of different sort can be added to the delivery.

The crates are saved on table (MHC RAT) that relates to the delivery table.

The number of crates is recorded in the **packaging quantity** field (CRTQ) that can be modified.

The tare weight (TARW) is the weight of a single crate.

The gross weight (GWTM) is calculated by the tare weight multiplied by the packaging quantity. It is recalculated when the number of crates is updated, and it can be overridden manually. This weight is also added to the delivery total weight.

Here are some differences between crates and normal packages:

- Crates have no content in M3, while a package can contain packed items or other smaller packages.
- Crates have no package number, while a package is identified by a package number, and a unique SSCC number.
- You cannot print a label for a crate although you can print a package label for a package.
- On one delivery, one sort of crate can be selected once only, with a quantity (for example, there are a quantity of 12 crates of sort 10L in the delivery). However, you can have several packages of the same sort in one delivery, they are differentiated by their package number.
- Crates cannot be defined per package, although packages can be included in outer packages.
- Crates are maintained in table MHC RAT. Packages are maintained in table MPTRNS.

Crates can be included in the packaging actions.

## How to Perform Packing

This document describes how to perform packing for outbound dispatching.

### Outcome

- The goods can be reported as packed.
- The packages can be packed into other packages.
  - Packages are stored in the MPTRNS table.
  - Package lines are stored in the MFTRNS table.

Packing is used for safe shipping and unitizing one or more items for an order. It is also used for placing items into an appropriate container package, and marking and labeling the container or package with customer shipping destination data, as well as other required information, such as delivery documents.

### Before you start

- The settings in [Define Settings for Packing](#) on page 374 must be completed.
- We recommend that the first two fields in the view for 'Delivery. Connect Packages' (MWS423) are:
  - &PEP = expand collapse
  - &PSTU = package structure

## Follow these steps

Packing can be done in different ways. The method to be used is determined by the settings in 'Dispatch Policy. Open' (MWS010), parameter 240.

- **Simple packing**

Simple packing involves packages and weight only. You cannot predefine certain items for certain packages, etc.

- 1 On the (MWS420/B) panel, select option 15='Packages'. This starts (MWS423). Here you add the package(s) to the delivery number. You cannot enter the number of items in each package, but you can enter volume and weight per package.

- 2 You add package(s) by filling in the fields at the bottom of the panel.

The 'Number of packages' field is useful if you want to add more than one of a specific package. For example, if you fill in the field with 3, package 1, package 2, and package 3 will be created.

Use the field 'Package numbers' to create your own package number, such as 010, 020, and 030.

Press function key F4 in the Packaging field. This starts 'Packaging. Open' (MMS050), where you select predefined packaging. You do not have to select predefined packaging; you can also manually enter the type of packaging in this field.

The 'Gross weights', 'Volume', and 'Free capacity unit' fields are not mandatory.

- 3 Change details of a package with option 2. If you try to change details of a package after the delivery, the packaging belongs to has been completed (reached status >=60) then a warning message is activated by a parameter in 'Settings - Packing' (CRS706).

- 4 After you have added your packages, press function key F3 to redisplay 'Picking List. Report' (MWS420).

- 5 On the (MWS420/B) panel, you can now confirm the stock issue by using option 16='Confirm issues', or you can continue with packaging actions.

- **Advanced packing**

Advanced packing is performed when all picking lines are packed in one or several packages with defaults according to the table in 'Item. Connect Packaging' (MMS053).

**Note:** Based on the minimum and maximum quantities per item/packaging in (MMS053), you may have to pack the remaining quantity manually.

Example: The minimum quantity is 5, the maximum quantity is 10 and the order quantity is 13. The system will then pack 10 items according to the rules and leave the remaining 3 for manual packing. This can be done by using option 14='Pick and pack', or by using option 15='Packages' in (MWS420).

- **Manual advanced packing**

To perform manual advanced packing, you can:

- Select option 22='Auto packing' on the (MWS420/B) panel. This will perform the packing according to the rules set in (MMS053).
- Select option 25='Manual packing'. This starts 'Packing List. Pack Manually' (MMS424). Here a package is suggested according to the rules set in (MMS053).

- **Perform the packing by using option 16='Pack'**

If the parameter 'Find existing pack no for manual pack', in 'Settings - Packing' (CRS706) is set to on, the package number will be found by searching for suitable packages that still have space in them. Suitable packages are those with the correct packaging code and standard quantity as set in (MMS053).

When the parameter is set to off (0), the last package used will continue to be used.

You can display the packages and the packages structure by using option 15='Packages', which starts (MWS423).

To change details of a package, select option 2. If you try to change details of a package after the delivery the packaging belongs to has been completed (reached status >='60'), a warning message is activated by a parameter in (CRS706).

- **Automatic advanced packing**

This packing is performed automatically when picking list moved to packing location (delivery status must be '50')

- **Automatic advanced packing when picking list printed**

This packing is performed automatically. You can display the results by using option 15='Packages'.

### Packing packages into other packages

#### Note:

- The first level of packing (for example, items packed in boxes) can be performed automatically (method 3 or 4) or manually (method 2).
- The second level of packing (for example boxes packed on pallets) is always performed manually in (MWS423).

- 1 You must select advanced packing (method 2, 3 or 4) in the dispatch policy (MWS010). If method 2='Manual advanced packing' is selected, you must first do the packing according to steps 5-7 above. If method 3 or 4 is selected, the packing (items packed in boxes, cartons, etc.) is already done.
- 2 The next step is to pack the packages into other packages. On the (MWS420/B) panel, select option 15='Packages'. This starts (MWS423).
- 3 Select option 27='Include in packages' in front of all the packages that should be included in other packages. This starts (MWS423/G).
- 4 Specify the packaging field and select the packaging type you have connected in (MMS053) to be included in another package. Press Enter.
- 5 (MWS423) is redisplayed with the new package structure. Expand the structure by using option 23='Expand'.

#### Example:

Twenty-three items are included in the delivery. A maximum of one item should be packed in each box. The boxes should be packed on a pallet. A maximum of 10 boxes per pallet is allowed.

The package structure should display 3 pallets. Two pallets with 10 boxes on each and one pallet with 3 boxes will be displayed when you expand the structure.

- 6 Confirm/report the delivery.

To undo packing, select option 26='Unpack' in 'Picking List. Report' (MWS420).

# How to Use Automatic Allocation with Manual Release and How to Stop Allocation

This document explains how you work with automatic allocation with manual release and how to stop allocation.

## Outcome

Balance IDs are allocated to order lines.

Automatic allocation with manual release, which is useful for high volumes and when wave picking is to be performed. (Wave picking is a collection of picking lists released at the same time.)

- The order status for completely allocated order lines is raised to 33.
- Allocated items are stored in the item/location (MMNGALO) file.

## Before you start

Settings for allocations must be made depending on the selected allocation method described in this document. Refer to:

- [Basic Settings for Automatic Allocation](#) on page 291
- [Create View and Sorting Order in \(MWS410\)](#) on page 357
- [Create Location Type Table \(MMS057\)](#) on page 234
- [Settings for Allocation Control Per Balance ID \(Allocation Table Control\)](#) on page 489

## Follow These Steps

### Workflow for Automatic Allocation with Manual Release for Allocation

- 1 Start ‘Delivery. Open Toolbox’ (MWS410). The B panel is the opening panel.
- 2 Select an appropriate view in the ‘View’ field.
- 3 Select an appropriate sorting order in the ‘Sorting order’ field.  
For setting up an appropriate view and sorting order, see the document ‘Settings for Automatic Allocation’.
- 4 Release for allocation by selecting option 31= ‘Release for allocation’ or F18=Release all selected.  
The rest of the automatic allocation flow is the same as described above.

### Stop Allocation

This function stops allocation of items per warehouse combination. It does not deallocate an already allocated order.

Use of this function prevents a certain item from being automatically allocated.

- 1 Start ‘Allocation. Stop’ (MMS122).
- 2 On the B panel, enter the warehouse and item that should be stopped from allocation.
- 3 Open the E panel and fill in the ‘Allocation stop type’ field.

**4** If you selected allocation stop type 1=Stopped until specified date, then you must also enter the date in the 'Valid to' field.

**5** Allocation stop can also be done via 'Picking List. Report Lines' (MWS422) using option 30=Stop allocation.

The type of allocation stop this creates is determined in 'Warehouse. Open' (MMS005/G) by the 'Allocation stop type' field.

## How to Use Manual Allocation

This document explains how you work with manual allocation.

Manual allocation can be used for certain products or for products that normally are allocated automatically, but occasionally need to be manually allocated.

### Outcome

An order line is manually allocated, and the order line is in status 33='Allocated'.

Allocation is used in the dispatch flow. The next step is to release the picking list.

Allocation is managed in (MMNGALO).

Allocation is stored in the MITLOC table.

### Before you start

- In 'Settings - Allocation Control' (CRS701/E), the 'Block manual allocation' field, select if manual allocation should be blocked for non-allocatable balance IDs or not.
- In 'Settings - Warehouse planning control' (CRS701), a new tolerance field, 'Over alloc dev' (OADE), controls the allowed over-allocation (percentage) when performing manual allocation in 'Allocation. Perform Detailed' (MMS121).
- In 'Item. Connect Warehouse' (MMS002/G), enter 1='Manual allocation' in the 'Allocation method' field. You can also enter allocation methods 2–7 (automatic allocation) in this field and still perform manual allocation as long as the item is outside the demand time fence.
- On 'co Type. Open' (OIS010/J), enter 1='Automatic allocation' in the 'Allocation method' field. You can also allocate manually by using option 15 or 2='Manual allocation'.

### Follow these steps

Manual allocation is performed in 'Allocation. Perform' (MMS120) or in 'Allocation. Perform Detailed' (MMS121). The difference is that in (MMS120), M3 will suggest a location from which items should be issued, while in (MMS121) all locations that have allocatable quantities are displayed and will have an open line.

### Perform manual allocation

- Start 'Allocation. Perform' (MMS120). The B panel displays allocatable orders per Item/Warehouse. You can allocate on this panel.

- 2** To display all order lines per order, use option 2='Change'. This opens the following panels, depending on which order category the order belongs to:

Manufacturing order: Category 1 activates the (MMS120/F) panel

Customer order: Category 3 activates the (MMS120/E) panel

Requisition order: Category 4 activates the (MMS120/G) panel

Distribution order: Category 5 activates the (MMS120/H) panel.

The panels above display an overview of the on-hand balance and so on. You can use the open line to allocate and/or override the allocation method. Enter the quantity to be allocated on the open line.

Sorting order 2 in the (MMS120/B) panel is useful when distribution orders to multiple warehouses are being managed and not enough stock is available. The extra information available in this sorting order makes manual sharing of the available stock easier.

- 3** F16 on the B panel, will deallocate all automatically allocated order lines, and then trigger an automatic allocation for the item/warehouse being worked on. Order lines that have been manually allocated (overriding allocation method not 0), or are in a status greater than allocated (for example, on a picking list) will not be affected.

### Perform manual detailed allocation

- 1** Start 'Allocation. Perform Detailed' (MMS121) by selecting option 11 from the order line. You can also start by selecting option 12='Change details' on the (MMS120/B) panel.
- 2** All locations with allocatable quantity are displayed and will have an open line. Select a location and enter a quantity in the open 'Allocatable quantity' field.
- 3** Press Enter and the field in the 'Allocated qty' header will be updated.  
Allocated quantity cannot be greater than the ordered quantity.
- 4** F15, with the cursor placed on an open line, activates 'Balance Identity. Display Allocations' (MMS063) where orders that already have an allocated quantity from the identity are displayed.

### Perform manual detailed over-allocation in Manufacture Orders for Fashion

Over-allocation is allowed in manual allocation 'Allocation. Perform Detailed' (MMS121) for material connected to schedule reservation order (SLRO=1 in MWOHED). Over-allocation is validated against the over-allocation tolerance set in 'Settings – Warehouse planning control' (CRS701).

- 1** Start 'Allocation. Perform Detailed' (MMS121) by selecting option 2 from 'Manufact Order. Check Comp Availability' (PMS040).
- 2** Open panel 'Allocation. Perform Detailed' (MMS121/P) and select Opening panel 'Additional Info' (K). It opens (MMS121/K) with additional fields like 'Item description' (FUDS), 'Schedule number' (SCHN). Columns Lot Ref 2, Lot Ref 1, Location and Dynamic Attribute description are also opened and show important fashion information that is used to select the location to allocate.
- 3** All locations with allocatable quantity are displayed and will have an open line. Select a location and enter a quantity in the 'Allocatable quantity' field.  
An over-allocation qty is allowed for manual allocated items that are part of a manufacturing order. This over-allocated quantity is controlled by the tolerance field 'Over alloc dev' (OADE) in 'Settings – Warehouse planning control' (CRS701) and it permits to allocate a percentage over the ordered quantity.
- 4** Press Enter and the field in the 'Allocated qty' header is updated. The manufacturing order is allocated and the component material ready for issue.
- 5** To return to 'Manufact Order. Check Comp Availability' (PMS040), press F3.

### Display information about allocation

- 1 The on-hand balance per warehouse is displayed in 'On-Hand. Display Summarized Per Item/Whs' (MMS200).
- 2 All locations where items are stored are displayed in 'Balance Identity. Display' (MMS060).
- 3 Orders to which the on-hand balance is allocated are displayed in 'Balance Identity. Display Allocations' (MMS063).
- 4 'Material Plan. Open' (MMS080), sorting order 5 displays allocation information.

## How to Use Pre-Allocation

This document explains how to work with pre-allocation. It contains instructions for these pre-allocation scenarios:

- Create demand order line
- Create acquisition order line
- Create pre-allocation from a demand order perspective, acquisition order perspective, material planner perspective and directly from the menu
- Managing pre-allocation rescheduling and how to send pre-allocation notifications
- Allocate during goods receiving
- Managing group pre-allocation for the fashion industry
- Reset pre-allocation.

### Outcome

All or part of an acquisition order line (PO, DO and MO) is promised to a demand order line (CO, RO, MO-material and DO).

Pre-allocation is stored in the MPREAL file.

Pre-allocation is used for:

- Demand that will be supplied by "pinpointed" planned receipts
- Internal and external orders, which create demand in combination with a stock shortage.

### Before you start

- A demand order (CO, RO, DO, MO) must be released.
- Acquisition orders (PO, DO, MO) must be released or firmly planned.
- The basic settings for pre-allocation must be defined.

### Follow these steps

#### Create demand order line

- 1 Enter an order and order lines which create a demand. This can be a requisition, distribution, customer or manufacturing order (the required materials are a demand).

- 2** Release the order.
- 3** Select option 39='Pre allocation' in front of the order line. This activates 'Preallocation. Perform Detailed' (MWS121).
- 4** Sorting order 1 is displayed by default. This is the demand perspective of pre-allocation.

#### Create acquisition order line

Normally this will be valid when a change needs to be made to the acquisition orders, for example, a change of quantity or date. A warning will be displayed subsequently if the parameter is turned on, and MWS121/B2 or B3 will be displayed.

- 1** Enter an acquisition order and order line which can either be a purchase, manufacturing, or distribution order.
- 2** Release the order.
- 3** Select option 39=Pre allocate in front of the order line. This activates 'Preallocation. Perform Detailed' (MWS121).
- 4** Sorting order 2 or 3 is displayed by default. These are the pre-allocation's acquisition perspectives.

#### Select planned issue or receipt in the material plan

- 1** Start 'Material Plan. Open' (MMS080). Use sorting order 1 to display pre-allocated quantity, or views on the E panel.
- 2** Select option 39=Pre allocation for the order line to be pre allocated. This activates 'Preallocation. Perform Detailed' (MWS121).
- 3** Sorting order 1, 2, or 3 is displayed depending on whether an acquisition order or demand order was selected for pre-allocation.

#### Create pre-allocation

- Create pre-allocation from the menu  
Start 'Preallocation. Perform' (MWS120). Select sorting order 1=demand perspective or sorting order 2=acquisition perspective or 3=material planner perspective with only relevant demand order lines displayed.
- From a demand order perspective
  - 1** The demand order, demand order line, and item number are displayed on the B panel in 'Preallocation. Perform Detailed' (MWS121).  
The 'Quantity to allocate' field indicates the remaining quantity to pre allocate or allocate.  
If there are acquisition orders released with the same item numbers as the demand order, then these orders will be displayed order line by order line.  
If there are no acquisition orders released that fit the demand order, the panel will be empty.  
Sometimes, the order lines are protected. These will normally be purchase order lines that belong to a previous line that are in a different status according to which stage of the receiving flow they are in.
  - 2** In the 'Pre allocated quantity' field, enter the quantity that should be promised from the acquisition order line to the demand order line. You can mark several simultaneously.
  - 3** Press Enter. The line or lines are updated.

- 4 Open the (MWS121/E) panel by selecting option 2='Change', to display or change the notification rules about the pre allocation.

On this panel, you can activate or deactivate whether notification about changes or deletions to the pre allocation should be sent to:

- Acquisition order responsible
- Demand order responsible
- Pre-allocation responsible.

You can also define who is responsible for pre allocation in the 'Responsible' field.

- 5 Parameters are set on the (MWS121/P) panel.

- 6 Define a default demand or acquisition order category to be displayed when opening the B panel (normally these are defaulted by the activating program).

- From an acquisition order perspective

- 1 The acquisition order, acquisition order line and item number are displayed on the B panel in 'Preallocation. Perform Detailed' (MWS121).

The Available field indicates the remaining quantity that is still available to pre allocate to a demand order.

If pre-allocations exist, they will be displayed here. You only maintain or change, not create, pre-allocations from the acquisition perspective.

If there are no pre-allocations created for this acquisition order, the panel will be empty.

- 2 Change the quantity for the pre-allocations by selecting one or more of the displayed demand orders, entering a quantity and pressing Enter.

If you have reduced the quantity to be supplied below the quantity that is pre-allocated, then the quantity on the top right side of (MWS121) will be negative. You should then remove pre-allocations until the quantity is  $\geq 0$ .

- 3 Open the (MWS121/E) panel to display or change the notification rules for the pre allocation.

On this panel, you can activate or deactivate whether notification about changes or deletions to the pre allocation should be sent to:

- Acquisition order responsible
- Demand order responsible
- Pre-allocation responsible.

You can also define who is responsible for pre allocation in the 'Responsible' field.

- 4 Open the (MWS121/E) panel to display or change the notification rules for the pre allocation.

- 5 Define a default demand/acquisition order category to be displayed when opening the B panel.

- From a material planner perspective

- 1 In 'Preallocation. Perform Detailed' (MWS121) you can perform the pre-allocation by selecting one or more of the displayed demand or acquisition order lines, entering a quantity and pressing Enter.

*Pre Allocate from the Menu*

- 2 In 'Preallocation. Perform' (MWS120) in the 'Demand/Acquisition order category' field and the 'Demand/Acquisition order number' field, enter the order to pre-allocate. Select option 12='Pre allocate'.

- 3 Open 'Preallocation. Perform Detailed' (MWS121).

- 4** Perform the pre-allocation by selecting one or more of the displayed demand/acquisition orders, entering a quantity and pressing Enter.

### Managing pre-allocation rescheduling

The purpose of this function is to manage a change in the planning date or the quantity of the demand order line when the pre-allocated (or referenced) acquisition order line has its accepted receipt date changed.

Two rules are valid for rescheduling the delivery date:

- If the acquisition order line is re-planned according to the delivery date, then the demand order line can automatically be re-planned (depending on the settings) if the link between them is one-to-one or if the link is one acquisition order line to many demand order lines.
- If the link is many acquisition order lines to one demand order line, there cannot be any re-planning of the demand order line.

Quantity rescheduling is then done automatically. When the material plan is updated, pre allocations are checked. If required, a reschedule is then performed by an automatic start job (MWS910).

### Notifications about pre-allocation rescheduling

Changes to the delivery of the acquisition or demand order may need to be communicated to the person responsible for pre-allocation, acquisition order or demand order. This is facilitated by the M3 Mail application.

- 1** To set the rules for such notifications, start 'Preallocation. Enter Msg Requirements' (MWS122).
- 2** Specify warehouse, responsible, order category, and order type (optional) on the B panel.
- 3** Open the E panel and set the rules for whether a message will be sent to the person responsible if:
  - The acquisition order a pre-allocation is attached to is changed or deleted such that the pre-allocation is affected.
  - The demand order a pre-allocation is attached to is changed or deleted such that the pre-allocation is affected.
- 4** Using the (MWS121/P) panel, you can set the default for if the responsible of the pre-allocation itself should be notified. The responsible individual is the user who creates the pre-allocation, but can be changed using the (MWS121/E9) panel.
- 5** The notification flag can be maintained on the (MWS121/E) panel.

### Allocate during goods receiving

After receipt of the acquisition order is validated and ready for stock entrance, (MMMNGRCT) is started automatically and retrieves information about the following:

- The item/warehouse combination
  - Acquisition order line details
  - Status for the item to put into stock.
- 1** From the goods receiving function, 'Cross-dock Results. Open' (MWS160) is activated automatically by pressing Enter with the cursor in the Quantity field, provided the 'Prompt cross dock' field on the (MMS005/G) panel for the receiving warehouse is on.
  - 2** You may change the put away location on the (MWS160) panel. Material plan cross docks may be prevented by changing the cross dock type to 9 and also changing the location to whatever is appropriate.
  - 3** Update (MWS160) by pressing F14. The cross-docked and pre-allocated demand order line will automatically be allocated

Pre-allocation for the demand order line is automatically deleted from the MPREAL file.

### **Workflow for managing group pre-allocations (often used by the fashion industry)**

- 1** Start 'Preallocation. Perform' (MWS120).
- 2** Open the P panel by pressing F13=Parameters. Select the A panel as the opening panel.
- 3** On the (MWS120/A) panel, a specified group of demand order lines from a specified demand order can be pre allocated from one or a group of acquisition orders. The group can contain style, color or size.
- 4** The B panel is then opened. In the 'Demand order category' field and the 'Demand order number' field, enter the order to pre allocate.

Optionally, you could fill in the 'Style number' field. This will also open the style feature fields—the Option fields. These define a subset of order lines that you want to pre-allocate.

- 5** Fill in the 'Acquisition order category' field.
- 6** Fill in either the 'Acquisition order number' or the 'Schedule number' field.
- 7** Press F14='Group pre-allocate' to create a pre-allocation for these groups of lines, wherever possible.
- 8** Use F15='Delete pre-allocation' if you want to remove the pre-allocations for the group.
- 9** You may review the result by option 12='Pre-allocate'.

If you are operating in a fashion environment, we recommend that you use sorting order 3 on the (MWS120/B) panel to sort by style number.

### **Reset pre-allocation**

- 1** Start 'Preallocation. Re-crt MITPLO via MPREAL' (MWS930).
- 2** Enter your password. Be careful when running this program, it might mess up your database if you do not know exactly what you are doing.
- 3** Fill in the 'Warehouse' and 'Item number' fields.
- 4** Press Enter.

## How to Use Soft Allocation

This document explains how you use soft allocation.

Soft allocation is frequently used when there are many lots, and it does not matter which one is picked. It can be performed with or without a check against the allocable balance on warehouse level. Issued balance identities are specified manually when reporting picking lists.

### **Stock Zone Directed Soft Allocation**

Soft allocation can also be specified per item and location type, indirect per stock zone. This is used when you want to divide your order line in several picking lines depending on if the location is, for example, a pick-, and case- or pallet-location.

## Outcome

- An item with the allocation method 'Soft allocation' is issued and hard allocated.
- The picking status is 90=All lines issued.

Soft allocation is often used when there are many lots, and it does not matter which one is picked.

Soft allocation allocates on the MITBAL level (item/warehouse file).

Hard allocation allocates on the MITLOC level (item/location file).

## Before you start

You have created an order. The order is in status 33=Allocated.

In this case the order is only soft allocated because the allocation method 6 or 7 is selected in (MMS002). See 'Parameters to Set'.

## Follow these steps

### Hard Allocate When You Report the Picking List

This can be done in one of the following ways:

- You have released an order with soft allocated items for picking (status 44=Picking list printed) and should now report picking.
  - 1 Start 'Picking List. Report' (MWS420). The B panel should be the opening panel.
  - 2 Select option 16='Confirm line'. This starts 'Picking List. Report Lines' (MWS422). Select option 11=Allocation. This starts 'Allocation. Perform Detailed' (MMS121).
  - 3 In the 'Allocated quantity' field(s), enter the quantity for each location you have picked from. In the 'Soft allocated quantity' field you can display the number of soft allocated items. The value in the 'Soft allocated quantity' field indicates the available amount that is left to allocate.
  - 4 Press Enter, and the (MWS422/B) panel is redisplayed.
  - 5 If you are satisfied, confirm all with function 16=Confirm all. If you have reported all lines, the picking status will now be 90=All lines issued.
- You can combine picking reporting and specifications of the balance ID (item-lot no.-location-quantity) at the same time.
  - 1 Start 'Picking List. Report' (MWS420). The A panel should be the opening panel.
  - 2 By filling in the Location and the 'Transaction quantity' fields together with the 'Delivery number' and Option fields, you can report picking and hard allocating at the same time.  
There are also fields for **'Lot number'** and **Container**.  
The same functions also exist on the (MWS422/E) panel.

### Hard Allocate One Part of the Ordered Quantity Before Picking and the Rest When You Report the Picking List

You have released an order with soft allocated items. You have not released the delivery for picking (status 33=Allocated). Now you want to hard allocate some of the balance IDs to specific locations, and the others should remain soft allocated.

- 1 Start 'Allocation. Perform Detailed' (MMS121). The easiest is to do this is by selecting option 15=Allocate, in the order line program (OIS101, MMS101, PMS101).
- 2 Fill in the Quantity field with the location and lot number you want to hard allocate.
- 3 Press Enter and F3. The order line is redisplayed.
- 4 Release the order for picking in (MWS410) to status 44=To be reported.
- 5 Start 'Picking List. Report' (MWS420). Now you must hard allocate the soft allocated items you have picked according to steps in **Hard Allocate When You Report the Picking List**

### Stock Zone Directed Soft Allocation

You have released an order with soft allocated items. You have not released the delivery for picking (status 33=Allocated).

- 1 Start 'Allocation. Perform Detailed' (MMS121).  
The easiest is to do this is by selecting option 15=Allocate, in the order line program (OIS101, MMS101, PMS101).
- 2 In the 'Soft allocated' field you display the quantity of soft allocated stock for the order line.
- 3 Press the 'Display Soft Allocation' button. This starts 'Allocation. Prepare Picking Release' (MWS413). You will here the display soft allocated order lines, divided regarding the settings you have done in (MMS057).
- 4 Close (MWS413) and redisplay (MMS121/B).
- 5 You can now select to:
  - Release the order line for picking with all the quantity soft allocated
  - Hard allocate one part of the ordered quantity before picking. Enter the quantity to be hard allocated in the 'Allocated quantity' field and press Enter. The result will be that the value in the 'Soft allocated' field has decreased with the same amount as you have hard allocated.  
You can now open (MWS413) and display the rest of the soft allocated quantity, divided regarding the settings you have done in (MMS057).
- 6 To continue the dispatch flow you can either follow steps for **Hard Allocate When You Report the Picking List** or **Hard Allocate One Part of the Ordered Quantity Before Picking and the Rest When You Report the Picking List**.

## Parameters to set

<b>Basic Settings</b>		
<b>Program ID/ Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS002/G)	Allocation method	<p>... how allocation is carried out for each item/warehouse combination.</p> <p>Valid alternatives are:</p> <p>6= Soft automatic allocation with a check against allocable balance on warehouse level.</p> <p>7=Soft automatic allocation without balance check.</p> <p><b>Note:</b> You cannot use any secondary allocation method together with soft allocation.</p>
<b>Settings for Stock Zone Directed Soft Allocation</b>		
(MMS057/B)	Item	.. the item these 'soft allocation' settings should be valid for.
(MMS057/B)	Minimum quantity	<p>..the minimum permitted quantity that may be put away, or should be picked, in a location which belongs to the specified location type.</p> <p>This quantity is used as the quantity key when determining which stock location type to use in both put-away and allocation.</p> <p>If this quantity is 0, then multiples will be ignored during the allocation process, meaning that quantities other than multiples of the normal quantity may be allocated.</p>
(MMS057/E)	Location type	<p>...a group of locations based on the characteristics (size etc.).</p> <p>The information can be used to locate unoccupied locations of the right size in connection with receipt of goods, for example.</p>

<b>Basic Settings</b>		
<b>Program ID/ Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS057/E)	Normal storage quantity	<p>...the recommended storage quantity for this location type.</p> <p>During put-away via (MMS160), the quantity to be put away can be divided by this storage quantity and a standard proposal received for put-away at several locations.</p> <p>The put-away function always divides by the largest quantity if several records exist for the item here.</p> <p>This field is also used during allocation. If the minimum quantity is not 0 and allocate to empty is not being used, then only multiples (full pallets, containers, etc.) of this quantity will be allocated.</p>
(MMS057/E)	Location	<p>.. indicates the location used for soft allocation.</p> <p>The quantities entered in the Min- and Normal quantity fields determine which stock location to be used for soft allocation. The location defined here is connected to a location type and a stock zone. This means that one using the printer control setting on the dispatch policy ensure that direct full pallet picks are grouped on one pick listed directed to a full pallet stock zone, the carton picks are grouped on a second pick list directed to a carton stock zone etc.</p> <p>The result can be that an order line, depending on the ordered quantity, can have several soft allocated locations</p> <p><b>Note:</b> This field is only used for <b>Stock Zone Directed Soft Allocation</b></p>

# Joint Delivery Rules

This document explains how joint delivery rules check for allocation over a group of order lines that are defined by an implied joint delivery code instead of by a joint delivery code (joint delivery code=delivery together of several different order lines within a customer order). For example, these groups of lines may contain the same style and color.

## Outcome

Delivery completeness is checked via allocation, and the result is:

- 1 Order lines are available for dispatch.
- 2 Order lines are not available for dispatch and de-allocated.
  - The primary use for joint delivery is to ensure delivery according to customers' requirements prior to the release of the order for picking, packing and delivery to the customer.
  - Joint delivery also frees up stock for other orders, if joint delivery rules prevent shipment on the order that currently has the allocation.

The hold code on delivery lines is set according to the outcome of joint delivery tests. The hold code per delivery is stored in the delivery number (MHDISL) table.

## Before you start

- Settings for joint delivery rules must be defined. Refer to [Define Settings for Joint Delivery Rules](#) on page 368.
- Settings for allocations must be defined depending on the selected allocation method (batch or automatic allocation).
- If you are going to use deallocation, the allocation automatic start job in 'Auto Allocation' (MMS920) should not be running. You can stop it in (MNS050) or (MNS051).
- The order line must be held before release of the picking list (parameter 040) in 'Dispatch Policy. Open' (MWS010).

## Purpose

These rules apply, for example, to a certain style, color, size and so on, and are often used in the fashion industry

With this function, you can perform a check to see if a group of lines pass or fail for dispatch according to the joint delivery rules. These rules are user-defined and must not necessarily be for 100% allocation. Instead, each line is, for example, 60% allocated, or, in total, 80% of the group is allocated.

## When

The primary use for joint delivery is to ensure delivery according to customers' requirements prior to the release of the order for picking, packing, and delivery to the customer.

### How

The order lines have been allocated automatically, or in batch. The joint delivery rules check for completeness over a group of order lines.

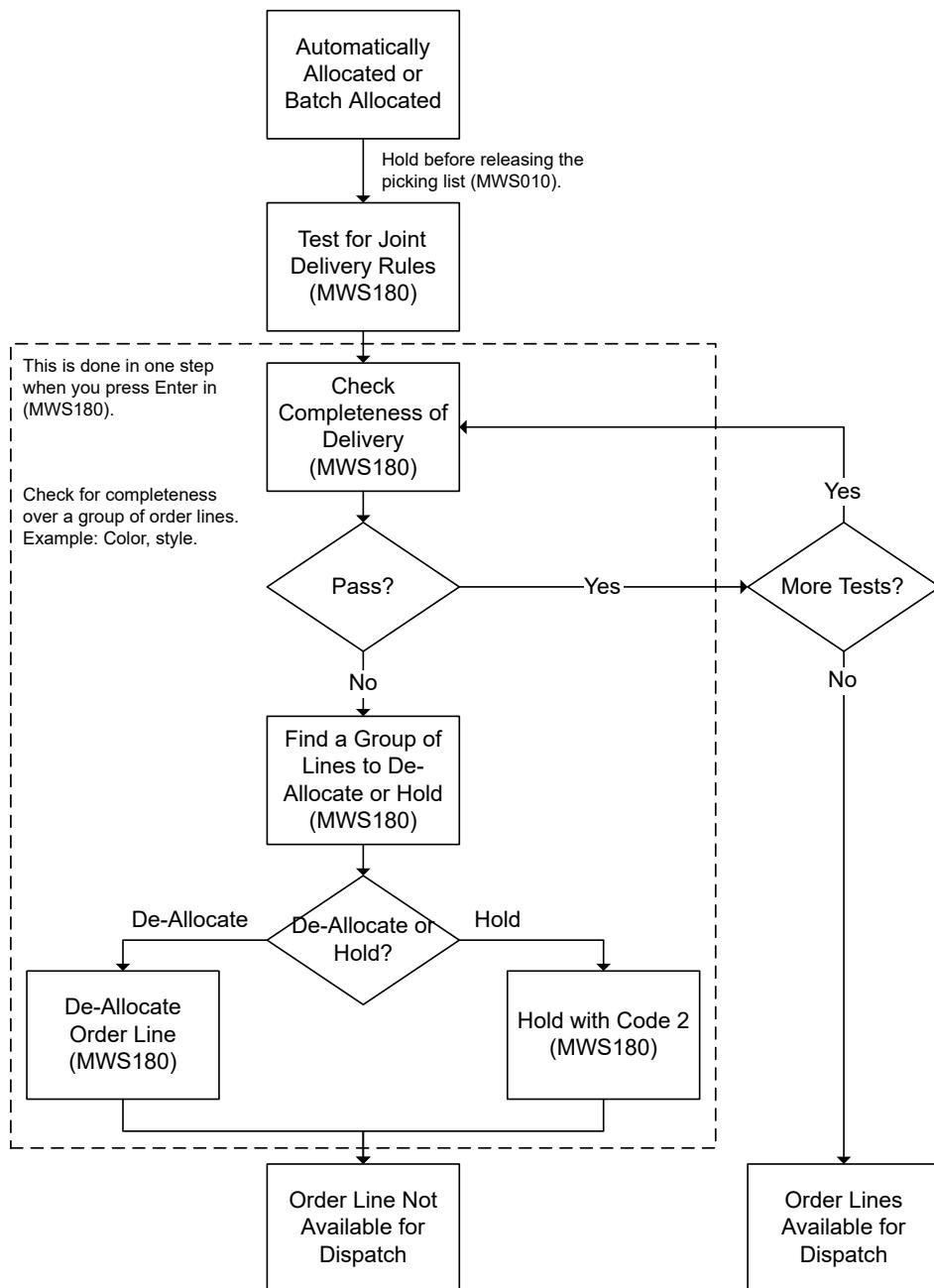
When the system has located order lines within a group that are complete, these are released for dispatch.

The order lines within a group that are not complete are checked based on the joint delivery rules set in (CMS016, CMS017 and MWS125) and will be de-allocated or held, that is not released for dispatch.

Soft allocated lines are excluded when the joint delivery rules are run.

### Workflow in M3

This workflow describes how M3 automatically selects what to be de-allocated and allocated.



## 1 Test for Joint Delivery Rules

The order lines have been allocated automatically or in batch. Ensure to check for completeness over a group of order lines. Start 'Joint delivery' (MWS180). Fill in the fields, and press Enter. Actual testing is done in (MWS181).

## 2 Check Completeness of Delivery

The system first checks the completeness of the selected orders.

## 3 Order Lines Available for Dispatch

When the system has located order lines within a group that are complete, these are released for dispatch.

#### **4 Find a Group of Lines to De-Allocate or Hold**

Order lines within a group that are not complete are checked based on the joint delivery rules set in (CMS016, CMS017 and MWS125).

#### **5 Hold or De-Allocate**

After the order lines within a group are located, the next step is to either hold the order lines with code 2 or to de-allocate the order lines. Whether the order lines should be held or de-allocated depends on the selection on the (MWS180/E) panel.

#### **6 Order Line Not Available for Dispatch**

The result is an order line that is available for dispatch or not. If the order line is not available for dispatch, further allocation and changes in stock can make the order line pass through the joint delivery test and become available for dispatch.

## Manage Cartonization

### Background

Cartonization is a packing method that automatically suggests how to pack while taking several constraints into consideration. The objective is to maximize fill rate and minimize the number of packages created.

Instead of connecting a packaging to an item or group of items in program 'Item. Connect Packaging' (MMS053), you connect a number of possible packaging to the delivery and from the measurement of the items to pack and the measurements on the packaging the system chose the optimum packaging and creates one or several packages. It is possible to pick directly to box. The internal package cartonization algorithm provides a direct link to the new Package Management solution.

These functions exist:

- The cartonization parameter on the delivery is activated when the delivery is firm.
- Both volume and weight can be used as cartonization measurement, but only one of the criteria at a time.
- When the cartonization algorithm is set up, the normal manual advanced packing can be used as been defined in 'Item. Connect Packaging' (MMS053). Here, it is also possible to select which warehouses the packing should retrieve the packages from.
- Cartonization can be used for packing reporting method 2-'Manual advanced packing', 3-'Automatic advanced packing when picking list is moved to packing location', and 4-'Automatic advanced packing when picking list is created'.
- The functions to connect an alternative unit of measure in 'Item Connect Location Type' (MMS057) are available. This makes it possible to use a different unit of measure when performing the cartonization.
- Dimension checks are available when an item's length, width and height have been defined.

### (MMS047) Packaging Group

'Packaging Group. Open' (MMS047) handles packaging groups which is an entity for cartonization. This makes it possible to create a subset, a group, of all packages and make the system use the packages in this subset when cartonization is performed, instead of always use all packages.

To have a package belong to a packaging group, a packaging group is selected on (MMS050/E). A package can only belong to one packaging group.

### Packaging

A number of packages can be connected to a packaging group. This way, the packaging information from 'Packaging. Open' (MMS050) is tied to the cartonization functions in 'Cartonization Selection Table. Open' (MWS185). There are fields to specify minimum and maximum fill rate, and capacity in free capacity units of measure. The dimensions can also be checked if the dimension check is enabled. Moreover, it is possible to allow packaging from more than one packaging group.

### Connect Location Type

The program 'Item. Connect Location Type' (MWS057) makes it possible to connect an alternate unit of measure to the field Cartonization U/M.

This field can be used in cartonization and makes it possible to use other measurements instead of the measurement per basic U/M for an item when the system calculates the size of the quantity to pack.

When auto-allocation is run, and a record in (MMS057) is found to select with location type to allocate from, and there is a cartonization U/M, then that cartonization U/M will be set on the allocation record. When the system uses the picking list lines (which are records in MITALO), it will pack in quantity in the cartonization U/M and not in the basic U/M.

For this to work, the item number must be known and that means that the cartonization U/M can only be used for group type 1 (item number). Furthermore, the quantity in basic U/M that is allocated based on the record in (MMS057) must be one that "works well" with the quantity in the cartonization U/M in 'Stock Transaction.Display History' (MMS070).

### Cartonization Selection Table

'Cartonization Selection table. Open' (MWS185) is a program which is object-control processed using 'Available Object Ctrl Parameters. Open' (CMS016) and 'Generic Object Control Table. Open' (CMS017).

The purpose of the program is to setup the cartonization rules.

- Advanced packing – This parameter can be set if there is a need to perform packing as set up in 'Item. Connect Packaging' (MMS053) before the cartonization logic is applied.
- Sorting object fields – There are two sorting object fields. They control in which order the system packs the picking list lines. The sorting enables the system to separate the picking list lines into different packages based on item characteristics. For example, items in different item groups may be separated so that they are not packed together when item group is selected as sorting object. Package break must be activated in order for this to take effect. The sorting objects that are available to use are collected in field group MWCZ2 and only those fields can be used.
- Package break - This parameter controls whether a new package should be started when the value of the sorting object fields are changed.

- Packaging group tells among which packages the system can select from when performing cartonization. In (MMS050), each package may be connected to a packaging group and this is how the system finds the package it may use when packing.
- Measurement type – Volume, weight or free capacity U/M can be selected as measurement for the system to use when calculating how much goods fit into a package. Only one of the three measurements may be used at a time, and that means that measurement is the only one considered in cartonization.
- Dimension Check

There are three values:

- 0 – No dimension check means that the dimension check is not enabled.
- 1 – Longest against longest means that the longest dimension of the item is compared against the longest dimension of the package, the second longest dimension of the item is compared against the second longest dimension of the package and the shortest dimension of the item is compared against the shortest dimension of the package. If all three dimensions of the package are greater than those of the item the result of the check is OK, otherwise the result is not OK.
- 2 – Longest against shortest means that the longest dimension of the item is compared against the shortest dimension of the package. If the shortest package dimension is greater than the longest item dimension the result of the check is OK, otherwise it is not OK.

Item dimension from 'Item. Open' (MMS001) are used for this check.

The dimensions are checked when the system selects the packaging for a package. A fail in the check means that the packaging is not selected. If there is no packaging with dimensions large enough to pass the check the packaging with the greatest capacity is selected (even that it has too small dimensions).

## Warehouse equipment

Warehouse equipment that puts picked goods in a package may pack with less accuracy than a human picker. To reflect this and to be able to adjust for such lower accuracy a pack adjustment factor is available on warehouse equipment.

The packing adjustment factor is multiplied with the maximum fill rate of the package (which is set on the packaging on (MMS050/E)) and the result is an adjusted maximum fill rate for the package.

Example: The maximum fill rate is set to 70% on (MMS050/E) and the packing adjustment factor is set to 80% for the warehouse equipment on the picking list. The adjusted maximum fill rate is then  $70/100 * 80/100 = 0.56 = 56\%$ .

A blank value in the packing adjustment factor field on (MWS023/E) means that no adjustment is made to the maximum fill rate.

In the case when package based picking is used where the picking lines are grouped together to form one picking list per package, the printer control parameter on the dispatch policy (parameter 110) must be set so that the picking list is split per stock zone and warehouse equipment. This means that there can only be one warehouse equipment per package and that means that the adjusted maximum fill rate (maximum fill rate from the packaging multiplied with the warehouse equipment packing adjustment factor) is constant for all the packed lines.

When the picking list is not divided per warehouse equipment, there may be different warehouse equipment for different picking list lines on the same picking list. In this case the adjusted maximum fill rate is different depending on different warehouse equipment. This means that the result of how much is packed into a package is dependent on the order in which the picking list lines are packed. A warehouse equipment with

a higher packing adjustment factor may add more to a package to which another warehouse equipment with a lower packing adjustment factor has stopped packing.

### **Dispatch policy**

In the program 'Dispatch Policy. Open' (MWS010) the parameter 245 'Cartonization' controls activation of the functionality. This is the default setting on all deliveries with this dispatch policy (on this warehouse, if the dispatch policy is set up for a specific warehouse).

Cartonization can only be activated if parameter 240-'Packing reporting method' is greater than 1 on the dispatch policy.

It may be set per warehouse.

It is possible to activate or deactivate cartonization on the delivery with parameter 'Cartonization' in 'Delivery. Open Toolbox' (MWS410), as long as the packing is not completed. The field 'Cartonization' in (MWS410) also gives the user information that cartonization will be performed by the system when the parameter is checked.

### **Function program - Manage Delivery Note Data**

How the cartonization logic works is by creating and updating packing data in M3. Packages are created and connected to the delivery when executing manual or automatic packing.

In cartonization, the system calculates the size (volume, weight, or number of free capacity units) of the quantity to pack. Based on that size, it then selects the package from the packaging group that is set in the cartonization selection table.

The objective is to create as few packages as possible while considering the set constraints.

The constraints are:

- Only packages in the selected packaging group may be used.
- Only hard allocation can be used
- A package may not be filled more than the capacity adjusted with max fill rate.
- A package may not be filled less than the capacity adjusted with the min fill rate.
- An item may not be packed in smaller parts than what is set according to the number of decimals on the unit of measure used. When a picking list line is packed in the basic U/M, it is the number of decimals on the item (MITMAS) that is used and when it is packed in the cartonization U/M, it is the number of decimals on the alternate U/M (MITAUN) that is used.
- A new package must be started when the value of a sorting object changes if the cartonization settings are specified that way.

The measurement is taken either from the item table MITMAS or from the table of alternative unit of measure MITAUN. The capacity of the packaging is set up in 'Packaging. Open' (MMS050).

### **Program flow**

There are three parts of the cartonization pack process:

- 1 Retrieve cartonization settings. The parameters that control which packages may be selected, the sort order of the work file, if new package should be started when a sorting object value changes, and also with measurement to use are retrieved.

If cartonization is activated on the delivery, the cartonization program must be called before any packing is started.

If advanced packing is activated in the cartonization setup (MITCRZ/AVPK = 1) normal advanced packing must be executed before cartonization is performed.

The cartonization settings are passed back to MMMNGDNT through MWRTVCRZDS.

- 2** Build workfile. For each picking list line, one record in the cartonization work file is created. Values are retrieved and set.

For each line in MITALO, a record in the cartonization work file, MMWCRZ, is created

- 3** Pack. With the cartonization settings fetched and the cartonization work file built, the system starts packing according to the cartonization algorithm.

If the advanced packing parameter (AVPK) is activated, the system will first pack the picking list lines according to the setup in (MMS053). The expected outcome of that is that the quantity to pack is decreased. It is the quantity left to pack that the system will add to the cartonization work file, and that will be packed in cartonization.

When the first sum is calculated, the next step for the system is to find a package that can hold that size. It can select packages from the packaging group set in the cartonization selection table.

The system reads the packaging file sorted by packaging group and capacity (where the capacity to sort on depends on the cartonization measurement set in the cartonization select table). When a package is found that can hold the size, the next step is to check if the capacity adjusted with the maximum fill rate still is large enough to hold the size. If it is large enough, a check will be made to see that the size is not smaller than then the capacity adjusted with the minimum fill rate. If the capacity checks fail, the next package record is read and checked. If all the capacity checks are passed the package is chosen.

If no package is found that can hold the whole size of the sum, the largest package is selected.

If no package is found where the size of the sum is greater than the capacity adjusted with minimum fill rate, no package is selected.

## Managing Delivery Approval

### Introduction

In some countries, approval must be received from a governmental agency before any transportation can start. In M3 BE, deliveries can be activated for an approval process wherein, the delivery note cannot be printed before the 'Approved' feedback is received from the authorities and registered in M3 BE. The delivery note is an essential transport document that gives information about goods to be shipped.

Data required for the approval and the feedback from the government are maintained in 'Delivery Approval. Open' (MWS418) and 'Delivery approval log. Open' (MWS419).

Related options and API transactions support the approval process.

## Limitations

Approval activation 1 and 2 are only compatible with closing point 2 and auto level 3.

See [Basic Settings for Dispatch Policy](#) on page 303.

## Dispatch policy

The dispatch policy in program 'Dispatch Policy. Open' (MWS010) is set using parameter 'Delivery Approval Activation' (GVPR). The field indicates if approval is necessary for the delivery. If activated, the delivery note will not be printable before approval has been received.

Alternatives:

- 0 = Not used
- 1 = Mandatory approval - digital only
- 2 = Mandatory approval, digital or manual

Alternative 0 means that no approval is necessary.

Alternative 1 means that digital approval from a legal government portal should be received. This alternative is suitable for a BOD-integrated solution where the process of the approval would be managed by integrations using API transactions.

Alternative 2 means that approval from a legal government portal must be received before the delivery note can be printed. The approval can be received digitally or be performed manually.

On the delivery head in 'Delivery. Open Toolbox' (MWS410), the parameter as specified above is retrieved. A delivery approval status (GVST) is also maintained to keep track of the progress of the approval. The different statuses are:

- 00 - Not used
- 10 - Active, not performed
- 20 - Active, request pending
- 30 - Rejected
- 80 - Manually approved
- 90 - Approved

The delivery approval activation setup, together with the delivery approval status, determines if the delivery note can be printed.

The data required by the government agency is maintained in (MWS418).

- 1 From the delivery, use related option 77 to start (MWS418). You can also start (MWS418) directly.
- 2 In (MWS418), create a record for the delivery where necessary data can be saved (driver, vehicle, and identification numbers provided by the legal authorities).

The logs for possible errors, incorrect formats, missing information, and integration issues are maintained in (MWS419). By using sequences, it is possible to create multiple logs on the same date and time. The logs include information describing, for example, the reason why an approval has been rejected.

## Related options

In (MWS418) a set of related options are available to manage the approval progress.

- Option 11 calls (MWS419) where error logs can be recorded.
- Option 12-'Request approval' can be used when all necessary information has been gathered, and the delivery is ready for departure. Requests can only be performed when the delivery progress status (PGRS) is 50 as it should be performed as late as possible in the dispatch flow. The approval status will be raised to 20. That can trigger the emission of a shipment delivery BOD that can be routed to an external application responsible for communicating with the local agency.  
**Note:** Progress status 50 is a prerequisite for triggering a BOD integration.
- Option 13: Reset approval. The approval status will be set back to 10.
- Option 14: Reject approval (only valid for alternative 2). The approval status will be set to 30.
- Option 15: Manual approval (only valid for alternative 2). The approval status will be raised to 90.

A set of API transactions are available for integration to other applications. These are:

- MWS418MI Approve. The approval status will be raised to 80.
- MWS418MI Reject. The approval status will be set to 30.
- MWS418MI ManualApprove. The approval status will be raised to 90.
- MWS418MI BODMIDelLines to retrieve sales amount for a customer order delivery line in transaction currency and local currency.

### Approval

When a delivery is activated for approval, printing the delivery note is allowed only when the delivery approval status is 80 or 90.

## Manage Delivery Documents and Labels

This document explains how to define and create document sets. A document set enables you to pre-select a group of documents. The advantage of this is that it is easier to maintain a pre-selection of documents.

This document also explains how you, either manually or automatically, connect delivery documents to a delivery or shipment. It further describes how you set up user-defined rules for when delivery documents should automatically be connected to a delivery.

The document also describes the settings for those documents that must have settings defined.

### Outcome

- Delivery documents are connected to a delivery.
- Delivery documents bundled into a document set are connected to a delivery.
  - Documents are stored in the ODEDOK table.
  - Document sets are stored in the DDOCSE table.
  - Connections between documents and deliveries are stored in the DDOCUX table.
  - Connections between pre-selected documents and their object key values are stored in the MDOCST table.
- Deliveries are connected to a shipment, which results in documents indirectly being connected to a shipment.

When an outbound or an inbound order is shipped, often there should be some delivery documents attached to the order.

### Before you start

- Order type and dispatch policy must be set.
- An order is created and allocated.
- The delivery's progress status must be as follows: 60='Fully reported' (only valid when delivery receipt confirmation is used) or 90='Closed receipt, fully reported'.
- The packing status must be 30='Packing completed'.
- The shipment status must be 50/50='Shipment packed complete, not reported'.

### Follow these steps

#### Generate standard documents

- 1 Start 'M3 Document. Open' (CRS928). Press F14='Gen standard' to generate all standard documents. (CRS928) is a global program and affects all companies in M3 BE.
- 2 Start 'Standard Document. Open' (CRS027). Press F14='Gen standard' to generate all standard documents for the particular company you are working in.

The standard documents that can be connected to a delivery are:

900	Delivery note
901	Dispatch Advice
902	CMR document
904	Swedish CMR
906	EUR1 – document
910	Unit document
912	00 Odette Transport Label
912	01 Package Label
912	02 Logistics Label
915	TEI Transfer document
920	00 Standard Bill of Lading
920	01 Master Bill of Lading (is connected to a shipment)
922	Pro forma invoice
925	Non-sales transit document

- 3 Press F14='Generate standard' to generate these standard documents.

#### Define document set

- 1 Start 'Delivery Document Set. Open' (MWS240).
- 2 Specify the 'Document set' and 'Description' fields.

**Note:** The master table for (MWS240) is CSYTAB.

### Bundle documents

- 1 Start 'Delivery Document Set. Connect Documents' (MWS245). Specify the 'Document set' and 'Document number' fields with the documents that should be included in the set (900–925).
- 2 The connection between document set and, for example, a customer, delivery method, etc. is made via the Generic Object Control Table. See step 4 in **Connect document manually to a delivery**.
- 3 Now you have created the basic data for documents and document sets. You can now choose between manually or automatically connecting document sets to deliveries and shipments.

### Connect document manually to a delivery

- 1 Start 'Shipment. Open Toolbox' (DRS100/B) or 'Delivery. Open Toolbox' (MWS410).
- 2 To select the delivery to which documents should be connected, select option 21=Documents, which starts 'Delivery. Connect Delivery Documents' (MWS260/B2).
- 3 The (MWS260/B2) panel displays the actual shipment number in the header.
- 4 By selecting options 27, 28 and 29, you can generate, print, or generate and print the document(s) with the current information about the delivery. These options are available in either (MWS260/B2) or (DRS100/B).

It is not possible to connect documents to a delivery number in (MWS260/B2) when starting from (DRS100). This must be done when starting from (MWS410). However, it is possible to generate and print documents in (MWS260). The status on the shipment must then be 50/50=Shipment packed complete, not reported. Packing is set in 'Dispatch Policy. Open' (MWS010) in the '240 Packing reporting method' field. Dispatch policy is connected to 'CO Type. Open' (OIS010) and 'Req/Distr Order Type. Open' (CRS200).

### Connect document automatically using the generic Object Control Table

- 1 Start 'Available Object Ctrl Parameters. Open' (CMS016). Press F14='Generate data' to generate all available object control parameters.
- 2 Select the 'Delivery doc selection – MWS250' parameter and select option 11='Ob tbl det lin'.
- 3 'Generic Object Control Table. Open' (CMS017) is started, where you create rules for delivery documents' connection to a delivery.
- 4 Select 'Delivery Document Selection Table. Open' (MWS250) in the Program field.  
For instructions on how to work in (CMS017), refer to [Define Settings for Joint Delivery Rules](#) on page 368. Read only 'Parameters to set' Part 1 and 'Follow these steps' Part 1.
- 5 Select option 11='Ob tbl det lin' to start (MWS250).
- 6 On the (MWS250/B) panel, define values for the fields in each priority.  
The 'Priority' field controls the table priority from the table in (CMS017). The field indicates the table priority.
- 7 The 'Start value 1, 2, 3, 4' fields are the first, second, third and fourth values to be compared with the contents of a control object. Specify values in these fields and open the E panel.
- 8 With the cursor in the 'Document set' field, you connect the rules for delivery documents. Press F4=Prompt to select a document set.
- 9 Press Enter to complete the object control table.

Now return to the transportation workflow by starting 'Shipment. Open' (DRS100).

- 10** On (DRS100/B), you generate, print, or generate and print the already connected documents by selecting options 27=Generate, 28=Print or 29=Generate/Print.

Generating/printing from (DRS100/B) will give you all the documents at the same time for each delivery number connected to the shipment. Generating/printing on (MWS260/B2) will give you the documents one by one.

The generation of the documents results in the automatically connected documents being updated with the currently information about the deliveries (shipment).

### Settings for Bill of Lading

When the Bill of Lading is used it is not allowed to pack items with different commodity code in the same packaging if the Bill of Lading should follow the 'VICS Voluntary Guidelines for the Bill of Lading'. On the Bill of Lading, the number of Handling Units and Packages are calculated and presented per commodity code.

The commodity code in M3 corresponds to NMFC# on the Bill of Lading (The National Motor Freight Classification item number. The NMFC number is assigned by commodity type and is used by participating LTL carriers to determine the level of rates for a shipment). The Commodity code also holds information about Class (A rating assigned to products based on their value and shipping characteristics, that is, density and how the freight is packaged) and if the commodity includes hazardous material.

- 1** Start 'Dispatch Policy. Open' (MWS010), the H panel. Activate the 'Commodity Code' field. This field must be activated if the commodity code should be displayed when printing the Bill of Lading.
- 2** Start 'Commodity Code. Open' (MMS041). Enter a commodity code and open the E panel. Enter a commodity class and activate the 'Hazardous material' field, if appropriate.

#### *Bill of Lading - Connect commodity code using the generic Object Control Table*

- 3** Start 'Available Object Control Parameters. Open' (CMS016). Press F14='Generate data' to generate all available object control parameters.
- 4** Select the 'Commodity Code – MMS038' parameter and select option 11='Ob tbl det lin'.
- 5** 'Generic Object Control Table. Open' (CMS017) is started, where you create rules for commodity code connection to a delivery.

- 6** Select 'Commodity Code Selection Table. Open' (MMS038) in the Program field.

For instructions about how to work in (CMS017), refer to [Define Settings for Joint Delivery Rules](#) on page 368. Read only 'Parameters to Set' Part 1 and 'Follow These Steps' Part 1.

- 7** Select option 11='Ob tbl det lin' to display 'Commodity Code Selection Table. Open' (MMS038).
- 8** On the (MMS038/B) panel, define values for the fields in each priority. The 'Priority' field controls the table priority from the table in (CMS017/E). The field indicates the table priority.
- 9** The 'Start value 1, 2, 3, 4' fields are the first, second, third and fourth values to be compared with the contents of a control object. Fill in these fields with values and open the E panel.
- 10** Select the Commodity Code defined in (MMS041).
- 11** Press Enter to complete the object control table.

Now return to the transportation workflow by starting 'Shipment. Open Toolbox' (DRS100).

- 12** On (DRS100/B), you generate, print, or generate and print the already connected documents by selecting options 27=Generate, 28=Print or 29=Generate/Print.

Generating or printing from (DRS100/B) gives you all the documents at the same time for each delivery number connected to the shipment. And the Master Bill of Lading connected to the shipment, if one is connected. Generating or printing on (MWS260/B2) will give you the documents one by one.

The generation of the documents results in the automatically connected documents being updated with the currently information about the deliveries (shipment).

### **Settings for Logistics Label**

The Logistics Label is a variant of the Package Label (see chapter "Package Labels" below). It contains application identifiers (AI), codes that describe what type of data is printed, and the ones that specify a quantity must be connected to the correct U/M.

The application identifier for weight and volume must be connected to the same weight and volume unit of measure that is defined as the general weight and volume unit of measure for the whole company in 'Settings-User-def Item Fields' (CRS703/E).

- 1 Start 'Unit of Measure. Open' (CRS050). Open the E panel. Select value in the 'Application identifier' field that corresponds to the current U/M. Each value in the list can only be connected to one U/M except 37.
- 2 Select the number of decimals, from 0 to 3, for the weight and volume application identifier.

Weight and volume is printed with six digits on the Logistics Label, including decimals. The possibility to set the number of decimals to a lower value than 3, which is the standard for weight and volume in M3, is to be able to print numbers greater than 999.

### **Settings for 900 delivery note printouts**

- 1 You define generic settings for the delivery note (per company) in 'Settings - Deliveries' (CRS721). You make specific settings per receiver for the delivery note in 'Settings - Delivery Notes' (MMS499).
- 2 Specify the 'Delivery note variant', 'Page break', 'Prt item name', 'Prt lot no', 'Prt catch weight', 'Backorder info', 'Prt feature/option' and 'Packaging type' fields.

Set Backorder info 2=Yes including not delivered order lines. The delivery note printout has been enhanced to print order lines that were not delivered at all.

Printout of not delivered order lines means that all order lines connected to the delivery number with delivered quantity equal zero is printed at the end of the delivery note.

- 3 In (MMS499) you also specify for which reference (receiving customer, CO or receiving warehouse, DO) the settings should affect. You specify the ID for the reference. For example reference=CUNO (customer) and ID= 4500 (customer 4500).
- 4 Print the delivery note (MMS480PF) using regular printout functions such as (MWS260). Can be performed before or after delivery issue.

#### *Attributes printed on delivery note*

The item oriented delivery note (variant 01) printout function (MMS480) prints attribute information.

The attributes printed are the Balance-ID / Lot attributes that are connected to the balance-IDs or lot at the printout occasion.

As the delivery note can be printed both before and after stock issue have been confirmed the printed attribute information reflects the values at the printout occasion.

The attribute information is printed as a separate stream file block (CF-block) after each item is listed. Editing of the printed attribute text follows the settings defined in 'Attribute. Open' (ATS010) and 'Attribute Model. Connect Attributes' (ATS051).

### **Settings for chronological delivery note number per division**

- 1 To manage chronological delivery note number per division, activate parameter 'Nbr ser per div' in 'Settings - Deliveries' (CRS721).
- 2 You can then create and maintain the chronological delivery note number series per division in 'Number Series. Open' (CRS165). When creating a new series, the division defaults to the division you are logged into.
- 3 A delivery note is created. The chronological delivery note number is taken from the number series specified in 'Dispatch Policy. Open' (MWS010) parameter 530, using the division for the warehouse on the delivery.

**Note:** When the parameter 'Nbr ser per div' has been activated in (CRS721) you only get a chronological delivery note number for the specific division. If chronological delivery note numbers per division have not been set up, no chronological delivery note number is created for the delivery note.

### Settings for non-sales transit document

To manage non-sales transit document (document number 925 and document variant 00), there are two parameters on the dispatch policy that control the information printed in the XML-output.

Parameter 640 on 'Dispatch Policy. Open' (MWS010/J) controls which number series to be used for retrieving the Freight alias document ID when the document is created. This number series is managed per division (according to sending warehouse) and must be of the number series type DC.

Parameter 650 on 'Dispatch Policy. Open' (MWS010/J) controls where the information is retrieved from. Depending on which of the supporting variants the delivery is created to support, the rates and information are retrieved differently.

**Note:** This document should be printed after the whole delivery has been reported as issued.

### Settings for and editing 901 Dispatch Advices

The Dispatch Advice document 901 header information can be edited prior to sending the dispatch advice.

**Note:** To be able to generate the dispatch advice document 901, the delivery in question must have packing completed. This is indicated through Packing status equal 30 or higher.

- 1 You must first generate 901 in 'M3 Document. Open' (CRS928) with F14 - Gen standard. You must then generate 901 in 'Standard Document. Open' (CRS027). This must be done so that (MWS260) option 11=Doc header, knows that it should call 'Dispatch Advice. Edit/Send' (MMS475).
- 2 Now you must generate 901 in (MWS260), option 27=Gen/Print documents. This results in that available information is retrieved and updated to the dispatch advice header.
- 3 You can edit the document header information by using (MMS475).. You start (MMS475) with option 49 in (MWS410) and (DRS100) or by option 11 in (MWS260). If you want to send the dispatch advice at this stage, press F14=Advice and the document will be sent / printed.
- 4 You print 901 by using option 28 in (MWS260).

### Settings for package labels

Package labels are documents 912 00, 912 01, 912 03—9.

You can generate a package label with a flexible output.

The solution consists of the following parts:

- *Document identities*

The previous solution, Odette transport label, still works but has been assigned document number 912 and document variant 00. The newer package label has been assigned document number 912 and document variant 01.

If you wish to produce modified package label documents you should use document number 912 and document variants 03 -> 99.

The new document numbers and variants are generated in (CRS928) and (CRS027).

- *Document reference creation*

Document number 912 and the document variant of your choice is attached to a delivery number based on the document set logic defined in (CMS016) and (MWS250). The 912 document is managed in the same way as all other document numbers in the 900 series. The point to create document references depends on how field 340 in (MWS010) is defined.

Once created, the document reference can be managed in (MWS260).

- *Document output control*

A user-defined control of the output (stream file for MOM or XML file for FOM) can be generated by the package label printout function. Select program 'Delivery Document Output. Define' (MWS270) in (CMS016) and you can use the same field group used in (MWS250) but here to define output control fields in (MWS270). The most important control field 'Sort/detail lev' concerns the sort order and level of aggregation in the output.

- *Document printout*

The package label and the Odette transport label is now printed using the same solution as for other documents in the 900 series. Printout of all labels per delivery number is initiated from (MWS260). The option in 'Delivery. Connect Packages' (MWS423) that prints one specific label is still possible to use.

- *Document output*

The stream file / XML file MWS485PF contain header and detailed information that are created based on the output control fields defined in (MWS270). More or less detail output will be generated base on the 'Sort/detail' field defined in (MWS270). Header data is static but as much information as possible is added.

The purpose with the option is to eliminate the need of modifications of the stream file / XML file content, as much as possible.

- *Document layout*

The layout MWS485PF, connected to document number 912 and document variant 01, has been developed by IRD. Odette standard uses the old MMS485PF as layout without any changes.

## Managing Pick-up Deliveries for Customer Returns

This document describes what a pick-up delivery is and how it works in the context of transportation planning in M3 BE.

A pick-up delivery can be created based on a customer return, so the transportation of a vehicle can be planned at the warehouse to be at the customer site at the correct date and time to pick up goods to be returned to the warehouse.

A pick-up delivery can also be created based on a transportation order workflow, where 'Additional Delivery Information. Open' (MWS495) is used to specify delivery information for the external delivery. The purpose

is to create a transportation planning entity in M3 BE to be able to plan the transport of a vehicle from the M3 BE warehouse to either the departure address or the delivery address of the transportation order.

### Limitations

One limitation that is important is that if pick-up functionality is activated on a customer return header then it's not possible to enter return lines with different dates. The pick-up delivery must also be confirmed as started before it's possible to start the receiving or inspection of a return order line.

### Outcome

A pick-up delivery created, planned on a shipment and confirmed as started. The pick-up delivery can also be managed without shipment connection.

If the pick-up delivery originates from a customer return the start confirmation will enable normal functionality to receive and inspect goods in the customer return process.

### Before you start

Since the entering of a customer return is the first step of creating a pick-up delivery, a customer requirement of returning goods must exists.

Basic settings controlling the functionality are set up in 'Settings – Customer Returns' (OIS399). The following parameters are of major importance to activate the functionality:

- Dispatch policy – if this parameter is left blank, the functionality of pick-up delivery is not activated and it is not possible to use. If a dispatch policy is entered, it will be used to create the outbound pick-up delivery that can be planned together with other outbound deliveries.
- Pick-up delivery – This input controls how a pick-up delivery will be created. Not at all, manually or automatically at exit of customer return line entry in (OIS391). Note that this value is a proposal that will be displayed and changeable when the customer return is created.

Other settings that are needed to run the pick-up delivery functionality for a customer return order are:

- Address ID – The pick-up address must exist in the customer address table as a type 1 (delivery address). This address ID gives information about where the pick-up will be performed, that is, the end-point of the transportation.
- Sending Warehouse – The address of the sending warehouse is the starting point of the transportation.
- Route/Route departure - A route/route departure must be connected to the return order, either automatically via preselection or manually on 'Customer Return. Open' (OIS390/E).

### Scenario

In this scenario, a pick-up delivery is created based on a customer return header. Information in the return header controls information on the pick-up delivery such as sending warehouse, loading place, unloading place, confirmed pick-up date and time. One pick-up delivery can only contain lines from one return order header.

One limitation that is important is that if pick-up functionality is activated on a customer return header then it's not possible to enter return lines with different dates. The pick-up delivery must also be confirmed as started before it is possible to start the receiving or inspection of a return order line.

Pick-up deliveries are stored in table MHDISH (Deliveries) with the key columns 'Direction' (INOU) = 1 (Outbound), 'Reference order category' (RORC) = 3 (Customer order), and 'Stock transaction type' (TTYP) = 30 (Customer return).

Since one customer order return can only be connected to one pick-up delivery and one pick-up delivery can only include one return order header, the key column in table MHDISH that links the both entities together are 'Order number' (OQRIDN). The order number column (OQRIDN) in table MHDISH will contain the 'Receiving number' (OCREPN) from the customer order return header table (OCHEAD).

### Follow these steps

The pick-up delivery functionality that originates from a customer return includes following steps:

- Create a customer return with pick-up functionality activated
- Working with customer returns
- Manual or automatic creation of pick-up delivery
- Working with pick-up deliveries
- Goods receipt of customer returns

Since the transportation planning and dispatch process can look very different between implementations, the following steps include more examples of how pick-up deliveries can be managed in the context of the existing outbound process.

### Create return order with pick-up functionality activated

At the creation of the return order header in (OIS390), it must be decided if pick-up delivery functionality should be used or not. The following additional information must be entered during the return order creation with pick-up functionality activated.

- 1 On (OIS390/A), set parameter 'Pick-up delivery' = 1 (Manually creation) or 2 (Automatic creation at exit of return) to activate functionality.
- 2 If pick-up is activated, the address number must be entered to give information about where the goods should be picked up. The address number must exist as a delivery address connected to the customer.
- 3 A requested pick-up date and time must also be entered. The definition of this date is when the customer wants the transportation vehicle to be at the pick-up address to pick up the goods. The requested pick-up date and time is expressed in the time zone according to the place of load of the pick-up address.
- 4 Based on existing information and settings, the system will execute a route preselection when the detailed panel (OIS390/E) is displayed. This results in a selected route, route departure and delivery method. It also results in a calculated confirmed pick-up date and time that is the date and time when the route departure is calculated to be at the place of load of the pick-up address.

It is possible to manually change route/route departure by using function key F14 to open 'Route Departure. Display Alternate' (DRS146).

**Note:** The return date is protected when pick-up functionality activated. The information in the return date originates in this case from the confirmed pick-up date

On (OIS390/E), the pick-up delivery status is displayed. This status indicates where in the dispatch process the pick-up delivery is.

00 – Not activated

10 – To be created

15 – Manually deleted

20 – Created and ready for confirm

80 – Confirmed as started

90 – Closed

- 5** On (OIS391/B), the return order lines are created as usual but note the following:

- Return date is protected since all lines must be on the same pick-up date and time.
- On (OIS391/E), only the transport notified quantity that is open for changes. Fields for returned quantity and quantity to inspect are protected until the pick-up delivery is confirmed as started.

### **Working with customer returns**

Since the creation of a pick-up delivery could be a manual step, at a later stage after the return order has been created, the sorting order (8 – Pick-up date) is available on (OIS390/B). This view can be used to select all return orders that is created but do not have a pick-up delivery created yet. From here it is possible to create (21), delete (22) and close (23) a pick-up delivery. It is also possible to select option '43' to start the dispatch process for a specific pick-up delivery in the Delivery toolbox.

### **Manual or automatic creation of pick-up delivery**

The parameter 'Pick-up delivery', set during return header entry, controls how the pick-up delivery is created after the customer return entry is completed.

0 = Pick-up functionality not activated

1 = Activated, manually creation

2 = Activated, automatic creation at exit of return line entry

The manual creation can be done from:

- (OIS390/A) – Option 21='Create Pick-up delivery'
- (OIS390/B) – Option 21='Create Pick-up delivery'
- OIS390MI/CrtPickup

Regardless if the pick-up delivery was created manually or automatically, the result will be a delivery created and visible in 'Delivery. Open Toolbox' (MWS410) with delivery status 50='Picking lists created, delivery blocked for further additions'. The return order header will also be updated since the pick-up delivery status will be raised to 20=Created.

Changes of the return order is not allowed after the pick-up delivery has been created. To be able to add return lines, change quantities or dates, the pick-up delivery must be deleted. This can be done in:

- (OIS390/A) – Option 22='Delete Pick-up delivery'
- (OIS390/B) – Option 22='Delete Pick-up delivery'
- OIS390MI/DelPickup

This action is only possible if the pick-up delivery is not yet confirmed as started. It will result in a deletion of the pick-up delivery in table MHDISH (Deliveries) and an update of the pick-up delivery status (PUDS) to 15='Manually deleted' in table OCHEAD (Customer return header). It will also enable (OIS391) to make changes like add lines or change advise quantities.

### **Working with pick-up deliveries**

After creation, the pick-up delivery is managed within the outbound process. This means that it can be downloaded to an external TOI system, it can be manually connected to a shipment or it can be confirmed as started directly in (MWS410) if shipments are not used.

The main difference between a pick-up delivery and a normal outbound delivery is that a pick-up delivery is a delivery with no goods to be picked from the stock. That means that no picking lists will exist and therefore the normal confirmation process with reporting picking lists on the delivery or shipment level will not be applicable for a pick-up delivery. To confirm start of a pick-up delivery, options are available in 'Delivery. Open Toolbox' (MWS410) and 'Shipment. Open Toolbox' (DRS100).

Infor recommends you to use the field 'Stock transaction type' (OQTTYP) in views in (MWS410) if pick-up functionality is used. Fields OQINOU=1 and OQTTYP=30 identify a customer return pick-up delivery.

The confirmation of a pick-up delivery represents that the actual transportation has started. This will raise the 'Delivery status' (PGRS) on the delivery to 90='Closed' and the 'Pick-up delivery status' (PUDS) on the customer return is raised to 80='Started'.

If shipments are not used, the confirmation of a pick-up delivery can be done in:

- (MWS410/B) – Option 58='Confirm Pick-up delivery'
- MWS410MI/CmfPickup

If shipments are used, the confirmation of a pick-up delivery can also be done in:

- (DRS100/B) – Option 58='Confirm Pick-up deliveries'
- DRS100MI/CmfAllPickup

In 'Shipment. Open Toolbox' (DRS100), these fields can be added to the view to display pick-up information on the shipment.

- &NPUH – Number of connected pick-up deliveries
- &NPUL – Number of connected pick-up delivery lines
- &NPUR – Number of reported pick-up deliveries

**Note:** The weight and volume for a pick-up delivery will not affect the shipment's weight or volume since this represents the goods leaving the warehouse. Weight and volume to be picked up must be managed manually or by an external system.

Reversing the confirmation of the pick-up delivery is allowed given that nothing has changed on the return order (change of return or credit status, a change of quantities etc). Reverse can be done in:

- (MWS410/B) – Option 59='Reverse Pick-up delivery'
- MWS410MI/RvsPickup
- (DRS100/B) – Option 59='Reverse Pick-up deliveries'
- DRS100MI/RvsAllPickup

When the pick-up delivery is confirmed as started, the normal return flow, with receipt and inspection, can be done as usual.

The close of a pick-up delivery is an optional reporting step to show that the pick-up delivery has been performed and picked up at the customer's site, it can be reported in:

- (OIS390/A) – Option 23='Close Pick-up delivery'
- (OIS390/B) – Option 23='Close Pick-up delivery'
- OIS390MI/ClcPickup

### **Goods receipt of customer returns**

To start receiving and inspecting a customer return, the pick-up delivery must be confirmed as started. That means that the pick-up delivery status must be 80='Started' or 90='Closed'.

**Note:** If the process of receiving has started, it is no longer possible to reverse the pick-up delivery. It is however possible to add new lines or change quantities to the customer return after the pick-up delivery has been confirmed started but if so, no new pick-up delivery can be created. The reason is that there are situations when a customer sends goods back that have not been advised.

## Managing Pick-up Deliveries for Transportation Orders

This document describes what a pick-up delivery is and how it works in the context of transportation planning in M3 BE.

A pick-up delivery can be created based on a transportation order workflow, where 'Additional Delivery Information. Open' (MWS495) is used to specify delivery information for the external delivery. The purpose here is to create a transportation planning entity in M3 BE to be able to plan the transport of a vehicle from the M3 BE warehouse to either the departure address, or the delivery address of the transportation order.

A pick-up delivery can also be created based on a customer return, so the transportation vehicle can be planned at the warehouse to be at the customer site at the correct date and time to pick up goods to be returned to the warehouse.

### Limitations

One limitation is that a pick-up delivery can only contain one transportation order line. The transportation order number and order line number can be found on the pick-up delivery in fields 'Order number' (OQRIDN) and 'Delivery consolidation - field 1' (OQDCC1).

### Outcome

A transportation order line is a customer order line with a transportation item entered against a specific warehouse. The warehouse address information is the starting point of the pick-up delivery. Even if the transportation order will incorporate a transportation of goods from point A to point B, the pick-up delivery is managing the planning of when the vehicle must leave the warehouse to be at point A in time to start the transportation towards point B, or to be at point B in time.

The confirmation that the pick-up delivery has started is mandatory to report freight for the external delivery in 'Inbound and Outbound Deliveries. Open' (MWS490).

### Before you start

Since the entering of a transportation order line is the first step of creating a pick-up delivery, a requirement of transport goods or a vehicle from one place to another must exist.

The dispatch policy to be used for pick-up deliveries is entered in 'Settings – TPL Standard Values' (CRS728).

If this field is left blank, the functionality for pick-up deliveries is not activated for transportation orders. The dispatch policy to be used must have parameter 540='Delivery consolidation field 1' set to value &PUDL in 'Dispatch Policy. Open' (MWS010).

The parameter 590\_‘Pick-up delivery type’ in (MWS010) is used as a default value in ‘Additional Delivery Information. Open’ (MWS495) during creation of the transportation order.

The following values are possible:

- 0 = No pick-up delivery created
- 1 = Pick-up created. Use departure address as end destination.
- 2 = Pick-up created. Use delivery address as end destination.

Other mandatory parameters needed to run the pick-up delivery functionality for a transportation order are:

- A departure address and delivery address retrieved from a customer or a warehouse or manually entered.
- Sending Warehouse – The address of the sending warehouse is the starting point of the pick-up delivery.
- Route/Route departure - A route/route departure must be connected to the transportation order, either automatically via preselection, or manually on (MWS495/E).

### Description

A pick-up delivery is created based on address information from both the M3 BE warehouse on the transportation order line and the entered additional delivery address information. Information from the M3 BE warehouse controls the starting point of the pick-up delivery. The parameter ‘Pick-up delivery type’ will then control which address information on the transportation order, departure- or delivery address, that will be used as the end-point.

If the departure address information is used as end-point for the pick-up delivery, the date and time entered in the departure date/time fields will be used as requested delivery date/time when performing a route preselection and retrieval.

If the delivery address information is used as end-point for the pick-up delivery, the date and time entered in the delivery date/time fields will be used as requested delivery date/time when performing route preselection and retrieval. In this scenario, the departure address information for the transportation order will always be the same as for the pick-up delivery, which is the address information for the sending warehouse.

The result of the route retrieval will be a confirmed pick-up date/time (in the time zone of the end-point) and departure date/time at warehouse (when the vehicle is planned to leave the warehouse expressed in warehouse time zone). The used route, route departure and delivery method will also be retrieved according to route retrieval.

One limitation is that a pick-up delivery can only contain one transportation order line. The transportation order number and order line number can be found on the pick-up delivery in fields ‘Order number’ (OQRIDN) and ‘Delivery consolidation value 1’ (OQDCC1).

The entity of a pick-up delivery is stored in table MHDISH (Deliveries) with the key columns ‘Direction’ (INOU)=1 (Outbound), ‘Reference order category’ (RORC)=3 (Customer order), and ‘Delivery consolidation field 1’=&PUDL.

### Follow these steps

The pick-up delivery with origin from a transportation order includes following steps:

- Create a transportation order with pick-up functionality activated
- Working with transportation order
- Working with pick-up deliveries
- Report freight of transportation order

### Create a transportation order with pick-up functionality activated

During creation of additional address information in (MWS495), you must decide if pick-up delivery functionality should be used or not, and if used, which address to be used as end-point for the pick-up delivery. The following additional information must be entered with pick-up functionality activated:

- 1 On (MWS495/E), set parameter Pick-up delivery type=1 (departure address as end-point) or 2 (Delivery address as end-point) to activate and control the pick-up functionality.
- 2 If pick-up is activated, the route, route departure and delivery method must be set to be able to create a pick-up delivery. This can be done automatically by the normal route preselection, or manually by 'Route Departure. Display Alternate' (DRS146).
- 3 Using warehouse address information and route settings, the system will execute a route preselection based on the address information given in (MWS495). This results in a selected route, route departure and delivery method. It also results in a calculated confirmed pick-up date and time that is the date and time when the route departure is calculated to be at the end-point of the pick-up delivery.

On (MWS495/B), the pick-up delivery status can be displayed. This status indicates where in the dispatch process the pick-up delivery is.

00 – Not activated

20 – Created and ready for confirm

80 – Confirmed as started

90 – Closed

These different statuses are valid for pick-up deliveries originating from a transportation order.

The pick-up delivery is automatically created at exit of (MWS495/E) if all required data has been entered.

If the pick-up delivery functionality is activated, it is possible to change the additional delivery information, given that the pick-up delivery is not connected to a shipment or the start has not yet been confirmed.

### Working with transportation orders

On (MWS495/B), the existing transportation orders can be managed. Here, the link between the external transportation delivery and the pick-up delivery can be viewed together with other pick-up specific information such as route, route departure confirmed pick-up date etc.

Related option '43' will open 'Delivery. Open Toolbox' (MWS410) for the pick-up delivery, to enable an easy access to the transportation planning entity.

Sorting order (4 – Pick-up) can be used for searching purposes, for example, if the pick-up delivery is known and you want information about the transportation order.

When the pick-up delivery is created, the result will be a delivery created and visible in (MWS410) with delivery status 50='Picking lists created, delivery blocked for further additions'. The transportation order will also be updated since the pick-up delivery status will be raised to 20=Created.

### Working with pick-up deliveries

After creation, the pick-up delivery is managed within the outbound process. This means that it can be downloaded to an external TOI system, it can be manually connected to a shipment or it can be confirmed as started directly in (MWS410) if shipments are not used.

The main difference between a pick-up delivery and a normal outbound delivery is that a pick-up delivery is a delivery with no goods to be picked from the stock. That means that no picking lists exist and therefore the normal confirmation process with reporting picking lists on the delivery or shipment level will not be applicable

for a pick-up delivery. To confirm start of a pick-up delivery, there are options in (MWS410) and 'Shipment. Open Toolbox' (DRS100).

Infor recommends to use field 'Delivery consolidation - field 1' (OQDCF1) in views in 'Delivery. Open Toolbox' (MWS410) if pick-up functionality for transportation orders are used. Fields OQINOU=1, OQTYP=31 and OQDCV1=&PUDL identifies a transportation order pick-up delivery.

Confirmation of a pick-up delivery represents that the actual transportation has started. This will raise the 'Delivery status' (PGRS) on the delivery to 90='Closed' and the 'Pick-up delivery status' (PUDS) on the additional delivery information for transportation orders is raised to 80='Started'.

If shipments are not used, confirmation of a pick-up delivery can be done in:

- MWS410/B – Option 58='Confirm Pick-Up'
- MWS410MI/CmfPickup

**Note:** The weight and volume for a pick-up delivery will not affect shipment's weight or volume since this represents the goods leaving the warehouse. Weight and volume to be picked up must be managed manually or by an external system.

If shipments are used, confirmation of a pick-up delivery can also be done in:

- DRS100/B – Option 58='Confirm All Pick-Up Deliveries'
- DRS100MI/CmfAllPickup

In (DRS100), these fields can be added to the view to display pick-up information on the shipment:

- &NPUH – Number of connected pick-up deliveries
- &NPUL – Number of connected pick-up delivery lines
- &NPUR – Number of reported pick-up deliveries

Reversing the confirmation of the pick-up delivery is allowed given that freight reporting has not been performed for the external delivery. Reverse can be done in:

- MWS410/B – Option 59='Reverse Pick-Up'
- MWS410MI/RvsPickup
- DRS100/B – Option 59='Reverse All Pick-Up Deliveries'
- DRS100MI/RvsAllPickup

When the pick-up delivery is confirmed as started, the normal transportation order flow, with freight reporting, can be executed as usual.

Close of a pick-up delivery will be performed automatically when the freight is reported for the external delivery in 'Inbound and Outbound Deliveries. Open' (MWS490).

### **Freight reporting of external transport delivery**

To be able to start the freight reporting of a transportation order, the pick-up delivery must be confirmed as started. That means that the pick-up delivery status must be 80='Started' or 90='Closed'.

Note that if the freight has been reported for the external delivery, it is no longer possible to reverse the pick-up delivery.

# Manual Over-Allocation - Manufacturing Component Line Fashion

This procedure is used to manually allocate a manufacturing order line by connecting it to one or more locations and lot numbers (if needed). Moreover, all or part of the quantity in a manufacturing order line can be allocated.

After using this procedure, a manufacturing order line is over, fully or partly allocated. Over/full allocation results in status '33' (allocated) for the component line. Partial allocation results in status '23' (one part allocated with remaining quantity to be allocated).

## Before you start

In 'Settings – Warehouse Planning Control' (CRS701), a new tolerance field, 'Over allocation deviation' (OADE), controls the allowed over-allocation (percentage) when performing manual allocation in 'Allocation. Perform Detailed' (MMS121).

A manufacturing component material line must be specified that is not fully printed in a picking list or fully delivered.

## Follow these steps

- 1 Start 'Manufacturing Order. Open' (PMS100).
- 2 Start 'Manufact Order. Check Comp Availability' (PMS040) by selecting related option 22='Check component availability'.
- 3 Start 'Allocation. Perform Detailed' (MMS121) by selecting option 2='Change' in (PMS040).
- 4 Open panel (MMS121/P) and select panel 'Additional Info' (K). It opens (MMS121/K) with additional fields like 'Item description' (FUDS), 'Schedule number' (SCHN). Columns Lot Ref 2, Lot Ref 1, Location and Dynamic Attribute description are also opened and show important fashion-related information that is used to select the location to allocate.
- 5 All locations with allocatable quantity are displayed and will have an open line. Select a location and enter a quantity in the open 'Allocated quantity - basic U/M' field.

An over-allocation quantity is allowed for manually allocated items that are part of a manufacturing order. This over-allocated quantity is controlled by the tolerance field 'Over allocation deviation' (OADE) in 'Settings – Warehouse Planning Control' (CRS701) which permits allocation of a percentage over the ordered quantity.
- 6 Press Enter to update the field in the 'Allocated qty' header. The manufacturing order is allocated and the component material ready for issue.
- 7 Press F3 to return to (PMS040).
- 8 Press F3 to return to (PMS100).

## Package and Crate

### Package:

A package is a unit created when reporting packing results. A package consists of packaging material and can contain one or more separately packed items or other smaller packages.

### Crate:

In the food and beverage industry, crates, cases, or bottles are often used to manipulate loose items. These containers are not numbered nor labeled. There could be several of the same sort on one delivery. For example, there are a quantity of 12 crates of sort 10L in the delivery.

## Packaging

Packaging is the material or equipment that the item quantity is packed or placed in. A packaging is defined by name, weight and volume capacity, length, width, height, and tare weight. See 'Packaging. Open' (MMS050).

Normal packaging can be defined per customer or item in 'Item. Connect Packaging' (MMS053).

Packaging can consist of an item number and can be handled like an item for planning purposes.

A crate packaging is also defined in 'Packaging' (MMS050) with a packaging type activated for crate management. Crate packaging can have a tare weight and a volume.

## Packing

Packing is the operation you carry out when you collect one or several items, the lines on a picking list, for example, and make a package and use packaging material, such as a box. Packing can be done manually or automatically.

During automatic packing, the entire quantity of goods is separated into packages according to a table specifying how many units of an item can fit into one package.

During manual packing, the contents of a package are determined when each individual package is created. A package may contain items for different orders but must be delivered to the same delivery address. During manual packing, packages with the same content can be created simultaneously.

The packing status for each delivery order is displayed in 'Delivery. Open Toolbox' (MWS410), and for the shipment in 'Shipment. Open Toolbox' (DRS100).

If different item numbers could be packed in the same package or not is controlled by the setting in 'Dispatch policy. Open' (MWS010).

# Package-Based Picking and Picking Capacity Split

This document describes package-based picking and picking capacity split. Six scenarios are described for package based picking and two for picking capacity split.

Package-based picking supports the following:

- Picking multiple pick lines into packages or picking full packages
- Pick reporting controlled via packages
- Display of the package information related to the picking process sufficiently.

Picking capacity split supports the following:

- Dividing picking tasks (picking list or wave picking lists) into reasonable units of work.

## Outcome

Based on the packages, you have released, managed, and reported a picking list or a wave picking list.

Based on the defined picking capacity figures, you have split a picking list or wave picking list into several picking lists.

Package-based picking enables you to pick packages that are already packed or to pick individual items that make up a package.

Package-based picking is useful for companies that have the following requirements:

- Large volumes of split picks
- Large volumes of full-pallet picks or full-package picks.

Picking list capacity split is a function that separates the different picking list lines into reasonable picking workloads. Several capacity fields control how the capacity is split.

Picking list capacity split is useful for companies that have high picking volumes.

The following tables are updated:

- Picking capacity - MPICAP (MWS175)
- Stock zone - MITARE (MMS040)
- Warehouse equipment - MITEQU (MWS023)
- Item per warehouse - MITBAL (MMS002)
- Pack parameters - CSYPAR (CRS706); Headings for the (MWS423/H)
- Dispatch policy - MHDIPO (MWS010)

## Before you start

Complete the settings as described in [Settings for Package-Based Picking and Picking Capacity Split on page 509](#).

## Purpose

### Capacity-based picking list creation

- Enables the generation of optimized picking tasks based on the warehouse, stock zone, or warehouse equipment capacity (maximum number of packages, maximum number of lines, maximum gross weight, maximum volume, total estimated pick time).
- Enables optimization based on pack reporting information or allocated information.
- Setting up a capacity constraint of one package, every picking task will represent a single package.
- Enables capacity control of both regular picking lists and wave picking lists.

### **Improved package information visibility and traceability**

- Better visibility of package info through the picking process.
- Combines pick and pack information.
- Both ordinary picking list and wave picking lists visualized regarding package information.

### **Package-based reporting capabilities**

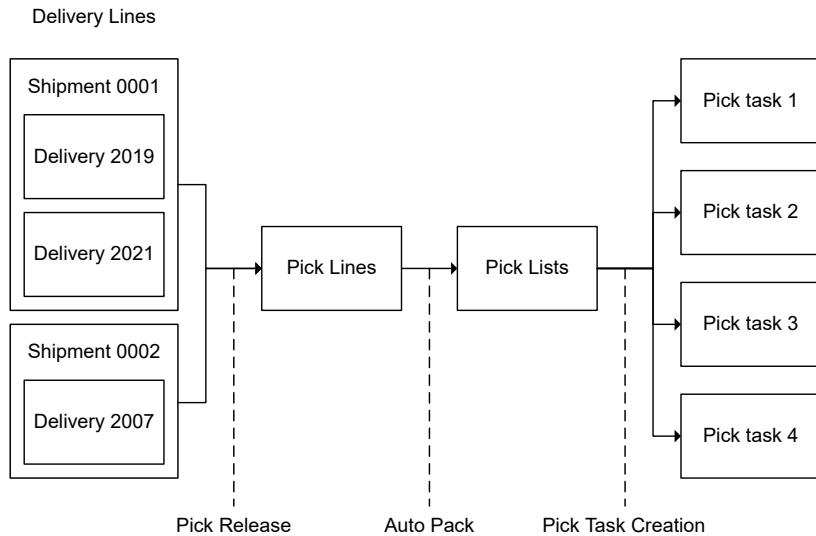
- Move to pack, move to dock, and issue reporting can now be done based on the package number that reflects the logistical flow through the warehouse. In earlier M3 versions, the reporting typically had to be done on the picking list or pick line level.
- Alternate unit of measures (U/Ms) introduced at pick reporting enable the picking task to be displayed and reported in alternate U/Ms (pieces, pallets, cases, and so on). You are not limited to reporting in the basic U/M.
- Both regular picking lists and wave picking lists can be reported based on packages.

### **Flexible package numbering**

- Package aliases have been introduced for full flexibility and traceability.
- Support is provided for user-defined package numbering methods (for example, simplified pack processing (SPP)).
- Unique package numbering methods are available for the carrier or forwarder (for example, SPP).

### **Scenarios for capacity-based picking list creation**

#### **Scenario 1 - Capacity-constrained picking list**



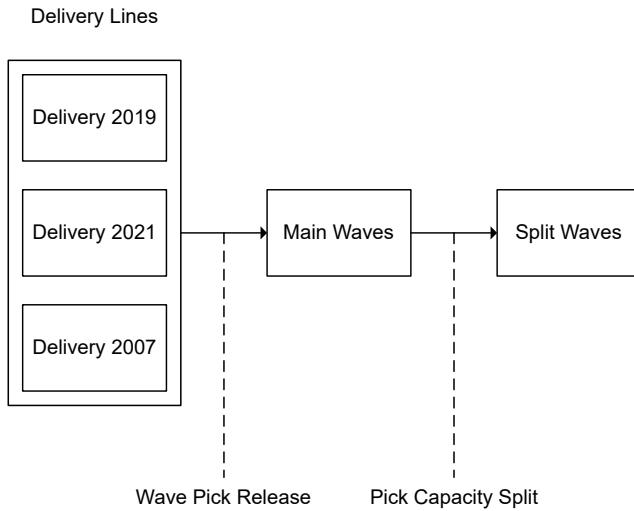
When a delivery is released for picking one or several picking lists are created. The goods to pick are originally on one picking list. This one list can be split in two steps.

In the first step the goods is split into different picking lists based on in which area in the warehouse to pick it, the stock zone, and if some equipment needs to be used to pick it, warehouse equipment. In scenario 1 there are goods to pick from stock zone 01, 02 and 03 and there are goods to pick with trolley, by fork lift and also goods that don't require any equipment. The goods to pick are divided on picking lists for combinations of these two parameters. In this scenario this makes four picking lists.

In the second step each picking list created in the first step is divided again, this time based on some capacity constraint. The available capacity constraints are: maximum number of packages (this requires automatic packing during pick release, indicated by the green arrow), maximum picking time, maximum weight of goods to pick, maximum volume of good to pick and maximum number of picking list lines.

The result of the two picking list steps is that the goods to pick for a delivery is formed on a number of picking lists based on where to pick it, what to use to pick it and also on how much it is to pick. The resulting picking lists are called pick tasks in the picture.

### **Scenario 2 - Capacity-constrained wave picking list**



In this scenario more than one delivery is released for picking and picked together in a wave pick. In a wave picking is made for more than one delivery at a time. As in scenario 1, for each delivery there is originally one picking list per delivery. However, these picking lists are part of the same wave picking list. Each of the original picking lists is first split on stock zone and on warehouse equipment. The picking list with the same combination of stock zone and warehouse equipment from each delivery are grouped together to one wave picking list per stock zone and warehouse equipment. In the picture these are called queues. Each of these wave picking lists are then divided further based on capacity constraints, the same constraints as in scenario 1. The end result is the same as in scenario 1, with the difference that each final picking list contains goods to pick for more than one delivery.

### Scenarios for package-based picking

#### **Scenario 1 - Full-package picking**

Full packages are picked, for one single delivery, from their storage location. No packing is needed. The picked packages are labeled and directly put on the dock to be loaded.

#### **Scenario 2 - Multiple full-package picking**

Full packages are picked, for more than one delivery, from their storage location. No packing is needed. The picked packages are labeled and directly put on the dock to be loaded.

#### **Scenario 3 - Pick and pack for final consignee**

Goods are picked, for one single delivery, from various parts of the warehouse. The goods are taken to the pack station and packed in one or several packages. The packages are labeled and put on the dock to be loaded.

#### **Scenario 4 - Wave pick and pack for final consignee**

Goods are picked, for more than one delivery, from various parts of the warehouse. The goods are taken to the pack station and packed in one or several packages. The packages are labeled and put on the dock to be loaded.

#### **Scenario 5 - Pick into internal tote**

Goods are picked for one single delivery. The goods are placed in an internal package, a tote, during picking and taken to the pack station. There the content of the tote is transferred to one package. The package is labeled and put on dock to be loaded. One tote is one picking task. Each picking task is one package. There may be several picking tasks for the delivery.

#### **Scenario 6 - Wave pick into internal tote**

Goods are picked for more than one delivery. The goods are placed in internal packages, totes, during picking and taken to the pack station. There the contents of the totes are transferred a number of packages, at least one per delivery. The packages are labeled and put on dock to be loaded.

## Partial Delivery

A partial delivery is the part of an order or order line that is delivered when the entire order is not delivered at once. When this occurs, a backorder is created for later delivery.

A partial delivery can be scheduled to accommodate a customer's request for delivery of order lines at different times. This means the backorder includes both planned and delayed deliveries.

## Performing Packaging Actions

This document describes how to perform packaging actions. Packaging actions are actions performed based on the packaging used.

Packaging actions can be divided into these parts:

- Creating customer charges for the packaging
- Managing the packaging ledger and inventory of the returnable packaging

### **Outcome**

You have added packaging charges on the order delivery.

The packaging ledger is displayed in 'Packaging. Open Ledger' (MWS080) and stored in MPCKLG table. It shows the balance of each type of packaging at different holders. A holder can be a warehouse, a customer, a forwarder, or a supplier.

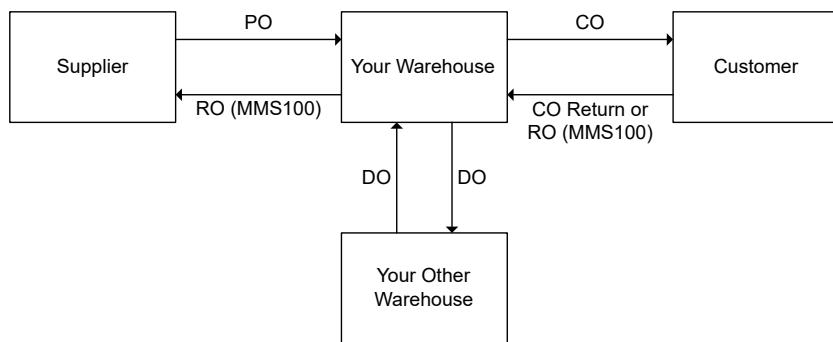
The packaging ledger transactions are displayed in 'Packaging. Enter Ledger Transactions' (MWS081) and stored in MPCKLT table.

The packaging stock inventory is updated.

### Before you start

The settings in [Define Settings for Packaging Actions](#) on page 379 must be defined.

### Outline



- PO - To buy new stock of packaging
- RO - Take the packaging out from stock (for example, a claim sent to the supplier)
- CO - Packaging sent with goods
- CO return - Return of packaging from the customer
- RO - Packaging returns using RO (transaction type 40)
- DO - Packaging from/to warehouses.

Automatic or manual application of the packaging actions according to the settings in dispatch policy:

- Automatic when fully packed
- Automatic when delivery fully issued

You can perform these packaging actions for each packaging:

- Add packaging charges
- Update the packaging ledger
- Add order line for the packaging on the CO, DO, or RO

### Performing packaging actions for outbound deliveries

Depending on the settings in **265 Automatic execution of packaging actions** field in 'Dispatch Policy. Open' (MWS010), packaging actions are performed in these ways:

- Manually (0)
- Automatically after fully packed (1)
- Automatically after fully issued (2)

To manually update packaging actions, use the related option **39-'Update packaging actions'** in 'Delivery. Open Toolbox' (MWS410).

### Packaging actions for customer orders

The **Packaging act** field on the CO order type in 'CO Type. Open' (OIS010) must be selected.

These are the results of performing packaging actions for customer orders:

- The **Packing status** field is raised to status **40-'Packaging actions completed'** on the (MWS410/E).
- The packaging charges are displayed in 'Customer Order. Connect Charges' (OIS103), which is started by using option **12** in 'Delivery. Open Toolbox' (MWS410).
- The packaging ledger is updated for the expected holder and displayed in (MWS080).  
The holder can be the customer or the forwarder, depending on the packaging type holder selection table 'Packaging Holder Selection Table. Open' (DRS081). If there is no relevant setup in (DRS081), then the customer becomes the holder by default. If the rule identified has holder type **1-Forwarder** but there is no forwarder on the delivery, the holder type reverts to **0-Consignee**.
- Order lines are created for the packaging items according to the packaging type holder selection table (DRS081). If there is no relevant setup in (DRS081), the order line creation method from 'Packaging Type. Open' (DRS080) are applied.
  - If you select **1='Add line to order'**, an order line is created as an additional customer order line. The packaging order lines are displayed as the last order lines on the first order in the delivery, if there are several orders in one delivery.
  - If you select **2='Create new requisition order'**, a new requisition order issue is created for the packaging item.

### Packaging actions for distribution orders

The **Packaging act** field on the DO order type in 'Req/Distr Order Type. Open' (CRS200) must be selected.

These are the results of performing packaging actions for distribution orders:

- The **Packing status** field is raised to status **40-'Packaging actions completed'** on the (MWS410/E).
- The packaging ledger is updated for the expected holder and displayed in (MWS080).  
The holder can be the receiving warehouse or the forwarder, depending on the packaging type holder selection table (DRS081). If there is no relevant setup in (DRS081), the receiving warehouse becomes the holder by default. If the rule identified has holder type **1-Forwarder** but there is no forwarder on the delivery, the holder type reverts to **0-Consignee**, which is the receiving warehouse.
  - If you select **1='Add line to order'**, order line is created as an additional distribution order line. The packaging order lines are displayed as the last order lines on the first order in the delivery, if there are several orders in one delivery.  
When the distribution order is received, the packaging item is also received. If the forwarder is the holder, a requisition order issue is created instead of distribution order lines to support packaging item. If the carrier keeps the packaging, the packaging item cannot be distributed to the destination warehouse, but it can only be issued from the shipping warehouse.
  - If you select **2='Create new requisition order'**, a new requisition order issue is created for the packaging item.  
When the distribution order is received, a requisition order entry is created to receive the packaging item. If the forwarder is the holder, no requisition order entry is created. If the carrier keeps the packaging, the packaging item cannot be received in the destination warehouse.

- When the packaging item is itself distributed, the packaging ledger is updated.

#### Packaging actions for purchase order

The **Packaging action** check box on the 'Purchase Order Type. Open' (PPS095) must be selected.

Purchase order receipts update the packaging ledger when the packaging item is received.

#### Packaging actions for Requisition order

The **Packaging act** field on the DO order type in 'Req/Distr Order Type. Open' (CRS200) must be selected.

Performing packaging actions for requisition orders show these results:

- The **Packing status** field is raised to status **40-'Packaging actions completed'** on (MWS410/E).
- The packaging ledger is updated for the expected holder and displayed in (MWS080).

In a requisition order issue, no receiver will hold the packaging. Although the forwarder keeps the packaging if defined in (DRS081); otherwise, no holder exists. If the rule identified has holder type 1-'Forwarder' but no forwarder exists on the delivery, the holder reverts to 0-'Consignee', which results in no holder in the requisition order.

Packaging ledger transaction process:

- If the holder type is 0-Consignee and no consignee exists in the requisition order issue, only a decrease from the warehouse is recorded.
- If the holder type is 1-Forwarder, the packaging ledger records both a decrease from the warehouse and an increase in the balance held by the forwarder.

Order line creation for the requisition order issue:

- If you select 1='Add line to order', order line is created as an additional requisition order line. The packaging order lines are placed as the last lines on the first order in the delivery, if multiple orders are included.
- If you select 2='Create new requisition order', a new requisition order issue is created for the packaging item.

When a requisition order is received, no entry is created to receive the packaging item.

When the packaging item is issued or received through a requisition order, the packaging ledger updates the holder set on the order line.

#### Errors in order line creation

If no customer order line is created, you can view the reasons in 'Error Log. Open' (EVS083).

To access the error log in (EVS083), select option 14 in 'Batch Customer Order. Open' (OIS275).

To avoid errors, make sure that these settings are defined for the packaging item:

- The cost price is specified.
- The item is a sales item.
- The item exists in the warehouse.
- The country of origin exists.

### Undo packaging actions

To revert the packaging actions, select option **40-'Undo packaging actions'** in (MWS410).

These are the results of undoing packaging actions:

- Order lines that were created for packaging actions are deleted.
- Stock transaction history records for the packaging item are deleted, ledger balances are updated.

**Note:** The packaging actions cannot be undone if the accounting is done, the invoicing is completed, or the delivery is fully received.

### Display and update the packaging ledger

You can display balances for the packaging at different holder on 'Packaging. Open Ledger' (MWS080/B). You can update the balance manually. Each manual update of the ledger result in a transaction is recorded in the packaging ledger transactions in (MWS081). Use the **Remark** field to indicate the reason for the update. The remarks are then saved on the detailed transaction history in (MWS081).

To access a list of all packaging ledger transactions, click the related option **11-'Details'** in (MWS080), which opens (MWS081).

## Picking Release Delivery Toolbox

This document explains how you release a delivery for picking. It also describes how to work in 'Delivery. Open Toolbox' (MWS410).

### Outcome

- A delivery is released for picking. Depending on the settings, a picking list is printed or not printed.
- A shipment is released for picking (with a number of deliveries connected to a shipment). Depending on the settings, a picking list is printed or not.
- Delivery document(s) may be connected to the shipment/delivery. They can be manually or automatically connected.
- A wave number may be connected to the shipment/delivery. A wave number is a number of picking lists/picking lines connected to a wave picking list.

Delivery status is raised to 50=Picking list(s) created, delivery blocked for further additions.

The following table are updated:

- Delivery numbers are stored in the MHDISH table.
- Delivery lines are stored in the MHDLIS table.
- Shipments are stored in the DCONSI table.

### Before you start

- The conditions listed in [Basic Settings for Dispatch Handling](#) on page 300 must be met

- An order is created and allocated. It is not released for picking.
- The delivery's progress status must be 05=Ready to be released for picking.

### Follow these steps

#### Open Toolbox

- 1 Start 'Delivery. Open Toolbox.' (MWS410/B).

If (MWS410) is opened from another program (DRS100, for example) via an option, a predefined information view can be displayed. Refer to

- 2 Select a view for the B panel. Refer to for how to create views and sorting orders.

**Note:** When you create view and sorting orders in (MWS410) and (MWS411), select only the fields required or needed. Selecting too many records can cause performance problems.

An appropriate view, selected on deliveries, can include the following fields:

- OQDLIX Delivery number
- OQDSDT Departure date
- OQDSHM Departure time
- OQRIDN Order number
- OQRORC Reference order category
- OQCONA Consignee
- OQLRLFA Released for allocation
- OQLRTD Released for picking
- OQCONN Shipment
- OQGRWE Gross weight
- OQPIST Packing status
- OQWHLO Warehouse
- OQPGRS Progress status.

- 3 You can now release one or several deliveries for picking directly from the B panel.

- Release one delivery number (one line) by selecting option 32=Release for picking.
- Release several delivery numbers by pressing F19=Release all pick lists.
- Clear the lines you do not want to release by using option 22='Select/deselect' in front of those lines that should not be released. Then press F19.

- 4 On the E panel, you can change the 'Transaction date', 'Transaction time' and 'Shipment assembly' fields.

- 5 Address information is displayed on the F panel.

- 6 Shipment, route and load information are displayed on the I panel.

#### Options on the (MWS410/B) Panel

- 1 There are several functions connected to the deliveries. For a complete description, refer to the Supply Chain Execution documentation.
- 2 The printer for the picking list is defined in 'Stock Zone. Open' (MMS040) in the Printer field.

#### Wave Picking

This can be used for large volumes. A wave picking list is a group of picking lists with the same warehouse, stock zone and warehouse equipment.

- 1 Start the (MWS410/P) panel to define some basic settings for the wave number.
- 2 Activate the 'Wave creation' field.
- 3 In the 'Wave line specification' field, specify whether all included order lines per wave line should be specified on the wave picking list.
- 4 The printer for the picking list is defined in 'Stock Zone. Open' (MMS040) in the Printer field.
- 5 Press Enter to redisplay the B panel.
- 6 Press F19 to release all picking lists included in the wave. This creates a wave number.

## Perform Package-Based Picking and Picking Capacity Split

This document explains how you use package-based picking and picking capacity split.

Package based picking supports the following:

- Picking multiple pick lines into packages or picking full packages
- Pick reporting controlled via packages
- Display of the package information related to the picking process.

Picking capacity split supports the following:

- Dividing picking tasks (picking lists or wave picking lists) into reasonable units of work.

### Outcome

Based on the packages, you have released, managed, and reported a picking list or a wave picking list is created.

Based on the defined picking capacity figures, you have split a picking list or wave picking list into several picking lists.

Package-based picking enables you to pick packages that are already packed or to pick individual items that make up a package. It is also useful for companies that have the following requirements:

- Large volumes of split picks
- Large volumes of full-pallet picks or full-package picks.

Picking list capacity split is a function that separates the different picking list lines into reasonable picking workloads. Several capacity fields control how the capacity is split.

Picking list capacity split is useful for companies that have high picking volumes.

Using package-based picking and picking capacity split affects the following data in M3:

- Picking capacity - MPICAP (MWS175)
- Stock zone - MITARE (MMS040)
- Warehouse equipment - MITEQU (MWS023)
- Item per warehouse – MITBAL (MMS002)
- Pack parameters – CSYPAR (CRS706); Headings for the (MWS423/H)

- Dispatch policy – MHDPO (MWS010)

### Before you start

The settings in [Settings for Package-Based Picking and Picking Capacity Split](#) on page 509 must be made.

### Follow these steps

#### Create Capacity-Based Picking List

For this activity, you must have an order line in status 33-'Allocated' or status 23-'Partially allocated'. The delivery should also be released for allocation.

- 1 Start 'Delivery. Open Toolbox' (MWS410). Select option 32-'Release for picking'. The status is raised to 44. This activity can also be triggered automatically by the auto start job (MWS970) based on the event of the current date and time being past the transaction date and time.
- 2 Select option 11-'Picking Lists'. 'Picking List. Report' (MWS420) is started. Here you can display the picking list (or picking lists, if the picking list was split) based on settings for picking list capacity.
- 3 If you want to display the calculated values, select option 27-'Plan pickers'. This starts 'Picking List. Plan Pickers' (MWS415). The E panel is displayed. Under the group line 'Picking Capacity Split Information' you can view all information about the split.

The information on the E panel first shows the capacity values that you defined in 'Picking List capacity. Open' (MWS175), and then the calculated values that caused a picking list to be split. By comparing these values, you can determine why the picking list was split and which capacity field caused it.

#### Create Capacity-Based Wave Picking List

For this activity, you must have an order line in status 33-'Allocated' or status 23-'Partially allocated'. The delivery should also be released for allocation.

The activity also requires that you have activated Pick Resource Planning on the dispatch policy in field 090 'Pick resource planning' in (MWS010).

- 1 Start 'Delivery. Open Toolbox' (MWS410). Select option 32-'Release for picking'. The status is raised to '44' and the delivery is released for pick resource planning. This activity can also be triggered automatically by the auto start job (MWS970) based on event of the current date and time being past the transaction date and time.
- 2 Start 'Picking List. Plan Pickers' (MWS415). Make sure that the fields on (MWS415/P) are set according to the required settings. You can either select the deliveries that should be part of one wave and select option 19-'Crt wav + rel'. Alternatively, you can select F19-'Crt wav + rel' to include all deliveries to be part of the wave.
- 3 Start 'Picking List. Report' (MWS420) and set sorting order 2='By picking wave'. Here you can display the wave picking list (or wave picking lists, if the wave picking lists were split), based on the settings for wave picking list capacity.

#### Display Package Information

You can display the package information in several ways.

- Display Packages for Picking List

For this activity, you must have completed advanced pack reporting, either manually or automatically.

Start 'Picking List. Report' (MWS420). Select a view that includes requested fields that visualize the package information for each picking list.

The information that can be displayed includes number of packages, packaging, and package number. If the picking list consists of several packages, some of the fields are left empty.

- Display Packages for Picking List Line

'Picking List. Report Lines' (MWS422) In (MWS420) you select option 11-'Picking list lines'.. Sorting order 4 (Packages) is displayed by default. Here you can view the package detail lines instead of the pick lines.

In (MWS420) The subfile contains package-related information such as packed quantity, package number, and packaging.

**Note:** The presentation mode when using package-based picking displays package details instead of pick lines. One example of one pick line of 100 pieces packed into four packages of 25 pieces each would display four lines in MWS422/B, not one.

- Display Packages for Wave Picking List Line

1 In (MWS420) you select option 12-'Wave line' from sorting order 2 (By picking wave). 'Picking List. Report Wave Line' (MWS421) is started. In (MWS421) you select option 12-'Picking list package details'. (MWS422) is started. Sorting order 5 (Packages by wave) is displayed by default. For each wave line you here can view the package detail lines instead of the pick lines.

2 The subfile contains package-related information such as packed quantity, package number, and packaging.

**Note:** The presentation mode when using package-based picking displays package details instead of pick lines. One example of one pick line of 100 pieces packed into four packages of 25 pieces each would display four lines on (MWS422/B), not one.

For information about how to use wave picking lists, see [Wave Picking](#) on page 539.

- Display Picking List Lines for the Package

In (MWS420), select option 15-'Packages'. 'Delivery. Connect Packages' (MWS423) is started. Select option 12-'Picking list lines'. (MWS422) is started. Sorting order 6 (Packages only) is displayed by default. Here you can view the picking list lines for the package.

The subfile contains package-related information such as packed quantity, package number, and packaging.

## Report Package-Based Picking

You can report the package-based picking in several ways. Package-based pick reporting means that you perform the reporting using package information to identify and process the actual reporting.

- **Report Picking by Package**

1 In (MWS420), select option 15-'Packages'. (MWS423) is started.

2 Depending on the type of reporting you want to do, select the requested option for a specific package number. All options will report all package detail lines included in the package according to the selected option.

You can select from option 17-'Move to packing location', 18='Move to docking location', or 16='Confirm issue'. The two Move options will move package content to the location defaulted according to the settings defined on (MWS422/P).

All reporting options can be used for the package being reported and below the package level. For example, if a pallet package on level 000 is moved to dock, all included boxes on level 001 will also

be reported as moved to dock. Any packages on subsequent levels (002, 003, etc) must be reported separately.

Select a view including the field ORPISS Pick status. This status field will indicate how far the package has been reported in the picking process.

- **Report Picking by Package Detail**

- 1 In (MWS420), select option 11-'Picking list lines'. (MWS422) is started.
- 2 Depending on the type of reporting you want to do, select the requested option for a specific package detail line. All options will report the individual package detail line according to the selected option.

Each package detail line can either be the full pick line or, more usually, part of a pick line. For example, one pick line can consist of 100 pieces and each package detail line can then consist of 25 pieces each. This results in four package detail lines in (MWS422/B). What you report is each individual package detail of 25 pieces.

If a pick line is fully packed, the transaction quantity is protected. If parts of a pick line are packed, the packed part is protected regarding the transaction quantity, while the unpacked part is open for manual changes. So, no partial reporting is allowed for a packed detail line.

You can select from option 17-'Move to packing location', 18-'Move to docking location', or 16-'Confirm issue'. The two Move options will move package content to the location defaulted according to the settings defined on (MWS422/P).

- **Report Picking in Alternate U/M**

For this reporting option, you must have made settings for picking reporting in alternate U/Ms on (MMS002/G) according to [Settings for Package-Based Picking and Picking Capacity Split](#) on page 509.

In (MWS420), select option 11-'Picking list lines'. (MWS422) is started.

For each pick line or package detail line, the transaction quantity is displayed in the alternate U/M defined in (MMS002/G). If the conversion between basic U/M and alternate U/M results in a number of decimals that is greater than the allowed value, the display is done in the basic U/M.

If an unpacked pick line is valid, a partial report can be made in the alternate U/M. For packed pick lines, the transaction quantity is protected.

For details about how to perform the reporting, see 'Report Picking by Package Detail'.

- **Report Pick and Pack per Picking List**

In (MWS420) select option 14-'Pick and Pack'. (MWS422/E) is started.

Depending on whether the pick line is packed, the processing follows two paths (see below). Perform the type of reporting you want to do. The pick line or package detail line will be reported to the state you have selected. After reporting is performed, the next pick line or package detail line will be displayed according to the sort order of the picking list.

If a pick line is not packed, the full pick line is displayed and will then be packed according to how (MWS422/E) is entered. The pack reporting is always performed first and the pick reporting as the second step. If you want to continue to pack in packages that are not full, clear the field 'Pack in new'. If you want to continue to pack in a new package number, select the field 'Pack in new'. After each pack operation is performed, (MWS422/E) is redisplayed, showing the packed information.

If the pick line is packed, either as described above or prior to starting option 14 in (MWS420), the packed information is displayed and the package detail line. Either select F17-'Move to packing location', F18-'Move to dock location', or Enter-'Confirm Issue. Depending on the option you select, the package detail line will be reported accordingly.

- **Report Pick and Pack per Wave Picking List**

In (MWS420) select sorting order 2-By Picking Wave' and option 34-'Wave Pick/Package'. (MWS422/E) is started.

See the previous description for reporting per picking list. The processing for a wave picking list is more or less identical to picking list processing and reporting. The only difference is that pick lines or package detail lines will be displayed for the full wave sorted according to the selected sort order.

## Manage Package Information

- **Package Alias**

On the (MWS423/H) panel you can enter three different package aliases.

A package alias number can be used to identify a package with an ID that is different from the internal M3 package number. For example, a forwarder can assign your internal M3 package number with an ID used internally by the forwarder. By updating the ID in (MWS423/H), you enable tracking the package using the alternative ID.

The headings for package aliases are user defined and defined for each division in 'Settings – Packing' (CRS706).

- **Move Package Content**

- 1 In (MWS420), select option 15-'Packages'. (MWS423) is started. Select option 37-'Move contents'. (MWS426/A) is started, prompting for a To package.
- 2 Enter the 'To package' with the package in which the content should be moved. Use F4 to view the possible packages. Press Enter.  
**Note:** You can only move the selected package content to another package inside the same delivery. If you want to move packages between deliveries, use option 36-'Move from' (MWS423).
- 3 (MWS426/A) is redisplayed, providing additional information about the From package and To package. Press Enter to confirm the content move.

Details are provided for the two package numbers to visualize the content of both packages before you perform the move.

- **Define a Package as Open, Committed or Full**

In (MWS420), select option 15-'Packages'. (MWS423) is started. Open the E panel and select an alternative in the 'Package status' field. The status selected will affect how manual and automatic pack reporting is performed.

If package status is 00 (Open package) is selected, you are always allowed to pack additional items (pick lines) into the package.

If package status is 80 (Committed package) is selected, the automatic pack reporting will never add items (pick lines) into the committed package. The manual pack reporting will issue a warning message if items (pick lines) are packed into the package, but you can override the warning. A committed package should be regarded as still inside the warehouse but physically unavailable to influence. For example, it might be out on the conveyor being physically packed.

Full packages in package status 90 never allows for adding more items (pick lines) into the package, regardless of whether the pack reporting is done manually or automatically. A full package status should be used when the rules in 'Item. Connect Packaging' (MMS053) still allow more pick lines to be added but the package is physically full.

# Perform Picking Resource Planning

This document explains how you direct picking work to the required resources.

This is an optional step in the dispatch flow.

## Outcome

- Picking teams are assigned to stock zones.
- A zone's picking lists may be split according to equipment required.
- Default picking times are set by various objects such as warehouse, location type, item and so on.
- When picking resource planning is activated in (MWS010), the picking lists will receive picking status 30='Ready to resource plan' when they are created in 'Delivery. Open Toolbox' (MWS410) or created automatically.
- After the resource planning is done, the picking resource planner can raise the status to 40=Ready to pick and report.

Picking work is directed to the required resources.

Picking teams are stored in the MITTEM table. The connection between item and picking time is stored in the MITPTI table.

## Before you start

- Order type and dispatch policy must be set.
- The '090 Picking resource planning' field in 'Dispatch Policy. Open' (MWS010) must be activated.
- An order must have been created, allocated and released for picking (Picking status=30).
- The conditions listed in [Define Settings for Picking Resource Planning](#) on page 391 must be met.

## Follow these steps

### 1 Start 'Picking List. Plan Pickers' (MWS415/B).

Select a view for the B panel in the 'View' field. If you leave this field blank, a standard view is displayed.

An appropriate view, selected on deliveries (the 'Delivery number' field), can include the following fields:

PIDLIX Delivery number

OQCONN Shipment

OQCONA Consignee

OQRORC Reference order category

&NOLI Number of lines

PINPLL Original number of picking list lines

PITEAM Picking team

PIPICK Picker

PIPISE Warehouse equipment

PIPLRI Wave number

PIPLTM Picking time.

**2** Specify the warehouse.

You can set filters on one or more of the following fields: Stock zone, Warehouse equipment, Picking team, Departure date and Route.

**3** Select F17=Selection if you want to make more selections on what to display. This starts the (MWS415/S) panel. Here you can also select From/To values.

You can change delivery to a new printer, new picking teams and/or new pickers.

**4** Select option 22 for the delivery or option 2 for the line. This starts the E panel.**5** To select several deliveries, select option 22 for the deliveries (or option 2 for the lines) and press Enter. Enter the new value(s) on the E panel. This will update all the deliveries you selected with option 22.

**Note:** If you enter a value that is not part of the picking team or if the value is not a registered user in M3, the Picker field will display a warning on panel E. Press Enter to override these warnings.

**6** Release the picking list by selecting option 16 in front of the line or by pressing F16 to confirm all lines. This will raise the picking list status to 40=Ready to pick and report.**7** You can release a wave picking list by opening the P panel and activating the 'Wave picking used' field. Then release several deliveries by pressing F16 on the B panel.**8** By pressing F19='Create wave + release', a one-step wave creation and wave release process is processed. The 'Wave creation' field on the (MWS415/P) panel must be activated.

## Pre-Allocation

This document explains the process flow in pre-allocation, which is when all or part of an acquisition order line (PO, DO or MO) is promised to a demand order line (CO, RO, MO-material or DO).

Pre-allocation can be done at any time providing both the acquisition order and the demand order are released orders. The acquisition order can also be a planned order if status is equal to or greater than 20.

Changes to the delivery of an acquisition or demand order may need to be communicated to the person responsible for the pre-allocation, acquisition order or demand order. This is facilitated by M3 Mail.

### Re-planning

If the acquisition order line is replanned according to the delivery date, then the demand order line will automatically be re-planned if the link between them is one to one. If the link is one acquisition order line to many demand order lines, then the demand order line will also be replanned automatically.

If the link is many acquisition order lines to one demand order line, then you cannot re-plan the demand order line.

Changes to the delivery of the acquisition or the demand order may need to be communicated to the person responsible for the link or the person responsible for the order. This is facilitated via M3 Mail.

### Outcome

The process results in a pre-allocated order, which will be allocated during the goods receipt flow.

Pre-allocation is used for:

- Demand that will be supplied by planned receipts
- Internal and external orders that create demand in combination with a stock shortage.

Pre-allocations are stored in the MPREAL file.

Changes in supply that jeopardize pre-allocations may activate subsequent events such as mail messages and rescheduling.

### **Before You Start**

- A demand order (CO, RO, DO) must be released.
- An acquisition order (PO, DO, MO) must be released or firmly planned.

### **Follow These Steps**

#### **1 Create Demand Order Lines**

Enter an order that creates a demand. It can be a requisition, distribution, customer or manufacturing order.

Release the order. Since there is a stock shortage, the order will not be raised to status 33=Allocated.

Select option 39='Pre-Allocation' in front of the order line. This activates 'Pre-Allocation. Perform Detailed' (MWS121). Sorting order 1 is displayed by default. This is the demand perspective of pre-allocation.

#### **2 Create Acquisition Order Lines**

The order can be a purchase, manufacturing or distribution order.

Select option 39='Pre-allocation' in front of the order line to be pre allocated. This activates 'Pre-allocation. Perform Detailed' (MWS121). Sorting order 2 or 3 is displayed by default. These are the acquisition perspective of the pre-allocation.

#### **3 Select Planned Issue or Receipt in the Material Plan**

Start 'Material Plan. Open' (MMS080).

Select option 39='Pre-allocation' in front of the order line to be pre allocated. This activates 'Pre-allocation. Perform Detailed' (MWS121). Sorting order 1 or 2 is displayed depending on whether an acquisition order or a demand order was selected in (MMS080).

#### **4 Create Pre-Allocation**

- **From a Demand Order Perspective**

If an acquisition order (or orders) that meet demand is created and released, it will be displayed and can be pre-allocated from (MWS121).

If no acquisition order that meets demand has been created and released, you cannot pre-allocate.

Perform the pre-allocation by selecting one or more of the displayed acquisition orders, entering a quantity and pressing Enter.

- **From an Acquisition Order Perspective**

If a pre-allocation exists, it will be displayed here. You can only maintain, not create, pre-allocations from the acquisition perspective.

If there are no pre-allocations created for this acquisition order, the panel will be empty.

Maintain the pre-allocations by selecting one or more of the displayed demand orders, entering a quantity and pressing Enter.

- **From a Material Planner Perspective**

Perform the pre-allocation by selecting one or more of the displayed demand/acquisition order lines, entering a quantity and pressing Enter.

- **Pre Allocate from the Menu**

Open 'Pre-Allocation. Perform Detailed' (MWS121).

Perform the pre-allocation by selecting one or more of the displayed demand/acquisition orders, entering a quantity and pressing Enter.

## 5 Managing Pre-Allocation Rescheduling

This function manages the process of changing the planning date (and consequently the confirmed delivery date in the case of customer orders) of demand order lines when the pre-allocated (or referenced) acquisition order line has its accepted receipt date changed.

Depending on the settings, the quantity change on a pre allocated order will also affect pre-allocation.

All pre-allocations for the acquisition are updated automatically by using this function. (This could include many demands supplied by one acquisition.)

You cannot reschedule if several supply orders are connected to one demand order.

## 6 Allocate Activities During Goods Receiving

The system checks for pre-allocations.

After receipt of the acquisition order is validated and ready for stock entrance, (MMMNGRCT) is activated automatically and obtains information about the:

- Item/warehouse combination
- Acquisition order category
- Status for the item to put into stock.

Should a cross-docking location be notified? (Yes, if it is within a pre-allocation cross-docking time fence.)

Select, suggest and put away in a cross-docking location.

From the goods receiving function, 'Cross Dock Results. Open' (MWS160) is activated automatically by pressing Enter with the cursor in the Quantity field. Select the location and quantity to be cross-docked and update by pressing F14.

Allocate the demand order line (cross docked goods).

The cross-docked and pre-allocated demand order will automatically be allocated as soon as (MWS160) is updated. The allocation is stored in the MITALO file.

The demand order's pre-allocation is automatically deleted from the MPREAL file.

## Workflow for Managing Group Pre-Allocation

This function is often used by the fashion industry. The purpose of this function is to begin with a specified group of demand lines and then to find an appropriate acquisition order lines to pre-allocate for each demand order line. Once a match is found, (MMMNGPRA)—which updates the MPREAL file—is activated to create the pre-allocation.

On the (MWS120/A) panel, a specified group of demand order lines from a specified demand order or manufacturing schedule will manage the automatic assignment of pre-allocations.

When searching for an acquisition order proposal to group pre allocate from the schedule number the search is done in the following sequence:

- 1 Search for proposal with finish date less than or equal to demand order planning date.
- 2 If no proposals with earlier finish date are found then search for proposals with finish date > demand order planning date

## Pre-allocation settings

This document explains how you define settings for pre-allocations.

### Outcome

- Basic settings for pre-allocation are defined per order type and per warehouse.
- Settings for pre-allocations notifications are defined.

Pre-allocation ensures that a demand is to be supplied by "pinpointed" planning receipts.

Pre-allocations are stored in the MPREAL file. Normal allocation is prevented.

### Before you start

No prerequisites.

### Parameters to set

Program ID/Panel el	Field	The field indicates ...
(CRS200) (PMS120) (OIS010) (MOS120)	<b>'Reschedule when pre-allocation supply side change'</b>	... whether a change of date for the pre-allocations acquisition order line results in the confirmed delivery date on the pre-allocated demand order line being rescheduled. Rescheduling also applies when the order is first connected.
(CRS200) (PMS120) (OIS010) (PPS095)	<b>'Pre-allocation maintenance on quantity change'</b>	... whether pre-allocation maintenance in 'Preallocation. Perform Detailed' (MWS121) should be activated by a change of quantity below the pre-allocated quantity on an order. The valid alternatives are:  0 = No 1 = Only for change of quantity on the acquisition order 2 = Only for change of quantity on the demand order line 3 = For any change of quantity.
(MMS005/G)	<b>'Cross-dock on/off'</b>	... whether cross-docking is to be used in this warehouse.

Program ID/Pan- el	Field	The field indicates ...
(MMS005/G))	'Planned cross dock time fence'	<p>... the number of days in the future that pre-allocations is considered for cross-docking.</p> <p>If the value is left as 0, then only pre-allocations due to be shipped today or in the past are to be considered.</p> <p>If a negative value is used, then only pre-allocations overdue by the number of days specified are to be considered.</p> <p>The days used are working days.</p>
(MMS005/G)	'Opportunity cross dock time fence'	<p>... the number of days ahead that demand in the material plan activates cross-docking. Cross-docks from the material plan are called opportunity cross-docks.</p>
(CRS424/B))	'Message type'	<p>... classification of messages according to the action the message requires. Message types 250–256 are valid for pre-allocation messages.</p>
(MWS122/E)	'Notify responsible when Demand order is changed/deleted'	<p>(Two fields)</p> <p>... whether the person responsible for the acquisition order should be notified when a pre-allocation that is attached to the acquisition order is changed or deleted.</p>
(MWS122/E)	'Notify responsible when Acquisition order is changed/deleted'	<p>(Two fields)</p> <p>... whether the person responsible for the demand order should be notified when a pre-allocation that is attached to the demand order is changed or deleted.</p>
(MWS121/P)	'Default notification'	<p>... tags for the pre-allocation (that is, the messages that are sent to the pre-allocation responsible).</p>

## Follow these steps

### Settings on order type

1 Start order type:

- 'Req/Distr Order Type. Open' (CRS200)
- 'Manufacturing Order Type. Open' (PMS120)
- 'CO Type. Open' (OIS010)
- 'PO Type. Open' (PPS095).
- 'WO Type. Open' (MOS120)

2 Fill in the '**Reschedule when pre-allocation supply sides change**' field. This field indicates whether a change of date for the pre-allocations acquisition order line results in the confirmed delivery date on the pre-allocated demand order line being rescheduled.

3 Fill in the '**Pre-allocation maintenance on quantity change**' field.

This indicates whether pre-allocation maintenance (MWS121) should be activated by a change of quantity below the pre-allocated quantity on an order. The valid alternatives are:

0 = No

- 1 = Only for change of quantity on the acquisition order
- 2 = Only for change of quantity on the demand order line
- 3 = For any change of quantity.

#### **Settings on warehouse**

- 4 Start 'Warehouse. Open' (MMS005). Open the G panel.
- 5 Activate the '**Cross-dock on/off**' field.
- 6 Specify the number of days and/or hours in the future that pre-allocations are to be considered for cross-docking in the '**Planned CD time fence**' field.
- 7 In the '**Opportunity CD time fence**' field, specify the number of days ahead that demands in the material plan (MMS080) activate cross docking. Cross docks form the material plan is called opportunity cross dock.

#### **Settings for notifications (messages)**

The basic settings for application messages are set in 'Settings - Application Messages' (CRS424).

- 8 In the '**Message type**' field, specify message type 250–256. This field is used to classify messages.
- 9 Create the message type by pressing F14='Create message type'.
- 10 To set the rules for the pre-allocation notifications (messages), start 'Notification Requirement. Open' (MWS122).
- 11 Fill in the '**Warehouse**' and '**Order category**' fields on the B panel.
- 12 The '**Responsible**' and '**Order type**' fields are optional to fill in.
- 13 Open the E panel and set the rules for whether a message is to be sent to the person responsible for:  
The acquisition order when a pre-allocation it is attached to is changed or deleted  
The demand order when a pre-allocation it is attached to is changed or deleted.
- 14 Open the (MWS121/P) panel. Here are the settings for notify the pre-allocation responsible (pre-allocation itself). These settings are also displayed as default on the (MWS121/E) panel.

When searching for default notification flags, the system searches according to the this hierarchy:

1. Look for full key: warehouse, responsible, order category, order type
2. Erase the order type and try again
3. Erase responsible and order type and try again.

Note this does not affect who gets notified, only if someone is notified.

## Print, Pick, Pack and Report Picking Lists

This document describes how to control a picking list. The main areas are:

- Define entry templates and some settings.
- Dispatch a known identity.
- Print a picking list.
- Move to packing and/or docking locations.

- Report a stock issue.
- Report a picking deviation.
- Correct a picking list.
- Select a location for returning unused materials from the shop floor.
- Print delivery documents.
- Confirm delivery receipt.

A picking list consists of a delivery number plus a picking list suffix.

A delivery number can generate several picking lists for different reasons. Each picking list is assigned a unique sequence number (or suffix) that, together with the delivery number, builds up the identity of the picking list.

The first picking list is always assigned suffix 01, the next one suffix 02, and so on.

### **Outcome**

- A picking list is released and ready to be printed.  
The picking list header is stored in the MHPICH table.  
A picking list line is defined as a record in the MITALO table after it has been released for picking.
- A picking list is printed.
- The goods can be moved to a packing location.
- The goods are reported as taken out of stock, and the picking list is reported as completed.
- Picking corrections can be made.
- If the delivery value check is activated, the delivery must either have passed the delivery value check or have been manually approved to enable issue reporting.

The picking list is used to list the material to pick for manufacturing or shipping orders (customer, requisition, and distribution and stock location movement orders).

### **Before you start**

Ensure that an order is created, allocated and released for picking (picking status=40).

### **Follow these steps**

#### **Define entry templates**

An entry template is a predefined set of fields available when the 'Picking List. Report' (MWS420/A) panel is opened. The template also defines where the cursor is positioned when the panel is opened.

- 1 Open 'Picking List. Open Entry Template' (MWS425).
- 2 Enter an ID for the template in the 'Entry template' field.
- 3 Go to the E panel. The field headings displayed are the fields available on the A panel in (MWS420). Enter a value in the 'Used' field for every field heading.
- 4 The 'Position' field indicates the position of the cursor when (MWS420/A) is opened or refreshed. This can only be set to 1='Yes' for one field in each entry template.

#### **Dispatch of a known identity**

- 1 To begin with, it is optional to define some settings for the A panel. Open (MWS420). Go to A panel.

- 2 Press F13='Settings' to open the P panel. Fill in the 'Entry template' field. If you leave this field blank, all available fields will be displayed on the A panel.
- 3 In the 'Option' field, enter the option you want to be displayed by default on the A panel. The option can then be changed manually.
- 4 Specify values in the 'Alias category', 'Propose weight', 'Wave line spec', 'Time format', and 'MO rpt options' fields.

### **Print picking list**

- 1 Open (MWS420). Go to the B panel.
- 2 There are four sorting orders to choose from:
  - 1=Picking lists by picking list status, delivery number and suffix
  - 2=Cumulated by wave number (printing inactivated from this sorting order)
  - 3=Picking lists by a single delivery number
  - 4=Picking lists by a single shipment number. Select sorting order 1, 3 or 4.
- 3 Print the appropriate picking list by selecting option 6='Print picking list'.

### **Move to packing location/docking location**

- 1 On the (MWS420/B) panel, use option 17='To pack location' to move the picked goods to a packing location.
- 2 This opens 'Picking List. Report Lines' (MWS422/B), where you also use option 17='To pack location' and specify the packing location in the 'To location' field. Then press Enter.  
This will raise the picking status to 50='All lines reported as moved to pack location'.  
If a default packing location is defined in 'Item. Connect Warehouse' (MMS002), this location will be suggested in the 'To location' field on the (MWS422/B) panel. You can also press F4 and select another location within the appropriate warehouse.
- 3 On the (MWS420/B) panel, use option 18='To dock location' to move the picked goods to a docking location.
- 4 This opens 'Picking List. Report Lines' (MWS422/B), where you also use option 18='To dock location' and specify the docking location in the 'To location' field. Then press Enter.  
This will raise the picking status to 60='All lines reported as moved to dock location'.  
If a default docking location is defined in (MMS002), this location will be suggested in the 'To location' field on the (MWS422/B) panel. You can also press F4 and select another location within the appropriate warehouse.
- 5 You can move the goods back to the default location (picking location) by using option 19='To default location'.  
This will lower the picking status to 40='Ready for reporting'.

### **Packing and performing packaging actions**

Refer to [Define Settings for Packing](#) on page 374 and [How to Perform Packing](#) on page 422.

### **Report picking perform a stock issue**

To be able to make a stock issue (confirm a picking list), the picking status must be 40, 50 or 60. The settings in 'Dispatch Policy. Open' (MWS010) controls this. Refer to [Basic Settings for Dispatch Handling](#) on page 300.

- 1 On the (MWS420/B) panel, you may confirm the entire picking list by using option 16='Confirm issues'.  
The sorting orders to select from are 1, 3, and 5 (sorting orders 2 and 4 are for wave picking and shipments).

- 2 You can also confirm selected picking list lines by using option 11='Pick list lines' on the (MWS420/B) panel.
- 3 This opens 'Picking List. Report Lines' (MWS422/B). Use option 16='Confirm issue for the selected line or lines'.
- 4 You can also confirm the entire picking list here by using F16='Confirm all'. By confirming the complete picking list, the picking status will be raised to 90='All lines reported as issued from inventory'.

### **Report pick list with deviations**

Pick deviation reporting occurs when a hard-allocated picking list line is reported with a deviating balance ID. Pick deviation can occur on a packed picking list line. Deallocation and reallocation occur when the picked balance ID is allocated by other demands. The deallocation continues until the allocatable inventory covers the reported quantity of the current picking list line. Pick deviation is allowed by setting the '170 Partial reporting' field in 'Dispatch Policy. Open' (MWS010). The alternatives below enable to pick deviation and control how deallocation is performed.

The valid alternatives for pick deviation are:

- 3 = Pick deviation by planning date and time
- 4 = Pick deviation by planning date and time when entered from (MWS422)
- 5 = Pick deviation by order priority, planning date and time
- 6 = Pick deviation by order priority, planning date and time when entered from (MWS422).

Pick deviation is usually reported with pick transactions API MHS850MI (Order initiated stock transaction interface) (example: AddPickViaRepNo).

When a deviating balance ID is picked with less quantity, completion flag can be activated to close and cancel the remaining allocation.

Furthermore, when picking less than the picking list line quantity and without the 'completion flag' (OEND), it is possible to control the quantity that should be moved to a new delivery, commonly called backorder, by using 'quantity picked' (QTYP) and quantity to be picked (QTYO) in API pick transactions in MHS850MI.

For example: a picking list line has a quantity 15. MHS850MI.AddPickViaRepNo is run with:

- 'Quantity picked' (QTYP) = 3
- 'Quantity to be picked' (QTYO) = 4
- 'End flag' = 0

A quantity of 3 will be picked, the picking list line remains open with a quantity of 11, quantity 1 is back-ordered.

### **Make picking corrections after picking list is reported**

Picking corrections are performed for deliveries that are reported as picked. Customer orders (CO), Requisition orders (RO), and MO material return orders must be set to status 90='All lines issued'. Distribution orders (DO) must be set to status 70='All lines issued and in transit (not received)'.

- Correct delivery with no packing or simple packing
  - 1 Use option 49='Picking corrections' on the (MWS420/B) panel. This opens 'Picking List. Adjust Reported Quantities' (MMS428).

- 2 Change the reported quantity for the picking list line(s) and press F16='Confirm issue'. Package records are automatically updated when the pick quantity is updated from (MMS428).  
The 'Flagged as complete' field determines whether there will be a back order (and a new picking list created) for the remaining quantity.
- 3 You can also adjust the physical inventory for the quantity specified by using option 18='Physical inv' in (MMS428).
- Correct delivery with advanced packing
  - 1 Use option 49='Picking corrections' on the (MWS420/B) panel. This opens 'Picking List. Adjust Reported Quantities' (MMS428).
  - 2 Select the picking lines you want to correct, and use option 22='Package details'. This opens 'Package Detail. Open' (MMS473).
  - 3 On the header on the (MMS473/B) panel, you can display the quantity to be distributed (blue) per picking list line and the deviating quantity (red) per picking list line from (MMS428) and the quantity already distributed per package.
  - 4 Select detail lines to adjust (could be several lines in the same package) by using option 2='Change'. On the E panel, change the quantity in the 'Delivered quantity - basic U/M' field. Press Enter.  
**Note:** The user is not allowed to exit (MMS473) until all of the deviating quantity has been distributed. This update affects both the outbound and inbound (if applicable) package records.
  - 5 Now, also change the picking list line(s) on the (MMS428/B) panel. Update the reported quantity by pressing F16='Confirm issue'.
  - 6 The 'Flagged as complete' field determines whether there will be a back order (and a new picking list created) for the remaining quantity.
  - 7 You can also adjust the physical inventory for the quantity specified by using option 18='Physical inv' in (MMS428).
- Correct MO material return orders (order category 01= 'Material to manufacturing orders')
  - 1 Use option 49='Picking corrections' on the (MWS420/B) panel. This opens 'Picking List. Adjust Reported Quantities' (MMS428).
  - 2 Change the reported quantity for the picking list line(s).
  - 3 If you want to specify a location different to the picking location when returning unused materials from the shop floor, select option 21='MO material return'.
  - 4 This opens 'Picking List. Return Material' (MMS432/E). In the 'Reported quantity' field, enter the actual quantity returned, not the quantity actually used.
  - 5 The 'Flagged as complete' field determines whether there will be a back order (and a new picking list created) for the remaining quantity.
  - 6 Press 'Next'. (MMS428) is re displayed. A new line has been added. This is the return location and quantity, specified in (MMS432).
  - 7 Press F16='Confirm issue'. Package records are automatically updated when the pick quantity is updated from (MMS428).
  - 8 You can also adjust the physical inventory for the quantity specified by using option 18='Physical inv' in (MMS428).

### Print delivery documents

- 1 The progress status of the delivery must be set to 60='Fully reported' (only valid when delivery receipt confirmation is used) or 90='Closed receipt, fully reported'.

**Note:** Print delivery documents can be printed without confirming/reporting picking lists. This is only valid for shipments with '240 Packing reporting method' in (MWS010/G) set to 0='No packing' or 1='Simple manual packing'.

The packing status must be 30='Packing completed'.

The shipment status must be 50/50='Shipment packed complete, not reported'.

- 2 Delivery documents are printed in 'Shipment. Open Toolbox' (DRS100) and 'Delivery. Open Toolbox' (MWS410) using the option 15='Gen/print doc' and in 'Delivery. Connect Delivery Documents' (MWS260) using the option 29='Gen/print doc'.

The default documents that can be connected to a delivery are:

900 Delivery note  
902 CMR document  
904 Swedish CMR  
906 EUR1 – document  
910 Unit document  
922 Pro forma invoice

### **Delivery receipt confirmation**

The M3 functionality of delivery receipt confirmation enables tracking of deliveries and packages after being issued from the warehouse. Delivery numbers or the highest level of an SSCC number can be used for delivery receipt confirmation.

This is used for customer orders (transaction type 31).

- 1 To activate this function, open 'Dispatch Policy. Open' (MWS010) and activate the '350 Delivery receipt confirmation' field.

When this function is activated, the delivery status will differ from the 'normal' one. Up to delivery status 50 this will be identical, but after that the following statuses will appear:

- 60=Fully reported (only valid when delivery receipt confirmation is used)
- 65=Partly received (only valid when delivery receipt confirmation is used)
- 95=Closed receipt, not fully received (only valid when delivery receipt confirmation is used)
- 90=Closed receipt, fully reported (this status is used for all dispatches)

**Note:** The delivery status for this confirmation function will be lowered from 95 to 90 when the goods receipt is fully completed.

- 2 You can report this receipt confirmation by using option 41='Confirm receipt' and 42='Close receipt' in (MWS410).

## Settings for Allocation Control Per Balance ID (Allocation Table Control)

This settings document explains how to define an allocation table that is used for automatic allocation and for batch allocation in connection with allocation methods two and five.

**Note:** If you use batch allocation with fair share you must be aware that the rules you apply here, for controlling balance IDs, and the rules you have set for fair share, to control customer priority, do not interfere with each other.

## Outcome

The allocation table determines which balance identities can automatically be allocated for a specific requirement, and from which locations.

The settings can be used for the following:

- For example, customer orders could be allocated from one location and manufacturing orders from another location.
- You can also prevent larger requirements from allocating small quantities and, thus, block small orders from delivery.

Allocation table is stored in the MADSET and MADMTX files.

## Before you start

Basic settings for automatic allocation must be done. See [Basic Settings for Automatic Allocation](#) on page 291.

## Follow These Steps

### Define Allocation Control Fields

- 1 Start 'Allocation Control Selection Field. Enter' (MMS123/B).

The allocation rules determine which stock is to be allocated against which orders, depending on factors related to the order.

Up to three fields per priority can be selected. Up to ten priorities can be defined.

Example: For priority one, there are two fields to select from: Warehouse (MWHLO) and 'Customer number' (OACUNO). This determines which warehouse and for which customer numbers there will be specific allocation rules.

The system starts by looking at priority one to find a match. If no match is found, the system will continue with priority 2 and so on. The valid alternatives for the Status field are:

10 = Not active

20 = Active.

- 2 Pressing F14 starts 'Allocation Control Selection Table. Open' (MMS124).

### Defining Allocation Rules

- 1 Start 'Allocation Control Selection Table. Open' (MMS124).

- 2 On the (MMS124/B) panel, the values for the selected control fields are entered.

Example: When an order at Warehouse 010 and Customer 10001 occurs, this rule will be active.

Note: An allocation selection table is valid for the entire company. If different allocation rules are valid in different warehouses, it is necessary to have "Warehouse" as one of the keys in the priority table in (MMS123).

- 3** Rules are defined on the (MMS124/E) panel.
- 4** The 'Alloc dev pct', 'Allocation dev years', 'Alloc dev mths', and 'Alloc dev days' fields are only valid for items with lot and expiration date control.
- 5** The 'Alloc min pct' field indicates the minimum percentage of the requirement that must be allocated to perform allocation. If this percentage is not reached, no allocation will be performed.
- 6** The 'Object parameter' field is used to make a selection of balance identities that can be used in the allocation. If no objects are entered, all balance identities are included in the allocation.

#### Parameters to Set

Program ID/Panel	Field	The field indicates ...
(MMS123/E)	Status	<p>... the status for the allocation control table. The valid alternatives are:</p> <p>10 = Not activated 20 = Activated.</p>
(MMS123/E)	Field 1, 2 ,3	<p>... information that refers to a field or data element from a specific file.</p> <p>It is used to create keys or search paths for userdefined tables and to create the contents of userdefined files.</p>
(MMS124/B)	Priority	<p>... the table priority. Values between 1–10 can be specified.</p> <p>Example:</p> <p>If the Warehouse (MOWHLO) and 'Customer number' (OACUNO) fields are specified for priority 1 in (MMS123/E), then these two fields are displayed when priority 1 is selected in (MMS124/B).</p> <p>If the 'Customer group' (OKCUCL) field is specified for priority 2 in (MMS123/E), then this field is displayed when priority 2 is selected in (MMS124/B).</p> <p>If an appropriate value is not found on priority 1, then the table with priority 2 is searched and so on. A priority between 1 and 10 can be specified, with 1 being the highest.</p>
(MMS124/B)	Value 1, 2 ,3	<p>... the value for the selected control fields.</p> <p>Example:</p> <p>If the Warehouse field (MOWHLO) is defined in (MMS123/E) for priority 3, then you select priority 3 in (MMS124/B) and then press F4 with the cursor in the Warehouse field. This starts 'Warehouse. Open' (MMS005). Enter the Warehouse ID you want in the allocation control table.</p>

Program ID/Panel	Field	The field indicates ...
(MMS124/E)	Allocation deviation – percentage	<p>... the percentage of the expiry and sales periods left before the expiry and last sales dates.</p> <p>Calculating a new expiry/sales date adjusted by this percentage creates the deviation check. The information for the calculation is retrieved from the item/warehouse (MITBAL) file.</p> <p>The percentage cannot be entered if deviation years, months or days are entered.</p> <p>The field is only valid for items with lot and expiry date control as defined in (MMS001).</p>
(MMS124/E)	Allocation deviation • years • month • days	<p>... the number of years/month/days left until the expiry and last sales dates (or the number of years/month/days that have passed if the value is negative). The deviation check is based on the date allocation is carried out.</p> <p>The field is only valid for items with lot and expiry date control.</p>
(MMS124/E)	Allocation minimum percentage	<p>... the minimum percentage of the requirement that must be allocated to perform allocation. If this percentage is not reached, no allocation will be performed.</p>
(MMS124/E)	Object parameter	<p>... a selection of balance identities that can be used in the allocation. If no objects are entered, all balance identities are included in the allocation.</p>

## Settings for Event Based Document Control

This document explains how you define the settings for Event Based Document Control (EDC).

**Note:** This document does not explain the specific settings for TEI (Transportation Execution Interface) which use the EDC functionality for creating documents.

### Outcome

An allowed document is produced when a given event occurs. The document media is defined (printed, sent by mail etc.) and also if the document should be produced immediately (synchronous) or sent to a queue and produced later, through an auto start job (asynchronous).

Defining settings for Event Based Document Control (EDC) updates these:

- CREVNT – Document Events  
This file contains a list of the events to which documents can be attached for automatic creation and printing.
- MDOCEV – Event Controlled Documents

This file is used to define that when a given event occurs, and the context matches the stored object values, the defined list of documents/variants is produced according to the corresponding media definition.

- MDOCEO - Documents to produce for an Event Occurrence

This file stores all data needed to produce any of the triggered documents for a given event occurrence, when the document is to be produced synchronously.

EDC is used in the dispatch flow to produce:

- Picking list
- Address label
- Package label
- Delivery note
- Dispatch advice
- Loading list
- Unloading list

### **Before you start**

- The settings for the dispatch flow must be defined. The settings and values depend on how the dispatch flow is executed. Dispatch descriptions, instructions, settings and references to other documents is found in [Dispatch Handling](#) on page 403.
- The documents to be used must be defined in 'M3 Document. Open' (CRS928) and in 'Standard Document. Open' (CRS027). See more in [Manage Delivery Documents and Labels](#) on page 446.
- The Object control parameter records, on the (CMS016/B) panel, must be generated so all available objects are displayed. Press F14=Generate data.
- The Field groups must be generated for applicable fields in (CRS108) and (CRS109). Press F14=Generate data.
- If using the SHIPMENT\_ISSUED event, you must have the auto start jobs 'DRS900 – Monitoring Shipment' and 'DRS901 – Process Shipment Time Triggers'. If sending documents to a queue and get produced later, through an auto start job (asynchronous), you must have the auto start job 'MWS974 –Manage Event Based Documents' running.
- The process enables you to send document output through different kinds of media, such as a printer, email, fax or electronic data interchange (EDI).

### **Follow these steps**

#### **Create an object control table**

- 1 Start 'Available Object Control Parameters. Open' (CMS016). Select **SCE Event Document** and select option **11=Object table detailed lines**.
- 2 'Generic Object Control Table. Open' (CMS017/B) is started.  
Set the **Panel sequence** field to **E (T) 1**.
- 3 Enter (MWS145) and select **Create**.
- 4 On the (CMS017/E) panel enter:
  - If sending documents to a queue and get produced later, through an auto start job (asynchronous), you must have the auto start job 'MWS974 –Manage Event Based Documents' running. Select event
  - Select sequence no. If you leave this field blank, the system takes the next higher number.

- Set to Status **20 - Active**
- Priorities from **0** to **9** in the **Priority** fields.  
By default, sequence 10 corresponds to priority 0, 20 to priority 1 and so on up to sequence 100, which corresponds to priority 9.
- The 'Field 1(2, 3 and 4)' fields with the selected fields from the field group (EVT01=Release pick, EVT02=Delivery issued, EVT03=Shipment issued). Press F4 to select valid fields.

**5** Select fields and redisplay (CMS017/E).

**6** Press Enter until you start 'Delivery Process Document Control. Open' (MWS145).

### Create values for the object control table

- 1 You must define values for the defined control fields. You must repeat this for each priority. To the right on the **Priority** field you can see all priorities defined for this event/sequence no.
- 2 On the (MWS145/B) panel, specify values for the fields.
- 3 The 'Value 1, (2, 3 and 4)' fields are the first, second, third and fourth values to be compared with the contents of a control object.
- 4 Specify the **From date** field.

**Note:** F15=Delete old, can be used on the B panel to remove all expired document triggers.

**5** On the (MWS145/E) panel, fill in these fields:

- To date - The document trigger applies up to and including this date.
- Send to ASJ - Select the check box to produce the documents asynchronously (through auto start job).  
If producing documents through ASJ, then you need to have the ASJ (MWS974) running.
- Check CSFDEF - whether a check should be made that the output controls for each document are valid when retrieving each document trigger. If they are not valid, a M3 mail message is sent to the responsible person, defined in the **Responsible** field.

**6** See descriptions in the parameter list for Doc number, Doc variant, doc name.

**7** Printer file, Work station and User settings

This combination points to one or more entries in 'Output Media Selection. Open' (MNS205).

### Controlling pick lists

- (MWS010) - Picking lists can only be produced through EDC if the auto-level of the relevant dispatch policies is **3=Issue made automatically when picking list reported**.
- (MMS040) - The media control settings work for pick-lists ONLY if the **Printer** field on all relevant stock zones is left blank.
- (MWS010) - Using this functionality you can use more than one pick list variant for the same dispatch policy. It is recommended that you have parameter 100 - 'Auto print of pick lists' (MWS010) switched off in all relevant dispatch policies; otherwise there is a danger of producing twice.
- (MWS010) - Parameter '120 Document variant'. Document variant 50 and 60 are introduced for picking lists:

50 – Pick list download

60 – As for variant <blank> but with showing unallocated lines.

You can trigger more than one variant at the same time. For example, you might want to produce both the download and a printed pick list.

- (MWS420) - You can produce a copy of a pick-list with a different variant than that set for the document trigger by going to (MWS420), then select option **27=Plan pickers**. Change the document variant (and set a printer ID if you need to) in (MWS415/E), return to (MWS420) and then select option **66=Print copy for the pick list**.
- (MWS415) - Note that if reprinting pick lists (from MWS420) you may need to set the printer in (MWS415/E). The reason for this is that the document event trigger media setting is not used; rather, normal media controls are used.
- If you control all pick list output through stock zone (the printer set in (MMS040)), the output is consistent and predictable. However, if the printer is blank in (MMS040), that is, you are relying on (MNS204)/(MNS205) settings, then the media control can be different. The USID/DEVD used will be the ones for your current session rather than the ones that may have been originally used based on the trigger in (MWS145/E).

### Use of the SHIPMENT\_ISSUED event

To determine that a shipment is fully issued requires two criteria to be fulfilled.

- Firstly, all deliveries that are connected to the shipment need to be completed. You can check the high/low status for the shipment. The status must be 60/60=Shipment reported.
- Secondly, the shipment must not be available for more deliveries to be added to it (since this might change the status of first criteria). The second criterion is fulfilled when the deadline date/time to be passed. You can see when this has occurred (and the ASJ has recognized it) by looking at the **Manual connect only** field on the shipment (DRS100/E, field DAMANC) which will have a value of **2=Manual (ASJ)**, after the ASJ processed the shipment.

### Same event issued twice

The same event can occur twice. The most likely instance of this is the "RELEASE\_PICK" event. This can occur, for example, when a delivery in the **Closing point** field is **1= Close when all picking lists are delivered** on (MWS010/G). In this case, the delivery stays open (for new delivery lines to be added) even after the "RELEASE\_PICK" event occurs.

For this reason, the "RELEASE\_PICK" event is triggered for the range of suffixes that was released rather than for the whole delivery. Documents are then only triggered (where possible) for that range of suffixes.

There is a risk that package related documents can be produced more than once in the above case. The reason for this is that goods from the newly released range of suffixes can be auto-packed into the same packages as were used for a range of suffixes that were released earlier.

### Debug messages can be displayed in the server view

Some debug messages are issued to the server view. These enable you to see:

- what events have occurred for a given entity
- which document triggers have been found and executed
- which document have been produced

Examples of these are:

- 050705 030624 2132 D Event RELEASE\_PICK has been triggered for shipment, delivery 2502942, picking list 1 to 1
- 050705 030624 2132 D Document trigger activated for priority 1, event RELEASE\_PICK , sequence 0, key: obj1=005 , obj2=04 , obj3= , obj4=
- 050705 030625 2132 D Document 120 variant 60 produced through EDC for userid GRAPAU0
- 050705 030627 2132 D Document 912 variant 01 produced through EDC for userid GRAPAU0

#### Parameters to set

##### Basic settings for pick lists

Program ID/ Panel	Field	The field indicates ...
(MWS010/B)	Auto level	<p>... the auto level, which mainly regulates when the stock issues are made</p> <p>Picking lists can only be produced through EDC if the auto-level of the relevant dispatch policies is 3=Issue made automatically when picking list reported.</p>
(MWS010/E)	Auto print of pick lists	<p>... whether picking lists are printed automatically when they are created.</p> <p>It is recommended that you have parameter 100 - 'Auto print of pick lists' (MWS010) switched off in all relevant dispatch policies; otherwise there is a danger of producing twice</p>
(MWS010/E)	Document variant	<p>... the document variant used when a picking list is printed.</p> <p>Document variant 50 and 60 have been introduced for picking lists:</p> <p>50 – Pick list download</p> <p>60 – As for variant &lt;blank&gt; but with showing unallocated lines.</p> <p>You could trigger more than one variant at the same time. For example, you might want to produce both the download and a printed pick list.</p>

Program ID/ Panel	Field	The field indicates ...
(MMS040/E)	Printer	<p>... the printer on which the printout should be printed. The media control settings work for pick-lists ONLY if the Printer field on all relevant stock zones is left blank.</p> <p>If controlling all pick list output through stock zone (the printer set in (MMS040)) that will be OK, but if printer is blank in (MMS040) (i.e., you are relying on (MNS204)/(MNS205) settings) then the media control could be different. The USID/DEVD used will be the ones for your current session rather than the ones that may have originally been used based on the trigger in (MWS145/E).</p>

#### Settings for specifying the objects to control the document output

Program ID/ Panel	Field	The field indicates ...
(CMS016/B)	Object control parameter	<p>... the available object control parameter, where you can define your objects and values.</p> <p>Select SCE Event Documents - (MWS145).</p> <p>These values are generated automatically when you first enter (CMS016) for the installation. If you have upgraded (CMS016) you may need to press F14 to create any new values.</p>
(CMS017/B)	View	<p>... the view.</p> <p>Views are user-defined, and determine what fields are to be displayed as well as how the data is to be calculated. They are defined in (CRS020). See .</p>
(CMS017/B)	Program name	<p>... the program that is used for the object control table. In this case it is (MWS145).</p>

Program ID/ Panel	Field	The field indicates ...
(CMS017/B)	Event/Start value 1	<p>... an event, which is a defined point in time when a M3 entity (such as a delivery) reaches a certain status. They are specified in Event. Open (CRS019).</p> <p>By using the event-controlled document functionality, it is possible to have certain documents automatically produced when one of these defined events occurs.</p> <p>Examples:</p> <p><b>DELIVERY_ISSUED</b></p> <p>This event occurs when the status of a delivery becomes greater than or equal to 60.</p> <p><b>RELEASE_PICK</b></p> <p>This event occurs when a picking list or group of picking lists is created after a delivery is released for picking.</p> <p><b>Note:</b> This event may occur more than once depending on the closing point of the delivery. The event applies to picking lists that attain a status of 40 or greater for the first time. This means that the event is deemed to have occurred for picking lists going through pick resource planning only after release from pick resource planning.</p> <p><b>SHIPMENT_ISSUED</b></p> <p>This event occurs when a shipment is in status 60/60=Shipment reported, AND the shipment deadline has passed; that is, when all deliveries within the shipment are fully issued and no more deliveries may be automatically added to the shipment.</p> <p><b>Note:</b> The SHIPMENT_ISSUED event requires that the auto start jobs (ASJ) (DRS900) and (DRS901) are running.</p>
(CMS017/E)	Sequence no/Start value 2	<p>... the sequence number.</p> <p>The sequence number allows you to specify different sets of controlling objects for the same event. You might, for example, want to control pick lists with one set of objects and address labels with another.</p> <p>If you don't specify a sequence number, one will be selected for you automatically. The system will take the next higher number for the event.</p>

Program ID/ Panel	Field	The field indicates ...
(CMS017/E)	Status	<p>... the status for the object control setting.</p> <p>10 = Preliminary 20 = Definite 90 = Blocked/expired.</p> <p>Only status 20 is used in the dispatch flow.</p>
(CMS017/E)	Field sequence no	<p>... the order in which each information field should be displayed.</p> <p>Example:</p> <p>To move an object control line from priority 2 to 1, assign the sequence number for the line a number between 11 and 19. Press ENTER. The line is then placed in the correct order.</p>
(CMS017/E)	Priority	<p>... a priority for the selected fields.</p> <p>The object lookup is always performed in priority order. If no qualified objects are found according to priority one, M3 will try to find matching objects according to priority two, etc.</p>
(CMS017/E)	Field 1, 2 ,3 ,4	<p>... a field or data element from a specific file.</p> <p>It is used to create keys or search paths for user defined tables and also to create the contents of user defined files.</p> <p><b>Note:</b> These fields will be protected if entries are found in (MWS145). That means that you cannot enter these fields if they are 'in use'.</p>
(CRS109/B)	Field group	<p>... a grouping of several fields from different files that regulate matrix entries. In this case, the EVT01/2/3 field group will be selected.</p> <p>Field groups are system-defined and cannot be changed.</p>

#### Settings for which documents should be produced and how (through ASJ or immediately)

Program ID/ Panel	Field	The field indicates ...
(MWS145/B)	Priority	<p>... the table priority from the table in (CMS017).</p> <p>When searching after document event triggers, object value entries are searched in priority sequence, from 0 to 9, until a matching set of object values is found.</p> <p>All available priorities are displayed to the right and are separated with a slash, such as 1/2/5.</p>

Program ID/ Panel	Field	The field indicates ...
(MWS145/B)	Value 1, 2, 3, 4	<p>These are the values that must match for the given event to cause the documents specified in the corresponding (MWS145/E) panel to be produced.</p>
		<p>Example: A setting is made here for event RELEASE_PICK. If the control objects are warehouse and stock zone, and the values stated here are 001 and AA, then the warehouse and stock zone for the picking list must be 001/AA for the documents in the corresponding (MWS145/E) panel to be produced.</p>
		<p>Example: Start value 1 could be Warehouse (OQWHLO). Select a warehouse by pressing F4=Prompt.</p>
		<p>Start value 2 could be stock zone (PISLTP). Select a stock zone by pressing F4.</p>
(MWS145/B)	From date	<p>... the date from which the document trigger will be active.</p>
(MWS145/E)	To date	<p>... the valid to date. The document trigger applies up to and including this date.</p>
(MWS145/E)	Send to ASJ	<p>whether the production of the specified documents for this event trigger will be produced synchronously or asynchronously.</p>
		<p>If the documents are to be produced asynchronously, then the task is sent to an auto-start job (batch job). Otherwise, the print program is started and the flow must wait for the print program to finish.</p>
		<p>Select the check box to produce the documents asynchronously (through auto start job).</p>
(MWS145/E)	Check CSFDEF	<p>... whether a check should be made that the output controls for each document are valid when retrieving each document trigger.</p>
		<p>The check made is that at least one output media selection entry exists in (MNS205) for this key. If no such entry exists, a message is sent to the M3 mailbox for the person who is responsible, as indicated in the trigger definition (MWS145/E).</p>
		<p>Select the check box if a check should be made.</p>
(MWS145/E)	Responsible	<p>... a unique user ID.</p>
		<p>The person responsible entered here will receive any M3 Mail for errors related to this document trigger.</p>

Program ID/ Panel	Field	The field indicates ...
(MWS145/E)	Doc number	... the Document number and document variant together determines a specific variant/type of document.
	Doc variant	Only documents defined for the event in (CRS019) may be used.
	Doc name	The following documents are valid in EDC:
		RELEASE_PICK: Picking list (120), Address labels (913), Package labels (912)
		DELIVERY_ISSUED: Delivery Note (900), Dispatch Advice (901), Address labels (913), Package labels (912)
		SHIPMENT_ISSUED: Loading list (909/00), Unloading list (909/01), Dispatch Advice (901), Delivery Note (900)
(MWS145/E)	Printer file	... the combination of printer file, work station and user.
	Work station	This combination points to one or more entries in 'Output Media Selection. Open' (MNS205).
	User	When the connected document is produced, it will use this (or these) output services and media type(s).
		<b>Note:</b> For picking lists, the media control entered here is only used if the printer specified for all relevant stock zones is set to blank.
(MWS145/E)	Log level	... the log level.
		If this check box is selected, then delivery documents produced through event-controlled documents functionality will update delivery document history and be visible in the connected delivery documents sorting order (MWS260).
		Select the check box to update delivery document history.
		This is only valid for certain documents.

### Media control settings for the documents

The process enables you to send document output through different kinds of media, such as a printer, email, fax or electronic data interchange (EDI).

# Settings for Fair Share, Allocation Priority Rules and Allocation Priority with Fair Share

This document explains how you set the batch allocation rules for fair share, allocation priority rules and allocation priority with fair share.

When you use batch allocation, this is the second step for setting up the parameters. The first step is defining the basic batch allocation settings.

## Outcome

You have set up the parameters for the batch allocation method you will use in one of these cases:

- Fair share  
Fair share is used to distribute a fair share to equal priorities when stock shortages occur.
- Allocation priority rules  
Allocation priority rules are used to prioritize demand order lines when stock shortages occur.
- Allocation priority with fair share  
Allocation priority model with fair share is used to prioritize demand order lines when stock shortages occur. When allocatable net is not enough to fulfill demand quantity within an allocation priority group (demand lines having same priority according to the model), fair share will be used among those demand lines. This method can be used for customer orders, distribution orders and requisition orders.  
Batch allocation limits are used to validate and adjust the redistributed allocated quantities.

## Before you start

Basic batch allocation rules are set. See these documents:

- [Basic Batch Allocation Settings](#) on page 285
- [Define Settings for Allocation Priority Model](#) on page 360

## Follow These Steps for Fair Share Settings

**Note:** The only settings for fair share are the basic batch allocation settings are described in the document, Basic Batch Allocation Settings.

However, every time you run the batch allocation program (MMS189) you have to define some settings. These are described in this section:

- 1 Start 'Allocation. Distribute Quantities' (MMS189). The E panel is the opening panel.
  - The 'Planning date' field indicates the date when the scheduled transaction is expected to take place. You can use it to override the demand time fence. If you leave this field blank, then the demand time fence is used for calculating the planning date.
  - Enter the appropriate priority retrieved from the customer order in the 'Priority' From and To fields. The priorities are displayed in the material plan (MMS080). Priority selection is used in cases of shortages.
  - Enter the actual warehouse or warehouses that should be selected in the 'Warehouse' From and To fields.

- The 'Style no' field indicates a comprehensive term for a number of similar items. This is not mandatory and is frequently used in the fashion industry.
- Enter the actual item or items that should be batch allocated in the 'Item number' From and To fields.
- After entering all the desired fields on the E panel, click Next.
- On the F panel, select the 'Include SCO' check box if demand order lines with supply chain order links should be included in the batch allocation run.
- Enter '1-Fair share' in the 'Distribution method' field.
- Select the 'Check allocation limits' check box if batch allocation limits should be validated in the batch allocation run.
- Adjust maximum allocated quantity.
- After entering all the desired fields on the F panel, click Next.

**2 Fair share is calculated as:**

(Selected requirements total allocated quantity + Allocable net) (Selected requirements planned quantity)

### Follow These Steps for Allocation Priority Rules Settings

#### Set Priority

- 1 To set **Priority Per Order Type**, start order type:
  - 'Req/Distr Order Type. Open' (CRS200/H)
  - 'CO Type. Update Field Selection' (OIS014/E)
  - 'Manufacturing Order Type. Open' (PMS120/F).
- 2 Fill in the 'Default Priority' field. This field indicates priority per order type. It can be overridden by priority per customer (CRS610) or by allocation priority (MMS156, MMS157).
- 3 To set **Priority Per Customer**, start 'Customer. Open' (CRS610). Fill in the Priority field on the F Panel.

#### Allocation Priority (Calculated According to Various Factors Related to the Customer)

- 1 Start 'Settings - Allocation Priority' (MMS156/E).
- 2 The 'Factor number' field determines the sequence during the calculation and display of the allocation priority. The factors are entered in an open subfile where the user specifies the factor values (0–99).
- 3 Settings for each factor are entered in the 'Field/value' fields.

These fields contain specific objects, numeric values or specific values, which are displayed in a table in 'Field Group. Display Permitted Fields' (CRS109). The numeric values can be positive or negative. Special values can be set. They are:

&NPER = Number of periods a customer has purchased

&RETN = Number of customer returns in a period

&RETV = Value of customers returns in a period.

- 4 The Operand field can be set to \*, /, + and -.

The total sum of the calculation results is the final priority value. The maximum priority value is 999,999 and any value above that is set to 999,999.

#### Allocation Priority Calculation

- 1** Start 'Allocation Priority. Open' (MMS157). On the E panel, indicate the selection for the allocation calculation.
- 2** Fill in the From and To fields for 'Customer', 'Customer group' and 'Date' to select the transactions to be included.
- 3** Enter the ID of the information that you want to be retrieved in the 'Dataset' field.
- 4** Fill in the 'Updated by division' and 'Divided by zero' fields.
- 5** Press Enter. The system checks that the dataset exists and includes the following:
  - Status 20 (in the OSSSET-file)
  - Customer number as the first key (in a non-MUC installation)
  - Divisions plus customer number as the first two keys (in a MUC installation)
  - Customer group, if this is selected (in the OSSELE-file).

The fields used in the calculation (as set in MMS157, file VAPRA) are included in the dataset (OSSELE for values and OSSSEE for other information, such as reason code).

### **Allocation Priority Model**

- 1** Start 'Allocation Priority Model. Open' (MMS181) to create a model ID.
- 2** Start Object control parameter programs, 'Available Object Ctrl Parameters. Open' (CMS016) and 'Generic Object Control Table. Open' (CMS017) to create an object control selection table for program 'Allocation Priority Model Selection Table. Open' (MMS182). The available objects in the selection table are controlled by field group MMAP2.
- 3** In 'Allocation Priority Model Selection Table. Open' (MMS182), set the allocation priority for a specific set of selection object values.

**Note:** Low value in the allocation priority field indicates a higher priority.

### **Batch allocation run**

- 1** Start 'Allocation. Distribute Quantities' (MMS189).
  - On the E panel, fill in the selections for demand lines.
  - On the F panel, select 'Include SCO' to include demand order lines with supply chain order links to be included in the batch allocation run.
  - Select '2=Allocation prio' in the 'Distribution method' field.
  - Select the 'Check allocation limits' check box if batch allocation limits should be validated.
  - Adjust maximum quantity allocated.
  - Select allocation priority hierarchy in the 'Allocation priority hierarchy' fields.
  - If '6-Alloc prio model' is selected in first 'Allocation priority hierarchy' field, enter a value in the 'Allocation prio model' field.

### **Follow These Steps for Allocation Priority with Fair Share**

#### **Allocation Priority Model**

- 1** Start 'Allocation Priority Model. Open' (MMS181) to create a model ID.
- 2** Start Object control parameter programs 'Available Object Ctrl Parameters. Open' (CMS016) and 'Generic Object Control Table. Open' (CMS017) to create an object control selection table for program

'Allocation Priority Model Selection Table. Open' (MMS182). The available objects in the selection table are controlled by field group MMAP2.

- 3 In 'Allocation Priority Model Selection Table. Open' (MMS182), set allocation priority for a specific set of selection object values.

**Note:** Low value in the allocation priority field indicates a higher priority.

#### Batch allocation run

- 1 Start 'Allocation. Distribute Quantities' (MMS189).
  - On the E panel, fill in the selections for demand lines.
  - On the F panel, select 'Include SCO' to include demand order lines with supply chain order links in the batch allocation run.
  - Select '3-Prio mod, fair share' in the 'Distribution method' field.
  - Select the 'Check allocation limits' check box if batch allocation limits should be validated.
  - Adjust maximum allocated quantity.
  - Select '6-Alloc prio model' in the first 'Allocation priority hierarchy' field.
  - Enter a value in the 'Allocation prio Model' field.
- 2 Within the group of demand lines sharing the same priority (according to the allocation priority model), fair share is calculated as:  

$$\text{(Selected requirements total allocated quantity} + \text{Allocable net}) / \text{(Selected requirements planned quantity)}$$

#### Parameters to Set

Program ID/Panel	Field	The field indicates ...
(MMS189/E)	Style	... a comprehensive term for a number of similar items. This is not mandatory and is frequently used in the fashion industry.  Style is set in 'Style. Open' (MMS016), 'Style. Connect Feature' (MMS017), 'Style. Create Item' (MMS276), 'Feature. Open' (PDS055), 'Feature. Distribute Option' (PDS071) and a few more programs.  See documentation 'Style Settings'.
(MMS189E)	Planning date	... the date when the scheduled transaction is expected to take place. You can use it to override the demand time fence. If you leave this field blank, then the demand time fence is used for calculating the planning date.

Program ID/Panel	Field	The field indicates ...
(MMS189/E)	Priority	... the appropriate priority retrieved from the customer order. Priorities are displayed in the material plan (MMS080).
(MMS189/F)	Only deallocate	... that only deallocation of included demand order lines will be initiated.
(MMS189/F)	Include SCO	<p>...whether demand order lines with supply chain order (SCO) links should be included in the batch allocation run.</p> <p>If this setting is not checked, demand order lines with SCO links will not be processed even if they are included in the selection.</p> <p><b>Note:</b> Only demand order lines with an SCO policy that have the setting 'Link existing order' with value 1 or 2 is processed.</p>
(MMS189/F)	Distribution method	<p>... how to distribute the allocated quantity. The valid alternatives are:</p> <p>1 = According to a calculated percentage of ordered quantity (fair share).</p> <p>2 = According to allocation priority and allocation order.</p> <p>3 = According to allocation priority with fair share.</p>
(MMS189/F)	Allocation priority hierarchy	...how to sort the different demand lines before reallocation is done when distribution method 2 or 3 is used.
(MMS189/F)	Check allocation limits	...if validation of batch allocation limits (MMS154) are to be included
(CRS200) (OIS014) (PMS120)	Default priority	...priority per order type. It can be overridden by priority per customer (CRS610) or by allocation priority (MMS156, 157).
(CRS610)	Priority	... the priority per customer.

Program ID/Panel	Field	The field indicates ...
(MMS156/E)	Factor number	... the sequence during calculation and display of the allocation priority. The factors are entered in an open subfile where the user specifies the factor values (0–99).
(MMS156/E)	Operand	... mathematical operation and can be set to *, /, + and -. The calculation results are totaled into the final priority value. The maximum priority value is 999,999 and any value above that is set to 999,999.
(MMS157/E)	Dataset	<p>... the contents and search paths for a specific budgeting and/or reporting level for key information from customer orders. Datasets are defined in 'Dataset. Open' (OSS401).</p> <p>The system checks that the dataset exists and includes the following:</p> <ul style="list-style-type: none"> <li>• Status 20 (in the OSSSET-file) and</li> <li>• Customer number as the first key (in a non-MUC installation)</li> <li>• Divisions plus customer number as the first two keys (in a MUC installation).</li> <li>• Customer group, if this is selected (in the OSSELE-file).</li> </ul> <p>The fields used in the calculation (as set in MMS157, file VAPRA) are included in the dataset (OSSELE for values and OSSSEE for other information, such as reason code).</p>

Program ID/Panel	Field	The field indicates ...
(MMS157/E)	Updated by division	<p>... whether to update the allocation priority per division. The valid alternatives are:</p> <p>0 = No. The allocation priority should only be updated on the central level. The priority is totaled for selected divisions.</p> <p>1 = Yes. The allocation priority should be updated per division.</p>
(MMS157/E)	Divided by zero	<p>... how divisions should be processed when the denominator equals 0. The valid alternatives are:</p> <p>0 = The denominator is set to 1.</p> <p>1 = The quotient is set to 0</p> <p>2 = The calculation is aborted and the values that have not yet been calculated will not receive any value.</p> <p>If alternative 2 is selected, values that will use the results of unfinished calculations are left open for manual correction. The results that are already calculated will be used as usual, and the values where they are used will be closed. This alternative should always be used if the result of alternative 0 or 1 is too unpredictable.</p> <p>You can perform manual division by zero using formula lines with Boolean operands (conditional statements) if none of the above can be used.</p>
(CMS016/E)	Object control parameter	<p>... if allocation priority model is used as an allocation priority hierarchy. Then object control program MMS182 must be created in CMS016</p>
(CMS017/B)	Object control selection table	<p>...create a selection table for an allocation priority model.</p>
(MMS181)	Allocation priority model. Open	<p>...create an allocation priority model ID</p>

Program ID/Panel	Field	The field indicates ...
(MMS182)	Allocation priority model selection table. Open	...define which allocation priority to be used for a specific combination of objects from the selection table.
(CMS016/E)	Object control parameter	... if validation of batch allocation limits is included. Then object control program MMS154 must be created in CMS016
(CMS017/B)	Object control selection table	...create a selection table for an allocation limit.
(MMS154)	Allocation min/max limits Sel Table. Open	...define batch allocation limits to be used for a specific combination of objects from the selection table.

## Settings for Package-Based Picking and Picking Capacity Split

This document explains how you define settings for package-based picking and for splitting the picking capacity.

### Outcome

You can perform package-based picking and you can split picking capacity.

Defining settings for package-based picking and for splitting picking capacity updates the following M3 tables:

- Picking capacity - MPICAP (MWS175)
- Stock zone - MITARE (MMS040)
- Warehouse equipment - MITEQU (MWS023)
- Item per warehouse – MITBAL (MMS002)
- Pack parameters – CSYPAR (CRS706); Headings for the (MWS423/H)
- Dispatch policy – MHDIPO (MWS010)

Package-based picking enables you to pick packages that are already packed or to pick individual items that make up a package.

Package-based picking is useful for companies that have the following requirements:

- Large volumes of split picks
- Large volumes of full-pallet picks or full-package picks.

Picking capacity split is a function that separates the different picking list lines into reasonable picking workloads. Several capacity fields control how the capacity is split.

Picking capacity split is useful for companies that have high picking volumes.

### **Before you start**

You must define the settings for the dispatch flow that you want to use. Refer to the following documents:

See [Basic Settings for Dispatch Handling](#) on page 300

See [Define Settings for Picking Resource Planning](#) on page 391

See [Define Settings for Transportation Management](#) on page 620

See [Define Settings for Packing](#) on page 374

### **Follow these steps**

**Note:** These steps only refer to settings for package-based picking and picking capacity split. Also, you must have defined the settings for the current dispatch flow that you want to use. See the references in the 'Before Starting' section.

#### **Basic settings for package-based picking**

- 1 Start 'Dispatch Policy. Open' (MWS010). Select the value in the fields that are mandatory for package-based picking.
- 2 Optional: Define the user-defined fields that will be displayed on the 'Delivery. Connect Packages' (MWS423/H) panel. Open 'Settings – Packing' (CRS706). On the E panel you create the three headings for the package alias.

For example, you can assign each package with an ID that is supplied by the forwarder, such as "UPS tracking number."

#### **Settings for wave picking lists**

- 1 On the (MWS010/E) panel you must select setting 090 (Picking resource planning).
- 2 Start 'Picking List. Plan Pickers' (MWS415). Open the P panel and select wave creation. The 'Picking capacity split' field is displayed. Select the picking capacity split.

#### **Settings for displaying alternate unit of measures**

- 1 In 'Picking List. Report Lines' (MWS422) you can display alternate U/Ms for an item.  
**Note:** The basic U/M must be fully converted to the alternate U/M without any remainder. Otherwise, the basic U/M will be displayed.
- 2 Start 'Item. Connect Warehouse' (MMS002). Open the G panel. Select alternate U/M. The alternate U/M is defined in 'Item. Connect Alternate U/M' (MMS015). See [Define Alternate Unit of Measure](#).

#### **Settings for picking list capacity**

These settings define the picking list capacities. They also define when the picking list or wave picking list should be split into a new picking list or wave picking list.

#### **Define picking time per item or location type**

- 1 Start 'Item. Connect Picking Time' (MMS405). You can define the picking time for each item, each distribution technology group, or each location type. The 'Normal quantity' field is optional. This field can be useful if you have several records within the same location type and want to have different pick times for them.  
The distribution group technology is defined in 'Distribution Group Technology. Open' (MMS043) and is connected to a location type in (MMS057).
- 2 Open the E panel and specify the fields.

### Create an object control table for picking capacity

- 1 Start 'Available Object Control Parameters. Open' (CMS016). Select Picking List Capacity (MWS175) and select option 11-'Object table detailed lines'.
- 2 'Generic Object Control Table. Open' (CMS017/B) is started. Set the 'Panel sequence' field to E (T) 1.
- 3 On the (CMS017/E) panel specify the following:
  - Priorities from 1 to 10 in the Priority fields.
  - By default, sequence 10 corresponds to priority 1, sequence 20 to priority 2, and so on up to sequence 100, which corresponds to priority 10.
  - The 'Field 1(2, 3, and 4)' fields with the selected fields from the field group MWKVE. Press F4 to select the valid fields.
  - Gray fields (not editable) have records created in 'Picking List Capacity. Open' (MWS175).
- 4 Press Enter. The T panel is displayed. Press Enter again and start (MWS175).

### Create values for the object control table

- 1 You must define values for the defined control fields. You must repeat this for each priority. To the right of the 'Priority' field you can view all priorities defined for this event/sequence number.
- 2 On the (MWS175/B) panel, specify the values for the fields.  
The 'Value 1, (2, 3 and 4)' fields are the first, second, third, and fourth values to be compared to the contents of a control object.
- 3 Specify the fields on the (MWS175/E) panel. Select the fields to be entered depending on whether the capacity is for a picking list or a wave picking list. For more information about wave picking, see [Wave Picking](#) on page 539.

You can now perform the dispatch process with package-based picking.

### Parameters to set

Program ID/ Panel	Field	The field indicates ...
(MWS010/E)	070 Calculate estimated picking time	<p>...whether estimated picking times should be calculated and saved when a picking list is created.</p> <p>The calculation is based on the picking time table in (MMS405). See below.</p> <p>You must select this check box if the picking capacity split is based on picking time.</p>
(MWS010/E)	090 Picking resource planning	<p>...whether picking resource planning is used.</p> <p><b>Note:</b> You must select this check box if you want to use picking capacity for wave picking lists.</p> <p>For more information about wave picking, see Wave Picking.</p>
(MWS010/E)	110 Printer control	<p>...how picking lists are split, as well as the printer used to print the picking lists.</p> <p>The picking list is always printed on the printer that is set for the stock zone unless there are multiple stock zones.</p> <p>The valid alternative is: 3 = The picking list is split by stock zone and warehouse equipment. The warehouse equipment used is as defined for each item/warehouse (MMS002) or location (MMS010). Each picking list is printed on the corresponding printer for each stock zone.</p> <p>This alternative is required when you use picking capacity split. It determines a unique combination of stock zone and warehouse equipment for each individual picking list. This information is later used to retrieve the picking capacity values defined in 'Picking List Capacity. Open' (MWS175).</p>

Program ID/ Panel	Field	The field indicates ...
(MWS010/E)	115 Picking capacity split	<p>Select the check box to split the picking capacity.</p> <p>The picking release activity will attempt to split one picking list into several based on the capacity constraints defined in 'Picking List Capacity. Open' (MWS175).</p>
(MWS010/F)	170 Partial reporting allowed	<p>...whether picking lists can be partially reported during pick line reporting in MWS422 and for which packed statuses.</p> <p>When you report a package-based pick, the actual reporting is always partial. Based on this, an alternative must be selected from 1 to 6.</p>
(MWS010/F)	175 Pick reporting level	<p>...the level on which the picking is reported.</p> <p>The valid alternatives are:</p> <p>1 = Pick line. Each pick line will be displayed and reported (MITALO). This alternative does not assume that the pack is reported before the pick is reported.</p> <p>2 = Package. Each package detail line will be displayed and reported. This alternative assumes that the pack is reported before the pick is reported.</p> <p>You must select alternative 2 in order to use package-based picking.</p>

Program ID/ Panel	Field	The field indicates ...
(MWS010/G)	240 Packing reporting	<p>...the packing and packing reporting method used.</p> <p>The valid alternatives are:</p> <p>2 = Manual advanced packing</p> <p>3 = Automatic advanced packing when picking list is moved to a packing location</p> <p>4 = Automatic advanced packing when picking list is created.</p> <p>If picking capacity constraints are set for a number of packages for each picking list, you must select alternative 4.</p> <p>For more information about the packing settings, see Define Settings for Packing.</p>
(MWS010/H)	460 Move in partial mode	<p>Select the check box to move a picking list line or a package detail line to a packing location or docking location in (MWS422) in partial mode. If the check box not is selected, the quantity that not is moved (the remaining quantity) will be considered as a backorder quantity. The check box must be selected.</p>
(MWS415/P)	Wave creation	<p>...whether a picking wave is created and a wave picking list printed.</p> <p>Select the check box if wave handling is used and a wave picking list should be printed.</p>
(MWS415/P)	Wave line creation	<p>...if and how the wave picking list is printed.</p> <p>The valid alternatives are 0, 1, 2, and 3.</p>

Program ID/ Panel	Field	The field indicates ...
(MWS415/P)	Picking capacity split	<p>Select the check box to indicate that picking capacity should be split for wave picking lists.</p> <p>If you select this, the pick release activity will attempt to split one picking list into several based on the capacity constraints defined in 'Picking List Capacity. Open' (MWS175).</p> <p>The picking capacity split is an individual user setting because one wave can consist of many deliveries with different settings in MWS010/E setting 115.</p> <p><b>Note:</b> You must select this check box if you want to process picking capacity for wave picking lists.</p>
(MMS002/G)	Alternate U/M	<p>...an alternate unit of measure (U/M) for the basic U/M for an item. An unlimited number of alternate U/Ms can be defined for each item.</p> <p>You define the alternate U/Ms in 'Item. Connect Alternate U/M' (MMS015).</p> <p>Enter the alternate U/M if you must report picking based on a different U/M than the basic U/M.</p> <p><b>Note:</b> The basic U/M must be fully converted to the alternate U/M without any remainder. Otherwise, the basic U/M will be displayed.</p> <p>For more information, see Define Alternate Unit of Measure.</p>

Program ID/ Panel	Field	The field indicates ...
(CRS706/E)	User-defined field - package alias 1,2,3	<p>...the field heading used for the field Package alias 1, 2 and 3.</p> <p>The headings entered as package alias 1, 2 and 3 are alternatives to the M3 package number in 'Delivery. Connect Packages' (MWS423/H). These headings appear on the (MWS423/H) panel where they describe how the package alias fields 1, 2 and 3 are used.</p> <p>For example, you can assign each package with an ID that is supplied by the forwarder, such as "UPS tracking number."</p> <p>These are not mandatory.</p>
<b>Settings for Picking List Capacity</b>		
(MMS405/B)	Normal storage quantity	<p>...a quantity used to distinguish between different picking times within the same location type.</p> <p>For example, this can be useful for a picking location that also contains broken packages. This information is optional.</p>
(MMS405/E)	Picking setup time	<p>...the normal time used to pick an item regardless of quantity.</p> <p>The picking setup time can be entered in hours, minutes, or seconds, depending on the time unit.</p> <p>The picking setup time is used to calculate the estimated picking time for a picking list.</p> <p>This value, together with the value in the 'Max pick time' field on the (MWS175/E) panel, determine when a picking list should be split.</p>

<b>Program ID/ Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS405/E)	Picking time	<p>...the normal time needed to pick an item depending on quantity.</p> <p>The picking time is defined per time quantity and can be entered in hours, minutes, or seconds, depending on the time unit. Regardless of how the picking time is defined, it is always displayed in hours or part of an hour.</p> <p>The picking time is used to calculate the estimated picking time for a picking list.</p> <p>This value, together with value in the 'Max pick time' field on the (MWS175/E) panel, determine when a picking list should be split.</p>
(CMS016/B)	Object control parameter	<p>...the available object control parameter, where you can define your objects and values.</p> <p>Select 'Pick List Capacity' - MWS175.</p> <p>These values are generated automatically when you first enter CMS016 for the installation. If you have upgraded CMS016 you might need to press F14 to create any new values.</p>
(CMS016/E)		These fields are not changeable.
(CMS017/B)	View	<p>...the view.</p> <p>Views are user defined, and determine the fields that are displayed and how the data is calculated.</p> <p>They are defined in (CRS020). See .</p>
(CMS017/B)	Program name	<p>...the program that is used for the object control table. In this case it is MWS175.</p>
(CMS017/E)	Field 1 ,2 ,3, 4	<p>...a field or data element from a specific file.</p> <p>It is used to create keys or search paths for user-defined tables and to create the contents of user-defined files.</p>

Program ID/ Panel	Field	The field indicates ...
(CMS017/E)	Status	<p>...the status of the object control setting.</p> <p>10 = Preliminary 20 = Definite 90 = Deactivated.</p> <p>Only status 20 is used in the dispatch flow.</p>
(CMS017/E)	Sequence	<p>...the order in which each information field is displayed.</p> <p>By default, sequence 10 corresponds to priority 1, sequence 20 to priority 2, and so on up to sequence 100, which corresponds to priority 10.</p> <p><b>Example:</b></p> <p>To move an object control line from priority 2 to 1, assign the sequence number for the line a number between 11 and 19. Press Enter. The line is then placed in the correct order.</p>
(CMS017/E)	Priority	<p>...a priority for the selected fields.</p> <p>The object lookup is always performed in priority order. If no qualified objects are found according to priority one, M3 will try to find matching objects according to priority two, and so on.</p>
(CMS017/E)	Field	<p>...a field or data element from a specific file.</p> <p>It is used to create keys or search paths for user-defined tables and also to create the contents of user-defined files.</p> <p><b>Note:</b> These fields will be protected if entries are found in (MWS175). That means that you cannot enter these fields if they are in use.</p>

Program ID/ Panel	Field	The field indicates ...
(CRS109/B)	Field group	<p>...a grouping of several fields from different files that regulate matrix entries. In this case, the MWKVE field group can be selected.</p> <p>Field groups are system defined and cannot be changed.</p>
(MWS175/B)	Priority	<p>...the table priority from the table in (CMS017). When M3 searches for document event triggers, object value entries are searched in priority sequence, from 0 to 9, until a matching set of object values is found.</p> <p>All available priorities are displayed to the right and are separated by a slash, for example 0/1/2.</p>
(MWS175/B)	(MWS175/B)	<p>...the object values that must match for the given fields in (CMS017/E) to cause the picking activities entered in the corresponding (MWS175/E) panel to be produced.</p> <p><b>Example:</b></p> <p>Start value 1 can be Warehouse (OQWHLO). Select a warehouse by pressing F4=Prompt. Start value 2 can be stock zone (PISLTP). Select a stock zone by pressing F4.</p>

Program ID/ Panel	Field	The field indicates ...
(MWS175/E)	Max packages	<p>...the maximum number of packages that one picking list or one wave picking list can contain. The calculation of the number of packages included on the picking list or wave picking list assumes that the packing is reported before the picking list or wave picking list is released.</p> <p>The maximum number of packages field is used to split picking lists or wave picking lists into reasonable workloads when the picking list capacity is split.</p> <p>A capacity value of zero indicates that no split should be based on the number of packages.</p>
(MWS175/E)	Max weight	<p>...the maximum gross weight that one picking list or wave picking list can contain.</p> <p>The gross weight is calculated as the total item gross weight included on the picking list or wave picking list.</p> <p>The maximum gross weight field is used to split picking lists or wave picking lists into reasonable workloads when the picking list capacity is split.</p> <p>A capacity value of zero indicates that no split should be based on the gross weight.</p>

Program ID/ Panel	Field	The field indicates ...
(MWS175/E)	Max volume	<p>...the maximum volume that one picking list or wave picking list can contain. The volume is calculated as the total item gross weight included on the picking list or wave picking list.</p>
		<p>The maximum volume field is used to split picking lists or wave picking lists into reasonable workloads when the picking list capacity is split.</p>
		<p>A capacity value of zero indicates that no split should be based on the volume.</p>
(MWS175/E)	Max pick time	<p>...the maximum pick time that one picking list or wave picking list can contain. The pick time is calculated as the total pick time for all included picking list lines. The maximum pick time field is used to split picking lists or wave picking lists into reasonable workloads when the picking list capacity is split. A capacity value of zero indicates that no split should be based on the pick time.</p>
(MWS175/E)	Max pick lines	<p>...the maximum number of pick lines that one picking list or wave picking list can contain. The number of pick lines is calculated as the total of all allocations included on the picking list.</p>
		<p>The maximum number of pick lines field is used to split picking lists or wave picking lists into reasonable workloads when the picking list capacity is split.</p>
		<p>A capacity value of zero indicates that no split should be based on the number of pick lines.</p>

# Settings for System-Guided Pick and Pack

This document explains how you set up system-guided pick and pack.

## Outcome

You can pick, pack, move to the packing location, move to the docking location, and issue the picking list.

Picking activities (default, not user defined) are stored in the CRPIAC file.

Picking guideline data is stored in the MPIGLD file.

System-guided pick and pack is used to guide the user through selected parts of the dispatch flow. This reduces variability and enables you to create a dispatch flow that is suitable for reporting picking activities in a mobile picking scenario.

## Before You Start

- You must analyze your system-guided dispatch flow requirements and ensure that the system-guided dispatch flow is appropriate for the dispatch policy settings.
- It is recommended that you set parameter 110 (Printer Control) to 3 for the dispatch policy. This means that the picking list is split for each stock zone and warehouse equipment if those values are not the same in one delivery. When you set this parameter to 3, this ensures the correct retrieval of the picking guideline data using both stock zone and warehouse equipment. However, you can use system-guided pick and pack and have other values set for this parameter but the objects used at each priority in the selection table in CMS017 must be set after careful consideration.

## Follow These Steps

In 'Picking Activity. Open' (CRS018) you can display the available activities. You cannot create or change records in this program.

### Define Object Control Table for Picking Guidelines

- 1 Start 'Available Object Control Parameters. Open' (CMS016). Select Pick guideline (MWS170) and select option 11=Object table detailed lines.
- 2 'Generic Object Control Table. Open' (CMS017/B) is started. Set the 'Panel sequence' field to E (T) 1.
- 3 Enter "MWS170" in the Program field.
- 4 Enter the following information on the (CMS017/E) panel:
  - Priorities from 1 to 10 in the Priority fields.
  - By default, sequence 10 corresponds to priority 1, sequence 20 to priority 2, and so on up to sequence 100, which corresponds to priority 10.
  - The selected fields from the field group MWKVD in the 'Field 1(2, 3, 4 and 5)' fields. Press F4 to select the valid fields.
  - Gray fields that are not editable have records created in (MWS170).
- 5 Press Enter. The T panel is displayed. Press Enter again to start 'Picking Guidelines. Open' (MWS170).

### Create Values for the Object Control Table

- 1** You must define values for the defined control fields. You must repeat this for each priority. To the right of the 'Priority' field you can view all the priorities defined for this event/sequence number.
- 2** On the (MWS170/B) panel, define values for the fields.
- 3** The 'Value 1, (2, 3, 4 and 5)' fields are the first, second, third, fourth and fifth values to be compared to the contents of a control object.
- 4** Fill in the fields on the (MWS170/E) panel.

You can now perform the dispatch process with system-guided pick and pack.

#### Parameters to Set

Parameters to Set	Field	The field indicates ...
(CRS018/B)	Picking activity	<p>...one of several activities that should be performed in the warehouse to follow a predefined dispatch flow. These activities are predefined.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>SP = Start picking</li> <li>AP = Manual advance packing - Mobile picking</li> <li>MP = Move to packing location - Mobile picking</li> <li>MD = Move to docking location - Mobile picking</li> <li>IS = Issue - Mobile picking</li> </ul>
(CRS018/E)	Program	<p>...the program where the standard alternative should be triggered to perform the activity.</p>
(CRS018/E)	Task activated	<p>...if the activity is activated to be included in mobile picking.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>0 = Not activated</li> <li>1 = Activated for mobile picking</li> </ul> <p>This field is for informational purposes only.</p>

Parameters to Set	Field	The field indicates ...
(CRS018/E)	Standard alternative	<p>...the standard alternative used to perform this picking activity. An alternative can both be an option or a function key.</p> <p>The field is used in mobile picking where the alternative set in this field is triggered automatically when the next action is confirmed.</p> <p>This field is for informational purposes only.</p>
(CRS018/E)	Valid alternative 1 -10	<p>...the options or functions that are allowed to be used in addition to the standard alternative.</p> <p>This function is not currently available.</p>
(CMS016/B)	Object control parameter	<p>.. the available object control parameter, where you can define your objects and values.</p> <p>Select Pick guideline selection - MWS170.</p> <p>These values are generated automatically when you first enter CMS016 for the installation. If you have upgraded CMS016, you might need to press F14 to create any new values.</p>
(CMS016/E)		These fields are not changeable.
(CMS017/B)	Program name	... the program that is used for the object control table. In this case it is MWS170.
(CMS017/E)	Field 1 ,2 ,3, 4, 5	<p>...a field or data element from a specific file.</p> <p>It is used to create keys or search paths for user-defined tables and to create the contents of user-defined files.</p>

Parameters to Set	Field	The field indicates ...
(CMS017/E)	Status	<p>... the status of the object control setting.</p> <p>10=Preliminary 20=Definite 90=Deactivates</p> <p>Only status 20 is used in the dispatch flow.</p>
(CMS017/E)	Sequence	<p>... the order in which each information field should be displayed.</p> <p>By default, sequence 10 corresponds to priority 1, sequence 20 to priority 2, and so on up to sequence 100, which corresponds to priority 10.</p> <p>Example:</p> <p>To move an object control line from priority 2 to 1, assign the sequence number for the line a number between 11 and 19. Press Enter. The line is then placed in the correct order.</p>
(CMS017/E)	Priority	<p>... a priority for the selected fields.</p> <p>The object lookup is always performed in priority order. If no qualified objects are found according to priority one, M3 will try to find matching objects according to priority two, and so on.</p>
(CMS017/E)	Field	<p>... a field or data element from a specific file.</p> <p>It is used to create keys or search paths for user-defined tables and to create the contents of user-defined files.</p> <p>Note: These fields will be protected if entries are found in (MWS170). This means that you cannot enter these fields if they are in use.</p>

Parameters to Set	Field	The field indicates ...
(CRS109/B)	Field group	<p>... a grouping of several fields from different files that regulate matrix entries. In this case, the MWKVD field group can be selected.</p> <p>Field groups are system-defined and cannot be changed.</p>
(MWS170/B)	Priority	<p>... the table priority from the table in (CMS017). When searching after document event triggers, object value entries are searched in priority sequence, from 0 to 9, until a matching set of object values is found.</p> <p>All available priorities are displayed to the right and are separated with a slash, such as 0/1/2.</p>
(MWS170/B)	Value 1, 2, 3, 4	<p>These are the object values that must match for the specified fields in (CMS017/E) to cause the picking activities specified in the corresponding (MWS170/E) panel to be activated when performing the picking via MWS420 using the new sorting order for mobile picking.</p> <p>Example: A setting is made in MWS170/E for using the picking guideline sequence MP (Move to pack) and IS (Issue). If the control objects are warehouse and stock zone, and the values entered here are 001 and AA, then the warehouse and stock zone for the picking list must be 001/AA to activate the picking guideline sequence of MP and IS in the corresponding MWS170/E panel.</p> <p>Example: Start value 1 can be Warehouse (OQWHLO). Select a warehouse by pressing F4=Prompt.</p> <p>Start value 2 can be stock zone (PISLTP). Select a stock zone by pressing F4.</p>

Parameters to Set	Field	The field indicates ...
(MWS170/E)	Picking guideline sequence	...the sequence of activities that should be performed using mobile picking in the dispatch flow.
(MWS170/E)	Activity	See CRS018/B.
(MWS170/E)	Auto release task	<p>...if a mobile picking task that was completed or canceled should be automatically released so that other users or pickers can start working on the task.</p> <p>The valid alternatives are:</p> <p>0 = No automatic release</p> <p>1 = Automatic release activated</p>

## Shipment Package

The purpose of the shipment package functionality is to group packages on customer orders and distribution orders going to or through the same physical address, such as a distribution center or drop box.

### Abstract

Packages can be grouped within a shipment going to different customers but first passing through a common distribution center, drop box, or other place of unloading and reloading of goods. Shipment packages can also be used to group distribution order packages on shipments.

Packages are grouped per delivery to the same customer or warehouse. Packages can in turn be included in shipment packages that are grouped per shipment going on the same route.

### Before you start

Using shipment packages is optional and is not parameter controlled. The only requirements are that transportation management (with shipments) is used, advanced packing is used, and that the intended content of the shipment package have the same (not blank) ship-via address.

### Overview

Shipment packages make use of the ship-via functionality. Ship-via is an additional address on the delivery which the goods pass though on the way to the final address. Each delivery can have one ship-via address.

The packages from all deliveries on a shipment going through the same ship-via address are eligible for having its packages included in the same shipment package. There can be any number of shipment packages per ship-via address (including none) and any number of shipment packages per shipment (including none). Shipment packages are logically used to group packages for multiple customers going through the same

physical ship-via address. Shipment packages can also be used to group packages for one customer or warehouse as well.

Shipment packages are intended to be used in the last parts of the outbound process for customer and distribution orders.

Picking and packing into customer packages are performed as usual. After normal packing has been reported, the packages can be included in shipment packages based on ship-via destination. The shipment packages start out unassigned, and are assigned a ship-via address when the first package is added into it. When assigned a ship-via address, packages bound for other ship-via locations cannot be included in the shipment package.

The shipment package can be moved to different locations in the warehouse such as pack and dock locations using options. When moved, the status of the shipment package and its contents is updated.

The shipment package has no limit on weight, volume, or number of included packages. To prevent further packages from being added to an existing shipment package, the shipment package can be closed.

When the goods on the shipment are about to be issued from stock, they can be issued on shipment package level, or any other level. For example, pick line, pick list, delivery, package, or shipment.

### **Shipment package documents**

There are four documents related to shipment packages and these can be printed at any time:

- Shipment package label - contains header information, including number and ship-via address.
- Shipment package note - contains information about the included packages, and the respective customers, and customer orders. It is intended to be included in the shipment package to provide information about which packages are included, and for which customer they are included.
- Loading list.
- Unloading list.

### **Maintaining shipment packages**

Use of shipment packages is strictly limited to outbound customer order and distribution order processing only.

'Shipment Package. Open' (DRS150) is the maintenance program for shipment packages, and the corresponding functionality is available in API DRS150MI.LstShipmentPck and API DRS150MI.GetShipmentPck.

(DRS150) allows you to create sorting orders and views, and comes with two standard sorting orders and two connected views. The first sort order displays all shipment packages sorted alphabetically. The second one displays all shipment packages filtered by shipment number.

### **Details of included packages**

'Shipment Package. Display Detail' (DRS151) displays the packages included in the shipment packages. You can access this via related option 11 in (DRS150). The corresponding functionality is available in API DRS151MI. LstPckInShpPck.

The field 'Location' displays a location if all of the package content is in the same location, otherwise an asterisk '\*' is displayed. If all the packages in (DRS151) included in the shipment package have the same location, that location is displayed in (DRS150), otherwise an asterisk is displayed.

### Create shipment package

Shipment packages are created in (DRS150) using standard option 1. A shipment number and packaging are required. A shipment package number can be entered or left blank to be generated by the package numbering rule connected to the packaging type in 'Packaging Type. Open' (DRS080) through 'Packaging. Open' (MMS050).

The corresponding functionality is available in API DRS150MI.AddShipmentPck.

### Delete shipment package

Shipment packages can be deleted in (DRS150) using standard option 4. Only empty shipment packages can be deleted.

The corresponding functionality is available in API DRS150MI.DelShipmentPck.

### Move shipment package and content

A shipment package and its content can be moved to different locations in the warehouse using the related options 'Move to' (options 17-19) and 'Load/Unload' (options 34-35). These related options also affect the picking status for the included packages and lines. That is, 'Move to Packing Location' will move included packages and lines to the provided location, and update the picking status (PISS) to 50 = 'All lines reported as moved to pack location' on lines and packages.

The move operations available are:

- Move to Packing location = 50, related option 17
- Move to Docking location = 60, related option 18
- Move to Standard location = 40, related option 19
- Load onto Shipment = 65, related option 34
- Unload from Shipment = 60, related option 35.

The updated status can be seen on packages in 'Delivery. Connect Packages' (MWS423) and on pick list lines in 'Picking List. Report Lines' (MWS422). The use of option 34 and 35 requires that 'Load building' is activated on the shipment.

The corresponding functionality is available in API DRS150MI.ReportShpPck.

### Add packages to the shipment package

A package can be added to a shipment package by using related option 61 in (MWS423). Using the shipment package sort order 4, and entering the shipment number in the header, all packages and shipment packages on the shipment are shown.

Normal packages are populated in the 'Package number' field, and shipment packages are distinguished by having the number populated in the 'Package structure' field. The 'Shipment package number' field is populated for packages included in a shipment package.

**Note:** Only packages on the highest level can be included in a shipment package directly. That is, not included in another package; package level = 0. Packages in a structure are also implicitly included in a shipment package when the top package is included in a shipment package.

To add a package in a shipment package, go to the relevant package, specify the shipment package number you want to include it in, and select option 61.

The corresponding functionality is available in API MWS423MI.AddToShipmentPack.

### Remove packages from the shipment package

Packages included in a shipment package can be detached or unpacked in two ways:

- To unpack all packages from the shipment package, select related option 26 'Unpack' in (DRS150).
- To remove a specific package from the shipment package, use related option 62 'Remove from shipment package' in (MWS423).

When unpack or remove is selected, the packages are disconnected and lose their reference to the shipment package.

The corresponding functionality is available in API MWS423MI.RemFromShipmentPack.

### Close and open a shipment package

As long as a shipment package is open, more packages can be added to it. A shipment package can be closed from further addition by using related option 31 'Close shipment package'. A package can be reopened by selecting related option 30 'Open shipment package'.

### Additional API operation

Another option is available using an API transaction which is not available as an interactive program.

When the cross-dock for a package is about to be confirmed the user can enter a 'To shipment package' in the transaction MHS850MI.AddPutAwayPack. When a value is entered the system will directly try to include that package in the shipment package. A set of checks are made to ensure that the package can be included in the shipment package and if the checks are passed, the pick list for that exact package will be released and processed and the package will be included in the shipment package. This option is available to give a one-touch process for handling packages at cross-dock receipt and included them in the outbound shipment package.

### Archiving

Shipment packages are archived automatically when the connected shipment is archived through 'Delivery. Archive/Delete' (MWS820).

### Route and ship-via setup

This section describes some hints and tips to simplify the route and ship-via address setup in combination with shipment package utilization.

The ship-via address is mainly for information, but since the shipment packages function relies on ship-via address, it is important to automate the setting of ship-via addresses on deliveries as much as possible. The

ship-via address can be maintained and updated on 'Delivery. Open Toolbox' (MWS410) but setting it manually for each delivery is not efficient. Automatic Retrieval of the ship-via address for new deliveries should be set on 'Dispatch Policy. Open' (MWS010).

The ship-via address can be retrieved automatically from the customer/customer order address, the route, or the generic object control table 'Available Object Ctrl Parameters. Open' (CMS016). The generic object control table gives the most flexibility on how the ship-via address should be retrieved. For example, the dispatch policy, delivery terms, delivery method, or a combination, can be used as selection rules.

**Note:** We recommend that the final address is entered as the customer order address and not the ship-via address. By entering the final address as the customer address it gives the ability at the unload/reload location to separate the goods by customer and customer address. This functionality is especially important where the final customer has many addresses that are serviced by the same ship-via address. The final address is also printed on the shipment.

In a situation where a distribution center is the ship-via address, you might want to give information to the final customer when the goods will arrive at the distribution center, or when they will be delivered to the final address. To better provide an overview of the delivery, it is advised to also enter the ship-via addresses as dummy unloading places in 'Route. Connect Unloading Places' (DRS021).

If many unloading places are connected to the same ship-via address, we recommend having the route retrieval set up by generic object control. If only one or a few unloading places are connected to a ship-via address, you can use retrieval per route and enter the ship-via address per unloading place.

**Note:** This setup may require a lot of changes (one per unloading place) if the ship-via address is updated. If the generic object control table is used instead, the changes are likely to be very few when a ship-via address is updated.

## Stock Entrance Allocation

This document describes what stock entrance allocation is and when it is used.

Stock entrance allocation is performed automatically by M3 when stock from an acquisition order line that is linked to a demand order line is received.

The linkage between the orders could be from any of three different sources:

- Order initiated link (one-to-one links created at the time the demand order line was created, usually because of planning method 3=Order driven - acquisition orders are only triggered, created and released by a requiring order).
- Pre-allocation link
- An opportunity cross-dock link

### Outcome

The stock received against the acquisition order line is allocated to the linked demand order line.

The inventory history record is updated as follows:

- Cross-dock type is given a value of 1, 2, 3, 4 or 5

- The acquisition and demand order line details are recorded

If the link is an order-initiated link, and more stock is received than was demanded, then one of the following will occur:

- For demand orders other than customer orders, the transaction quantity on the demand order line will be increased to accommodate the extra stock received, and the full quantity received will be allocated.
- For customer orders the outcome will depend on the settings in (CRS723) for the relevant acquisition order type.

If the stock received is not received in status 2 (approved) or 2-step put-away applies to the receipt, then the allocation will be delayed until the stock is approved or the 2-step put-away task is confirmed. These delayed allocations are called planned stock entrance allocations. The aggregate quantity of these for any given balance identity can be seen in 'Balance Identity. Display Allocations' (MMS063). These are stored in the MITBLA table.

If the stock allocated to the demand order line is issued and then subsequently returned due to pick correction, and the link is an order-initiated one, then the stock returned via the pick correction is re-allocated to the demand order line as a part of the pick correction processing

The purpose of stock entrance allocation is to ensure that stock received from a particular acquisition order is allocated to the specific demand order line it is linked to. This is particularly useful in the following scenarios:

- The stock was purchased or manufactured "to order", i.e., specifically for the demand order.
- The stock is customized for the demand order line.
- The stock has been promised using pre-allocations.
- The stock is being cross-docked.

The following tables are updated:

- The allocated balance ID is stored in the MITLOC table.
- The allocated order, order line and so on are stored in the MITALO table.
- Details of performed cross-docks are stored in the MITTCD table.
- Some details about the stock entrance allocation are recorded in the MITTRA table.
- Delayed allocations are stored in the MITBLA table.
- If a pre-allocation promise was fulfilled, the pre-allocation is removed or reduced. This affects the MPREAL and MITPLO tables.
- Over-receipt of order-initiated acquisition orders may result in the linked demand order table having its transaction quantity updated (OOLINE, MWOMAT, MGLINE tables).

## Before you start

The conditions in these documents must be fulfilled:

- See [Pre-Allocation](#) on page 479
- See [Cross-Docking and Extended Cross-Docking](#) on page 239

## Technical description

When a stock entrance allocation is performed, the following pattern is always followed:

- 1 The stock is registered into M3 inventory via (MMS900) with the allocated quantity already accounting for the quantity to be allocated via stock entrance allocation. This is done to prevent other demands from allocating the stock in the moments between the registration of the stock and the creation of the allocation.
- 2 Program MMMNGSEA (Manage Stock Entrance Allocations) performs the allocations by either updating MITBLA (if status is not 2, or if 2-step put-away is activated), or by calling MMMNGALO to create the allocation.

## Transportation Documents

Transportation documents are the documents needed when shipping goods. They can either be included with the shipment or forwarded to the appropriate authorities or consignees.

The types of transportation documents are as follows:

- Waybill - depends on the delivery method and whether the order is exported.  
Different types of waybills include:
  - International waybill - CMR
  - (Swedish) waybill
  - Delivery note
  - Dispatch advice
  - Address label
  - Loading list / Unloading list
  - Pro forma invoice
- Export documents - based on the country where the goods are loaded/unloaded.

The following export documents can be processed:

- Unit document
- EUR.1 certificate.

## Transportation Management

Transportation management is a tool that is used to manage all outgoing shipments. A shipment is your delivery placed on one physical truck/train/boat or any other method of delivery. A shipment can also contain pick-up deliveries for customer returns that should be picked up, or pick-up deliveries for transportation orders to make sure that the vehicle is arriving on the departure/delivery address at the correct time.

### Outcome

A shipment is picked, packed, reported, and shipped.

- To control a physical shipment throughout the dispatch flow

- Can be used for customer orders, requisition orders, distribution orders, and manufacturing orders-only material issues

The following tables are updated:

- Shipments are stored in the DCONSI table.
- Routes are stored in the DROUTE table.
- Route dispatches are stored in the DROUDI table.
- Connections between shipment/deliveries and documents are stored in the DDOCUX table.
- Customer return headers are updated if a pick-up delivery is connecting the return and the specific shipment.
- The pick-up delivery status in the MHDISA table is updated when the pick-up delivery created for a transportation order is reported as started.

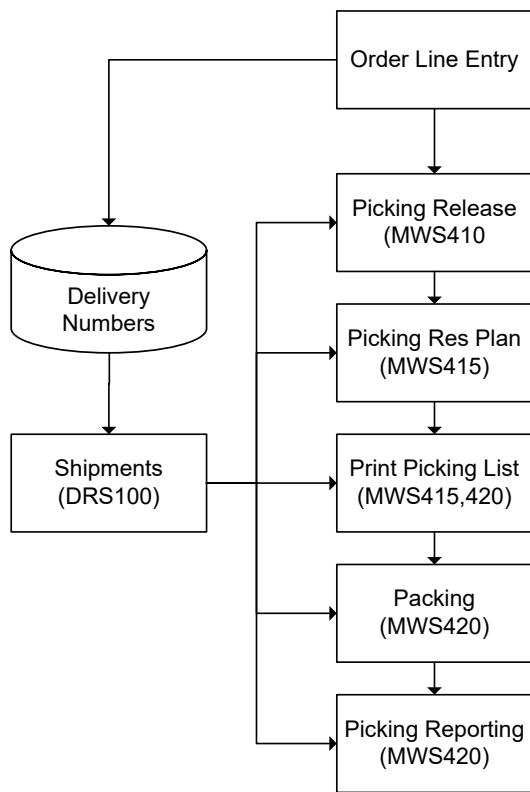
### **Before you start**

No prerequisites are needed.

### **Structure**

#### **Shipment**

Shipment in M3 is defined as a number of delivery numbers connected to one shipment. Use of shipment means that the dispatch flow (a number of delivery numbers) is controlled by the shipment. This is known as transportation management.



### Shipment (DRS100)

- Only transportation management
- Grouped delivery numbers
- Freights documents
- Releases controlled by shipment

Customer order lines from different customers and for different delivery addresses (different deliveries in M3) can be added to a shipment, assuming that the places of unloading for these customer orders are defined on the shipment's route setup.

If you do not want to track the progress of a physical shipment, then you should not use transportation management. Just issue the goods using the process described in [Dispatch Handling](#) on page 403. That flow is simpler than the transportation flow because there are fewer steps.

Transportation management works seamlessly together with the following areas:

Customer orders transaction type (3)

Requisition orders transaction type (4)

Distribution orders transaction type (5)

Manufacturing orders material issue.

Customer order returns

## Transportation orders

### **Routes**

Routes are used to define route departure, place of unloading, unloading sequence, lead time, etc. Route types are used to control the setup of the route and its application throughout the transportation management.

Every element does not need to be entered in the system to use route/route departure. For example, routes do not have to have unloading places. In that case, you create a route with route type 1=Open route.

A route always has a place of loading, and may have one or more places of unloading. The place of loading must match the place defined in ‘Warehouse. Open’ (MMS005). If the place of loading and the place of unloading, as defined in ‘Place. Open’ (MMS008), are in the same country, the transportation documents will be different than if these places are situated in different countries. If the route is a domestic route, another CMR document will be generated. Note that in the definition of the places, a time zone can be entered to cover time zone conversion.

The route and route departure are retrieved by the system via the settings on the F panel in ‘CO Type. Update Field Selection’ (OIS014) and ‘Route Selection Table. Open’ (DRS011).

The code for the route can, for example, be geographical (Spain, Sweden, etc.) or it can be named after the forwarding agent that carries out the transport operations.

### **Document handling**

Delivery document(s) are connected to a delivery. The following standard documents can be connected to a delivery:

- Delivery note
- CMR
- Swedish CMR
- EUR1 – document
- Unit document
- Pro forma invoice.

### **Delivery numbers uses**

- Separate the logistical (delivery numbers) element from the commercial (order numbers) element.
- A unique delivery number should be used instead of a delivery index. The delivery number is always created/updated online when maintaining order lines. The primary key is consignor (warehouse), consignee (receiver), dispatch policy, planned departure time and transportation requirements.
- All further dispatch activities (allocation, picking, packing and shipment assembly) will be controlled by the delivery number instead of the order index.
- The delivery number contains all required data for dispatch handling, such as consignee, date and time, weight, volume, transport method and term, and so on.

### **Shipment number uses**

A shipment number contains several delivery numbers connected to one shipment. Use of a shipment number means that the dispatch flow (a number of delivery numbers) is controlled by the shipment. This is known as transportation management.

The system can be set up to automatically assign new delivery numbers to a shipment. The test that follows determines whether this automatic connection should be made.

All of the following statements should be true:

- The requested delivery's route and route departure should be suitable for the shipment.
- The requested departure date and time should be suitable for the shipment.
- The remaining capacity of the shipment should be sufficient for the delivery.

### **Back order preselection logic**

Back order deliveries have been changed to respect route preselection logic. The requirement that the new solution meets is the possibility to reschedule a back order to the next best possible departure occasion. This is activated by performing so-called route preselection for any action in the dispatch flow that triggers creation of a back order delivery number.

Before this functional change was performed, a back order delivery was always placed on the same departure date and time as the original delivery number. This caused inaccurate departure dates and times and transaction dates and times. Moreover, no consolidation of back order deliveries to one future delivery was performed.

The following dispatch flow action may create a back order:

- Picking list creation using (MWS010–300), Closing point=2
- Picking list issue of last picking list suffix inside a delivery number
- Manual close from (MWS410) using option 37=Close delivery
- Manual close from (MWS420) using option 13=Close delivery
- Manual close from (DRS100) using option 37=Close shipment.

The back order delivery number that is created will be connected to the route, route departure, departure date and departure time that the route preselection logic calculates based on the point of time when the back order is reported. Normally this would find the same route but possibly a new route departure number, and most likely a new departure date and time will be calculated.

The rescheduling of the back order delivery will also affect the calculation of the transaction date and time, presented in 'Delivery. Open Toolbox' (MWS410/E), that affects the automatic picking list creation.

The rescheduling will not change any information on the underlying order line (CO/DO/RO/MO). The route, route departure, departure date and departure time will keep the original values.

### **Workflow**

- **Create shipment before or after picking lists are created**

The order lines are connected to a new or existing shipment number. The picking lists are created per shipment number

If you do not have your own fleet of trucks, you may want to consider transportation management (creation of a shipment) before picking lists are created. In this case, you can book transport with the forwarding agent in advance so that when the empty trucks arrive at your warehouse docking area, they only have to be loaded.

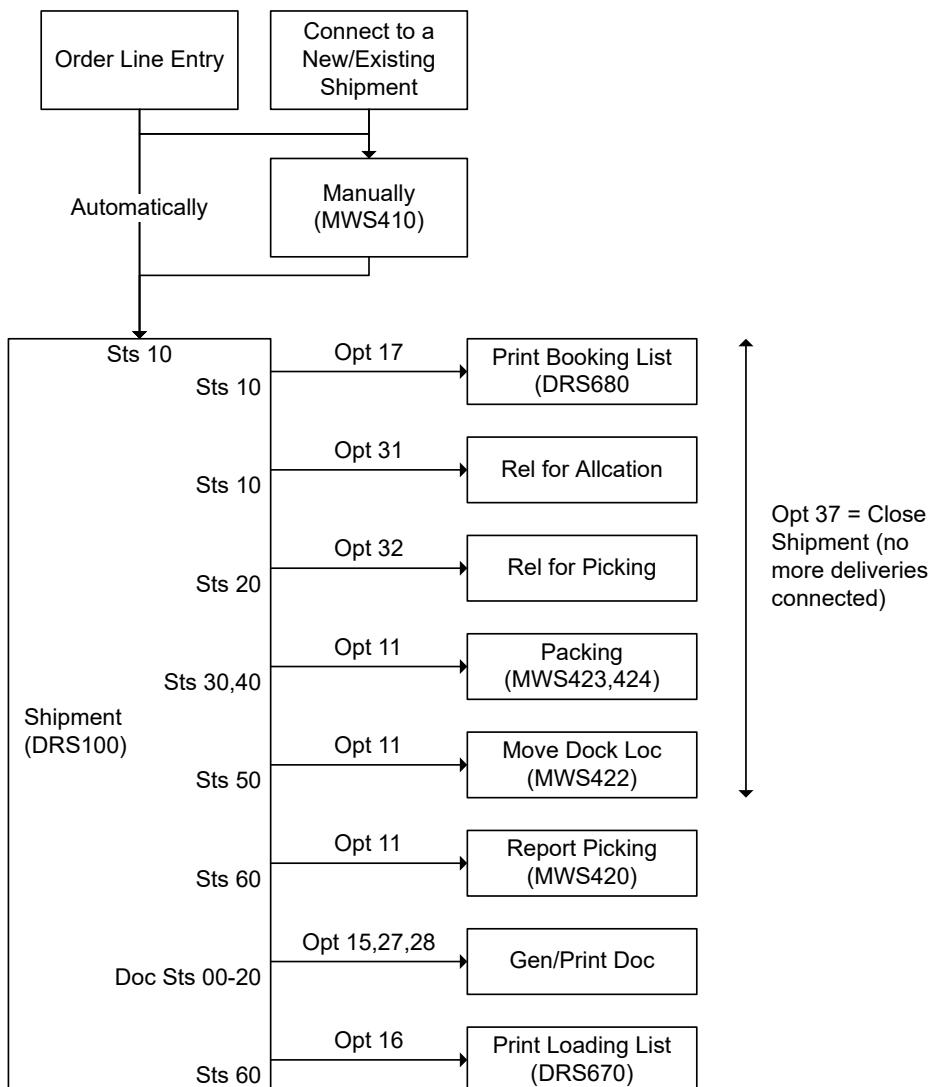
- **Create shipment after picking lists are created**

You create picking lists per delivery number and thereafter connect deliveries to a shipment.

If you have your own fleet of trucks, you may want to consider transportation management (creation of shipment) after the picking lists have been created, after packing is completed or after picking lists are picked and reported. Then you can control the workload at the docking area yourself.

- **Create shipment before picking lists are created**

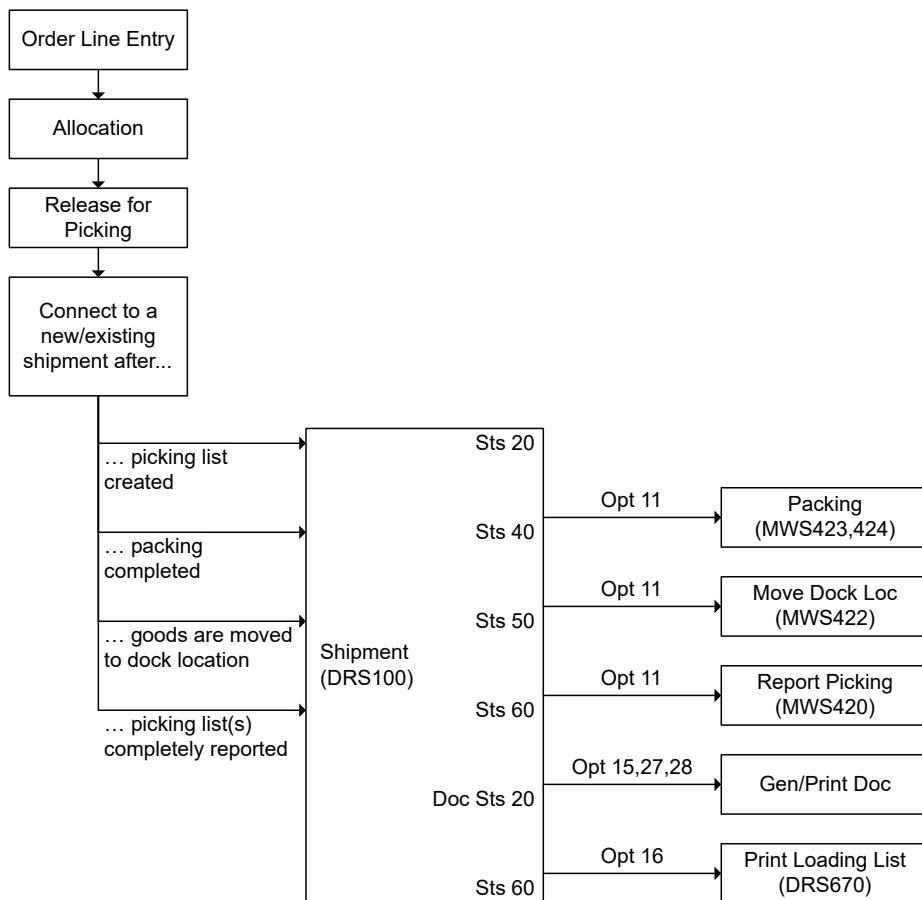
- 1 Create an order (in this documentation, it is a customer order).
- 2 Manually or automatically connect a delivery to a shipment.
- 3 Work with the dispatch flow for the shipment from (DRS100).



- **Create shipment after picking lists are created**

- 1 Create an order (for example, a customer order).
- 2 Allocate and release for picking by delivery.
- 3 From now on you can connect a delivery to a shipment, or you can continue to work with the delivery without connection to a shipment. Four alternatives ("connection points") are valid (see preceding figure).
- 4 Manually connect a delivery to a shipment.

**5 Work with the dispatch flow for the shipment from (DRS100).**



## Wave Picking

This document explains how wave picking works. Wave picking is a picking tool for large volumes.

A wave picking list is created by a combination of warehouse, stock zone and warehouse equipment.

A wave picking list line is a combination of item number, location and lot number.

### Outcome

- A wave number is created when releasing several deliveries for picking.  
A wave number consists of several delivery numbers (several picking lists). The key for a wave is the combination of wave number, warehouse (MITBAL), stock zone (MITARE) and warehouse equipment (MITEQU).

The wave number's life cycle is from the release for picking (creating wave number) to when the last included picking line is reported as issued from stock.

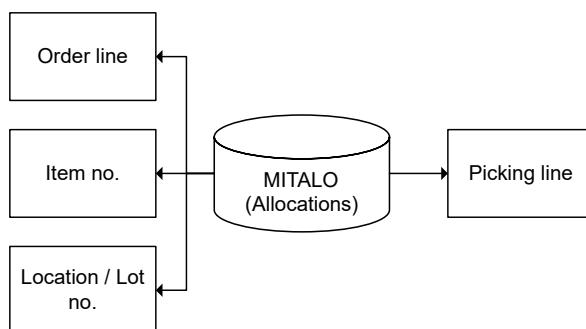
- A wave picking list is created by a combination of warehouse, stock zone and warehouse equipment.
- All pick lines (MITALO records) with the same item, location and lot number will be cumulated to one wave line on the wave picking list.

Wave picking optimizes picking works for large volumes and provides a tool for fast picking reporting

### Before You Start

- An order is created, allocated and released for picking (picking list status 40=Ready for reporting).
- The '040 Released for picking' field must be deactivated (0=No) in 'Dispatch Policy. Open' (MWS010).
- You can release the deliveries from the (MWS410/B) panel. The 'Wave creation' field must be activated on the (MWS410/P) or (MWS415/P) panel when you release the orders (delivery numbers).
- The printer for the picking list is defined in the Printer field in 'Stock Zone. Open' (MMS040).

### Definitions



**Picking list line:** A picking list line is the connection between an order line and goods in the warehouse. It contains how much of a balance identity is allocated to an order line. With this information the picker knows how much to pick of a balance identity for an order line.

**Picking list:** A collection of picking list lines for goods delivered on the same delivery.

**Wave picking list:** A collection of picking lists from several deliveries that are picked at the same time.

**Wave picking list line:** A wave picking list line is an aggregated line for several picking list lines from several deliveries on the same wave picking list. All picking list lines containing the same balance identity information (what to pick) is summarized into one wave picking list line.

### Follow these steps

#### Workflow for Wave Management

- 1 Create wave in 'Delivery. Open Toolbox' (MWS410)  
To release deliveries for picking, use F19 Release all Picking List
- 2 Select Wave for reporting in 'Picking List. Report' (MWS420/B2)

Here you can also report regular picking lists instead of using wave reporting.

- 3** Select Wave line in 'Wave Lines. Report' (MWS421)
- 4** Here you can also change the quantity for each wave line.
- 5** Perform reporting in 'Picking List. Report Lines' (MWS422).

For more details, see section **Reporting**.

### Workflow for Wave Picking Reporting

A wave picking list is created when several deliveries are released for picking at the same time. It is required that the wave creation parameter on the P panel is activated.

- 1** Depending on whether pick resources are planned or not, the wave is created from 'Delivery. Open Toolbox' (MWS410) or from MWS415.
- 2** The wave picking list is displayed in 'Picking List. Report' (MWS420), sorting order 2.
- 3** To report wave picking list lines, you can navigate to 'Wave Lines. Report' (MWS421).
- 4** To view the picking list lines that are part of a wave picking list line, use related option 11 in 'Wave Lines. Report' (MWS421) to start 'Picking List. Report Lines' (MWS422).
- 5** If a deviating quantity is reported, the system distributes it among the picking list lines that are part of the wave picking list line according to the 'Propose quantity' parameter on 'Wave Lines. Report' (MWS421/P).

### Reporting

You can choose between wave reporting or picking list reporting by delivery.

#### Release a Wave Picking List

- 1** Start 'Delivery. Open Toolbox' (MWS410). Activate the 'Wave number' field on the P panel.
- 2** On the B panel, clear deliveries to release by using option 22. Then release the wave by using F19=Release all picking lines.
- 3** You can also do a 'rough' selection before you use option 22. Then you press F17=Select, where you can select From and To values for what to display on the B panel.
- 4** If you use picking resource planning, you release the deliveries on the (MWS415/B) panel. The 'Wave picking' field must be activated on the (MWS415/P) panel. Press F17=Select to select the deliveries to release (to be displayed on the B panel). Then press F16='Confirm all' to release the wave.

You can instead press F19=Create wave + release. A one-step wave creation and wave release process is then performed.

#### Report a Wave Picking List

- 1** Start 'Picking List. Report' (MWS420/B1). Select sorting order 2=Cumulated by wave numbers.
- 2** You display the wave number on the (MWS420/B2) panel. Each wave number consists of several deliveries, which were selected when you released the deliveries for picking in (MWS410) or (MWS415).
- 3** Use option 12='Wave line' to start 'Wave Lines. Report' (MWS421).

This panel displays each wave line included in the wave number. A wave line is the cumulated quantity of several picking lines (from several picking lists) with the same item number, location and, if used, lot number.

Here you can change the quantity per wave line in the 'Transaction quantity' field.

- 4 Use option 11='Pick list lines' to report a wave line. This starts 'Picking List. Report Lines' (MWS422).
- 5 Each picking list line that is included in the wave line is displayed on the (MWS422/B) panel.
- 6 Confirm the entire wave line (all picking lines included) by using F16.
- 7 Move one picking list line to a pack location by using option 17. Then define the packing location in the 'To location' field.

This line will get picking list status 50='All lines reported as moved to pack location' and can be displayed on the (MWS420/B1) panel.

- 8 Move one picking list line to a docking location by using option 18. Then define the docking location in the 'To location' field.

This line will get picking status 60='All lines reported as moved to dock location' and can be displayed on the (MWS420/B1) panel.

### How to Report by Delivery

- 1 Start 'Picking List. Report' (MWS420/B1), where sorting order 1='Picking lists by delivery number and suffix' is displayed.
- 2 You can also create your own wave view. For example, the following fields can be included:

PIPLRI	Wave number
PISEEQ	Picking sequence
PIPICK	Picker
PITEAM	Picking team
&NOLI	Number of lines
OQRIDN	Order number
PIPLTM	Picking time.

- 3 Select the appropriate picking list and confirm it by using option 16=Confirm issue. Or open the picking list lines by using option 11=Picking list lines. This starts (MWS422), where you can confirm line by line.
- 4 You can also pack and move the picking lists. Refer to [Print, Pick, Pack and Report Picking Lists](#) on page 484.

## Chapter 6: Warehouse Management Interfaces

# M3 Business Engine Administrator's Guide for Warehouse Management Interfaces

This document provides general information for consultants and customers on Warehouse Management Interfaces (WHI). To fully understand the concepts in this document, you must have experience using M3 BE.

This document does not describe the details on M3 Interface (MI) programs and their transactions, such as which files and fields are required and how they are used.

For a detailed description of MI programs and their transactions, see the programs 'MI Repository. Open' (MRS001), 'MI Transaction. Open' (MRS002), and 'MI Transaction Layout. Open' (MRS003).

### Overview

Warehouse Management Interfaces (WHI) is primarily used to manage material flow and logistics within a warehouse. WHI is a set of gates in and out of M3 that supports integration to Warehouse Management Systems (WMS) and material handling equipment (MHE).

MHE includes scanners, bar code readers, hand-held devices, conveyors, and more.

The communication can be through APIs. This communication can be asynchronous for managing large volumes or synchronous, for example, from and to a bar code reader.

WHI is divided into these parts:

- Warehouse Integration
  - WMS integration
  - MHE client integration
  - MHE online integration
- Warehouse Collaboration
  - Third-party logistics (3PL)
  - Vendor-managed inventory (VMI)
  - Point of sales (POS)
  - Electronic data interchange (EDI)

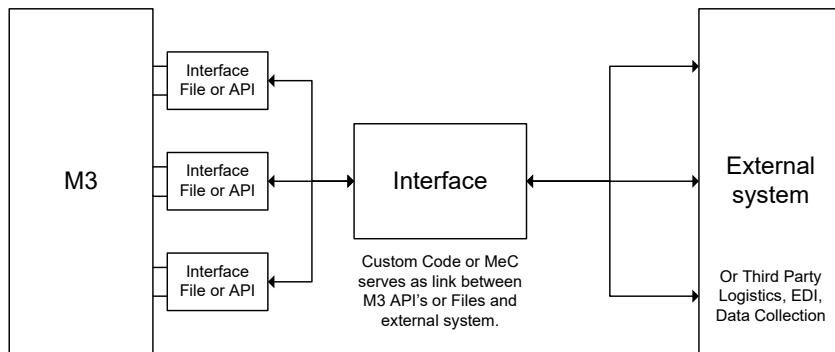
These business processes are supported:

- Basic data: download item, alias, vendor information.
- Warehouse receipts: download expected receipts and preallocations.

Upload goods receipt/put away of purchase orders, distribution orders, requisition orders, manufacturing orders, and customer order returns.

- Warehouse shipments: download picking list. Upload picking list reporting and shipment packaging.
- Inventory management: download aggregated on-hand balance. Upload stock inventory transactions.

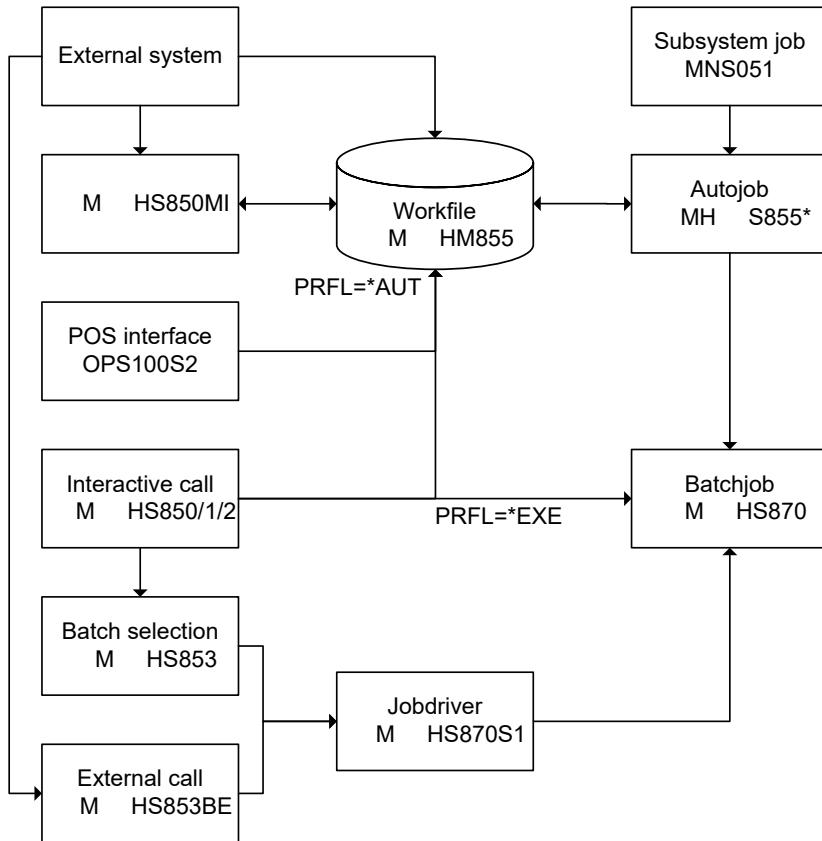
### Warehouse Integration Architecture (WHI)



### Upload batch programs architecture

The auto jobs MMS855 and MHS855 with the corresponding trigger files MMM855 and MHM855 process incoming messages without a call from an external system. The autojob is executed if an external system sends a request towards M3. This is done by setting the value of the process flag (PRFL) in the MI transaction to \*AUT.

This figure illustrates the architecture of the MHS850 batch entry.



\* Autojobs are reading their respective workfile.

MHS855 reads MHM855

MHS855T1 reads MHMT01

MHS855T2 reads MHMT02

MHS855T3 reads MHMT03

MHS855T4 reads MHMT04

MHS855T5 reads MHMT05

MHS855T6 reads MHMT06

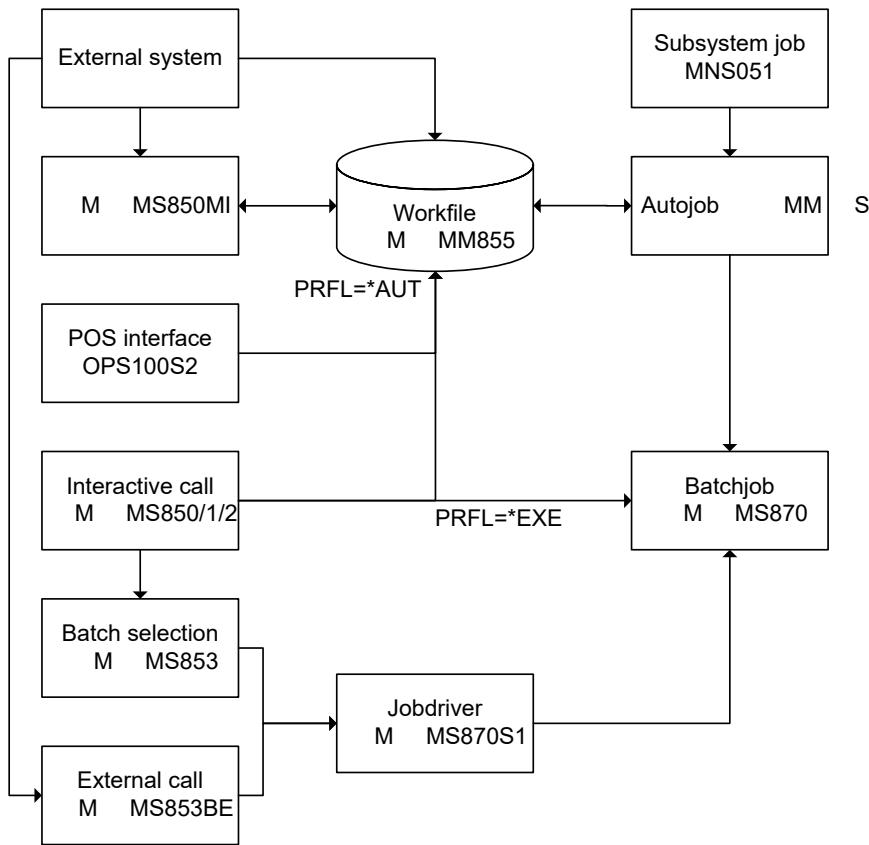
MHS855T7 reads MHMT07

MHS855T8 reads MHMT08

MHS855T9 reads MHMT09

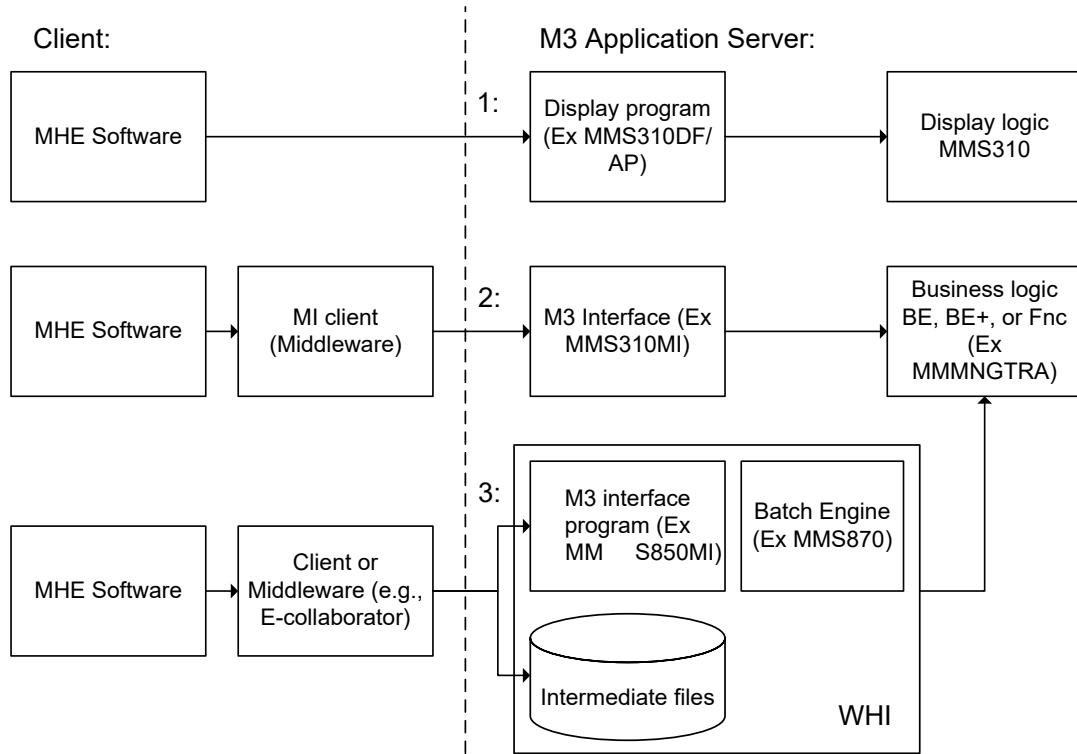
MHS855TA reads MHMT0A

This figure describes the architecture of the MMS850 batch entry.

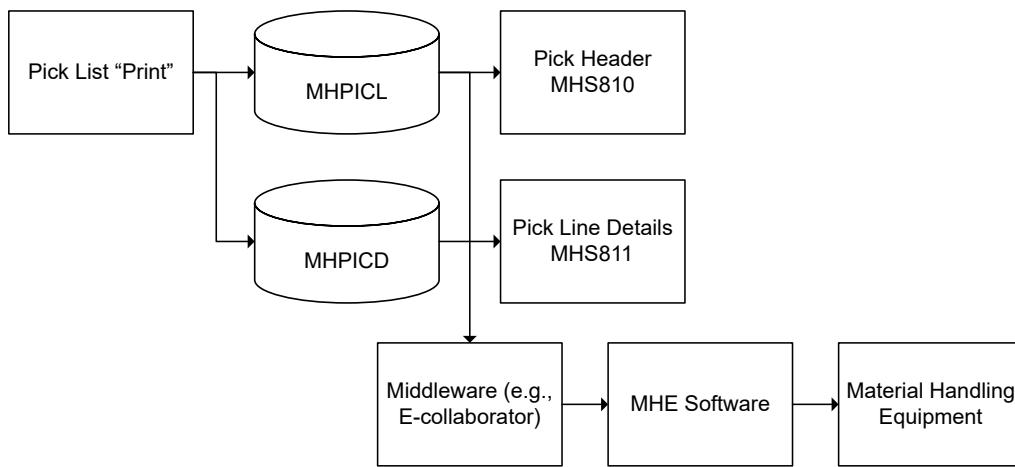


### MHE integration architecture

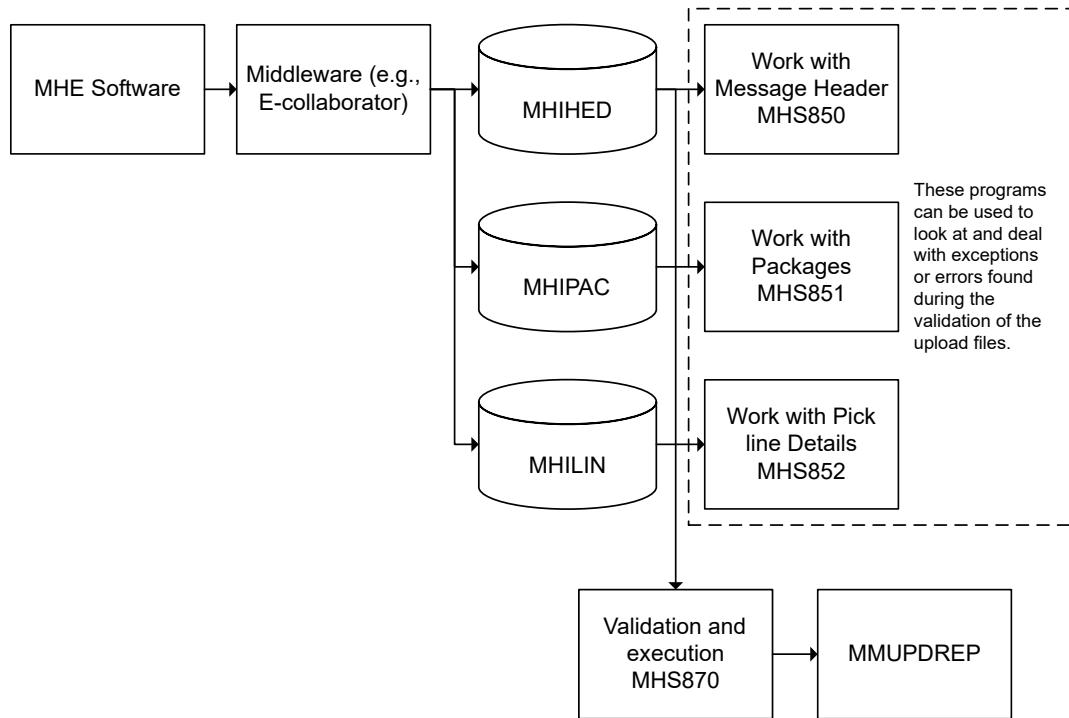
The material handling equipment (MHE) software simulates a user and uses the graphical interface to execute changes in M3. This diagram illustrates the main approaches for MHE integration:



The MHE software uses MI programs to execute changes in M3.



The MHE software uses MI programs to populate the WHI interface files. Validations are done on and execution of transactions are based on the data in the interface files.



### Using warehouse management interfaces

The WHI concept works for interfacing to larger WMS, 3PL concepts, and MHE, but the following needs to be considered when using Warehouse Management Interfaces:

- The concept of qualifiers that follow the transaction types makes it easy to follow the M3 logic. If the user or consultant is unsure of the functionality, we recommended to first try the core M3 function. If it does not work, it will not work using the WHI programs either.
- The MI test is a tool that can be used to simulate an external system for test and examples. Another way is to manually create example and test transactions in MHS850 and MMS850, which can be uploaded to M3. If the external system writes the same way as the examples, the flow should be secure.
- The unique keys from the download files are mandatory for the upload side. M3 must be supplied with the unique key in order to process the data since WHI uses core functions.
- For the download of expected receipts, the command field can sometimes differ depending on the transaction (order type). This is because MMS910 works differently with different transaction types. The status field can sometimes be used to add additional filter logic.

### Use the APIs provided in M3 API Toolkit to download and upload data

The APIs provided with M3 BE are used to download and upload data.

- The download APIs are MHS630MI, MHS635MI, MHS640MI, MHS800MI, and MHS805MI, MHS810MI, and MHS820MI.
- The upload APIs are MMS850MI and MHS850MI.

The upload APIs have specific transactions with logic for how to populate the intermediate files as well as generic transactions defined. This approach is strongly recommended rather than writing directly to the files.

For a detailed description of MI programs and their transactions, see the programs (MRS001), (MRS002), and (MRS003).

There are MI transactions per MI program that set the download flag (DOWN) to 1 on the records in the download file. This will make the list transactions exclude these records next time they are run.

Process flag (PRFL):

- \*EXE – execute online – Error messages are returned to the clients
- \*AUT – execute using auto job
- blank – data is specified in the interface but will not be uploaded to M3. Can be processed using a process transaction or using option 25 in MMS850/MHS850.

#### UTC mode in API transactions

Most of the order-initiated stock transactions in API MHS850MI can receive date and time expressed as UTC time by inputting the value “1” in the field 'UTC Mode' (UTCM). With that mode activated, the provided date and time is considered being provided as UTC and is converted to local warehouse time before being saved in the interface tables.

In the interface files MHIHED, MHIPAC MHILIN, the date and time are always considered as local warehouse time. If UTCM is activated in the Get and List transactions, MHS850MI will convert the date and time found in interface files from local warehouse time to UTC, before returning the values to the API output.

**Note:** The date and time must both be available for the conversion to succeed. Depending on the transaction, certain date and time combinations can or cannot be converted. That is, RPDT RPTM (reported date and time) can be converted while EXPI (expiration date), having no time, cannot be converted.

## Supported Processes for Warehouse Management Interfaces

### Basic data download - MHS630MI/635MI/640MI

Item, alias and supplier downloads deliver basic data from M3 to the warehouse system. This only needs to be performed if that basic data has been changed. All basic data must be changed in M3 and downloaded to the external system. No basic data changes from the external system can be processed by the interface. Basic data should only be maintained by one system.

- 'Item Master Table. Export' (MHS630) generates the data in the MHITMA (Item master download data) file. MHS630MI is used to retrieve the data.
- 'Item Alias File. Export' (MHS635) generates the data in the MHIPOP (Alias number download data) file. MHS635MI is used to retrieve the data.
- 'Supplier Master File. Export' (MHS640) generates the data in the MHDMAS, MHDVEN and MHDADR (Supplier download data) files. The API MHS640MI is used to retrieve the data.

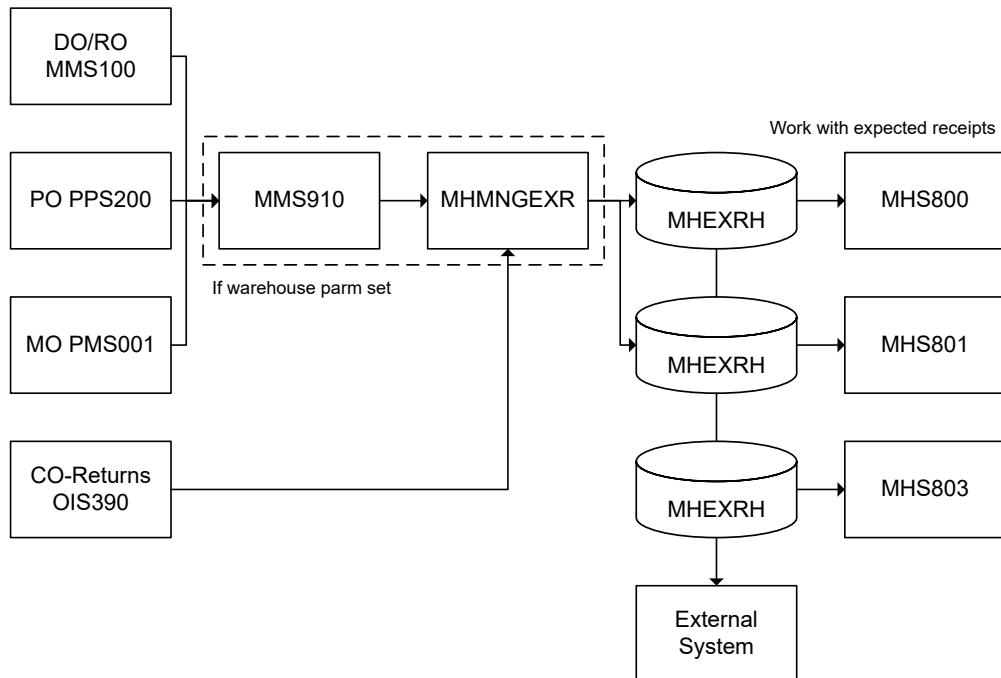
These functions can be executed manually using selection criteria or they can be scheduled. When performing the download manually using the selection programs mentioned above, M3 basic data records that might have been deleted will not be captured, only new and changed records. The manual routine gives a refresh or a snapshot view according to the selections.

The 'Change date' field is used to schedule when the download should be performed.

**Note:** A new record will appear with the command (CMND) \*UPD or \*CHG depending on how the record is created.

An MBM initiator can be created if there are records that have been changed in M3 and should be retrieved by the external system. The initiator for alias and supplier download is only available in Java.

### Expected receipts download - MHS800MI



Expected Receipts is composed of Purchase Order Receipts, Distribution/Requisition Order Receipts, Customer Order Returns and Manufacturing Order Receipts. The aim of the transaction is both to give the external system visibility of inbound transactions and to enable the receipt to be performed by the external system, using this information.

(MHS800/801/803) are the M3 programs where the expected receipts download files MHEXRH, MHEXRD, and MHFRNS can be monitored in 'Expected Receipt. Display' (MHS800) and 'Package Details Download. Display' (MHS803). The data is written to these files by the batch program (MMS910) and 'Customer Return. Open' (OIS390) if the warehouse parameter 'Planned receipts' on 'Warehouse. Open' (MMS005/H) is set to 1. The API MHS800MI is used to list the expected receipts.

Expected Receipts Package Details for Inbound DO (MHS803) - goods receipt of a DO line if it consists of several lots. A view program for MHFRNS exists, called (MHS803). This is accessed by selecting option 11 from 'Expected Receipt. Display Lines' (MHS801).

A good rule is that any change that would affect the material plan in M3 BE will also update the expected receipts files. One result is that only changes on the line level are captured.

However, some changes are filtered so M3 only downloads relevant data. The command field (CMND) follows the update of the material plan (MITPLO) and can be used when building logic into the external system.

See the table below for how the command field reacts for different events. (Please note the table describes the normal events and there could be exceptions depending on how M3 BE is configured.) The download flag (DOWN) is always set to zero (0) after M3 BE has written or updated a record.

<b>Purchase order (PO) Transaction event:</b>	<b>Expected receipts header (MHEXRH, MHS800)</b>	<b>Expected receipt details (MHEXRD, MHS801)</b>
Add a PO with lines	*ADD	*ADD
Change quantity or date	*CHG	*CHG
Partial receipt	*PRC	*PRC
Fully receipt	*CLS	*CLS
Deleted order	*DLT	*DLT
Close PO	*CLS	*CLS

**Note:** Shipment advice 'Serialized Item. Consolidate' (PPS260) and transportation notification 'Purchase Order. Notify Transportation' (PPS270) are filtered from download. Confirmation 'Purchase Order. Confirm' (PPS250) updates the download files and can lead to order lines being split via the purchase line suffix. Quality inspection 'Purchase Order. Inspect Goods' (PPS310) do not update the download files. Closing the PO using program 'Purchase Order. Flag Line Complete' (PPS350) will result in a \*CHG on the PO header and \*CLS on the lines.

<b>Distribution order (DO) Transaction event:</b>	<b>Expected receipts header (MHEXRH, MHS800)</b>		<b>Expected receipt details (MHEXRD, MHS801)</b>	
	<b>Order with one line</b>	<b>Order with several lines</b>	<b>For changed line</b>	<b>For unchanged lines if exists</b>
Add an order with lines	*ADD	*ADD	*ADD	*ADD
Change date on order head	*CHG	*CHG		*CHG
Change date on order line	*CHG	*CHG	*CHG	Same as before
Change quantity	*CHG	*CHG	*CHG	Same as before
<b>Partial receipt</b>	*PRC	<b>*PRC</b>	*PRC	Same as before
<b>Full receipt</b>	*CLS	<b>*PRC</b>	CLS*	Same as before

<b>Distribution order (DO) Transaction event:</b>	<b>Expected receipts header (MHEXRH, MHS800)</b>		<b>Expected receipt details (MHEXRD, MHS801)</b>	
	<b>Order with one line</b>	<b>Order with several lines</b>	<b>For changed line</b>	<b>For unchanged lines if exists</b>
Delete order header	*DLT	*DLT		*DLT
Delete order line	*DLT	Depends on flag for rest of the lines	*DLT	Same as before

**Note:** The delivery number (DLIX) is used for DO receipt and the final (DLIX) is downloaded when the picking list from the 'from warehouse' is reported. Requisition orders (RO) will follow the same logic.

<b>Manufacturing (MO) Transaction event:</b>	<b>Expected receipts header (MHEXRH, MHS800)</b>	<b>Expected receipt details (MHEXRD, MHS801)</b>
Add a MO with lines	*ADD	*ADD
Change quantity or date	*CHG	*CHG
Partial receipt	*PRC	*PRC
Fully receipt	*CLS	*CLS
Deleted order	*DLT	*DLT

**Note:** Expected receipt for by-products and co-products in 'Manufact Order. Report By-product' (PMS080) and 'Manufact Order. Report Co-product' (PMS090) are not supported.

<b>Customer order returns Transaction event:</b>	<b>Expected receipts header (MHEXRH, MHS800)</b>	<b>Expected receipt details (MHEXRD, MHS801)</b>
Add a CO return with lines	*ADD	*ADD
Change quantity or date	*CHG	*CHG
Partial receipt	*PRC	*PRC
Fully receipt	*CLS	*CLS
Deleted order	*DLT	*DLT

**Note:** The CO return must be advised in M3 prior to receipt. (CO return in status 11). Two-step CO return with quality inspection is not supported. It is possible to exclude records that have been previously processed by entering 1 in the field Exclude processed before. This is useful in a scenario when the external system cannot manage multiple downloads of the same record. The process flag (0/blank = Unprocessed, 1 = Processed) is disregarded if 'Exclude processed before' is set.

### Expected receipts create MBM initiators

This function creates MBM initiators for the selected expected receipts records so the expected receipts then can be downloaded to M3 e-Collaborator.

The MBM Initiator can be used to trigger the Infor Enterprise Collaborator (IEC) to ask for the updated records via the MI programs. The initiator contains all the necessary information that IEC needs to be able to use the MI transactions.

MBM initiators are created when picking lists are printed in print program (MWS435) (table MHPICL), when item information is downloaded in 'Item Master Table. Export' (MHS630) (MHITMA) when alias information is downloaded in 'Item Alias File. Export' (MHS635) (MHIPOP), when supplier information is downloaded in 'Supplier Master File. Export' (MHS640) (MHDMAS) and when expected receipt information is downloaded in 'Expected Receipt. Create MBM-Initiators' (MHS815) (MHEXRH).

### **Preallocation download - MHS805MI**

Downloading preallocation data provides the external system with information so that the external system can make better decisions during the receiving process about cross-docking, put-away locations, and so on.

The preallocation download file (**MHPREA**) mirrors the data of the M3 core preallocation file (table MPREAL - maintained in 'Preallocation. Perform' (MWS120)) for the warehouses where the download parameter 'Planned receipts' on 'Warehouse. Open' (MMS005/H) is set to 1. The MHPREA data is accessible from the program 'Preallocation. Display' (MHS805). The API MHS805MI is used to list the preallocation data.

**Note:** The M3 cross-docking functionality with optional cross-docking cannot be used when M3 is integrated to an external WMS.

The four download files MHPICL (Pick header), MHPICD (Pick details), MHPICA (Addresses), and MHPICT (Text blocks) are populated. The pick ticket header and detailed data are accessible from 'Picking List. Display' (MHS810/811) and the addresses from 'Picking List Address. Display Downloaded' (MHS813). The API MHS810MI is used to list pick header (LstPickList), picking details (LstPickDetail), addresses (LstPickListAddr), and text blocks (LstPickLstTxt). The transaction PrcPickList is used to mark the picking list header and lines as read from the external system, which means that it will not be listed again. PrcPickListDet is used to mark the lines one by one as read.

Using MHS810MI, you can also list picking details for a specific wave number by using the transaction LstDetByWave.

Once a pick ticket has been downloaded, the external system takes over. Therefore, no picking lists should be reported or deleted within M3 BE. When entering the M3 core pick reporting program for an externally controlled warehouse, a warning message is displayed. This warning can easily be modified to a hard validation preventing the user from using the program for an externally controlled warehouse. A changed order line will not update the existing pick ticket but will create a new delivery or picking list suffix for the additional quantity.

**Note:** The parameter auto print on the dispatch policy 'Dispatch Policy. Open' (MWS010) must be set to 1 if the picking list should be automatically downloaded when it is released.

### **Request for movement task download**

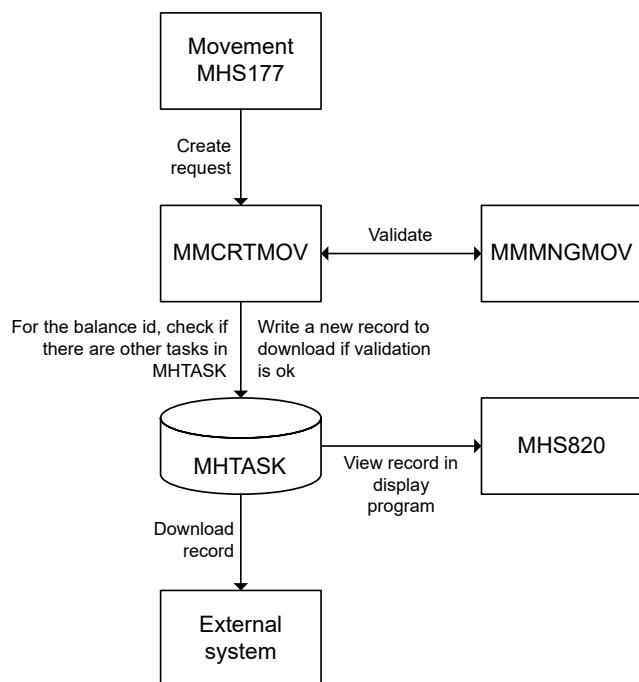
This function can, for example, be used after quality inspection of received goods which is performed in M3, and a movement from a non-allocable to an allocatable stock location in the WMS is wanted.

The movement task is created in M3 BE and can be downloaded to the external system. The WMS system retrieves the movement request and report to M3 after the movement is carried out.

### Generate a request for movement task to a WMS

The M3 user will generate a request by using the program 'Movement Task. Create' (MHS177). A function program (MMCRTMOV) will be created to manage the movement task initiated in (MHS177). We also check if there is another request for the same balance ID already waiting to be reported. A task number (TASN) will be generated by M3 BE and used as a unique identifier that must be returned to M3 by the WMS when reporting the progress of the request. This function program calls the existing MMMNGMOV to validate the request. If the validation is successful, the request is written to a new download file (MHTASK) by MMCRTMOV and can thereafter be downloaded by the external system.

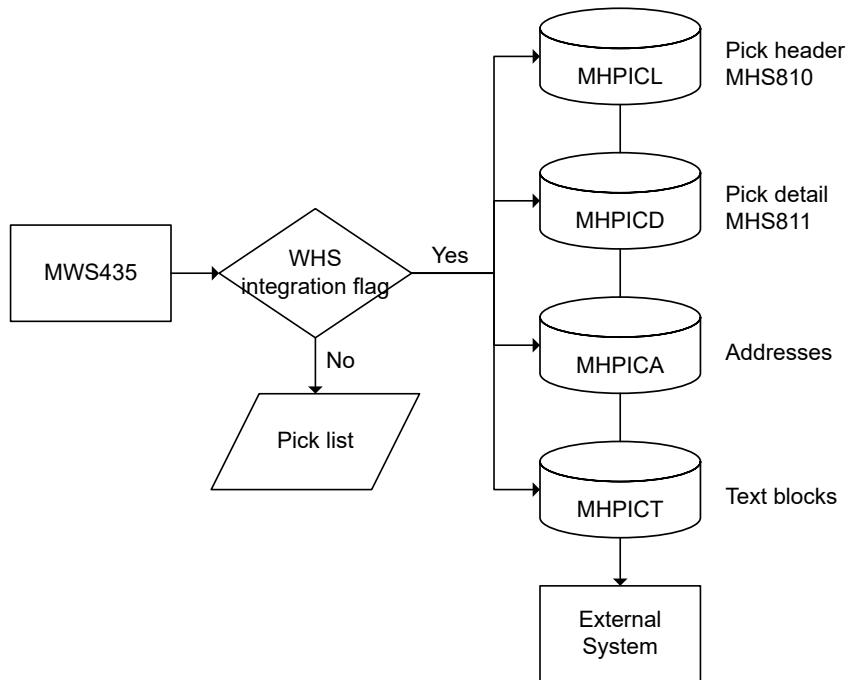
Create and download movement task:



### Report back the performed movement task to M3 - MMS850MI

The API MMS850MI takes care of the situation in which M3 BE has initiated the movement task, as opposed to when the movement is initiated from the WMS. The M3 programs that actually update the M3 files are not executed until the movement is reported back. The function program (MMCRTMOV) is called by MMMNGMOV to delete the record in MHTASK.

### Picking list download - MHS810MI



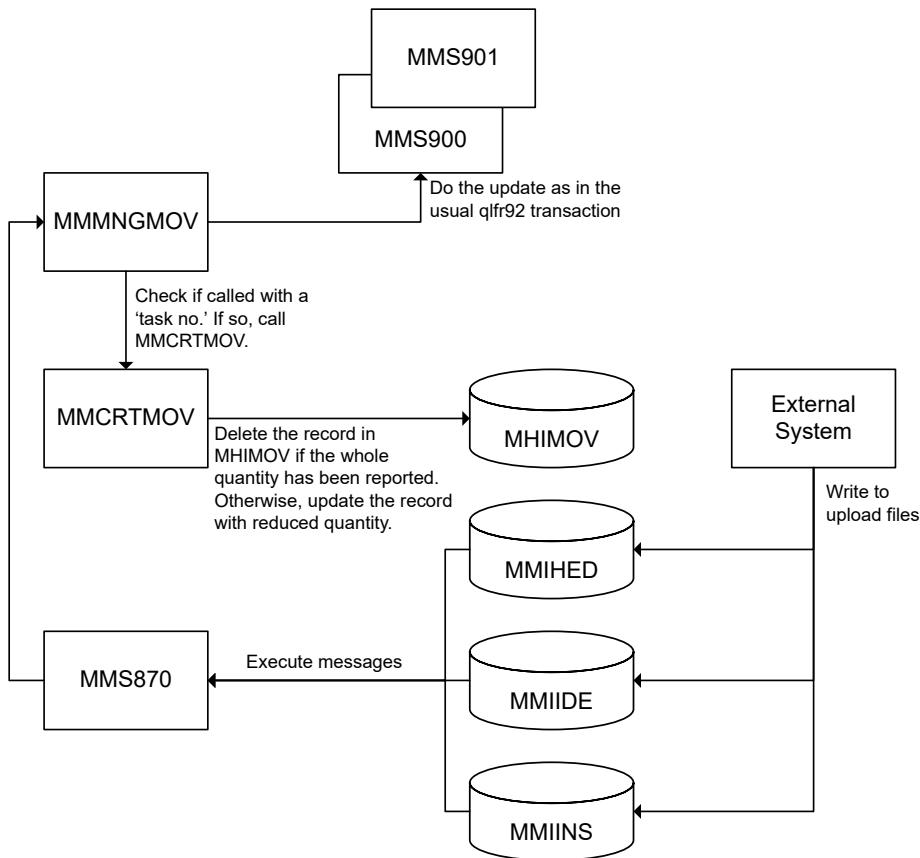
The pick ticket download is performed from (MWS435) if the warehouse parameter 'Picking list' on (MMS005/H) is set to 1 or if the picking list parameter on warehouse equipment in 'Warehouse Equipment. Open' (MWS023) is set to 1.

The download based on warehouse equipment is meant for use when interfacing to material handling equipment (MHE). This can, for example, be used when only one part of the warehouse is automated.

You can also print and download a picking list if the parameter in (MMS005) or 'Warehouse Equipment. Open' (MWS023) is set to 2.

This solves the case when the picking is performed by MHE but the reporting is done by the user.

Upload, execute and delete movement task:



On the download part, there is a new download file, MHTASK. The physical movement, managed by the external system, is triggered by the information in the download file and it is then reported back like as is currently done; the difference is that the M3 BE user decides which items to move. The task number (TASN) that has been downloaded from M3 must also be reported back. The reference order category and number are included in the download file. This opens up for solutions where movement tasks initiated by related transactions, for example goods receipts, can be treated in a different way by the WMS.

If the WMS fails to carry out the movement, the reporting back to M3 should still be performed but with the reported quantity set to 0.

### Exception management

If a quantity other than the one downloaded in MHTASK is reported, different results can be expected. These types of exceptions should be treated exactly like full reporting. In other words, the quantity reported by the operator via the WMS should be the one used in the M3 transactions. The record in MHTASK should also be deleted when the transaction is processed.

As mentioned in the section above, if the WMS fails to carry out the movement, the reporting back to M3 should still be performed but with the reported quantity set to 0.

If a quantity smaller than expected is reported, it might be because there were not enough goods at the From location. In that case, there is stock on the From location in M3 and in the WMS (if applicable) that in fact does

not exist and a manual adjustment of the balance is required. If a quantity larger than expected is reported, there might not be enough available stock from which to take. In that case, the upload message will not go through the validation and it will receive status 45. Then, the balance at the From location must be adjusted before executing the upload message again.

### **Mass deletion of downloaded data**

A mass delete program has been created for the mass deletion of general data that has been downloaded to the WHI using 'Download Data. Mass Delete' (MHS090).

This program is recommended for use by customers who handle large data volumes via the WHI. It enables two main things:

- 1** Deletion of downloaded data for different download tables at the same time.
- 2** Deletion of downloaded basic data.

The program has the same functionality as action F10/MASSDE() has in the download programs for transaction data, for example 'Expected Receipt. Display' (MHS800). It applies to the download tables for basic data and transaction data, as in the following instances:

#### **1 Basic data download**

- (MHS630) Item Download: Table MHITMA
- (MHS635) Alias Download: Table MHIPOP
- (MHS640) Supplier Download: Table MHDMAS, MHDVEN and MHDADR

#### **2 Transaction data download**

- (MHS800) Expected receipts: Table MHEXRH, MHEXRD, MHFRNS and MHPRNS
- (MHS805) Preallocation Download: Table MHPREA
- (MHS810) Picking List Download: Table MHPICL, MHPICD, MHPICA and MHPICT

### **Selection of download programs/tables to mass delete**

On the E panel of the program a check box appears to the right of each of the download programs. The purpose of the check box is to enable the selection of the download data for a specific program to be mass deleted. If a check box is selected, the download tables for the current program are selected for mass deletion.

### **Selection of data in download tables to mass delete**

There are two criteria in the mass delete program that are used to determine the data to delete from the tables for the selected download programs. The first one is the 'Download flag' field, DOWN. The second one is the 'Days before mass delete' field, DBDE.

The criteria for DOWN has a default setting. That is, by default only data with DOWN set to 1 (data that is marked as processed by the external system) will be deleted from the selected download tables. In order to also include downloaded data that has DOWN set to 0 (data that is marked as unprocessed), the check box 'Include unprocessed data' must be selected. When this check box is selected, all downloaded data will be mass deleted, regardless of the value in the DOWN field.

The DBDE field is already used as criteria for mass delete in the currently existing method for option F10='Mass delete' in the download programs for transaction data, for example MHS800/B. In these programs the field

is set under option F13=Settings. The DBDE field has the same functionality in the new mass delete program and is applicable for both basic and transaction data. The selection of mass delete based on the DBDE field is done in the following way. The entered number of days in DBDE is compared to the change date of the data that is included in the files that should be mass deleted. The data with change date further back in time than the entered number of days in DBDE counted from today is deleted. Only those programs that are currently checked in each of the two groups will be affected by the setting of the field. The locally set DBDE fields in the download programs for transaction data will not be taken into consideration when the new mass delete program is used.

In order to execute the mass delete program, the DBDE field must be correctly set. If it is left blank when Enter or Next is pressed, this will result in an error message, "Days before deletion' must be entered'. This also means that in order to be able to select zero days before deletion, 0 must be set in the DBDE field.

### Perform check before executing mass delete

When the selection for mass delete has been done and Enter or Next is pressed on the E panel of the mass delete program, a pop-up field is displayed presenting options to either cancel or confirm the mass delete. This is used in order to avoid unintended delete of data. Only if confirm is selected the mass delete of the download data actually takes place. If cancel is selected instead, a jump is made back to the E panel of the program, where the earlier made settings still will remain.

### Supported processes

- **Warehouse receipts**
  - When an order is released (purchase order, distribution order, requisition order, manufacturing order, or customer order return) an expected receipt is downloaded.
  - When the external system receives the goods (order) this is uploaded to M3.
  - Preallocation can also be downloaded to an external system.

#### MI Programs - Download

- Expected receipts - MHS800, MHS801MI, MHS803MI
- Expected receipts to e-Collaborator - MHS815MI
- Preallocation - MHS805MI

#### MI Programs - Upload

- Received transactions - MHS850MI

- **Warehouse shipments**

- A picking list can be downloaded.
- The reported picking (picking list) is uploaded.
- The packaging information is uploaded.

#### MI Programs - Download

- Pick list - MHS810MI

#### MI Programs - Upload

- Received transactions - MHS850MI

- **Inventory information**

- Aggregated on-hand balances are downloaded - MMS060MI
- Request for inventory movements are downloaded - MHS820MI

- Performed inventory transactions are uploaded - MMS850MI
- MI Programs - Download
- Stock messages/aggregated on-hand balance - MHS820MI
  - Create stock movement request - MHS177MI
- MI Programs - Upload
- Stock messages - MMS850MI

## Download processes

### Basic data download - MHS630MI/635MI/640MI

Item, alias and supplier downloads deliver basic data from M3 to the warehouse system. This only needs to be performed if that basic data has been changed. All basic data must be changed in M3 and downloaded to the external system. No basic data changes from the external system can be processed by the interface. Basic data should only be maintained by one system.

These are the programs:

- MHS630 is the M3 function that generates the data in the MHITMA (Item master download data) file. MHS630MI is used to retrieve the data.
- MHS635 is the M3 function that generates the data in the MHIPOP (Alias number download data) file. MHS635MI is used to retrieve the data.
- MHS640 is the M3 function that generates the data in the MHDMAS, MHDVEN and MHDADR (Supplier download data) files. MHS640MI is used to retrieve the data.

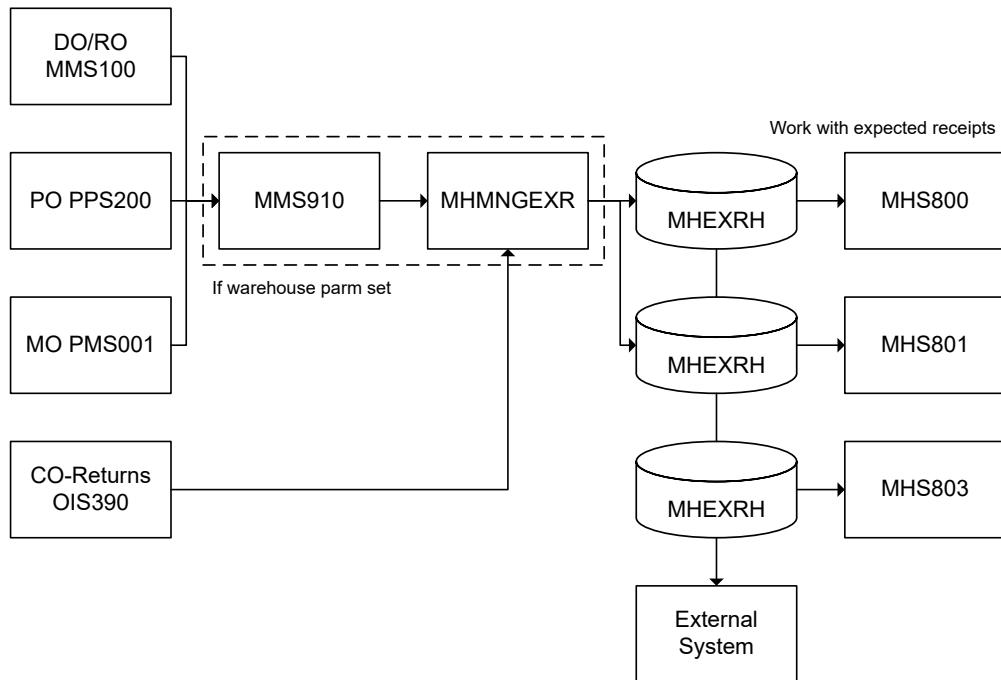
These functions can be executed manually using selection criteria or they can be scheduled. When performing the download manually using the selection programs, M3 basic data records that might have been deleted are not captured, only new and changed records. The manual routine gives a refresh or a snapshot view according to the selections.

To schedule when to perform the download, specify the date in the **Change date** field.

**Note:** A new record appears with the command (CMND) \*UPD or \*CHG depending on how the record is created.

An MBM initiator can be created if there are records changed in M3 that you want to retrieve through the external system. The initiator for alias and supplier download is only available in Java.

### Expected receipts download - MHS800MI



Expected Receipts are composed of Purchase Order Receipts, Distribution/Requisition Order Receipts, Customer Order Returns and Manufacturing Order Receipts. The aim of the transaction is both to give the external system visibility of inbound transactions and enable the receipt to be performed by the external system, using this information.

**MHS800/801/803** are the M3 functions where the expected receipts download files **MHEXRH**, **MHEXRD** and **MHFRNS** can be monitored in MHS800/801 and MHS803. The data is written to these files by the function programs MMS910 (Planning overview) and OIS390 (Customer return) if the warehouse parameter **Planned receipts** in MMS005/H is set to 1. **MHS800MI** is used to list the expected receipts.

Expected Receipts Package Details for Inbound DO are saved in MHFRNS and displayed in 'Package Details Download. Display' (MHS803).

A rule of thumb is that any change that affects the material plan in M3 also updates the expected receipts files. The result is that only changes on the line level are captured.

However, some changes are filtered so M3 only downloads relevant data. The command field (CMND) follows the update of the material plan (MITPLO) and can be used when building logic into the external system. The 'Purchase order (PO) Transaction event' table shows how the command field reacts for different events. The table describes the normal events and there could be exceptions depending on how M3 is configured. The download flag (DOWN) is always set to zero (0) after M3 has written or updated a record, and can be set to 1 by the external system to flag that the record has been read.

**Table 4: Purchase order (PO) Transaction event**

Purchase order (PO) Transaction event:	Expected receipts header (MHEXRH, MHS800)	Expected receipt details (MHEXRD, MHS801)
Add a PO with lines	*ADD	*ADD
Change quantity or date	*CHG	*CHG
Partial receipt	*PRC	*PRC
Fully receipt	*CLS	*CLS
Deleted order	*DLT	*DLT
Close PO	*CLS	*CLS

**Note:** Shipment advice (PPS260) and transportation notification (PPS270) are filtered from download. Confirmation (PPS250) updates the download files and can lead to order lines being split through the purchase line suffix. Quality inspection (PPS310) does not update the download files. Close PO through the function (PPS350) results in a \*CHG on the PO header and \*CLS on the lines.

**Table 5: Distribution order (DO) Transaction event**

Distribution order (DO) Transaction event:	Expected receipts header (MHEXRH, MHS800)	Expected receipt details (MHEXRD, MHS801)
Full pick	*ADD	*ADD
Pick Correction	*CHG	*CHG
Reverse All	*DLT	*DLT
Partial receipt	*PRC	*PRC
Full receipt	*CLS	CLS*
Reverse of DO Receipt	*PRC	*PRC

**Note:** Delivery number (DLIX) is used for DO receipt. Expected receipts for a distribution order are created only after the outbound delivery has been fully picked from the 'from warehouse'. Requisition orders (RO) follows the same logic.

**Table 6: Manufacturing (MO) Transaction event**

Manufacturing (MO) Transaction event:	Expected receipts header (MHEXRH, MHS800)	Expected receipt details (MHEXRD, MHS801)
Add a MO with lines	*ADD	*ADD
Change quantity or date	*CHG	*CHG
Partial receipt	*PRC	*PRC
Fully receipt	*CLS	*CLS

<b>Manufacturing (MO) Transaction event:</b>	<b>Expected receipts header (MHEXRH, MHS800)</b>	<b>Expected receipt details (MHEXRD, MHS801)</b>
Deleted order	*DLT	*DLT

**Note:** Expected receipt for by-products and co-products (PMS080) and (PMS090) is not supported.

**Table 7: Customer order returns Transaction event**

<b>Customer order returns Transaction event:</b>	<b>Expected receipts header (MHEXRH, MHS800)</b>	<b>Expected receipt details (MHEXRD, MHS801)</b>
Add a CO return with lines	*ADD	*ADD
Change quantity or date	*CHG	*CHG
Partial receipt	*PRC	*PRC
Fully receipt	*CLS	*CLS
Deleted order	*DLT	*DLT

**Note:** The CO return must be advised in M3 prior to receipt. (CO return in status 11). Two-step CO return with quality inspection is not supported. You can exclude records that have been previously processed by entering 1 in the field Exclude processed before. This is useful in a scenario when the external system cannot manage multiple downloads of the same record. The process flag (0/blank = Unprocessed, 1 = Processed) is disregarded if 'Exclude processed before' is set.

### Expected receipts create MBM initiators

This function creates MBM initiators for the selected expected receipts records so the expected receipts then can be downloaded to M3 e-Collaborator.

The MBM Initiator can be used to trigger the Infor Enterprise Collaborator (IEC) to ask for the updated records through the MI programs. The initiator contains all the necessary information that IEC needs to be able to use the MI transactions.

MBM initiators are created when picking lists are printed (MHPICL, MWS435), when item information is downloaded (MHITMA, MHS630), when alias information is downloaded (MHIPOP, MHS635), when supplier information is downloaded, (MHDMAS, MHS640) and when expected receipt information is downloaded (MHEXRH, MHS815).

### Preallocation download - MHS805MI

Downloading preallocation data provides the external system with information so that the external system can make better decisions during the receiving process about cross-docking, put-away locations, and so on.

The preallocation download file (**MHPREA**) mirrors the data of the M3 core preallocation file (MPREAL - maintained from MWS120) for the warehouses where the download parameter 'Planned receipts' in MMS005/H is set to 1. The MHPREA data is accessible from the program **MHS805**. MHS805MI is used to list the preallocation data.

**Note:** The M3 cross-docking functionality with optional cross-docking cannot be used when M3 is integrated to an external WMS.

The four download files **MHPICL** (Pick header), **MHPICD** (Pick details), **MHPICA** (Addresses), and **MPICT** (Text blocks) are populated. The pick ticket header and detailed data is accessible from **MHS810/811** and the addresses from **MHS813**. **MHS810MI** is used to list pick header (LstPickList), pick details (LstPickDetail), addresses (LstPickListAdr), and text blocks (LstPickLstTxt). The transaction PrcPickList is used to mark the picking list header and lines as read from the external system, which means that it is not listed again. PrcPickListDet is used to mark the lines one by one as read.

Using MHS810MI, you can also list pick details for a specific wave number by using the transaction LstDetByWave.

Once a pick ticket has been downloaded, the external system takes over. Therefore, no picking lists should be reported or deleted within M3. When entering the M3 core pick reporting program for an externally controlled warehouse, a warning message is displayed. This warning can be modified to a hard validation preventing the user from using the program for an externally controlled warehouse. A changed order line does not update the existing pick ticket but creates a new delivery and picking list suffix for the additional quantity.

**Note:** The parameter auto print on the dispatch policy (MWS010) must be set to 1 if the picking list should be automatically downloaded when it is released.

#### Request for movement task download

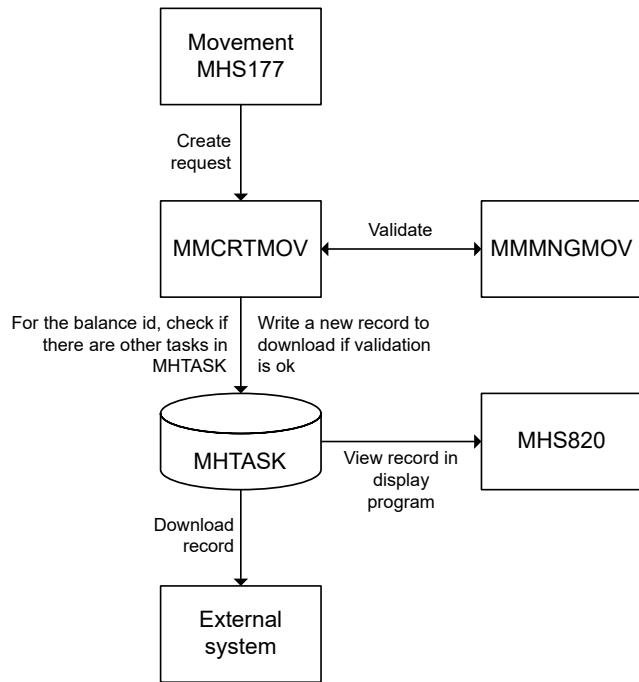
This function can, for example, be used after quality inspection of received goods which is performed in M3, and a movement from a non-allocable to an allocatable stock location in the WMS is wanted.

The movement task is created in M3 and can be downloaded to the external system. The WMS system retrieves the movement request and report to M3 after the movement is carried out.

#### Generate a request for movement task to a WMS

The M3 user generates a request by using the program MHS177. A function program (MMCRTMOV) is created to manage the movement task initiated in MHS177. We also check if there is another request for the same balance ID already waiting to be reported. A task number (TASN) is generated by M3 and used as a unique identifier that must be returned to M3 by the WMS when reporting the progress of the request. This function program calls the existing MMNGMOV to validate the request. If the validation is successful, the request is written to a new download file (MHTASK) by MMCRTMOV and can thereafter be downloaded by the external system.

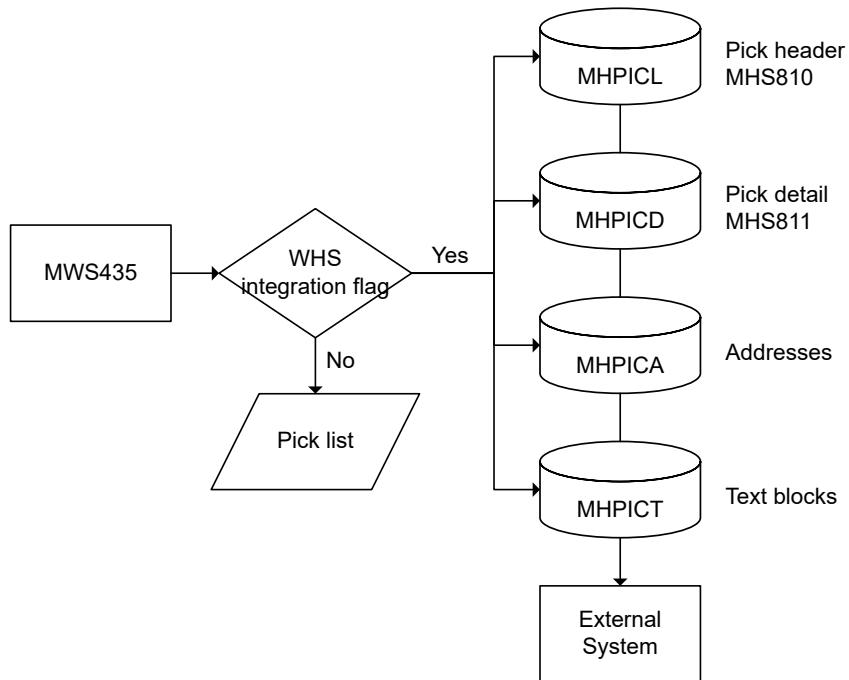
Create and download movement task:



#### Report back the performed movement task to M3 - MMS850MI

MMS850MI takes care of the situation in which M3 has initiated the movement task, as opposed to when the movement is initiated from the WMS. The M3 programs that actually update the M3 files are not executed until the movement is reported back. The function program (MMCRTMOV) is called by MMMNGMOV to delete the record in MHTASK.

### Picking list download - MHS810MI



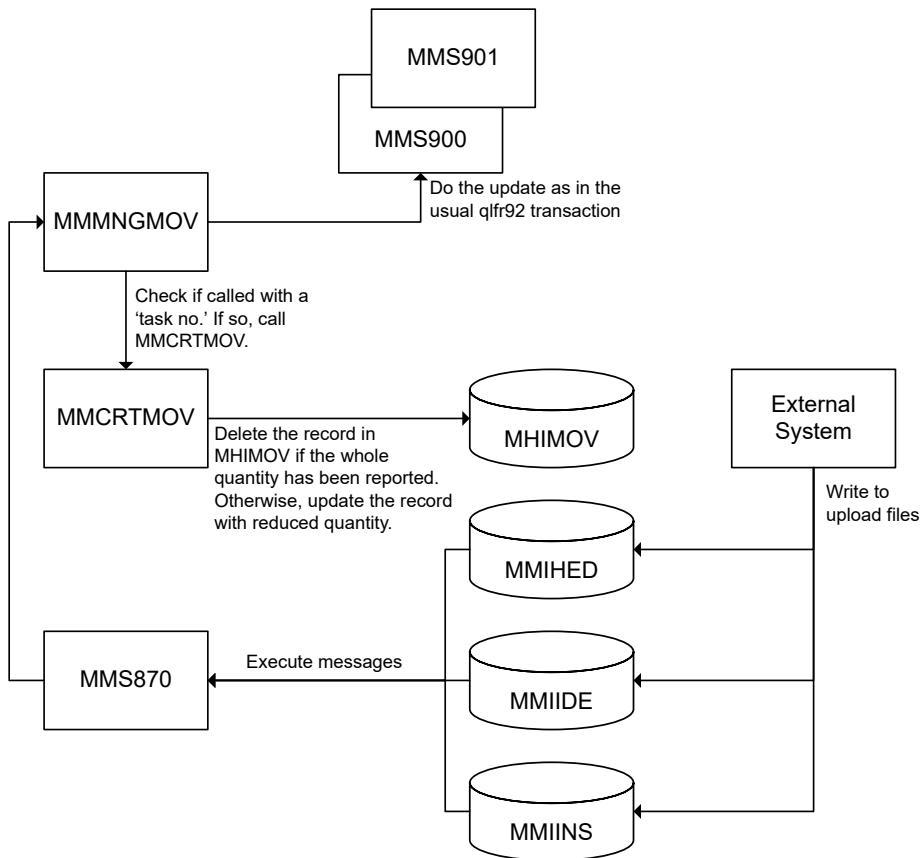
The pick ticket download is performed from **MWS435** if the warehouse parameter 'Picking list' in MMS005/H is set to **1**, or if the picking list parameter on warehouse equipment **MWS023** is set to.

1. The download based on warehouse equipment is meant for use when interfacing to material handling equipment (MHE). This can, for example, be used when only one part of the warehouse is automated.

You can also print and download a picking list if the parameter in MMS005 or MWS023 is set to.

2. This solves the case when the picking is performed by MHE but the reporting is done by the user.

Upload, execute and delete movement task:



On the download part, there is a new download file, MHTASK. The physical movement, managed by the external system, is triggered by the information in the download file and it is then reported back like as is currently done. The difference is that the M3 user decides which items to move. The task number (TASN) that has been downloaded from M3 must also be reported back. The reference order category and number are included in the download file. This opens up for solutions where movement tasks initiated by related transactions, for example, goods receipts can be treated in a different way by the WMS.

If the WMS fails to carry out the movement, the reporting back to M3 should still be performed, but with the reported quantity set to 0.

### Exception management

If a quantity other than the one downloaded in MHTASK is reported, different results can be expected. These types of exceptions should be treated exactly like full reporting. In other words, the quantity reported by the operator through the WMS should be the one used in the M3 transactions. The record in MHTASK should also be deleted when the transaction is processed.

As mentioned in the section Picking list download - MHS810MI, if the WMS fails to carry out the movement, the reporting back to M3 should still be performed but with the reported quantity set to 0.

If a quantity smaller than expected is reported, it might be because there were not enough goods at the From location. In that case, there is stock on the From location in M3 and in the WMS (if applicable) that in fact does

not exist and a manual adjustment of the balance is required. If a quantity larger than expected is reported, there might not be enough available stock from which to take. In that case, the upload message will not go through the validation and it will receive status 45. Then, the balance at the From location must be adjusted before executing the upload message again.

### **Mass deletion of downloaded data**

A mass delete program is created for the mass deletion of general data that has been downloaded to the WHI: 'Download Data. Mass Delete' (MHS090).

We recommended this program for the customers who handle large data volumes through the WHI. It enables two main things:

- 1** Deletion of downloaded data for different download tables at the same time.
- 2** Deletion of downloaded basic data.

The program has the same functionality as action F10/MASSDE() has in the download programs for transaction data, for example MHS800. It applies to the download tables for basic data and transaction data, as in these instances:

#### **1 Basic data download**

- MHS630/Item Download: Table MHITMA
- MHS635/Alias Download: Table MHIPOP
- MHS640/Supplier Download: Table MHDMAS, MHDVEN and MHDADR

#### **2 Transaction data download**

- MHS800/Expected receipts: Table MHEXRH, MHEXRD, MHFRNS and MHPRNS
- MHS805/Preallocation Download: Table MHPREA
- MHS810/Picking List Download: Table MHPICL, MHPICD, MHPICA and MHPICT

### **Selection of download programs/tables to mass delete**

On the E panel of the program a check box appears to the right of each of the download programs. The purpose of the check box is to enable the selection of the download data for a specific program to be mass deleted. If a check box is selected, the download tables for the current program are selected for mass deletion.

### **Selection of data in download tables to mass delete**

There are two criteria in the mass delete program that are used to determine the data to delete from the tables for the selected download programs. The first one is the **Download flag** field, DOWN. The second one is the **Days before mass delete** field, DBDE.

The criteria for DOWN has a default setting. That is, by default only data with DOWN set to 1 (data that is marked as processed by the external system) will be deleted from the selected download tables. In order to also include downloaded data that has DOWN set to 0 (data that is marked as unprocessed), the check box 'Include unprocessed data' must be selected. When this check box is selected, all downloaded data will be mass deleted, regardless of the value in the DOWN field.

The DBDE field is already used as criteria for mass delete in the currently existing method for option **F10='Mass delete'** in the download programs for transaction data, for example (MHS800/B). In these programs, the field

is set under option **F13=Settings**. The DBDE field has the same functionality in the new mass delete program and is applicable for both basic and transaction data. The selection of mass delete based on the DBDE field is done in this way. The entered number of days in DBDE is compared to the change date of the data that is included in the files that should be mass deleted. The data with change date further back in time than the entered number of days in DBDE counted from today is deleted. Only those programs that are currently checked in each of the two groups will be affected by the setting of the field. The locally set DBDE fields in the download programs for transaction data are not taken into consideration when the new mass delete program is used.

To execute the mass delete program, the **DBDE** field must be correctly set. If it is left blank when Enter or Next is pressed, this results in an error message, and Days bef delete must be specified. This also means that to be able to select zero days before deletion, you must set the **DBDE** field to 0.

#### Perform check before executing mass delete

When the selection for mass delete has been done and Enter or Next is pressed on the E panel of the mass delete program, a pop-up field is displayed presenting options to either cancel or confirm the mass delete. This is used in order to avoid unintended delete of data. Only if confirm is selected the mass delete of the download data actually takes place. If instead cancel is selected, a jump is made back to the E panel of the program, where the earlier made settings still remain.

## Supported processes

- **Warehouse receipts**
  - When an order is released (purchase order, distribution order, requisition order, manufacturing order, or customer order return) an expected receipt is downloaded.
  - When the external system receives the goods (order) this is uploaded to M3.
  - Preallocation can also be downloaded to an external system.
- MI Programs - Download
  - Expected receipts - MHS800, MHS801MI, MHS803MI
  - Expected receipts to e-Collaborator - MHS815MI
  - Preallocation - MHS805MI
- MI Programs - Upload
  - Received transactions - MHS850MI
- **Warehouse shipments**
  - A picking list can be downloaded.
  - The reported picking (picking list) is uploaded.
  - The packaging information is uploaded.
- MI Programs - Download
  - Pick list - MHS810MI
- MI Programs - Upload
  - Received transactions - MHS850MI
- **Inventory information**

- Aggregated on-hand balances are downloaded - MMS060MI.
- Request for inventory movements are downloaded - MHS820MI.
- Performed inventory transactions are uploaded - MMS850MI.

#### MI Programs - Download

- Stock messages/aggregated on-hand balance - MHS820MI
- Create stock movement request - MHS177MI

#### MI Programs - Upload

- Stock messages - MMS850MI

## Upload processes

Order transactions and inventory transactions share the same basic process for uploads according to these rules:

- There is only one qualifier (type of transaction) per message.
- The message must always include all three levels.
- The message number must be unique, automatically assigned by the M3 number series in 'Number Series. Open' (CRS165) or from the external system. The number series in M3 is number series type 16 and number series A for 'Internal Stock Msg. Manage' (MMS850) and number series type 17 and number series 1 for 'Order Init Stock Msg. Manage' (MHS850).

External system		
Interface Transactions	M3 Interface	Order Transactions
<ul style="list-style-type: none"> <li>• MMIHED - Received Header (MMS850)</li> <li>• MMIIDE - Received Identities (MMS851)</li> <li>• MMIINS - Received Instructions (MMS852)</li> </ul>		<ul style="list-style-type: none"> <li>• MHIHED - Received Header (MHS850)</li> <li>• MHIPAC - Received Packages (MHS851)</li> <li>• MHILIN - Received Lines (MHS852)</li> </ul>
Inventory 'Engine' MMS870 selects function based on Message Qualifier (MMS860)	Interface 'Engine'	Order 'Engine' MHS870 selects function based on Message Qualifier (MHS860)
<ul style="list-style-type: none"> <li>• MMMNGTRA - Actual Stock</li> <li>• MMMNGMOV - Move Balance ID's</li> <li>• MMMNGRCL - Reclassification</li> </ul>	Business Function	<ul style="list-style-type: none"> <li>• PMS050BE - MO Receipts</li> <li>• MMUPDREP - Report Issues</li> <li>• PPS300BE - Goods Receipt</li> <li>• PPS310BE - QI Inspection</li> <li>• MMMNGGRC - DO/RO Receipts</li> <li>• MHMNGRET - Customer Order Returns</li> </ul>

### Supported upload transactions

These M3 transaction types are supported by the API MHS850MI (Received transactions) for upload to M3.

Qualifier	Connected function	Description	API transaction	Additional info
10	PMS050BE	MO Put-away	AddMORReceipt	<a href="#">MHS850MI Transaction AddMORReceipt on page 584</a>
11	MMUPDREP	MO Issue	AddMOPick	<a href="#">MHS850MI Transaction AddMOPick on page 583</a>
11R	PMS060Fnc	MO Requisition Issue	AddMORReqIssue	<a href="#">MHS850MI Transaction AddMORReqIssue on page 585</a>
13	PMS080Fnc	MO By-product receipt	AddMORecBy	<a href="#">MHS850MI Transaction AddMORecBy on page 584</a>
20	PPS300BE	Receipt PO with direct put-away	AddPORReceipt	<a href="#">MHS850MI Transaction AddPORReceipt on page 586</a>
21	PPS310BE	PO Inspection	AddPOInspect	
21PA	PPS310BE	PO Inspection by Package	AddPickViaPackInsp	
22	PS320Fnc	PO Put-away	AddPOPutaway	
23	PPFINMRK	Close PO	AddPOClose	
27	PPS360	Transport Notification	AddTransNotify	
29	PPS365CL	Shipment advice		
30A	MHMNGRET	Report Qty for CO ret		<a href="#">MHS850MI Customer Returns on page 577</a>
30D	MHMNGRET	Dir Receipt for CO return rptd	AddCOReturn	<a href="#">MHS850MI Transaction AddCOReturn on page 579</a>
31	MMUPDREP	Issues to CO reported	AddCOPick	<a href="#">MHS850MI Transaction AddCOPick on page 578</a>
40	MMMNGGRC	Receipt for RO reported	AddROReceipt	
41	MMUPDREP	Issues for RO reported	AddROPick	

<b>Qualifier</b>	<b>Connected function</b>	<b>Description</b>	<b>API transaction</b>	<b>Additional info</b>
50	MMMNGGRC	Receipt for DO reported	AddDOReceipt	
50P2	MMMNGGRC	DO via Pack	AddDORecViaPack	<a href="#">MHS850MI Transaction AddDORecViaPack on page 582</a>
50PA	MMMNGGRC	Receipt DO Packages	AddDOPackRec	<a href="#">MHS850MI Transaction AddDOPackRec on page 581</a>
50VR	MMMNGGRC	DO Receipt Add Line	AddDORecOther	<a href="#">MHS850MI Transaction AddDORecOther on page 581</a>
51	MMUPDREP	Issues for DO reported	AddDOPick	<a href="#">MHS850MI Transaction AddDOPick on page 582</a>
51CR	MMS100BE	DO/RO Creation	AddDO	<a href="#">MHS850MI Transaction AddDO on page 580</a>
61	MMUPDREP	WO Issue	AddWOPick	
92	MMUPDREP	Relocation Order Issue	AddReplPick	<a href="#">MHS850MI Transaction AddReplPick on page 590</a>
CFMP	MMUPDREP	Add confirm Pick list	AddCfmPickList	
CFPA	MMCHKPIC	Pick by Package in stock	AddPickByPacStk	<a href="#">MHS850MI Transaction AddPickByPac-Stk on page 585</a>
CFSL	MMCHKPIC	Pick by Soft packed line	AddPickSftPacLn	
CFVP	MMUPDREP	Pick via Package	AddPickViaPack	
DLTP	MMUPDREP	Delete Picking List	DeletePickList	<a href="#">MHS850MI Transaction DeletePickList on page 587</a>
PACF	MMMNGPPC	Put-away confirmation	AddPutAwayConf	
PAPA	MMMNGPSM	Put-away Package	AddPutAwayPack	
PLRN	MMUPDREP	Confirm Pick list by Report No	AddPickViaRepNo	<a href="#">MHS850MI Transaction AddPickViaRep-No on page 586</a>
SUBL	MMUPDREP	Confirm Pick list by Sublot	AddPickViaSblobt	

Qualifier	Connected function	Description	API transaction	Additional info
CORR	MMMNROS	Correct Pick List Line	AddCorrPickLine	<a href="#">MHS850MI Transaction AddCorrPickLine on page 579</a>

These M3 transaction types are supported by API MMS850MI (Stock messages) for upload to M3.

Qualifier	Connected function	Description	API transaction	Additional info
0145	MMMNTRA	Actual stock		
100L	PMS260BE	MO report orderless	AddMOOrdLess	
31PS	MMMNPOS	Sales report from POS		
90	MMMNTRA	Actual stock	AddQty	
90A	MMMNTRA	Stock variance +/-	AddAdjust	
90PC	MMUPDSTO	Partial count	AddPartialCount	<a href="#">MMS850MI Transaction AddPartialCount on page 588</a>
91BL	MMMNGTNK	Tank cleaning	AddLocClean	
92	MMMNGMOV	Movement balance ID	AddMove	
92AL	MMMNGMOV	Movement all balance IDs	AddMoveAll	
92PA	MMMNGPSM	Package movement		
96	MMMNGRCL	Reclassification status		
96ST	MMMNGRCL	Reclassification status	AddRclLotSts	<a href="#">MMS850MI Transaction AddRclLotSts on page 588</a>
97	MMMNGRCL	Reclassification lot		
98	MMMNGRCL	Reclassification item	AddReclass	<a href="#">MMS850MI Transaction AddReclass on page 589</a>
99	MMMNGTNK	Lot blending	AddLotBlend	

### How to complete the upload batch programs

The solution for completing the upload batch programs (MHS870/MMS870) is either event-driven or automatic using an autojob. The logic is based on the system or programs writing into M3 running the batch job after a message, or several messages, are written to the intermediate files. This can be done in several ways:

- Use the transaction MMS850MI.PrcStkTran to run (MMS870) for internal stock messages and MHS850:PrcWhsTran to run (MHS870) for order initiated stock messages. This is the solution M3 uses internally for incoming EDI messages through Amtrix/M3 e-Collaborator.
- Use the field Process Flag (PRFL) with value EXE. MHS\*870/MMS870 is run interactively.
- Use the process flag (PRFL) with value \*AUT to write to the autojob control files.

Another option is to use a job scheduler, or to create autojobs.

#### **API MHS850MI (Received transactions)**

Order transactions from the external system are recorded in M3 using API MHS850MI. MHS850MI populates these tables:

- **MHIHED** - Received Transaction Header
- **MHIPAC** - Received Packages
- **MHILIN** - Received Lines

**MHS850MI** contains several transactions that can be used to send data.

There are two types of transactions: generic transactions, and custom transactions.

The generic transactions can be used for any qualifier and correspond to the actual upload tables (See AddWhsHead, AddWhsPack and AddWhsLine). They are flexible but more complex and might require unnecessary overhead, depending on what the user wants to achieve. The message must be structured with one AddWhsHead-message, one or several AddWhsPack-messages, and one or several AddWhsLine-messages.

The custom transactions are more streamlined and the three level structures are structured automatically from one MI transaction. An example is AddCOPick where a customer order pick line is reported. The message header, package, and line are generated from this single transaction.

**MHS850/851/852** can be used to display and run messages as well as to correct invalid or incorrect data. These programs are mainly designed for testing and monitoring purposes.

Order transactions can include actions taken for customer order picks, customer order returns, DO/RO picks and receipts, manufacturing order picks and receipts, purchase order receipts, and purchase quality inspection.

(MHS850) has two additional action codes. 25 (Validate) validates that the message contains correct information, but no 'business logic' validations takes place. This option corresponds to leaving the **Process flag** field blank in MHS850MI. Action 21 (Execute) sends that message to M3. This corresponds to Process Flag \*EXE.

F14='Execute' can be used to display 'Order Init Stock Trans Msg. Select' (MHS853). This program enables the filters to be specified on what messages to process.

F15='Validate' can be also used to display (MHS853). In this situation, only validation occurs, no execution of any messages.

One more method is available to process the messages. MHS853BE can be called in a batch function, or used with a Job Scheduler. This program takes partner, warehouse, and message types as parameters.

#### **API MMS850MI (Stock messages)**

Stock messages from the external system are recorded in M3 by API MMS850MI. MMS850MI populates these tables:

- **MMIHED** - Inventory Message Header
- **MMIIDE** - Inventory Identity (What is going to be processed)
- **MMIINS** - Inventory Instruction (What are you going to do with that inventory)

How the message is structured does not matter as long as these rules are obeyed:

- Qualifiers can be mixed on the instruction level. The qualifier sequence can be used to sequence different events on the same balance ID.
- The message must always include all three levels.
- The message number must be unique either from the M3 number series in (CRS165) or from the external system.
- There can only be one qualifier per instruction line. Some EDI messages, such as inventory report, can contain several qualifiers belonging to the same balance ID. In such cases, the incoming message must be split into several instruction lines, for example by IEC.

**MMS850MI** contains several transactions that can be used to send data. There are two types of transactions, generic transactions and custom transactions. The generic transactions can be used for any qualifier and correspond to the actual upload tables (See AddStkHead, AddStkId and AddStkIns). They are flexible but more complex and might require unnecessary overhead, depending on what the user wants to achieve. The message must be structured with one AddWhsHead-message, one or several AddWhsPack-messages, and one or several AddWhsLine-messages. The custom transactions are more streamlined and the three-level structure is created automatically from one MI transaction. An example is AddMove, where a stock movement is reported. The message header, identity, and instruction are generated from this single transaction.

**MMS850/851/852** can be used to display and execute messages as well as to correct errors in the messages. These programs are mainly designed for testing and monitoring purposes.

Stock messages can include inventory adjustments, movements, and reclassifications.

Like (MHS850), (MMS850) has two additional action codes. 25='Validate' validates that the message contains correct information. Action 21='Execute' sends that message to M3 BE.

F14='Execute' can be used to display (MMS853). This program enables the filters to be specified on which messages to process. If no filters are used, all messages are processed.

F15='Validate' can also be used to display 'Internal Stock Trans Msg. Select' (MHS853). In this case, only validation occurs, no execution of any messages.

One more method is available to process the messages. MHS853BE can be called in a batch function, or used with a Job Scheduler. This program takes partner, warehouse, and message types as parameters.

## Backorders when a Picking List is Reported from an External System

It can be challenging to define how to manage backorders when a picking list is reported from an external system or partner.

In the API transactions to report a pick line, three parameters are important when managing backorders:

- The delivered quantity (DLQT) is always the picked quantity.

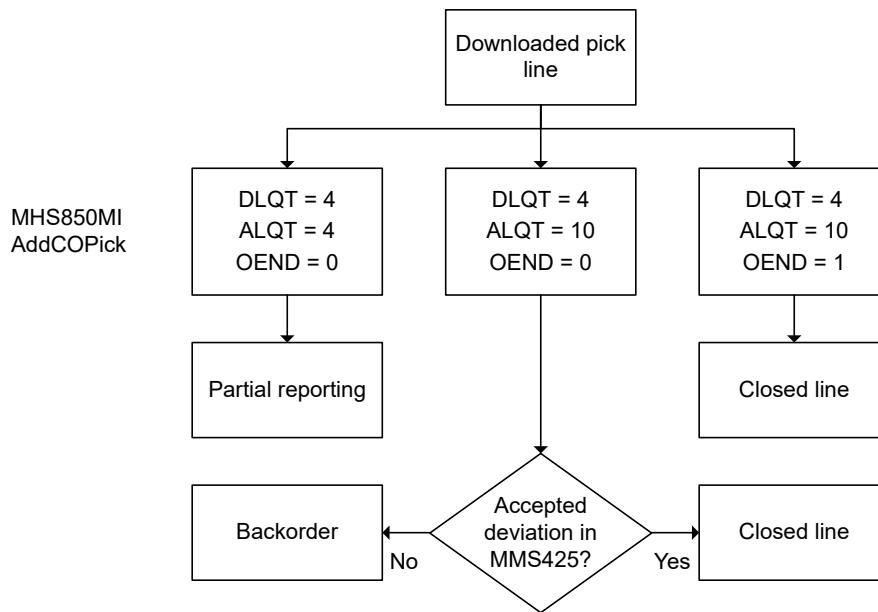
- The allocated quantity (ALQT) indicates the part of the physical stock that is marked to be used for withdrawal to the pick line.
- The 'Flagged as completed' parameter (OEND) indicates whether the remaining quantity will be backordered.

What should happen to a delivery line after it is reported when a shortage has occurred?

The main rule is that the M3 core logic should decide whenever the pick shortage should be backordered or not. Then the 'Flagged as completed' parameter should always be set to zero and a deviation acceptance limit is defined in the program 'Item. Connect Order Line Completion Limit' (MMS425). However, if backorders are not used, the parameter should be set to 1.

To manage partial reporting of a pick line, a good rule is to always set both the allocated and delivered quantity as the picked quantity.

See the example in the following figure to understand the different outcomes of a reporting transaction.



A pick line of ten pieces is downloaded to an external system. If partial reporting of four pieces is done, both the allocated and delivered quantity should be set to four. The result is a partial reported line in status 46 with six pieces left on the picking list.

If the allocated quantity is set to ten and the 'Flagged as completed' parameter is zero, M3 will decide if the pick line should be closed or backordered. If no acceptance limit is set, the line will be backordered.

If the allocated quantity is set to ten and the 'flagged as completed' parameter is one, the pick line will be closed and the status will be 69.

**Note:** The parameter 'Completion endmark' in 'Settings - Deliveries' (CRS721) may affect whether a backorder is created, or if the line is completed.

## Manage Attribute with Warehouse Interface

When stock transactions are performed, attribute information can be provided for the stock. In H5, the user would usually be guided to 'Attribute. Open' (ATS101) to provide attribute information.

Some warehouse interface transactions can accommodate attributes.

A 'message line attribute' record can be added in 'Order Init Msg Line Attribute. Manage' (MHS856), it relates to one message line and can be reached using option '12' from 'Order Init Stock Trans Msg. Manage' (MHS852).

(MHS856) records are saved in table MHIATR.

Each message line attribute record is created by providing:

- a sequence number (which can be fetched by M3)
- an attribute ID
- an attribute value: The attribute value is saved on different fields depending on the attribute type: ATVA (for alphanumerical types), ATVN (for numerical types) or ATVD (for date types).

Attribute types 1 (alphanumerical) 2 (numerical) and 3 (date) are the only supported types.

The following rules apply:

- (MHS856) can only be accessed if the item or product on the message line is attribute managed.
- (MHS856) can only be accessed if the message line is using qualifier 20 (PO receipt) or a qualifier 10 (MO receipt).
- Line attributes records can only be added if the attribute ID belongs to the attribute model of the item or product.
- When changing an existing line attribute record, only its value can be updated. If the attribute ID should be updated, the user should delete and create a new record.
- The same attribute ID cannot be added twice for the same message line.
- A maximum of 10 attributes can be added for each message line.
- A line attribute can only be copied to another existing message line.

Line attributes can also be managed using the API MHS850MI transactions 'AddAttribute', 'UpdAttribute', 'DltAttribute', 'GetAttribute', and 'LstAttribute'.

### **Note:**

The transactions "AddAttribute" and "UpdAttribute" have a unique input field for the attribute value. The API will convert the value provided accordingly to the attribute types alphanumerical, numerical, or date.

When the 'Order Init Stock Msg. Manage' (MHS850) instruction is processed, the attribute information is passed to the business function.

This is an example of the workflow for performing a purchase order receipt with WHI with attributes:

- 1 Perform MHS850MI AddMOReceipt or MHS850MI AddPOReceipt without the process flag.
- 2 Execute MHS850MI AddAttribute as many times as there are attributes to add for the stock to be received.
- 3 Run the API transaction MHS850MI PrcWhsTran to execute the transaction.

The MHIATR records are archived when the message is archived. Archived line attributes are transferred to table MHAATR.

## Manage Sublot with Warehouse Interface

Some Warehouse Interface transactions are compatible with sublots reporting.

When executing a transaction on subplot item, it is necessary to identify which reference subplot IDs are involved in the transaction. Interactively, the user would be taken to 'Sublot Master. Open' (MMS472) to select the affected sublots. Working with the warehouse interface, the list of reference subplot IDs should be provided in the interface files prior to execution.

When working with 'Order Init Stock Msg. Manage' (MHS850), the subplot reference IDs should be provided in 'Order Init Sublot Msg. Manage' (MHS854).

When working with 'Internal Stock Msg. Manage' (MMS850), the subplot reference IDs should be provided in 'Internal Stock Transact. Manage Sublines' (MMS854).

This is an example workflow using the (MHS850) interface:

- 1 Run transaction MHS850MI.AddMReqIssue with a blank process flag.
- 2 Use transaction MHS850MI.AddSubLine to provide the subplot reference IDs (BANT) as many times as there are sublots to issue.
- 3 Run transaction MHS850MI.ChgWhsLine to update the delivered quantity (DLQT) to match the number of sublots.
- 4 Run transaction MHS850MI.PrcWhsTran with process flag \*EXE to execute the transaction.

This is an example workflow using the (MMS850) interface:

- 1 Run transaction MMS850MI.AddAdjust with a blank process flag.
- 2 Use transaction MMS850MI.AddSubLine to provide subplot reference IDs (BANT) as many times as there are sublots to add.
- 3 Use transaction MMS850MI.ChgStkIns to update the qualifier quantity (QLQT) to match the number of sublots.
- 4 Run transaction MMS850MI.PrcStkTran with process flag \*EXE to execute the transaction.

## MHS850MI Customer Returns

Processing of customer returns in MHS850MI can be performed as a direct put-away using qualifier '30D' or transaction 'AddCOReturn'. If separate collecting and inspection steps are preferred, qualifier '30A' should be used in the generic warehouse transactions.

For qualifier '30A', the field 'Inspection result type' (field IRES) uses the input to determine the action of the transaction. The values accepted are:

- 0 or blank = Receive customer return line
- 1 = Rejected
- 2 = Repairable
- 3 = Returned to customer
- 4 = Returned to supplier
- 5 = Approved

Value '0' or blank is used to receive quantity on a customer return line whereas values '1' - '5' are used in the inspection step and determine what the outcome of the inspection is. It is only possible to report the inspection result for one return action at a time. For example, if some of the returned quantity should be approved and some rejected, the transaction must be run twice. One time for each inspection action.

For a subplot-controlled item, both the receival and inspection transactions must be followed by transaction AddSubLine to record each subplot.

## MHS850MI Transaction AddCOPick

The transaction MHS850MI.AddCOPick picks, packs, and moves a picking list line for a customer order, using qualifier 31.

The required input data are:

- Order line, delivery number and picking list suffix
- Item, lot, container, location to pick from.

The picking list line must exist and must be hard or soft allocated.

The transactions 'move to pack' and 'move to dock' can be performed using the issue move mode (see Related topics).

The transactions 'short pick with backorder', 'partial pick', or 'short pick' can be performed using appropriately 'picked quantity', 'quantity to be picked', and 'completion flag' (see Related topics).

The difference between 'short pick' and 'short pick with backorder' is what you do with the remaining quantity.

If you, for example, should pick 10 items, but find only 9 to pick, 'short pick' means that you pick 9 and that is all. You do not plan to pick another one later, and therefore you close the line, and the customer will only receive 9 items.

On the other hand, 'short pick with backorder' means that you pick 9 and you move the one remaining item to a new delivery that you can pick later. The customer will receive 9 now, and one item later.

Packing is performed if an existing package number is provided. Alternatively, manual packing into a new package can be performed if a packaging is provided. In that case, the package number can be specified, if not, M3 BE will retrieve a number as per the packaging number rule.

The UTC mode can be activated where date and time provided is expressed in the UTC time zone, instead of location warehouse time.

### Add additional allocation at movement

Additional allocation at move is activated by parameter 180 - 'Allow overissues' in program 'Dispatch Policy. Open' (MWS010) when set to 2 - 'Yes + additional allocation at movement'.

See [Basic Settings for Dispatch Policy](#) on page 303.

The new functionality is enabled during pick reporting of a move to pack or move to dock transaction, using MHS850MI AddCOPick or using MHS850MI transactions AddWHSHead, AddWHSPack, or AddWHSLine with the corresponding qualifier (31 for CO).

### Example of how to report extra balance IDs

All your picking list lines must be in the same location and have picking status 50= 'All lines are reported as moved to the packing location'.

Use transaction MHS850MI.AddCOPick

- 1 Point to an extra balance ID from stock to include in the picking list.
- 2 Input the same 'To' location as on the picking list lines.
- 3 Use issue move ISMD = 1 'Move to pack'.

OR

All your picking list lines must be in the same location and have picking status 60= 'All lines are reported as moved to the docking location'.

Use transaction MHS850MI AddCOPick

- 1 Point to an extra balance ID from stock to include in the picking list.
- 2 Input the same 'To' location as on the picking list lines.
- 3 Use issue move ISMD = 1 'Move to dock'.

If all of the above conditions are not met, a deviating balance ID is picked if it is allowed by the dispatch policy. Otherwise the transaction is stopped and the extra quantity is not added to the picking list.

## MHS850MI Transaction AddCOReturn

The API MHS850MI transaction AddCOReturn performs customer order returns, using qualifier 30D.

The customer order return record must exist in 'Customer Return. Open' (OIS390) with a receiving number.

The following input is required:

- Customer number and Receiving number
- Item, lot, container, and quantity to be received
- The location to receive into

This transaction does not allow further booking of inspection and put-away. It must use an approved location in status 2.

## MHS850MI Transaction AddCorrPickLine

The transaction MHS850MI AddCorrPickLine supports pick correction at package line level, or at picking list line level if no packing is used.

The field 'Item number' (ITNO) is required together with picking list line details ('Stock transaction type' (TTYP), 'Order number' (RIDN), 'Order line' (RIDL), 'Order index' (RID1) and 'Picking list suffix' (PLSX)).

The 'Package number' (PACN) is required for deliveries using packing method 2, 3, or 4 and refers to the package that should be adjusted.

The field 'Quantity Picked' (QTYP) refers to the quantity that was actually picked. If the delivery uses packing methods 0 or 1, 'Quantity Picked' refers to the quantity that was actually picked on the picking list line. If the delivery uses packing methods 2, 3, or 4, a 'Package number' (PACN) must be provided, and 'Quantity Picked' refers to the quantity actually picked in the package.

Example:

One picking list line with total of 25 pieces is packed into two packages: 10 pieces in package P1, and 15 pieces in package P2.

AddCorrPickLine performed for package P1 with quantity 9 pieces reverses 1 pieces back into stock.

AddCorrPickLine performed for package P2 with quantity 9 pieces reverses 6 pieces back into stock.

The field 'Catch weight' (CAWE) is required for catch weight items. 'Catch weight' refers to the catch weight of the 'Quantity Picked'. When packing is used, 'Catch weight' represents the actual weight for the item/lot/container in the specified package.

The field 'Location' (WHL) is not required. If all transactions for the picking list line were performed from the same location, M3 BE can retrieve that information and perform the pick correction using this same location. If pick transactions were performed from several locations, the user must specify from which location the correction should be made. You cannot perform pick correction using a different location from the one used at picking.

The transaction AddCorrPickLine does not allow input of the reporting date and time. The time at which the transaction runs is considered to be the transaction time.

For subplot items, 'Quantity picked' (QTYP) and 'Catch weight' (CAWE) must be zero. No sublines can be added as pick correction is performed for all sublots that were picked for the provided order line, delivery, picking list suffix, package, lot, container and location. You cannot perform a pick correction of a subplot item at a more detailed level than stated here.

MHS850MI.AddCorrPickLine does not apply to kit items and non-stock items. MHS850MI.AddCorrPickLine does not apply to container management seven items, except if the picking was earlier performed from a non-container managed location, where the item was not stored in an in-house package.

This transaction applies to transaction types 11, 31, 41, 51, and 92 only. You cannot, however, perform a pick correction with AddCorrPickLine for a subplot item issued on a replenishment order (transaction type 92).

## MHS850MI Transaction AddDO

The purpose of the API MHS850MI transaction AddDO is to create a distribution order header and distribution order lines.

The following input data is required:

- Order type
- Warehouse and customer (the to warehouse)
- For the order line creation, item and quantity
- An order number can be provided in order to add a line to an existing order, or in order to control the order number. The order number is always fed back to the message line after the message execution.

When successive transactions are performed, the same order header may be used. In that case, the transaction AddDO only creates an order line to the previously created order. When running multiple MHS850MI transactions in sequence with AddDO, the DO lines are added to the same distribution order header. This only applies if the transactions have the same order number (RIDN), reference order number (RORN), transaction type (TRTP), and customer number (CUNO). This is called the aggregation key. If the API is disconnected between the two API calls, a new order header will be created for the next transaction.

A way to force the creation of a new distribution order header is to enter '?' in the field order number (RIDN) when running MHS850MI transaction AddDO. That will systematically create a new distribution order header and line for each AddDO execution. This is regardless of whether the transaction has the same aggregation key as the previous transaction.

In this example, a new distribution order header with multiple order lines is created.

- 1 Run API MHS850MI transaction AddDO with RIDN = '?' and process flag = blank.
- 2 Run API MHS850MI transaction AddWHSLine with the message number from the first transaction, qualifier 51CR, and order number = blank. That corresponds to the second order line. Repeat this for every subsequent order line.
- 3 Execute the message number with API MHS850MI transaction PrcWHSTrans. This will result in one order header with several lines.

The holder field (HLDR) is available for transaction types 40 and 41. This is useful when using an RO to receive or issue returnable package items, the holder can be provided and the packaging ledger is updated. HLDR is validated based on the existing values in 'Item Owner. Open' (CRS685).

Accounting objects are available in MHS850MI AddDO and can be used for cost allocation in the bookings created in M3 BE. These accounting objects are available on the DO/RO line, and can be used to build the accounting string (as per set up in 'Accounting Rule. Set' (CRS395).)

## MHS850MI Transaction AddDOPackRec

The API MHS850MI transaction AddDOPackRec performs package-based receipts.

The API transaction AddDOPackRec can be used when the package on the delivery should be received as-is and be preserved. In that case, the package on the delivery is transferred to an in-house package.

This is applicable to items with 'Container management=7', and requires that the dispatch policy is activated for package-based receipts. Packages and package structures can be received one-by-one, or by a complete delivery to preserve the package structure into the receiving warehouse.

Package to be received, or SSCC (Serial Shipping Container Code) number, must be provided, as well as the location they should be received into.

## MHS850MI Transaction AddDORecOther

The API MHS850MI transaction AddDORecOther allows the receipt of goods that were not sent on the distribution order.

The following input data is required:

- Distribution order number
- Package number, if the goods is received in a specific package
- Details about item/lot/container, and the quantity to be received
- The location where it should be received.

The transaction adds a new line on the distribution order with quantity 0 (zero), and creates an inbound package line. It then picks the quantity from the deviating location (\*=>YYY), and the final receipt is performed using these details.

**Note:** The possibility to receive an item not included on the delivery is controlled by setting parameter 600 on the dispatch policy (MWS010/J) to 2.

To receive an item not included on the delivery, parameter 515 on the order type (CRS200/J) should also be activated to accept the distribution order line with zero quantity. Over receipt using an API is not allowed for catch weight item, subplot item, or in-house package items.

## MHS850MI Transaction AddDORecViaPack

The transaction AddDORecViaPack is used to receive a distribution order per package.

The package number, or SSCC number, is required as the delivery number.

When the transaction is executed, all items included in the package are received at once.

**Note:** M3 must know where to receive, so proper setup must be made for the default location to be found.

This is not applicable to in-house package items with container management method 7. Those packages, where the package structure should be preserved, should be received with transaction AddDOPacRec and package-based receipts should be activated.

## MHS850MI Transaction AddDOPick

The purpose of the MHS850MI transaction AddDOPick is to pick a distribution order.

In order to be carried out, the transaction needs to identify which picking list line to process, using the order number and line, the delivery number and picking list suffix, as well as the item, lot, container, and location to pick from.

See the related topics about how to perform the move to pack and move to dock transactions, as well as how to manage short pick and partial pick.

### Add additional allocation at movement

Additional allocation at move is activated by parameter 180 - 'Allow overissues' in 'Dispatch Policy. Open' (MWS010) when set to 2 - 'Yes + additional allocation at movement'.

See [Basic Settings for Dispatch Policy](#) on page 303.

The new functionality is enabled during pick reporting of a move to pack or move to dock transaction, using MHS850MI AddDOPick or using MHS850MI transactions AddWHSHead, AddWHSPack, or AddWHSLine with the corresponding qualifier (51 for DO).

#### **Example of how to report extra balance IDs**

All your picking list lines must be in the same location and have picking status 50= 'All lines are reported as moved to the packing location'.

Use transaction MHS850MI.AddDOPick

- 1** Point to an extra balance ID from stock to include in the picking list.
- 2** Input the same 'To' location as on the picking list lines.
- 3** Use issue move ISMD = 1 'Move to pack'.

OR

All your picking list lines must be in the same location and have picking status 60= 'All lines are reported as moved to the docking location'.

Use transaction MHS850MI AddDOPick

- 1** Point to an extra balance ID from stock to include in the picking list.
- 2** Input the same 'To' location as on the picking list lines.
- 3** Use issue move ISMD = 1 'Move to dock'.

If all of the above conditions are not met, a deviating balance ID is picked if it is allowed by the dispatch policy. Otherwise the transaction is stopped and the extra quantity is not added to the picking list.

## MHS850MI Transaction AddMOPick

The purpose of the transaction MHS850MI AddMOPick (qualifier 11) is to report picking of material for a manufacturing order.

The material line on the manufacturing order must have issue method 1 (Picking List).

The picking list line must exist and must be hard or soft allocated.

These are the required input data:

- 'Warehouse' (WHLO), 'Partner' (E0PA), 'Message type' (E065)
- 'Manufacturing order number' (MFNO), 'Sequence number' (MSEQ)
- 'Delivery number' and 'Picking list suffix'
- 'Item', 'Lot', 'Container' and 'Location' to pick from
- 'Quantity picked' (QTYP)

This transaction is not compatible with picking sublots, but you can pick sublots on a picking list for manufacturing orders using the transaction AddPickViaSblob (qualifier SUBL).

UTC mode can be activated, where the date and time provided is expressed in the UTC time zone instead of the location's warehouse time.

## MHS850MI Transaction AddMORecBy

The purpose of the MHS850MI transaction AddMORecBy is to perform receipt of manufactured by-products.

These are the required input data:

- 'Warehouse' (WHLO), 'Partner' (E0PA), 'Message type' (E065)
- 'Manufacturing order number' (MFNO), 'Sequence number' (MSEQ)
 

**Note:** If MFNO and MSEQ are not provided, you must specify the 'Reporting number' (WOSQ) as input.
- 'Component number' (MTNO) represents the by-product item number
- 'Reported quantity' (RPQA) represents the quantity to be received
- 'Reporting date' (RPDT), 'Reporting time' (RPTM)
- 'Location' (WHL) is where to receive the by-products

The following data is optional:

- If the by-product is container managed: CAMU can be provided
- If the by-product is catch-weight controlled: CAWE can be provided
- If the by-product is lot-controlled: BANO can be provided
- If the by-product uses 'Expiration date' (EXPI): EXPI can be provided

You can receive subplot items by adding sublots in 'Order Init Sublot Msg. Manage' (MHS854) (or using MHS850MI.AddSubLine) before the instruction is executed.

You can also provide attribute information in 'Order Init Msg Line Attribute. Manage' (MHS856) before the instruction is executed.

The actual potency of the lot can be specified. The calculation of the on-hand balance is based on the quantity received, the active item's normal potency, and the lot's actual potency.

UTC mode can be activated where the date and time provided is expressed in the UTC time zone instead of the location's warehouse time.

## MHS850MI Transaction AddMOReceipt

The transaction MHS850MI AddMOReceipt performs receipt of a manufacturing order (MO). These are the required input data:

- Manufacturing order number and line to be received
- Item, lot, container details, and quantity to be received
- Location where it should be received

You can receive subplot items by adding sublots in 'Order Init Sublot Msg. Manage' (MHS854) (or using transaction MHS850MI.AddSubLine) before the instruction is executed.

You can also provide attribute information in 'Order Init Msg Line Attribute. Manage' (MHS856) before the instruction is executed.

The actual potency of the lot can be specified. The calculation of the on-hand balance is based on the quantity received, the active item's normal potency, and the lot's actual potency.

UTC mode can be activated where the date and time provided is expressed in the UTC time zone instead of the location warehouse time.

## MHS850MI Transaction AddMOReqIssue

The transaction MHS850MI AddMOReqIssue is used to report issue of material on a manufacturing order. It is applicable for issue on material line with issue method 2 (requisition) or 3,4,5 and 6 (back flush).

The transaction MHS850MI AddMOReqIssue requires the following information in order to proceed correctly:

- Which balance ID to issue from (ITNO, WHSL, BANO, CAMU). Existence and sufficiency of stock to issue is controlled by the parameter 'Prevent negative on-hand balance' in 'Settings - MO Reporting' (PMS490).
- Which material line to report. The manufacturing order number and material sequence number must be provided (MFNO and MSEQ). Alternatively, the reporting number (WOSQ) identifying the material line must be provided. Note that in both cases, the reference saved in the interface file MHILIN in 'Internal Stock Trans Msg. Manage' (MHS852) is always the manufacturing order number (RIDN) and material sequence number (RIDL). The reporting number (WOSQ) is never saved, but converted to the corresponding order and line number.
- The reported quantity and catch weight.

**Note:** Even if the Product Engineering U/M (PEUN) is provided, the quantity is always considered to be expressed in the unit on the material line, or the engineering unit, depending on the item setup in 'Item. Connect Alternate U/M' (MMS015).

To delete or reverse part of a quantity that was issued, the transaction MHS850MI AddMOReqIssue can be run with a negative quantity.

This transaction is compatible with issue of sublots. Example of workflow:

- 1 Run MHS850MI AddMOReqIssue with a blank process flag.
- 2 Use MHS850MI AddSubLine as many times as there are sublots to issue.
- 3 MHS850MI ChgWhsLine to update the delivered quantity (DLQT) to match the number of sublots.
- 4 Run MHS850MI PrcWhsTran to execute the transaction.

For subplot items: catch weight adjustment is not permitted when performing a requisition order issue, therefore an individual subplot's catch weight is always retrieved from the subplot master to prevent inconsistencies.

This transaction can be run with UTC mode activated, which means that all date and time provided are considered being UTC time and will be converted to local warehouse time.

## MHS850MI Transaction AddPickByPacStk

This transaction can be used to pick in-house packages for a soft or hard-allocated picking list line (to be used for items with container management method 7). The transaction checks that the whole package content fits what is required on the delivery, transfers the in-house package to the delivery, and reports issue / moves to pack location / moves to dock location.

For in-house packages with soft-allocated picking list lines, a transfer from soft to hard allocation will also be performed.

**Note:** The in-house package must contain either soft-allocated balance IDs or hard-allocated balance IDs in order to be reported on. It is not possible to report on a mix of hard and soft allocations.

This transaction requires a package number (PANR) or SSCC number.

The required delivery number (DLIX) must be ready to be picked. The fields PLSX (Picking list suffix) or PLRN (Reporting number - pick line) can be used when the package should be reported on a specific picking list or picking list line. This is useful in scenarios where many picking lists are connected to one large delivery.

## MHS850MI Transaction AddPickViaRepNo

MHS850MI AddPickViaRepNo supports reporting of one picking list line.

The related qualifier is PLRN.

The reporting number is mandatory and identifies a unique picking list line.

The balance ID to pick must be identified by its location, lot number, and container number as applicable.

**Note:** The item number does not need to be provided as the information is available on the picking list being reported.

If packaging is provided, a package is created on the delivery, and item is reported as manually packed.

If an existing package number is provided, the quantity is packaged in the provided package.

This transaction is not recommended for package-based reporting. When reporting is performed at package level, it is recommended to use package based transactions.

This transaction can be run with UTC mode activated, which means that all dates and times provided are considered being UTC time and will be converted to local warehouse time.

## MHS850MI Transaction AddPORReceipt

The transaction MHS850MI AddPORReceipt performs receipt of a purchase order line.

These are the required input data:

- Purchase order number, line, and subline to be received
- Item, lot, and container details, and quantity to be received
- Location where it should be received

You can use the input field 'Purchase order unit of measure' (PUUN) to input the unit of measure used on the purchase order line and expressed the received quantity accordingly.

You can receive subplot items by adding sublots in 'Order Init Sublot Msg. Manage' (MHS854) (or using MHS850MI AddSubLine) before the instruction is executed.

You can provide attribute information in 'Order Init Msg Line Attribute. Manage' (MHS856) before the instruction is executed.

The actual potency of the lot can be specified. The calculation of the on-hand balance is based on the quantity received, the active item's normal potency and the lot's actual potency.

UTC mode can be activated when date and time provided is expressed in UTC time zone instead of location warehouse time.

## MHS850MI Transaction DeletePickList

Use the MHS850MI API transaction DeletePickList to delete a picking list.

This input data is required:

- Warehouse
- Delivery Number
- Picking List Suffix

To delete a picking list, you must meet certain conditions. For example, the picking list cannot be packed, reporting cannot have started, or the picking list cannot have assigned sublots.

Because of the size of a picking list, the deletion may take time to process. Therefore, we recommend to run the transaction through autojobs, and use the process flag \*AUT to prevent the transaction time out.

## MMS850MI Transaction AddMove

The purpose of this transaction is to perform stock movement from one location to another.

As input to the transaction, it is necessary to identify:

- the balance ID to move (item, location, lot, and container if applicable)
- the quantity to move
- where to move it.

The transaction MMS850MI.AddMove creates a message in 'Internal Stock Msg. Manage' (MMS850) (table MMIHED), a line which identifies the balance ID in 'Internal Item Msg. Manage' (MMS851) (table MMIIDE), and an instruction in 'Internal Stock Trans Msg. Manage' (MMS852) (table MMIINS).

It is possible to use the transaction MHS850MI.AddMove on an existing message if still not completely executed. In that case just a line and instruction is added.

**Note:** We do not recommend two users to work simultaneously on the same message number.

The qualifier used to represent this transaction is "92".

The transaction MMS850MI.AddMove is compatible with sublots. Sublots must be specified as sublines when moving part of a balance ID.

To enable movement of quantities allocated on a picking list using the API MHS850MI, the transaction AddMove activates parameter 'Moveable net calculation' for qualifier 92 in 'Internal Stock Trans Qualif. Open' (MMS860).

Alternatives:

0 = The system calculates the movable net quantity as the approved on-hand balance minus the allocated quantity minus the quantity of pending put-away.

1 = The system calculates the movable net quantity as the approved on-hand balance minus the sum of picking list quantity and pending put-away quantity. Hence, an allocated quantity that is not on the picking list and not pending put-away is included in the movable net quantity.

2 = The system calculates the movable net quantity as the approved on-hand balance minus the pending put-away quantity. This alternative is only valid using API MMS850MI.AddMove.

**Note:** If any quantity is in pending put-away, no quantity can be moved. If any quantity is already packed, moving quantity on the picking list is not allowed. This means only a quantity that excludes quantities on the picking list can be moved. Moving parts of the quantity on the picking list is not allowed. This means an entire balance ID must be moved if quantities on the picking list are included.

## MMS850MI Transaction AddRclLotSts

The purpose of this transaction is to change the balance ID status of a balance ID for a lot-managed item.

The information about lot and location are mandatory.

96ST is a reclassification with CALT=1 (calculation method). The calculation method is saved in the stock instruction in the program 'Internal Stock Trans Msg. Manage' (MMS852), table MMIINS, in the field CAMD.

## MMS850MI Transaction AddPartialCount

Reporting of partial counts for a physical inventory line is done in 'Physical Inventory. Report' (MMS301) using an external system, mainly hand-held devices like scanners.

The transaction AddPartialCount in MMS850MI supports reporting of partial counts for a specific line of a physical inventory request based on the physical inventory number (field STNB), together with either the physical inventory line number (field STRN), or the complete balance identity of such a line. Either the item number, or alias of category 2, can be used for addressing the balance identity. The transaction AddPartialCount is available in MMS850MI. This transaction enables reporting of partial counts for a physical inventory line in 'Physical Inventory. Report' (MMS301).

The transaction can also be used for creating new inventory lines for a specific request. This is done by entering a balance identity which does not already exist on the list.

Furthermore, if an item exists in the item master file (table MITMAS) and not in the specific warehouse for which the physical inventory is done, this item will automatically be added to the warehouse (table MITBAL) and facility (table MITFAC) when the transaction is processed.

An equivalent SndPartialCount transaction is also available in MMS850MI to enable creation of the same kind of transactions, but without having them validated before they are actually processed. This can be useful for instance when the communication between the external system and M3 BE is not synchronous, or when a huge amount of data is being uploaded to M3 BE at once, or when data must not be lost because of evaluation errors.

When partial count is performed, an external system might need to read the same physical inventory request several times, as well as read a physical inventory request for which reporting already has started. In order to address this need, the transaction, LstStockTakeAll is available in MMS301MI as a complement to the original LstStockTake-transaction in MMS301MI which only read requests of status 40.

The transaction, LstStockTakeAll, differs from LstStockTake in the following ways:

- 1** Changed read function: The LstStockTake transaction only reads physical inventory headers of status 40. The LstStockTakeAll transaction reads all requests in the interval greater equal status 40 to lower than status 60, including status 41 and 51. When using the LstStockTakeAll transaction, the external system must decide which status that should be acknowledged.
- 2** The changed update function: The LstStockTake transaction sets a read physical inventory header to status 41, the LstStockTakeAll transaction sets a physical inventory header to 41 if it before the read had status 40, and 51 if it before had status 50.
- 3** In addition, the Related option 21 'Change status' in 'Physical Inventory. Perform' (MMS300) now sets a physical inventory header of status 41 back to 40, and a header in status 51 back to 50.

For more information about the workflows, see Net Change Report 2481.

## MMS850MI Transaction AddReclass

The purpose of this transaction is to reclassify the balance ID. It is controlled by the input field 'Calculation method' (CALT):

- 0: New item
- 1: Change status at location level

The calculation method is saved in 'Internal Stock Trans Msg. Manage' (MMS852) in the field CAMD in table MMIINS.

### Calculation method 0

This method is used to reclassify to a new item number or new lot number.

Specify input field 'New item number' (NITN) to reclassify to a new item number.

Specify input field 'New lot number' (NBAN) to reclassify to a new lot number.

Specify input field 'Quantity' (QLQT) to reclassify part of the balance ID to a new item.

For subplot-managed items, this transaction can be used to reclassify from item X to item Y with the following restrictions.

### Sublot management

- Use case 1: Item X subplot = Yes and Item Y subplot = Yes - supported

- Use case 2: Item X subplot = Yes and item Y subplot = No - supported
- Use case 3: Item X subplot = No and Item Y subplot = Yes - NOT supported

Catch weight setup

- Source and target items are using catch weight - supported
- Source and target items are not using catch weight - supported
- Mix - NOT supported

Container management

- If the target item is containerized, the source must be containerized.
- If the target item is not containerized, the source can be either containerized, or not.

Reclassified sublots use the 'Reference ID' (BANT) of the source subplot.

To reclassify a full balance ID of a subplot-managed item using calculation method 0, the sublines can be disregarded when the AddReclass transaction is used.

### **Calculation method 1**

This method is used to change the status of a balance ID.

When calculation method 1 is used, the whole balance ID is reclassified to a new status.

## MHS850MI Transaction AddReplPick

The purpose of the MHS850MI API transaction AddReplPick is to pick a replenishment order.

A replenishment order is an order to move balance IDs to another location within the same warehouse. When the picking is performed, the balance ID is moved to the location that was selected on the order line. It is not relevant to perform a 'move to dock', or 'move to pack' transaction for a replenishment order.

To be carried out, MHS850MI needs to identify which picking list line to process, using the order number and line, the delivery number and picking list suffix, as well as the item, lot, container, and location to pick from. You can control the destination location, and override the one selected on the order line, by using the **To location** field (TWSL) when running the API.

## Move a Picking List Line to a Packing or Docking Location

In MHS850MI interface, for pick transactions, the issue/move mode (ISMD) determines which type of move is performed.

- issue/move mode (ISMD) must be set to 1 for movement to a packing location
- issue/move mode (ISMD) must be set to 2 for movement to a docking location

The default packing or docking location in 'Item. Connect Warehouse' (MMS002) is used unless a specific To location is entered.

Partial movements to a packing or docking location are determined by the dispatch policy in 'Dispatch Policy. Open' (MWS010). If parameter 460 (Move in partial move) is selected, you can report part of the picking list line to the packing or docking location. If it is not selected, the remaining quantity will be considered to be a backorder quantity.

The issue/move mode in the transaction must be set to 1 for movement to a packing location and set to 2 for movement to a docking location. The default packing or docking location in (MMS002) is used unless a specific To location is entered.

## Download and Upload to an External System

This document explains how you work with warehouse integration (WHI) to an external system. It also explains how to work with the integration between M3 and a WMS system, as an example.

The 'Follow these steps' section describes only the manual activities that are available to support warehouse integration.

Provided that the settings are defined for warehouse integration, all downloads and uploads will be performed automatically. The settings also determine, to a certain degree, when downloads and uploads will be executed.

See information about API Repository in 'MI Repository. Open' (MRS001), 'MI Transaction. Open' (MRS002), and 'MI Transaction Layout. Open' (MRS003).

### Outcome

You can perform these tasks:

- Manually download item basic data and alias data.
- Display, change, and manually download expected receipts and picking lists.
- Display, change, and manually upload internal and order initiated stock transactions.
- Archive (file) internal and order-initiated stock transactions.

This process is used if:

- The settings in M3 specify that downloads and uploads should be performed automatically. In this case, you do not need to start these programs. You sometimes have to start these programs to identify and correct errors, or manually download and upload.
- You want to perform manual downloads or uploads.
- You want to archive (file) some transactions.

### Before you start

The conditions in [Settings for Integration to an External System](#) on page 597 must be fulfilled.

### Follow these steps

#### Download Item Basic Data

- 1 Start 'Item Master File. Export' (MHS630).

- 2** Specify the name in the Warehouse field.
- 3** Specify the name of the external partner in the Partner field. An example is the internal number of the customer.
- 4** Specify the values in the From and To fields.
- 5** Press Enter to execute the report (Table: MHITMA).

#### **Download Item Alias Data**

- 1** Start 'Item Alias File. Export' (MHS635).
- 2** Specify the name in the Warehouse field.
- 3** Specify the name of the external partner in the Partner field.
- 4** Specify the values in the From and To fields.

#### **Download Supplier Basic Data**

- 1** Start 'Supplier Master File. Export' (MHS640).
- 2** Specify the name in the Warehouse field.
- 3** Specify the name of the external partner in the Partner field.
- 4** Specify the name of the supplier or suppliers to be downloaded.
- 5** Press Enter to execute the report.

#### **Display, Reset Download and Change Expected Receipts**

- 1** Start 'Expected Receipt. Display' (MHS800/B).
- 2** Specify the name of the external partner in the Partner field.  
Partners are defined in 'Stock Msg Partner. Open' (MMS865).
- 3** The Warehouse field is used if you want to display records for only one warehouse. If the field is left blank, records for all warehouses are displayed.
- 4** The Transaction type field is used if you want to display records for only transaction type. If the field is left blank, records for all transaction types are displayed. These are the valid alternatives:  
10 = MO receipt  
20 = PO receipt  
30 = CO returns  
40 = RO receipt  
50 = DO receipt.
- 5** On the B-panel, the order headers for the expected receipts are displayed. When an order is created (PO, RO, DO, CO return), it will also be displayed here. Option 5=Display opens the E-panel for more information.
- 6** Option 11='Order lines' starts 'Expected Receipts. Display Lines' (MHS801). On the B-panel, the order lines for an order header and the item numbers are displayed.
- 7** Option 2='Change order' starts the order entry program (PPS200/A, PMS100/A, MMS100/A, OIS100/A), where you can make changes to the order.
- 8** Option 11=Package, on the (MHS801/B) panel, starts 'Package Details Download. Display' (MHS803). Package details for inbound DO (50=DO receipt) are displayed here.

- 9 On the B-panel in (MHS800), (MHS801) and (MHS803), option 21='Download again' resets the download parameter to 0=The record has not been processed. You can then perform a second download.
- 10 If the pre-allocation flag in (MMS005) is on, then connections between supply and demand will also be downloaded.

### **Download Expected Receipts to Infor Enterprise Collaborator (IEC)**

This function creates MBM initiators for the selected expected receipts records so that the expected receipts can then be downloaded to IEC.

- 1 Start 'Expected Receipt. Create MBM-Initiators' (MHS815). Make your selections on the E-panel.  
The 'Include downloaded records' field indicates whether records that have been previously downloaded should also be written to the IEC initiator.  
The 'Exclude processed before' field indicates whether records that were processed before should be excluded when writing to the IEC initiator regardless of whether they are marked as downloaded.

### **Display, Reset Download and Change Picking List**

- 1 Start 'Picking List. Display' (MHS810/B).
- 2 Specify 'PKMS' in the Partner field. Partners are defined in 'Stock Msg Partner. Open' (MMS865).
- 3 The Warehouse field is used if you want to display records for only one warehouse. If the field is left blank, records for all warehouses are displayed.
- 4 On the B-panel, the delivery numbers are displayed. When an order is created (RO, DO, CO) it will also be displayed here.
- 5 One or more orders can be connected to a delivery number. Option 5=Display opens the E-panel for more information.
- 6 Option 11='Pick list lines' starts 'Picking List. Display Lines' (MHS811). On the B-panel, the delivery lines for a delivery and the item numbers are displayed.
- 7 Option 22=Order, on the (MHS811/B) panel, starts the order entry program (PMS100/A, MMS100/A, OIS100/A), where you can make changes to the order.
- 8 On the B-panel in both (MHS810) and (MHS811), option 21='Download again' resets the download parameter to 0=The record has not been processed. You can then perform a second download.
- 9 You can also display addresses connected to the delivery by using option 12=Addresses on the (MHS810/B) panel. This starts 'Picking List Address. Display Downloaded' (MHS813).

### **Display, Reset Download and Change Pre-Allocations**

- 1 Start 'Preallocation. Display' (MHS805).
- 2 Specify 'PKMS' in the Partner field. Partners are defined in 'Stock Msg Partner. Open' (MMS865).
- 3 The Warehouse field is used if you want to display records for only one warehouse. If the field is left blank, records for all warehouses are displayed.
- 4 On the (MHS805/B) panel, option 2=Change starts 'Preallocation. Perform' (MWS120), where you change pre-allocation for the selected order.
- 5 Option 21='Download again' resets the download parameter to 0=The record has not been processed. You can then perform a second download.

## Display and Reset Download for Package Details

This function is only used for download package data for inbound DOs since the package data in this case is created in M3.

All packages included in a certain DO inbound delivery can be viewed.

- 1** Start 'Package Details Download. Display' (MHS803).  
You can also start (MHS803) from (MHS802) with option 11.
- 2** Specify 'PKMS' in the Partner field. Partners are defined in 'Stock Msg Partner. Open' (MMS865).
- 3** You can leave the 'Reference order category' field blank or select 5=DO. Note: This function is currently only valid for inbound DOs.
- 4** Option 21='Download again' resets the download parameter to 0=The record has not been processed.  
You can then perform a second download.
- 5** Details about the package are displayed on the E-panel.

## Display and Reset Download Stock Transaction Task

This function is used for adjustments, reclassifications, and movements of stock. These are the stock transaction types included:

90 = Physical inventory variances

92 = Replenishment move order issue

96, 97, 98 = Reclassification of status, lot, item.

- 1** Start 'Stock Transaction Task. Display' (MHS820).
- 2** Specify 'PKMS' in the Partner field. Partners are defined in 'Stock Msg Partner. Open' (MMS865).
- 3** Option 21='Download again' resets the download parameter to 0=The record has not been processed.  
You can then perform a second download.
- 4** Details about the stock transactions are displayed on the E-panel.
- 5** Information about the reference order for stock tasks is displayed on the F-panel.

## Request Movement Task

This function can, for example, be used after quality inspection of received goods (which is performed in M3), and a movement from a non-allocable to an allocable stock location in the WMS is wanted.

The movement task is created in M3 and will be written to the WMS. The WMS retrieves the movement request and reports to M3 after the movement has been carried out.

The execution of M3 programs to perform the actual update of the M3 files is done when the movement is reported back.

- 1** Start 'Movement Task. Create' (MHS177). Specify the partner, warehouse, item, lot number, container, and so on.  
'Location. Select' (MMS160) will be started if the item exists in several locations in the warehouse and you have not selected a location.
- 2** Select a To location and quantity and click Next.  
Display the location movement in (MHS820).

## Work with Internal Stock

- **Work with Internal Stock Message Header**

- 1 Start 'Internal Stock Msg. Manage' (MMS850/B).
- 2 Select what to display per warehouse and status. The status indicates the lowest and highest status for the message lines.
- 3 Option 11=Lines starts 'Internal Item Msg. Manage' (MMS851).  
Option 21='Execute message' is a manual way to upload the business components in M3.  
Option 25='Validate message' does a rough check that the message is OK.  
Option 26='Move to archive' archives the records. They can then be displayed and also moved back in 'Internal Stock Msg. Display Filed' (MMS890).

- **Work with Internal Stock Identities Messages**

- 1 Option 11=Lines on the (MMS850/B) panel starts 'Internal Item Msg. Manage' (MMS851).
- 2 In (MMS851), you display and work with the lines (items) included in the message. A line usually corresponds to the M3 balance identity definition and can be considered as the From value on which to perform an action.
- 3 Option 11='Quantity and times' starts 'Internal Stock Trans Msg. Manage' (MMS852).  
Option 21='Execute message' is a manual way to upload the business components in M3.  
Option 25='Validate message' performs a rough check that the message is OK.

- **Work with Internal Stock Transaction Messages**

- 1 Option 11='Quantity and times' on the (MMS851/B) panel starts 'Internal Stock Trans Msg. Manage' (MMS852).
- 2 The (MHS852/B) panel displays qualifiers and actions for the item. The instruction level is the execution level and can be considered as the To-value level.
- 3 Option 21='Execute message' is a manual way to upload the business components in M3.  
You can also display information about the item by selecting option 22, 23, or 24.

**Note:** A message can contain several qualifiers on the same balance ID. The qualifier sequence controls in which order instructions for the same balance identity should be executed, such as whether a stock take should be done before a reclassification.

- **Archived Internal Stock Messages**

- 1 Option 26='Move to archive' on the (MMS850/B) panel archives the records. They can then be displayed and moved back in 'Internal Stock Msg. Display Filed' (MMS890).
- 2 Start 'Internal Stock Msg. Display Filed' (MMS890).
- 3 Option 21='Transfer to production' moves the record back to (MMS850) again.
- 4 By using the various options, you can also display archived identities (MMS851) and instructions (MMS852).  
Option 21='Execute message' is a manual way to upload the business components in M3.  
Option 25='Validate message' performs a rough check that the message is OK.

These stock transaction types are included:

- **Work with Order-Initiated Stock Message Header**

- 1 Start 'Order Init Stock Msg. Manage' (MHS850/B).

- 2 Select what to display per warehouse and qualifier. The qualifier defines the type of order and the activity behind it. Example: Qualifier 50=Receipt for DO reported.  
The message header for the packages, orders, and deliveries is displayed.  
**Note:** A message can only contain one type of qualifier. You may not mix receipts and picking list reporting in the same message.
- **Work with Order-Initiated Packages Messages**
  - 1 Option 11=Packages on the (MHS850/B) panel starts 'Order Init Package Msg. Manage' (MHS851). The package's number for the message, weight, volume, and other information are displayed here.
  - 2 Option 11=Lines on the (MHS851/B) panel starts 'Order Init Stock Trans Msg. Manage' (MHS852). Option 21='Execute message' is a manual way to upload the business components in M3. Option 25='Validate message' performs a rough check that the message is OK.  
**Note:** A dummy package must be created even if package data is not used.  
**Note:** On the (MHS852/E) panel, the '**Total quantity**' field indicates:
    - 1) If this field is blank, the quantity in the 'Picked quantity' field will also be defaulted in this field.
    - 2) If the quantity in this field is less than the total quantity for the order line, then the result will be that the picking list will still be open for partial reporting up to the total quantity for the order line.
    - 3) If the quantity in this field is larger than the quantity in the 'Picked quantity' field, M3 will store the difference of the two fields as backorder quantity. Allowed differences are defined in (MMS425), and they will be used to determine whether a new picking list should be created or not. This logic could be used, for example, when a WMS needs to report a short pick and wants to close the existing picking list suffix.
- **Work with Order-Initiated Line Messages**
  - 1 Option 11=Lines on the (MHS851/B) panel starts 'Order Init Stock Trans Msg. Manage' (MHS852).
  - 2 The packages lines which include order number and delivery number, the date, time, and quantities are displayed here.
  - 3 Option 21='Execute message' is a manual way to upload the business components in M3.
  - 4 Options 21=Order, 23='Picking list' and 24='Goods receiving' are available.  
**Note:** On the (MHS852/E) panel, the '**Total quantity**' field indicates:
    - 1) If this field is blank, the quantity in the 'Picked quantity' field will also be defaulted in this field.
    - 2) If the quantity in this field is less than the total quantity for the order line, then the result will be that the picking list will still be open for partial reporting up to the total quantity for the order line.
    - 3) If the quantity in this field is larger than the quantity in the 'Picked quantity' field, M3 will store the difference of the two fields as backorder quantity. Allowed differences are defined in (MMS425), and they will be used to determine whether a new picking list should be created or not. This logic could be used, for example, when a WMS needs to report a short pick and wants to close the existing picking list suffix.
- **Archive Order-Initiated Stock Messages**
  - 1 Option 26='Move to archive' on the (MHS850/B) panel archives the records. They can then be displayed and also moved back in 'Order Init Stock Msg. Display Filed' (MHS890).
  - 2 Start 'Order Init Stock Msg. Display Filed' (MHS890).
  - 3 Option 21='Transfer to production' moves the record back to (MHS850) again.

- 4 By using various options, you can also display archived packages (MHS851) and lines (MHS852).
- 5 Details about archiving are found in Administrator's Guide - Archive and Delete Transactions.

## Settings for Integration to an External System

This document explains how you set up M3 Warehouse Integration (WHI). In this document a warehouse management system (WMS) is used as an example of an integrated system.

### Outcome

Provided that the settings are defined for warehouse integration, all downloads and uploads are performed automatically from the host M3 to an external system. The settings also determine, to a certain extent, when downloads and uploads are executed.

For more information, refer to [M3 Business Engine Administrator's Guide for Warehouse Management Interfaces](#) on page 543.

### Before you start

You have to perform a mapping job together with the person who is responsible for the external system.

Consider these issues:

- Which system owns which function?
- Where are the cuts in the business processes?
- Do the two systems have the necessary data? (The unique keys must be provided).
- Who is responsible for the actual interface?
- Which technology should be used: file to file, middleware, APIs, EDI, XML or a combination of these techniques?

### Follow these steps

#### General settings

- Define External System
  - 1 Start 'Stock Msg Partner. Open' (MMS865). Here you define external system(s) to M3.
  - 2 On the B panel, the **Message direction** field indicates the direction of the message. If you want to both download and upload, you must create two records, one for output and one for input.
  - 3 Fill in the Partner field and the **Message type** field. For outgoing messages, the **Message type** field should be blank.
  - 4 Open the E panel. The only mandatory field is the **300 Partner manager** field.
  - 5 For outgoing messages, there is an F panel with optional fields.

- 6 On the B panel, option 12='Mail parameter' starts 'Stock Message Partner. Connect Msg Types' (MMS867). You activate the message types, which should be sent for the defined external system (partner). You can also create standard messages with **F14=Create standard**.
 

**Note:** The partner controls how many download records to create per business event in M3. It is possible to integrate with several systems and each system must be defined as a partner.
- Define What to Download and Upload
  - 1 Start 'Warehouse. Open' (MMS005). Open the H panel.
  - 2 Under Send you can, per warehouse, activate the **Send planned receipts**, **Send picking lists** and **Send item master** fields.
  - 3 Under Retrieve you can activate the **Retrieve receipts/pick list** and **Retrieve stock transactions** fields.
  - 4 The **Alias qualifier** field indicates which type of EAN code is to populate the alias number (**POPN**) field of the item master download file. This only applies if the **Item master** field in (MMS005/H) is set to 1.
- Define Locations
  - 1 Start 'Stock Location. Open' (MMS010).
  - 2 At least two locations must be entered, one allocatable and one non-allocatable. On the E panel, the Allocatable field must be set to **1=Allocatable**, and for the other location, to **0=Non-allocatable**. If the two-step receiving flow for purchase orders must be used, then three locations must be defined, one per status (under inspection, approved and rejected).

### Downloads - Item basic data, item alias data, expected receipts, picking list

The M3 job scheduler allows standard M3 reporting or batch functions to run automatically according to a schedule. This function can be used for automatic downloads.

For detailed step and action instructions, refer to Administrator's Guide for Job Scheduler.

### Settings for using the MBM initiator for expected receipts

- 1 An MBM initiator indicates whether downloads of expected receipts should be sent to M3 e-Collaborator. If you activate the MBM initiators, the download will be sent to M3 e-Collaborator.
- 2 Check that the parameters on the F panel in 'Stock Msg Partner. Open' (MMS865) are set correctly. The planned receipts, picking list and item master parameters must be set to **1**, depending on which functionality you want to activate. The planned receipts parameter in M3 e Collaborator must be set to **1** or **2** if you want to send planned receipts by the initiator.
- 3 The send parameters on the H panel in 'Warehouse. Open' (MMS005) must be set to **1** to activate expected receipts, picking lists and the item master.
- 4 Check that the document you want to connect to the initiator exists in 'Standard Document. Open' (CRS027). If not, create it. The document numbers are **120=Picking list**, **E01=Item data export**, and **E02=Planned receipts export**.
- 5 Check that the document also exists in 'M3 Document. Open' (CRS928) or create it.
- 6 On the (CRS928/E) panel, set the **Media control selection** flag to **1**. Field 1 and field 2 are the object values that are connected to a media, and at least Field 1 must be filled in.

This could, for example, be partner, supplier, customer or anything else you want to use to trigger the initiator. The values you can choose from are retrieved from (CRS928) and must be hard coded for the document in question. Use **F14='Generate Standard'** afterwards in that case.

- 7 In 'Std Document. Connect Media Ctrl Object' (CRS945) you see the field you indicated in (CRS928). Create a new record with a value for this field. Go through the panel sequence. Choose option **12=Media** for your new record to start (CRS949).
- 8 In 'Doc Media Control Object. Connect Media' (CRS949) you connect a media to the partner, supplier, customer or other object you specified in the previous step. Choose a service identity (the service provider for output from M3 that you want to use). Every record in (CRS949) gives rise to a record in 'Output. Manage per Job' (MNS206). The record with an exclamation mark in front of it in (MNS206) is connected to the initiator. Use option **13=Partner** for that record to view the output per partner. The media is defined in (CRS116).

### **Uploads - Settings for internal stock messages**

- 1 Start 'Internal Stock Trans Qualif. Open' (MMS860).
- 2 On the B panel, use option **14='Generate all qualifiers'** to generate all the standard qualifiers that are used for the integration to PkMS.

### **Uploads - Settings for order-initiated stock messages**

- 1 Start 'Internal Stock Trans Qualif. Open' (MHS860).
- 2 On the B panel, use option **14='Generate all qualifiers'** to generate all the standard qualifiers that are used for the integration to PkMS.
- 3 Start 'Number Series. Open' (CRS165).
- 4 Create number series type 16 with series A for internal stock messages.
- 5 Create number series type 17 with series 1 for order-initiated stock messages.

### **Check order configuration (optional)**

- 1 The different order types must have the correct auto level and next manual function. The picking list must be printed.
- 2 Check the allocation method (**6** is preferred) and issue method (**1**) for items.

### **Archive received messages (optional)**

- 1 Start 'Stock Msg Partner. Open' (MMS865).
- 2 Select option **2** to start (MMS865/E). Activate the filing parameter and number of days before last activity.

### **Round decimal (optional)**

- 1 Start 'Stock Msg Partner. Open' (MMS865).
- 2 Select option **1** in (MMS865/E) for parameter 325. This automatically rounds the value of the input that contained too many decimals for quantity and catch weights fields.

## Parameters to set

<b>Program ID/ Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS865/B)	<b>Message direction</b>	<p>... the direction of the message. The valid alternatives are:</p> <ul style="list-style-type: none"> <li>• I = Input</li> <li>• O = Output</li> </ul>
(MMS865/B)	<b>Partner</b>	<p>... the identity an external partner, for example with the internal number of the customer.</p>
(MMS865/B)	<b>Message type</b>	<p>... the message type, which must contain the name of the standard message to be processed. Examples:</p> <ul style="list-style-type: none"> <li>• EDIFACT messages: ORDERS ORDRSP, etc.</li> <li>• ODETTE messages: DELINS AVIEXP, etc.</li> </ul>
(MMS865/E)	<b>300 Partner manager</b>	<p>... a unique user ID. The ID can be used for selection and sorting.</p>
(MMS865/E)	<b>305 Override mail receiver</b>	<p>... whether overriding of an entered mail recipient is allowed. The valid alternatives are:</p> <p><b>0 = No</b>, mail recipient will not be overridden.</p> <p><b>1 = Yes</b>, mail recipient will be overridden using a value in (RSS015/310).</p>

Program ID/ Panel	Field	The field indicates ...
(MMS865/E)	<b>325 Rounding Decimal</b>	<p>The field indicates: The rounding decimal allows whether rounding may be applied to values with too many decimals in MHS850MI and MMS850MI transactions for the fields of <b>Quantity</b> and <b>Catch-weight</b>.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>• <b>0 = No</b>, the input value is not rounded, the API may return an error if the value has too many decimals</li> <li>• <b>1 = Yes</b>, the input quantity and catch weight are rounded if they have too many decimals, the rounded value is saved in stock message details.</li> </ul>
(MMS865/E)	<b>Filing</b>	<p>... whether the message should be archived. The valid alternatives are:</p> <ul style="list-style-type: none"> <li>• <b>0 = No</b></li> <li>• <b>1 = Yes</b></li> </ul> <p>This field is only valid for upload messages (MMS850, MHS850).</p>
(MMS865/E)	<b>Days before archive/deletion</b>	<p>... the number of days after a received and executed inventory transaction that a message is archived. When a message is archived, it is removed from production files and stored in an archiving file.</p> <p>This field is only valid for upload messages (MHS850, MMS850).</p>

## F Panel for Download partners

Program ID/ Panel	Field	The field indicates ...
(MMS865/F)	Download planned receipts (for a specific partner)	<p>... whether planned receipts are downloaded to the MHEXRH and MHEXRD out files. These out files are used to standardize the format for interfacing external systems.</p>
(MMS865/F)	Download picking lists (for a specific partner)	<p>... whether the picking list is downloaded to the output files MHPICL and MHPICD. Output files are used to provide a standard output format for interfaces with external systems.</p>

Program ID/ Panel	Field	The field indicates ...
(MMS865/F)	Download item master (for a specific partner)	<p>... whether the item output file (MHITMA) and alias number file (MHIPOP) are to be populated for this specific warehouse. Output files provide a standard output format for interfaces with other systems.</p> <p>M3 updates the output file in these situations:</p> <ul style="list-style-type: none"> <li>• A download is initiated manually through the selection program (MHS630) or (MHS635).</li> <li>• Automatic download are defined through the M3 Job Scheduler. The item master is downloaded automatically according to a schedule.</li> </ul>
(MMS865/F)	Create MBM initiators (Send pl receipts to e-Collaborator)	<p>... whether MBM initiators are to be created for expected receipts so that they can be sent to M3 e Collaborator.</p> <p>These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>• <b>0 = No</b>, do not create MBM initiators (do not send planned receipts to M3 e-Collaborator)</li> <li>• <b>1 = Yes</b>, create MBM initiators. Provides alternatives to send manually through (MHS815) or send at regular intervals through (SHS050).</li> </ul>

Program ID/ Panel	Field	The field indicates ...
(MMS867/E)	Activate application message type	<p>... whether you activate the message types, which are to be downloaded for the defined external system (partner).</p> <p>On the B panel, you can also create standard messages through F14=Create standard.</p>
	Download planned receipt (for a specific warehouse)	<p><b>Note:</b> The partner controls how many download records to create per business event in M3. You can integrate to several systems, and each system must be defined as a partner.</p> <p>... whether planned receipts are downloaded to the MHEXRH and MHEXRD out files. These out files are used to standardize the format for interfacing external systems.</p> <p>M3 updates the out files whenever the material plan in (MMS080) is updated.</p> <p>This field also indicates to the system whether pre-allocations are to be sent to the MHPREA out file.</p>

Program ID/ Panel	Field	The field indicates ...
(MMS005/H)	Download picking lists (for a specific warehouse)	<p>... whether the picking list is downloaded to the MHPICL and MHPICD output files. Output files are used to provide a standard output format for interfaces with external systems.</p>
		<p>M3 updates the output files when a picking list is released (picking list status 40).</p>
		<p>These alternatives are valid:</p>
		<ul style="list-style-type: none"> <li>• 0 = The picking list is not downloaded.</li> <li>• 1 = The picking list is downloaded.</li> <li>• 2 = The picking list is downloaded and printed.</li> <li>• 3 = The picking list is downloaded and printed but not validated against warehouse integration in (MWS420).</li> </ul>
(MMS005/H)	Download item master (for a specific warehouse)	<p>... whether the item output file (MHITMA) and alias number file (MHIPOP) should be populated for this specific warehouse. Output files provide a standard output format for interfaces with other systems.</p>
		<p>M3 updates the output file in these situations:</p>
		<ul style="list-style-type: none"> <li>• A download is initiated manually through the selection program (MHS630) or (MHS635).</li> <li>• Automatic downloads are defined through the M3 job scheduler. The item master is downloaded automatically according to a schedule.</li> </ul>

Program ID/ Panel	Field	The field indicates ...
(MMS005/H)	Retrieve receipts/pick list	<p>... whether goods receipt or picking lists reported from external systems will be allowed to update M3 using batch entry in (MHS870). Retrieved messages can be displayed and updated in (MHS850). Only messages with permitted order categories, as defined in (MHS860), are executed.</p> <p><b>Note:</b> There may be a conflict between opportunity cross-docking and integration to a warehouse management system.</p>
(MMS005/H)	Retrieve stock transaction	<p>... whether messages retrieved from external systems update M3 stock transactions when using batch entry in (MMS870).</p> <p>The messages retrieved this way can be displayed and updated in (MMS850). Only messages with permitted qualifiers (as defined in (MMS860)) are executed.</p>
(MMS005/H)	Alias qualifier	<p>... which type of EAN code is to populate the alias number (<b>POPN</b>) field of the item master download file. This only applies if the 'Item master' parameter in (MMS005/H) is set to <b>1</b>. These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>• EA08 = EAN8, an EAN number containing eight digits</li> <li>• EA13 = EAN13, an EAN number containing 13 digits</li> <li>• DU14 = DUN14, a packaging variant of an EAN number</li> <li>• UPC = UPC number</li> </ul>

Program ID/ Panel	Field	The field indicates ...
(MMS010/E)	Allocatable	<p>... allocation and must be set to <b>1=Yes, allocatable</b>, and for the other location, to <b>0=Non-allocatable</b>.</p> <p>This field determines whether the balance identities created for the respective location should be allocatable.</p>
		<p>It must be set to <b>1=Yes, allocatable</b>.</p> <p>When creating new balance identities in connection with receipts from stock, this code is obtained from the location for which the receipt is made. If there are exceptions, the allocation code may be changed in (MMS060).</p>
(CRS165/B)	Number series	<p>... the number series. The same ID may be used by other series if they belong to other types. For example, there may be a series A for order numbers as well as for invoice numbers, although they have separate number ranges and start values.</p> <p>Number series type 16 with series A is used for internal stock messages.</p>
		<p>Number series type 17 with series 1 is used for order-initiated stock messages.</p>
(MWS010/E)	100 Auto print pick list	<p>... whether picking lists are printed automatically when they are created.</p> <p>Select <b>1=Yes</b>.</p>
(MNS310)	'Subsystem Job. Open'	<p>... auto-start jobs used in this subsystem.</p> <p>You have the predefined auto start jobs MHS855 –Order related messages and MMS855- Internal stock messages as predefined auto start jobs. These are for uploading. These start the MHS870 and MMS870 batch jobs.</p>

Program ID/ Panel	Field	The field indicates ...
(SHS050)	'Job Schedule Category. Open' All fields	You can schedule the download batch jobs in M3 Job Scheduler. See .
(SHS030)	'Job Schedule. Open' All fields	See .
(SHS031)	'Job Schedule Program. Open' All fields	See .
(SHS035)	'Job Schedule Field. Open' All fields	See .
(SHS231)	'Job Schedule Information. Open' All fields	See .

## Scenarios for Using Warehouse Management Interfaces (WHI)

WHI can be used when the warehouse is controlled by M3 or if the warehouse is controlled by an external system.

WHI can be divided into two main areas, Warehouse Integration and Warehouse Collaboration.

### Warehouse Integration

- **WMS Integration**

WMS integration is a standard interface to M3 for larger Warehouse Management Systems (WMS).

This communication can be asynchronous for managing large volumes, or synchronous, for example, from and to a bar code reader.

- **MHE Client Integration**

This is integration to material handling equipment (MHE) such as, scanners, bar code readers, hand-held devices (Palm, Pocket PC), conveyors, and so on. This communication is often synchronous.

- **MHE Online Integration**

This is integration to MHE, which consists of very thin clients. This is only synchronous communication. There is very little logic on the client side.

### Warehouse Collaboration

- **Third-Party Logistics (3PL)**

3PL is a concept for outsourcing supply chain management.

Outsourcing is a viable option for many companies. Businesses outsource for various reasons - to increase shareholder value, reduce costs, business transformation, improve operations, overcome lack of internal

capabilities, gain a competitive advantage, improve capabilities, increase sales, improve service, reduce inventory, increase inventory velocity and turns, mitigate capital investment, improve cash flow, and turn fixed costs into variable costs and other benefits, both tangible and intangible. To the maximum, and if done correctly, outsourcing and business process outsourcing can be used to create a viable virtual corporation.

- **Vendor-Managed Inventory (VMI)**

The objectives of vendor-managed inventory (VMI) are as follows:

- Increase in-stock inventory
- Increase sales
- Improve customer service
- Increase gross margins
- Reduce overall inventory in the supply chain
- Stabilize vendor's production.

Another interesting issue that is part of the VMI process is whether customers should be invoiced directly at shipment or after selling the products to their own end customers.

- **Point of Sales (POS)**

M3 point of sale (POS) integration is a vital part of a retail-concept based on M3 Collaboration Application. M3 POS integration connects local and separate POS systems to M3.

The combination of a specialized POS system, which meets specific requirements from the counter sales and cash payments process in high volume shops, with M3 provides a solution for the entire value chain.

- **Electronic Data Interchange (EDI)**

Electronic data interchange (EDI) is the computer-to-computer exchange of business data in standard formats. In EDI, information is organized according to a specified format set by parties, allowing a 'hands off' computer transaction that requires no human intervention or rekeying on either end.

The information contained in an EDI transaction set is, for the most part, the same as on a conventionally printed document.

The M3 EDI solution is based on Infor Enterprise Collaborator (IEC), normally complemented by AMTRIX as the EDI server. Those components fulfill the technical infrastructure and can be complemented with package integration processes, so called EDI Business Messages.

This solution aims to offer packaged integration processes in order to deliver both speed and low risk for B2Bi projects.

## Deletion of Warehouse Interface Messages

Messages from 'Order Init Stock Msg. Manage' (MHS850) and 'Internal Stock Msg. Manage' (MMS850) in status 90 or higher can be deleted.

The functionality is defined by partner on 'Stock Msg Partner. Open' (MMS865/E). The following two parameters control this behavior:

- Parameter 235 'Filing/Deletion' must be set to 2-'Delete'
- Parameter 240 'Days before filing/deletion' must be greater than zero.

To delete records from (MHS850), run program 'Stock Messages. Archive' (MHS894).

To delete records from (MMS850), run program 'Archiving Stock Msg' (MMS894).

Messages are deleted as per partner setup. Messages qualifying for deletion must be in status 90 or higher. The number of days specified in parameter 240 is the number of days that the messages will be retained.

When a message is deleted from (MHS850), all related records in tables MHIHED, MHIPAC, MHILIN, MHISUB, MHIATR are also deleted.

When a message is deleted from (MMS850), all related records in tables MMIHED, MMIIDE, MMIINS, MMISUB are also deleted.

**Example:**

Partner ABC is set up as below:

235 'Filing/Deletion'= 2-'Delete'

240 'Days before filing/deletion= 1

The message number 0000000123 in (MHS850) is in status 90 with partner=ABC. The message is two days old.

The message number 0000000456 in (MHS850) is in status 90 with partner=ABC. The message is less than one day old.

Run (MHS894).

Result: All message numbers with generated dates older than one day and in status 90 with partner ABC will be deleted.

Message number 0000000123 is one of the messages that will be deleted. Message number 0000000456 will not be deleted since the message does not fulfill the selection criteria of being at least one day old.

## Delete Archived Warehouse Interface Messages

### **Deletion of archived warehouse interface messages from (MHS890)**

In program 'Order Init Stock Msg. Display Filed' (MHS890), the function key 10 ('Stock Msg Delete') takes you to 'Order-Initiated Stock Messages. Delete' (MHS898) where you select which archived warehouse interface messages to delete. By specifying values in the filter selection fields in (MHS898), you make the selection.

Use the following selection fields:

- From and to warehouse (mandatory)
- From and to partner (optional)
- From and to date generated ('To date generated' is mandatory)

**Example 1:**

From warehouse = 001 | to warehouse = 001

From partner = blank | to partner = blank

From date generated = blank | to date generated = 210615

Result example 1: All records within warehouse 001 older or equal to the date generate 210615 will then be deleted, independently of their partner.

**Example 2:**

From warehouse = 001 | to warehouse = 003

From partner = EFP | to partner = EFR

From date generated = 210101 | to date generated = 210615

Result example 2: All records within warehouses from 001 to 003 with a partner from EFP to EFR with a generation date between 210101 and 210615 will be deleted.

**Example 3:**

From warehouse = 000 | to warehouse = ZZZ

From partner = 000 | to partner = ZZZ

From date generated = blank | to date generated = 210615

Result example 3: All records within warehouses from 000 to ZZZ with partner from 000 to ZZZ with a generation date older or equal to 210615 will then be deleted.

You can specify a record in 'Job. Connect Job Queue' (MNS310) to get a notification of the number of selected records.

Program (MHS898) is also enabled for job scheduling in 'Job Schedule Function. Open' (SHS030).

**Deletion of archived warehouse interface messages from (MMS890)**

In program 'Internal Stock Msg. Display Filed' (MMS890) the function key 10 ('Stock Msg Delete') takes you to 'Internal Stock Messages. Delete' (MMS898) where you select which archived warehouse interface messages to delete. By specifying values in the filter selection fields in (MHS898), you make the selection.

Use the following selection fields:

- From and to warehouse (mandatory)
- From and to partner (optional)
- From and to date generated ('To date generated' is mandatory)

**Example 1:**

From warehouse = 001 | to warehouse = 001

From partner = blank | to partner = blank

From date generated = blank | to date generated = 210615

Result example 1: All records within warehouse 001 older or equal to date generate 210615 will then be deleted, independently of their partner.

**Example 2:**

From warehouse = 001 | to warehouse = 003

From partner = EFP | to partner = EFR

From date generated = 210101 | to date generated = 210615

Result example 2: All records within warehouses from 001 to 003 with a partner from EFP to EFR with a generation date between 210101 and 210615 will be deleted.

**Example 3:**

From warehouse = 000 | to warehouse = ZZZ

From partner = 000 | to partner = ZZZ

From date generated = blank | to date generated = 210615

Result example 3: All records within warehouses from 000 to ZZZ with partner from 000 to ZZZ with a generation date older or equal to 210615 will then be deleted.

You can specify a record in 'Job. Connect Job Queue' (MNS310) to get a notification of the number of selected records.

Program (MHS898) is also enabled for job scheduling in 'Job Schedule Function. Open' (SHS030).

# Chapter 7: Managing Transportation Planning

## Additional Transportation Information

### Abstract

The transportation functionality enables you to add additional transportation data to a shipment or delivery. An example is information such as booking number, vessel name or ocean BOL number. Other examples are specific dates and times. In addition, information such as booking request date, estimated time of arrival and estimated time of departure can be stored.

The additional transportation information can only be added manually or via an API. This means that changes of the content of a shipment or delivery in M3 BE will not affect any information added as additional transportation information. It is also assumed that the additional transportation information is added to a M3 BE shipment or delivery at a very late step in the dispatch process.

The additional transportation information will be deleted when a shipment is deleted or when a delivery header is deleted. The information could also be archived together with the connected entity, for example if a shipment is archived, the connected additional transportation information is also archived.

The additional information can be read, added, changed and deleted from systems external to M3 BE using APIs.

### Limitations

- There are no validations made between any data added as additional information and any similar data that exists in M3 BE.
- Additional transportation information is only applicable for outbound transactions.
- Only one set of additional transportation information can be entered per shipment or delivery.
- Any specific date or time information must be entered with a date, a time and a time zone. The time zone must exist in M3 BE.
- Basic validation, like input format, is made for each field.
- No automatic update of additional transportation information is made depending on changes in M3, except if a shipment or a delivery is deleted.
- No validation that additional transportation information has been, or has not been, added to a shipment or delivery at any step in the dispatch process.
- Changes done in M3 BE that causes a delete of the shipment or delivery will delete the additional transportation information. This limitation is important to know in scenarios like where the last delivery line on a delivery is changed, first causing a delete of the delivery header and in the next step creating a new delivery with the same delivery number (reuse delivery numbers). This will cause a deletion of

additional transportation information. The recommended solution to avoid this is to add transportation information as late as possible in the dispatch process.

- Additional transportation information is connected to one entity, either a shipment or a delivery. There are no hierarchy or limitations between additional information on shipment level versus delivery level. This means that a delivery can have one set of additional information while the shipment that it is connected to has another set of information. Which level to use must be decided in each case. Infor recommends to only use additional information on either shipment level or delivery level.
- Shipments or deliveries created via load building functionality will not inherit additional transportation information from the original shipment or delivery. It must be added at a later stage in the process.

## Set-up

### Additional transportation information master table

Additional information is created, managed, and used per shipment or delivery. This is managed in program 'Additional transportation info. Open' (DRS102).

Field	The field indicates ...
Transportation information level	1 = info on shipment level, 2 = info on delivery level
Shipment	The shipment ID that the additional information is connected to. Must be zero if transportation information level is set to 2 and must not be zero if transportation info level is set to 1.
Delivery	The delivery ID that the additional information is connected to. Must be zero if transportation information level is set to 1 and must not be zero if transportation info level is set to 2.

### Detailed information

On the E and F panels in (DRS102), detailed information is viewed and maintained.

**Note:** There are generally no validations that the data is coherent with similar data in M3 BE, since there might be data stored in this table coming from an external system. However, there are some basic validations:

- Normal field format validations is done, for example, no alphanumeric characters in numeric fields etc.
- A date field consists of three different fields, a date field, a time field, and a time zone in which the point in time occurs.

## Managing additional transportation information

You can manage the additional transportation information that are connected to shipments or deliveries in 'Additional Transportation Information.Open' (DRS102).

This program can be accessed from 'Shipment. Open Toolbox' (DRS100) and 'Delivery. Open Toolbox' (MWS410) using option 20=Additional transportation info.Open.

Here, you can connect additional transportation information manually. You can also change or delete existing records.

You are only allowed to add an additional transportation information record to the level for which is intended. Hence, it is only possible to add transportation information for a shipment with transportation information level 1 and for a delivery with transportation information level 2.

When a shipment or delivery is deleted, the additional transportation information connected to it is also deleted. There is no automatic copying or transfer of additional transportation information from an old shipment or delivery to a new shipment or delivery.

It is also possible to create, change, delete, get, and list additional transportation information by using the appropriate transaction in API DRS102MI.

## Basic Settings for Freight Cost and Freight Cost Calculation

### **Freight cost settings and calculation**

#### **Basic settings for freight cost - freight cost management parameter**

The 'freight cost management' parameter in (CRS728) decides whether freight cost will be calculated according to the freight agreement connected to a delivery or shipment. The calculation can be completed manually at any time before the delivery or shipment is closed. The automatic calculation of freight cost is completed when the delivery or shipment is closed.

#### **Basic settings for freight cost and settings - freight cost calculation on freight agreement**

The freight cost calculation is based on the freight agreement and transportation service connected to the delivery or shipment, and uses the information available at the time of the calculation.

These sections explain the settings on the freight agreement for freight cost calculation:

#### **Settings on the freight agreement header (PPS100)**

- 1 When creating a freight agreement in (PPS100) opening panel, the purchase agreement type (PPS110) must be a freight agreement type. The supplier for which the agreement is defined can only be of supplier type 5 – Forwarding agent.
- 2 'Freight rate aggregation level' indicates the level (either the shipment or the delivery level) in the dispatch flow on which the agreement will be connected.

#### **Settings on the freight agreement lines (PPS101)**

- 1 In (PPS101), the 'Group ID' field for freight agreement lines is always visible but cannot be edited. It will always choose the group ID that has Transportation Service as the selection field. If no group ID exists with Transportation Service, one will be automatically created. Group ID 88 is generated in (CRS746).
- 2 In the (PPS101) opening panel, select a 'Transportation service ID' for which the freight elements and rates should be defined. These are defined in (DRS025).

#### **Freight cost element connected to freight agreement (PPS105)**

- 1 In (PPS101), select Related option 12='Freight Elements'. This starts 'Purchase Agreement. Connect Freight Cost Element' (PPS105).

- 2 On the opening panel of (PPS105), specify a sequence number for the first freight element. Go to the detail panel and select a freight cost element in the 'Freight rate element' field. Only costing elements with operator 88='Freight cost' can be selected. Freight cost elements are defined in (PPS280).
- 3 Select a 'Freight cost operator'. The operator contains the formula for retrieving the cost of the freight cost element per delivery or shipment (depending on aggregation level set on the freight agreement). The value of the freight cost element is either added or deducted from the grand total, depending on whether a markup is selected for the costing element in (PPS280). See [Freight Cost Management](#) on page 644 for more information about freight cost operators.
- 4 The 'Scale unit type' sets which type of unit for the freight scale, if any, is used to determine which transaction data from the delivery or shipment (depending on the aggregation level of the freight agreement) retrieves the correct freight rate for a freight element. A check is made to ensure that the correct operand is used, since all freight scale unit types are not allowed for all operands.
- 5 The 'Rate factor' is the multiplier used against the freight rate on the freight cost element to calculate the actual freight rate.
- 6 In 'Field 1, 2 and 3', you can select an object for which a special freight rate applies. An object represents the cause that triggers a particular freight rate. You can select a maximum of three objects for a freight cost element.
- 7 The 'Markup' check box is set if the costing element percentages are positive, which a markup is. If it is not set, then the costing element percentages are negative, which is a markdown.
- 8 The 'Lowest price element' check box is set to enable a comparison to find the lowest price within a freight cost element. If lowest price element is selected and a scale unit type is used, the system will compare the calculated value for the actual scale unit value and its corresponding rate. When the freight cost is calculated, it will use the lowest element value (scale unit value \* freight rate) of them.
- 9 The 'Manual update – freight rate' check box is set to enable the calculated value to be manually changed and saved in simulation and calculation mode (DRS500).

In (PPS105/E), these are the permitted and non-permitted combinations of freight cost operators and scale unit types:

<b>Freight opera-tor/Scale unit type</b>	<b>1-Gross weight</b>	<b>2-Volume</b>	<b>3-Transac-tion</b>	<b>4-Distance</b>	<b>5-Detention hours</b>	<b>6-Number of packages</b>
02-Fixed amount	Yes	Yes	Yes	Yes	Yes	No
10-Price per gross weight of assigned goods	Yes	No	No	No	No	No
11-Price per gross weight of packed goods	Yes	No	No	No	No	No

<b>Freight opera-tor/Scale unit type</b>	<b>1-Gross weight</b>	<b>2-Volume</b>	<b>3-Transac-tion</b>	<b>4-Distance</b>	<b>5-Detention hours</b>	<b>6-Number of packages</b>
12-Price per packed gross weight	Yes	No	No	No	No	No
13-Price per volume of assigned goods	No	Yes	No	No	No	No
14-Price per volume of packed goods	No	Yes	No	No	No	No
15-Price per packed volume	No	Yes	No	No	No	No
16-Price per free capaci-ty unit of as-signed goods	No	No	No	No	No	No
17-Price per free capaci-ty unit of packed goods	No	No	No	No	No	No
18-Price per packed free capacity unit	No	No	No	No	No	No
19-Price per detention hour	No	No	No	No	Yes	No
25-Price per package	No	No	No	No	No	Yes
26-Price per package with pack-age level 0	No	No	No	No	No	Yes

<b>Freight operator/Scale unit type</b>	<b>1-Gross weight</b>	<b>2-Volume</b>	<b>3-Transaction</b>	<b>4-Distance</b>	<b>5-Detention hours</b>	<b>6-Number of packages</b>
35-Price per distance (One way)	No	No	No	Yes	No	No
36-Price per distance (Return included)	No	No	No	Yes	No	No
45-Price per transaction quantity - basic U/M	No	No	Yes	No	No	No
46-Price per picking list quantity - basic U/M	No	No	Yes	No	No	No
47-Price per transaction quantity - alternate U/M	No	No	Yes	No	No	No
48-Price per picking list quantity - alternate U/M	No	No	Yes	No	No	No
70-Price per delivery (CMR)	No	No	No	No	No	No
71-Price per place of unloading	No	No	No	No	No	No
72-Price per unloading sequence	No	No	No	No	No	No

#### **Freight rates connected to freight cost element (PPS109)**

- 1 In (PPS105), select related option 12='Scaled Rates'. This starts 'PO Agreement. Connect Scaled Freight Rates' (PPS109).
- 2 Specify the 'From date' and open the detail panel.
- 3 On the detail panel, specify the 'freight rate' and 'from value' if that field is editable for the specific freight operator. You must always specify at least one freight rate here.

### Create freight cost zone and connect to a forward agent

- 1 Start 'Freight Cost Zone. Open' (DRS032) and create a freight cost zone.
- 2 Start 'Forward Agent. Connect Freight Cost Zone' (DRS034). Select a forward agent and connect a freight cost zone.
- 3 On the (DRS034/B) panel, select option 11='Place of unload'. This launches (DRS033). Connect the forward agent and freight cost zone to a place of unload.
- 4 Start 'Supplier. Open' (CRS620) and select option 22='Forwarder/Freight cost zone'. Select the freight cost zone, defined in (DRS034).

### Connect the transportation service ID to a delivery or shipment

- 1 Start 'Dispatch Policy. Open' (MWS010).
- 2 On the (MWS010/I) panel, the '500 Retrieve transportation service from' field determines one of the following:
  - Alternative 1: You must have connected a transportation service ID to (DRS006) and (DRS005). It must be the same transportation ID that you have in (PPS101).
  - Alternative 2: You must have connected a transportation service ID to (DRS030). It must be the same transportation ID that you have in (PPS101).
  - Alternatives 3 and 4: You must have connected a transportation service ID to at least one of the functions mentioned above. Transportation service IDs are defined in (DRS025).

### Connect a transportation service ID to a customer or warehouse

**Note:** This is only necessary if you want to retrieve the transportation service ID from the selection program (DRS030).

- 1 Start 'Customer/Warehouse. Connect Tran Service' (DRS030). Specify the reference and identity.
- 2 Open the E-panel and connect a transportation service ID (DRS025).

## Create Transportation Equipment

This section explains how to create and maintain 'Transportation Equipment. Open' (DRS013).

### Outcome

'Transportation Equipment. Open' (DRS013) is used to manage a specific mode of transportation. An equipment can be connected to a warehouse or a place of load.

### Follow these steps

- 1 Start 'Transportation Equipment. Open' (DRS013).
- 2 On the B panel, specify an identifier in the 'Transp equipment' field and select the Create option.
- 3 On the E panel, specify the required fields such as description, delivery method, country, and status.

- 4 For the transportation equipment type, values are being validated if existing in 'Transportation Equipment Type. Open' (DRS015). Transportation equipment type will by default fill out the weight, volume, and free capacity fields for the transportation equipment.
- 5 Click Next to go to the next panel.
- 6 On the F panel, 10 user-defined field can be specified. Field headings are maintained in 'Settings - TPL Standard Values' (CRS728/F).
- 7 Click Next to save the record.

## Create Transportation Resource

This section explains how to create and maintain 'Transportation Resource. Open' (DRS018).

### Limitations

Shift planning is not included in M3 BE for transportation planning. 'Transportation Resource Shift. Open' (DRS020) is only used for gathering information.

### Outcome

'Transportation Resource. Open' (DRS018) is used to store available resources that can handle or use transportation equipment.

### Follow these steps

- 1 Start 'Transportation Resource. Open' (DRS018).
- 2 On the B panel, specify an identifier in the 'Transp resource' field and select the Create option.
- 3 On the E panel, specify a description and name in the respective fields.
- 4 For the transportation resource shift, values are being validated if they exist in 'Transportation Resource Shift. Open' (DRS020).
- 5 Click Next.
- 6 On the F panel, 10 user-defined field can be specified. Field headings are maintained in 'Settings - TPL Standard Values' (CRS728/G).
- 7 Click Next to save the record.

## Define Settings for Transportation Management

This document explains how you define the settings for the transportation management workflow.

## Outcome

Settings for transportation management are defined for the following areas:

- Customer order type and dispatch policy
- Number series
- Loading platform
- Routes, route selections, route departures, unloading places and exceptions
  - Shipments are stored in the DCONSI table.
  - Routes are stored in the DROUTE table.
  - Route dispatches are stored in the DROUDI table.
- Document handling  
Connections between shipments/deliveries and documents are stored in the DDOCUX table.

The process can be used to control a physical shipment throughout the dispatch flow or for customer orders, requisition orders, distribution orders and service orders.

## Before You Start

The basic parameters for orders and order types are set.

## Follow These Steps

### Customer Order Type and Dispatch Policy

- 1 Start 'CO Type. Open' (OIS010/J). The 'Dispatch policy' field must be filled in with a dispatch policy that contains the appropriate transportation management settings.
- 2 Start 'CO Type. Update Field Selection' (OIS014) by selecting option 14 on the (OIS010/B) panel or entering H in the 'Panel sequence' field. You define routes and departures on the F panel.
- 3 Start 'Dispatch Policy' (MWS010). Fill in the '160 Shipment assembly point' field on the F panel.
- 4 Fill in the '240 Packing reporting method' field on the G panel.
- 5 Fill in the '330 Automatic connection to shipment' field on the G panel.
- 6 Fill in the '340 Point to connect delivery documents' field on the G panel.

### Number Series

Start 'Number Series. Open' (CRS165). Use the help text in the 'Series type' field to guide the setup.

**Note:** Make sure that you set up these number series in the central (blank) division and that you provide enough 'room' between the start number and the final number for your future shipment numbers, etc.

### Loading Platform

- 1 Start 'Loading Platform. Open' (DRS016). Select a warehouse and fill in the 'Loading platform' field. Open the E panel.
- 2 Fill in the Location, Description and Name fields.
- 3 In (MWS410), you can use the OQLODO loading platform field in your views (CRS020) and sorting options (CRS021).

- 4 Start 'Available Object Control Parameters. Open' (CMS016) if you want to define rules for automatic connection between delivery and loading platform. For loading platform, the MMAD7 field group should be selected. Set the values for loading platform in 'Loading Platform. Define Outbound' (MWS140).

## **Routes, Route Departures, Unloading Places and Exceptions**

- **Route**
  - 1 Start 'Route. Open' (DRS005/B). Enter panel sequence EF123, where 1=Route departures, 2=Exceptions and 3=Unloading places.
  - 2 Enter the route type.
  - 3 Fill in the following fields on the (DRS005/E) panel:
    - Place of loading (The value must match the place set in 'Warehouse. Open' (MMS005)).
    - Delivery method
    - Forwarding agent
    - Transportation equipment
    - Parameters shipment
    - Accumulated.
  - 4 Fill in the 'Stipulated internal lead time days/hours/minutes' field on the (DRS005/F) panel.
- **Route Departures**
  - 1 Start 'Route. Connect Departures' (DRS006). This can be started by using option 11='Route departures' on the (DRS005/B) panel. Fill in the Route and Departure fields on the B panel.
  - 2 Fill in the following fields on the (DRS006/E) panel:
    - Delivery method
    - Forwarding agent
    - Transportation equipment
    - Day of deadline
    - Time of shipment locking (hours)
    - Time of locking (hh, local time)
    - Stipulated internal lead time days/hours/minutes
    - Load platform
    - Departure day
    - Day of arrival
    - Time of departure
    - Time of arrival (hours)
    - Valid From-To.
- **Places of Unloading**
  - Start 'Route. Connect Unloading Places' (DRS021). This can be started by using option 13='Unloading places' from the (DRS005/B) panel. Fill in the 'Unloading sequence' field on the B panel.
  - Fill in the following fields on the (DRS021/E) panel:
    - Place of unloading
    - Unloading sequence
    - Transport lead time days/hours/minutes
    - Transport distance
    - Via address.

- Start 'Route. Connect Unloading Sequence' (DRS022). This program is also started by using option 11='Unloading sequence' on the (DRS021/B) panel. Fill in the 'Unloading sequence within place' field on the (DRS022/B) panel.
- **Route Departure Exceptions**
  - 1 Start 'Route. Connect Departure Exceptions' (DRS007). This program can also be started by using option 11 in (DRS006) or option 12 in (DRS005).
  - 2 Fill in the following fields on the (DRS007/B) panel:
    - Route
    - Departure
    - Valid from
  - 3 Fill in the following fields on the (DRS007/E) panel:
    - Valid from
    - Valid to (crucial information)
    - Time of departure
    - Cancelled route departure
    - Replacing route departure.

### **Route Selections**

- 1 Start 'Route Selection Field. Enter' (CRS727). The E panel is displayed.
- 2 The Priority field indicates the order (1–10) in which a combination of object values is to be checked. 1 is the highest priority.
- 3 The Field field is retrieved from 'Field Group. Display Permitted Fields' (CRS109). Here the 'DRKEY-Transportation planning keys' field group is used.
- 4 Start 'Route Selection Table. Open' (DRS011). This can also be started by using F14=Select table in (CRS727).
- 5 Depending on the keys defined in (CRS727), you can have up to four possible 'Start value' fields per priority entered.
- 6 Specify your first priority in the Priority field. Fill in values in the 'Start value 1, 2, 3, 4' fields. Press Enter.
- 7 Fill in the following fields on the E panel:
  - Route
  - Route departure
  - Selection method (crucial field)
 

**Note:** The field help says 'reschedule in', which means schedule earlier in time, and 'reschedule out', which means schedule later in time.
  - Try lower priority
  - Departure days
  - Route departure days (displays the setup in (DRS006)).

### **Simulate Route Selections**

The route pre-selection can have a complicated setup and it is important to test that the logic and basic data are correct. There is a simulation program to assist you, 'Check Route Departure (DRRTVRDE)' (MTS028).

The purpose of this program is to give the user a good tool for tests and simulation of route pre-selection.

(MTS028) has two primary tasks:

- Retrieve route information based on route pre-selection, mainly based on settings in (CRS727) and (DRS011)
- Calculate order line date and time information based on different scenarios.

For an instruction on (MTS028), refer to [Simulate Route Pre-Selection \(MTS028\)](#) on page 658.

## Document Handling

For more information on how to handle the documents in the transportation workflow, refer to [Manage Delivery Documents and Labels](#) on page 446.

### Parameters to Set

Program ID/ Panel	Field	The field indicates ...
(OIS010/J)	Dispatch policy	... a dispatch policy, which must contain the appropriate transportation management settings. See below.
(OIS014/F)	Route	... how routes and departures are proposed by default for a new customer order in the Route and 'Route departure' fields.
(OIS014/F)	Route departure	... whether the field heading and contents are displayed and whether the contents can be changed.
(MWS010/F)	160 Shipment assembly point	... selecting and filtering possibilities in 'Delivery Tool. Open' (MWS410). You are not required to follow the settings in this field in the transportation workflow.

Program ID/ Panel	Field	The field indicates ...
(MWS010/G)	240 Packing reporting method	<p>... the packing reporting method. You do not have to perform packing if you will run the transportation workflow. However, if you want the delivery documents generated and printed, you must select packing alternative 1, 2, 3 or 4.</p>
		<p>Instructions about packing are in the document <a href="#">How to Perform Packing</a> on page 422.</p>
		<p>Fill in the '260 Package numbering method' and '265 Automatic execution of packaging actions' fields.</p>
(MWS010/G)	260 Package numbering method	<p>... whether automatic package numbering is used per delivery number.</p>
(MWS010/G)	265 Automatic execution of packaging actions	<p>... whether packaging actions should be executed automatically as soon as a delivery is fully packed.</p>
(MWS010/G)	330 Automatic connection to shipment	<p>... whether the test described in the field help is done to determine whether a new delivery number is automatically assigned to a shipment.</p>
(MWS010/G)	340 Point to connect delivery documents	<p>... when delivery documents are automatically connected to a delivery.</p>

<b>Program ID/ Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(CRS165/B)	Series type	... the series type. These must be selected:
	05A	SSCC sequence number (defined for each division)
	06A	Unit documents
	06B	Euro1 documents
	06C	Pro forma invoice
	07A	Delivery notes
	08A	Package number
	13W	Wave number
	31X	Waybill number
	32A	Shipment number
	41A	Consignee's reference number
(DRS016/B)	Warehouse	... the warehouse ID. Normally, the warehouse is used to distinguish different geographic locations within a company.
(DRS016/B)	Loading platform	... a code that identifies the loading platform where the shipment is loaded. The code is used for sorting and selection in 'Delivery Toolbox. Open' (MWS410).

Program ID/ Panel	Field	The field indicates ...
(MMS005/F)	Place of loading	<p>... the geographical location where a shipment is loaded from a delivering warehouse.</p>
		<p>Enter a place of loading when you enter a route. When you then create a separate shipment, this place of loading is transferred to the shipment.</p>
		<p>The place of loading for each delivering warehouse is entered in (MMS005). Places of loading are defined in (MMS008).</p>
(DRS005/B)	Route type	<p>... the route type associated with the route. The route type is used to control the setup of the route and its application throughout the transportation process. There are five types to select from. Refer to the field help for a description of the different types.</p>
(DRS005/E)	Place of loading	<p>... the place of loading. The value specified here must match the place of loading specified in 'Warehouse. Open' (MMS005).</p>
(DRS005/E)	Delivery method	<p>... the delivery method. This method is used to create a shipment if you use transportation management. If you use the *SYSH setting in 'CO Type. Update Field Selection' (OIS014), the value in this field will be shown on the F panel in 'Customer Order. Open' (OIS100). Thus, the method of delivery is not retrieved from the 'Customer master' field, but rather from the route master file. In this case, the 'Delivery method' field cannot be edited on the (OIS100/F) panel. If you use *SYSL, on the other hand, this field can be edited in the order header.</p>
(DRS005/E)	Forwarding agent	<p>... the forwarding agent. The value in this field is retrieved from 'Supplier. Open' (CRS620). Customer type 5=Forwarding agent.</p>

<b>Program ID/ Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(DRS005/E)	Transportation equipment	... the transportation equipment. The value in this field is retrieved from 'Transportation Equipment. Open' (DRS013).
(DRS005/E)	Transportation service ID	...the ID of a specific service that a forwarder supplies. This is used in the Simplified pack process. See <a href="#">How to Perform Packing</a> on page 422.
(DRS005/E)	Parameters shipment	... the shipment parameters. If you activate these parameters, these fields will become mandatory when you handle the shipment. You will then have to enter this information if it is missing when you generate the transportation documents.
(DRS005/E)	Accumulated	... the total data connected to this route that is managed by the system. The values accumulated can be found in 'Route. Connect Unloading Places' (DRS021).
(DRS005/F)	Stipulated internal lead time days/ hours/minutes	... the picking and packing times that are deducted from the departure date to calculate the planning date. Based on the scheduled time of departure, this lead time is used to calculate the latest time when the goods to be shipped must be available in stock; that is, the planning time.
(DRS006/B)	Route	... the current route.
(DRS006/B)	Departure	... one or more departures that reoccur with a defined interval (for example, once a week).
(DRS006/E)	Delivery method	... the delivery method will be used when you create the shipment. The delivery method field in this program overrides the one specified for the route on the (DRS005/E) panel.

<b>Program ID/ Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(DRS006/E)	Forwarding agent	... the forwarding agent. This field overrides the one specified on the (DRS005/E) panel.
(DRS006/E)	Transportation equipment	... the transportation equipment. This field overrides the one specified on the (DRS005/E) panel.
(DRS006/E)	Transportation service ID	..the ID of a specific service that a forwarder supplies. This is used in the Simplified pack process. See <a href="#">How to Perform Packing</a> on page 422.
(DRS006/E)	Day of deadline	... how many days before the day of departure the locking of the shipment takes place.
(DRS006/E)	Time of shipment locking	... the time of locking (hh, local time), which describes the hour of the day when a shipment using this route departure should be locked.
(DRS006/E)	Stipulated internal lead time days/ hours/minutes	... the stipulated internal lead time. The value in this field overrides the one specified on the (DRS005/F) panel.
(DRS006/E)	Load platform	... a sorting option in 'Shipment. Open' (DRS100).

<b>Program ID/ Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(DRS006/E)	Departure day	<p>... the departure day. This field is crucial because it shows on which days the departures can take place. You have seven positions, one for each day of the week. This setting will control the selection of the next possible route departure. Based on this departure date, the picking and packing time is deducted to get the planning date, and the transportation lead time is added to get the confirmed delivery date.</p> <p>Example:</p> <p>1001000 means that departures take place on Mondays and Thursdays.</p> <p>If an order is entered for delivery on Tuesday, the system will reschedule to Thursday or Monday, depending on the setting in 'Selection method' field on the E panel in 'Route Selection Table. Open' (DRS011).</p>
(DRS006/E)	Day of arrival	... the day of arrival, and is used for information purposes only.
(DRS006/E)	Time of departure	... the time of departure in hours. See 'Departure day' above.
(DRS006/E)	Time of arrival	... the time of arrival, and is used for information purposes only.
(DRS006/E)	Valid From-To	... the period during which the route departure is valid.

Program ID/ Panel	Field	The field indicates ...
(DRS021/B)	Seq	<p>...the sequence number of the place for unloading. This sequence is important for the printing of the loading list. Items that must be delivered first must be loaded last.</p>
		<p>Example:</p> <p>A route has three via destinations called City 1, City 2 and City 3. The sequence for this route is City 3, City 1, City 2. In other words, City 3 has the lowest sequence number and City 2 has the highest. This means that all deliveries to City 2 will be loaded first, while the deliveries to City 3 will be loaded last so that they can be unloaded first.</p>
(DRS021/E)	Place of unloading	<p>... the place of unloading. One or more places of unloading can be entered. If the country code of this place of unloading differs from the country code of the place of loading (MMS008), then you have defined a route that goes abroad and different delivery documents will be generated.</p>
		<p><b>Note:</b> In the definition of the place of unloading, a time zone can also be entered to cover time zone conversion.</p>
(DRS021/E)	Unloading sequence	<p>... the unloading sequence. This field is used to indicate which delivery address identity is the key to the unloading sequence for a certain route. The valid alternatives are:</p>
		<p>0 = Postal address</p>
		<p>1 = Unloading zone.</p>

Program ID/ Panel	Field	The field indicates ...
(DRS021/E)	Transport lead time days/ hours/minutes	... the transportation lead time that will be added to the departure date/time to calculate the confirmed delivery date. This information is shown on the (DRS005/F) panel. Note: A local transportation lead time can be defined on the F panel in 'Route Selection Table. Open' (DRS011).
		<b>Note:</b> Time is always expressed based on the place of loading. The system will calculate the time between the different unloading places.
(DRS021/E)	Transport distance	... the distance between the place of loading and this place of unloading. This is also summarized on the (DRS005/E) panel.
(DRS021/E)	Via address	... the Via address. When the goods do not arrive directly from your warehouse at the customer's warehouse, you can predefined these addresses in 'Via Address. Open' (CRS300). This field is used for information purposes only.
(DRS022/B)	Seq	... the unloading and loading sequence. Depending on the unloading sequence on the (DRS021/E) panel, you can specify either the postal code or the unloading zone to direct the printout of the loading list.
(DRS007/B)	Route and departure	... the current route and departure
(DRS007/B)	Valid from	... the start date for the departure's exception.
(DRS007/E)	Valid From-To	... the period for the exception, which is crucial information.
(DRS007/E)	Time of departure	... the time of departure. Use this field if you want to use the same departure date but a different time.

Program ID/ Panel	Field	The field indicates ...
(DRS007/E)	Cancelled route departure	... the cancelled route departure. The valid alternatives are: 0 = Replacement 1 = Cancellation.
(DRS007/E)	Replacing route departure	... the replacing route departure, which you should enter if necessary.
(CRS727/E)	Priority	... the order (1–10) in which a combination of object values is to be checked. 1 is the highest priority.  If the object values are not qualified according to the objects selected for priority 1, then values for objects selected for priority 2 are checked, and so on.
(CRS727/E)	Field	... the field retrieved from 'Field Group. Display Permitted Fields' (CRS109). Here the 'DRKEY- Transportation planning keys' field group is used.  These keys will determine which route and route departure will be retrieved to calculate the planning date and the confirmed delivery date, based upon the selected departure date. The route and route departure will be entered on the customer order lines in (OIS101).  The keys are checked by the system from left to right and from top to bottom. The first hit found will determine the route and route departure used.  <b>Note:</b> It is crucial to get this setup right the first time because if you change the key values here, you will lose records in 'Route Selection Table. Open' (DRS011). Use priority 5 (not the highest and not the lowest priority) as a base.

Program ID/ Panel	Field	The field indicates ...
(DRS011/B)	Start value	... the start value. Depending on the keys defined in (CRS727), you can have up to four possible 'Start value' fields per priority entered.
(DRS011/B)	Priority	... the priority. Fill in values in the 'Start value 1, 2, 3, 4' fields.
(DRS011/E)	Route	... the route, which is defined in (DRS005).
(DRS011/E)	Route departure	... the route departure. This field is not mandatory, but if you use it, then only this individual route departure will be used, even if there are more departures connected to the route in (DRS006).
(DRS011/E)	Selection method	<p>... the selection method. This field is crucial because it manages the rescheduling if there is no predefined route departure available for the requested delivery date. Read the field help for the valid alternatives.</p> <p><b>Note:</b> The field help says 'reschedule in', which means schedule earlier in time, and 'reschedule out', which means schedule later in time.</p> <p><b>Back order route pre-selection</b></p> <p>The route pre-selection for a back order will be performed as defined in 'Route Selection Table. Open' (DRS011).</p> <p>For example, if you use selection method 1='Reschedule in', then you will in most cases not retrieve any valid results from the route pre-selection date calculation.</p>
(DRS011/E)	Try lower priority	... whether it is possible to use lower priorities in the pre-selection in order to find the best route and departure.

Program ID/ Panel	Field	The field indicates ...
(DRS011/E)	Departure days	<p>... the departure days. You can fill in this field if there is no route departure defined in (DRS006). On the right side of the panel, the 'Route departure days' field displays the setup in (DRS006).</p> <p>If there are departure days defined in (DRS006), you can only leave out departures in this field. You cannot add extra departures.</p>
(DRS011/E)	Route departure days	<p>... the days of the week for which the pre-selection applies.</p> <p>The field contains seven positions. The first position is for Monday, the second for Tuesday, and so on. One alternative should be entered for each day of the week.</p> <p>Different alternatives are valid for the field depending on whether only routes are used or whether both routes and departures are used. If the selection method 0 is selected for departures, then only routes are used.</p> <p>When only routes are used, the valid alternatives are:</p> <ul style="list-style-type: none"> <li>0 = No route on this day</li> <li>1 = Route on this day</li> <li>0 = No departures on this day</li> <li>1 = Departures on this day</li> </ul> <p>Blank = Departures on this day.</p> <p>When departures are also used, the valid alternatives are:</p> <ul style="list-style-type: none"> <li>0 = No route on this day</li> <li>1 = Route on this day</li> <li>0 = No departures on this day</li> <li>1 = Departures on this day</li> </ul> <p>Blank = Departures on this day.</p>

# Delivery Stop Based on Freight Cost Control

This section describes the setup and workflow when working with delivery stop based on freight cost control.

## Freight cost control checkpoint

The purpose of the parameter 'Checkpoint for freight cost control' in (MWS010) is to set at which step in the dispatch flow the freight cost control should be activated. There are 4 alternatives:

- 0 = No control.
- 1 = Yes, control will be performed from release for allocation.
- 2 = Yes, control will be performed from release for picking.
- 3 = Yes, control will be performed at issue.

The checkpoint set is the first time in the flow when freight cost controls will be performed.

- Selecting alternative 1 will activate control at release for allocation, at release for picking and at issue.
- Selecting alternative 2 will activate control at release for picking and at issue.
- Selecting alternative 3 will activate control only at issue.

The reason for this is that the freight cost setup could have changed between the steps and this would avoid incorrect invoices to customers and incorrect payments to forwarding agents.

## Freight cost control

The purpose of the parameter 'Freight cost control' in 'Delivery Term. Open' (CRS065) is to set what to control regarding the freight cost. The alternatives are:

- 0 = No control
- 1 = Charges
- 2 = PO amount
- 3 = Charges and PO amount

The controls that will be performed is not only charge- and PO amount-specific. Controls will also be performed on any setup that is crucial to freight charge and freight PO processing.

## Delivery stop based on freight cost

- 1 If a delivery is stopped, an application message with type 261 will be triggered.  
In order to get beyond a delivery stop due to limited freight cost setup, the setup must be corrected.
- 2 Use related option '30-Trigger Delivery Stop Check' in (MWS410) to perform a freight cost control again. Related option 30 is only valid if there is a stop code on the delivery. If you use this option when no stop code exists, an error message will be displayed saying 'Option 30 is only valid for deliveries with stop code'.

Freight cost control functionality is available for both customer orders and distribution orders.

For customer orders a delivery can be stopped due to all delivery stop codes.

For distribution orders a delivery can only be stopped due to delivery stop codes B01-B06, B08, and B20-B21, because charges do not exist on DOs.

### Delivery stop based on freight cost on shipment level

- 1 When a delivery on a shipment gets stopped due to inadequate freight cost setup, it will behave as if it was not connected to a shipment.  
In order to get beyond delivery stops due to inadequate freight cost setup on a shipment, the user must correct the setup.
- 2 Use related option '30-Trigger Delivery Stop Check' in (DRS100) to perform a freight cost control again. Using the option in DRS100 will trigger freight cost stop check for all deliveries connected to a shipment.

### Freight cost control at manual allocation

If the parameter 'Checkpoint for freight cost control' on the dispatch policy is set to 1='Yes, control will be performed from release for allocation', manual allocation will perform the same controls as automatic allocation. If allocation is not permitted, an error message will be displayed when the program is opened, saying that allocation is not permitted due to inadequate freight cost setup and that no allocation can be performed.

### Limitations

- The full functionality of freight cost control exists for auto level 3 on the dispatch policy. For auto level 5, this functionality is not allowed since picking lists do not exist for this auto level and that would be a way to avoid freight cost control at release for picking. Also, for auto level 5, issue of delivery is performed when order entry is completed, which would mean that the user would never have a chance to confirm the freight cost, which must be performed to enable a control of the PO amount.
- For auto level 4 on the dispatch policy, the alternative 3-'Yes, control will be performed at issue' cannot be used for checkpoint for freight cost control. The reason for this is that issue is performed automatically when a picking list is created.
- Automatic release for allocation cannot be used in connection with the alternative 1-'Yes, control will be performed from release for allocation' for checkpoint for freight cost control.

## Delivery Stop Based on Transportation Interface

This section describes the setup and workflow when working with delivery stop based on transportation interface.

### Transportation interface control

The purpose of the parameter 'Transportation interface control' (TRIC) is to set whether transportation interface functionality should be activated or not. If activated, delivery stops and freight cost distribution stop will occur depending on the transportation interface. This field exists in 'Transportation Service. Open' (DRS025).

### Transportation service changes

If 'Transportation interface control' on the shipment's Transportation service is deactivated, the 'Transportation indicator ID' will remain if it is already set on the shipment, and the functionality will continue to be activated. At this stage, update of the 'Transportation indicator ID' is only possible when the field is manually cleared. If it is cleared, you can check if the functionality is activated on the transportation service connected to the shipment. If the 'Transportation indicator ID' is blank and the 'Transportation interface control' is deactivated, it will not be possible to update the 'Transportation indicator ID' on the shipment with a value and the functionality will not be activated.

When the 'Transportation interface control' option is activated on the Transportation service on the shipment, you are able to work with this functionality.

If changing transportation service on a shipment from one with 'Transportation interface control' activated to deactivated, the 'Transportation indicator ID' on the shipment is set blank.

If the transportation service on a shipment is changed from one that had 'Transportation interface control' deactivated to activated, the 'Transportation indicator ID' field will receive the indicator with 'Default indicator' set if such exists. In both cases, at this stage, it is possible to work with this functionality.

### Transportation interface indicator

'Transportation Interface Indicator. Open' (DRS029) is the program where transportation indicators are set up. The transportation indicator implies the state of the transportation interface which indicates the life cycle of dispatching a shipment. It is also set on a shipment to control whether connected deliveries should be stopped.

The 'Transportation indicator ID' (TRFI) is the ID of a specific transportation indicator.

Optional parameter 'Default indicator' (DFLT) specifies if a default parameter is to be created on the shipment on its creation. It is only set on the shipment if the 'Transportation interface control' is activated in (DRS025). Only one single transportation indicator can have the 'Default indicator' activated.

Parameter 'Transportation delivery stop' (TIIC) specifies the step at which deliveries, connected to a shipment are stopped. The alternatives are:

- 1 = No stop
- 2 = Yes, stop is performed from release for allocation and forward
- 3 = Yes, stop is performed from release for picking and forward
- 4 = Yes, stop is performed from issue and forward
- 5 = Yes, stop is performed at freight cost distribution.

The transportation delivery stop, set on a transportation indicator, is the first time in the flow that transportation interface control is performed.

- Alternative 1 does not stop deliveries connected to a shipment at any step.
- Alternative 2 stops the deliveries at release for allocation, at release for pick and at issue, and stop freight cost distribution.
- Alternative 3 stops the deliveries at release for pick and at issue, and stop freight cost distribution.
- Alternative 4 stops the deliveries at issue, and stops freight cost distribution.
- Alternative 5 prevents you from performing freight cost distribution.

A stop at release for allocation, release for pick and at issue generates a delivery stop code E01 on all deliveries connected to the shipment. Delivery stop code E01 is not generated after a stop at distribution.

### Follow these steps

#### 1 Delivery stop based on transportation interface

If transportation interface control is activated and dependent on the field 'Transportation indicator ID' on the shipment (DRS110), deliveries connected to this shipment can be stopped.

- In order to get beyond delivery stop on a shipment due to the transportation interface, you must change the 'Transportation indicator' on the shipment to one that does not suggest a stop at the next stop step. Related option '30-Trigger delivery stop' can then be used to check if the deliveries should be stopped based on transportation indicator on the shipment.

This field is editable directly on the panel. It is also possible to update this field from an MI transaction.

- A default 'Transportation indicator' is set in (DRS110) if 'Transportation interface control' is activated in (DRS025) and a transportation indicator exists in (DRS029) with the 'Default indicator' check box activated. If functionality is activated in (DRS025) but no transportation indicator with 'Default indicator' is activated, the field in (DRS110) initially is blank. It also is blank if 'Transportation interface control' is not activated.

#### 2 Transportation delivery stop

The value of the field 'Transportation delivery stop' on a delivery is used to check if it should be stopped at a specific step.

The value of this field is synchronized with the delivery file from the transportation indicator set on the shipment. Every time the transportation indicator is updated, the synchronization of this field is performed.

- In order to get beyond a delivery stop that leads to a delivery stop code 'E01-Transportation interface', the 'Transportation indicator' must be changed on the shipment to allow you to proceed further followed by related option '30-Trigger Delivery Stop Check' in (MWS410).
- In order to get passed a delivery stop that leads to a delivery stop code 'E02-Delivery disconnected from shipment', use related option '30-Trigger Delivery Stop Check'.

#### 3 Transportation interface control at manual allocation

If the parameter 'Transportation delivery stop' on the delivery is set to 2-'Yes, from release for allocation', an error message is displayed both in (MMS120) when you try to perform allocation and in (MMS121) when you open it, saying 'Allocation not permitted due to transportation interface'.

#### 4 Transportation interface control at freight cost distribution

Freight cost distribution, both manual and automatic, is prohibited when the transportation indicator on the shipment has an active transportation delivery stop.

- A stop at manual distribution displays an error message in (DRS500) saying 'Distribution not permitted due to transportation interface'.
- When automatic distribution is activated, distribution is not performed, but no error message is displayed.

### Functional Limitations

The full functionality of transportation interface exists for auto level 3 on the dispatch policy. For auto level 5, the majority of this functionality is not available as the picking list does not exist for this auto level and, if used, would be possible to avoid transportation interface control at release for pick. In addition, issue of

delivery is performed when order entry is completed, which would mean that the stops cannot be performed at release for allocation, release for pick and issue. However, for auto level 5 stops can occur at freight cost distribution.

For auto level 4 on the dispatch policy, transportation delivery stop at issue is not possible because issue is performed automatically when picking list is created.

It is recommended not to use automatic release for allocation together with transportation delivery stop '2-from release for allocation.'

## Freight Accessorials

### Abstract

The functionality enables you to add additional data to a shipment, delivery or delivery line that is relevant to that shipment or delivery. An example is information about the transportation equipment needed to transport the goods, like a cold truck for keeping the goods at a certain temperature, or additional services like truck cleaning.

In the solution, you can set up a list of available accessorials or a predefined set of accessorials in an object-controlled selection table that will be retrieved automatically when the shipment, delivery or delivery line is created.

After you add the accessorials to the shipment, delivery or delivery line, you can manually change or delete them. You can also manually add accessorials.

The accessorials can be read, added, changed and deleted from systems external to M3 using APIs.

### Background

The requirement is the capability to add accessorials for each shipment, delivery and delivery line. The accessorials must be retrievable from a system external to M3.

### Limitations

The quantity of an accessorial does not depend on data from the shipment, delivery or the delivery line. For example, the quantity of an accessorial does not depend on the quantity of a delivery line or the total weight of the goods for a delivery.

A maximum of 24 accessorials can be automatically connected to each level (each shipment, delivery or delivery line).

The accessorials are connected only when the shipment, delivery or delivery line is created. If any change is made to the shipment, delivery or delivery line, the system does not retrieve the accessorials again.

A freight accessorial is bound to one level. It cannot be used on any of the other levels.

## Setup

- 1 Enable the 'Accessorial pre-selection' setting in 'Settings - TPL Standard Values' (CRS728). This will permit the system to retrieve accessorial from the accessorial selection table when shipments, deliveries and delivery lines are created. This setting must be selected in order for accessorial to be retrieved on any level.
- 2 Enable setting '490 Accessorial preselection' in 'Dispatch Policy. Open' (MWS010). This setting controls whether accessorial are retrieved for each delivery and delivery line.
- 3 Enter the accessorial in the accessorial table in 'Freight Accessorial. Open' (DRS024).
- 4 Define control objects for each priority in CMS017 for program 'Freight Accessorial Selection Table' (MWS280).

## Accessorial Master Table

All freight accessorial used in the system must be set up in the freight accessorial master table. This is managed in program 'Freight Accessorial. Open' (DRS024). A freight accessorial has the characteristics listed in the following table.

Field	Description
Accessorial ID	The identification of the freight accessorial.
Description	A description of the freight accessorial.
Name	The name of the freight accessorial.
Accessorial level	<p>The accessorial level controls how a freight accessorial can be used when connecting accessorial to shipments, deliveries and delivery lines.</p> <p>Only accessorial with accessorial level 1 can be connected to shipments. Only accessorial with accessorial level 2 can be connected to deliveries. Only those with level 3 can be connected to delivery lines.</p>
Accessorial group	Used to group accessorial together. The accessorial with the same value in this field belong to the same group.
Accessorial unit of measure	A unit of measure can be defined for the accessorial to indicate how the accessorial's quantity is measured. The unit of measure used must be a valid unit of measure as defined in 'Unit of Measure. Open' (CRS050).

## Accessorial Selection Table

You define which accessorial are found and when the system searches for accessorial to connect to a delivery line, delivery or shipment in 'Freight Accessorial Selection Table. Open' (MWS280).

In this program, you can define up to 24 accessorial for each record. You define each such record for each accessorial level and you can define up to five control objects. For each accessorial you can define a quantity.

Ten priority levels can be used, and a different combination of control objects can be defined for each priority.

## Retrieving Freight Accessorials

When a delivery line is created, the system automatically searches for accessorials with accessorial level 3 (Delivery line level) in the freight accessorials selection table. If a record in the selection table is found, the accessorials for that record are connected to the delivery line. If no record is found, then no accessorials will be connected.

Similarly, the system searches for accessorials with accessorial level 2 when a delivery is created and for accessorials with accessorial level 1 when a shipment is created.

After the accessorials are connected, they can be viewed in 'Delivery Accessorials. Open' (MWS417).

In order for the accessorials to be connected automatically, the correct setup must have been done. See the Setup section for more information.

## Managing Connected Accessorials

You can manage the accessorials that are connected to shipments, deliveries and delivery lines in 'Delivery Accessorials. Open' (MWS417).

This program can be accessed from 'Shipment. Open Toolbox' (DRS100), 'Delivery. Open Toolbox' (MWS410) and 'Delivery. Open Line Toolbox' (MWS411) using option 57=Freight Accessorial.

Here, you can connect additional freight accessorials manually. You can also change the quantity of the accessorials or delete them.

You are only allowed to add a freight accessorial to the level for which is intended. Hence, it is only possible to add a freight accessorial with accessorial level 3 (Delivery line level) to a delivery line.

When a shipment, delivery or delivery line is deleted, the accessorials connected to it are also deleted.

When a delivery line is moved from a delivery to a new delivery, accessorials for the new delivery are automatically retrieved and connected to the new delivery. The accessorials on the delivery line remain as they were before the move to the new delivery. Any changes to the accessorials that were connected (if some were deleted, added or changed) are retained when moved. This is also true when a delivery line is moved to an existing delivery.

When a delivery is closed and there are delivery lines moved to a new delivery, the accessorials for the closed delivery, on the delivery level, are moved as they were from the closed delivery to the new delivery. The accessorials connected to the moved delivery lines are moved as described in the previous paragraph.

When a shipment is closed and there are deliveries connected to it that are not issued, the non-issued deliveries are moved to a new shipment. The accessorials for the new shipment are created as they were for the closed shipment. The accessorials for the deliveries that were moved from the closed shipment to the new shipment remain the same, as do the accessorials connected to the delivery lines for those deliveries.

# Freight Charge

This document describes the functionality for generating and maintaining freight charges.

### **Settings on the freight agreement header and on freight cost element (PPS100/PPS105)**

- The 'Included in freight charge to consignee' check box sets whether the freight cost amount should be included in the freight charge amount. If this setting is enabled on the freight agreement header (PPS100), all the elements in the model will have the same setup. If it is enabled on freight cost element level (PPS105), it will only apply to that specific freight cost element.
- The 'Freight charge ID' sets which customer order charge will be used when freight charges are updated on customer orders for included deliveries. In order for freight charge update to occur, the same freight charge ID needs to exist on the customer order and delivery.

### **Settings for freight charge on transportation service**

In (DRS025), the 'Freight charge method' check box sets whether freight charges are automatically updated when the freight cost is distributed.

### **Settings on the customer order charge**

- In the freight cost flow, the 'Preliminary charge' field in CO charge related programs such as (OIS030), (OIS013) (OIS103) and (OIS003) can be used in order to require approval before invoicing. Activating this check box means that the status of the CO delivery (OIS150) is set to '61- Delivery approval is required'. The charge must then be manually updated through (OIS150) or 'Freight Cost. Open Toolbox' (DRS500) in order for the charge to be approved on the CO delivery and reach status 60='Ready to invoice'.
- The 'From external system' parameter in (OIS030), (OIS013) (OIS103) and (OIS003) sets whether the charge should be retrieved from an external system. Set the field '0 - No' if you want to work with the charge amount set directly on the charge or if you want to update the charge from (DRS500).
- If freight shopping is applied, define TEI Setup for the events Manual CO Charge or Manual CO. Manual CO Charge should be used if it is planned to initiate the TEI trigger from OIS103, and Manual CO should be used if you initiate it from OIS300.

For settings and prerequisites, refer to these documents in the See also section:

- Basic Settings for Freight Cost and Freight Cost Calculation
- Manage Freight Cost Calculation
- Settings for Freight Cost Distribution
- Manage Freight Cost Distribution

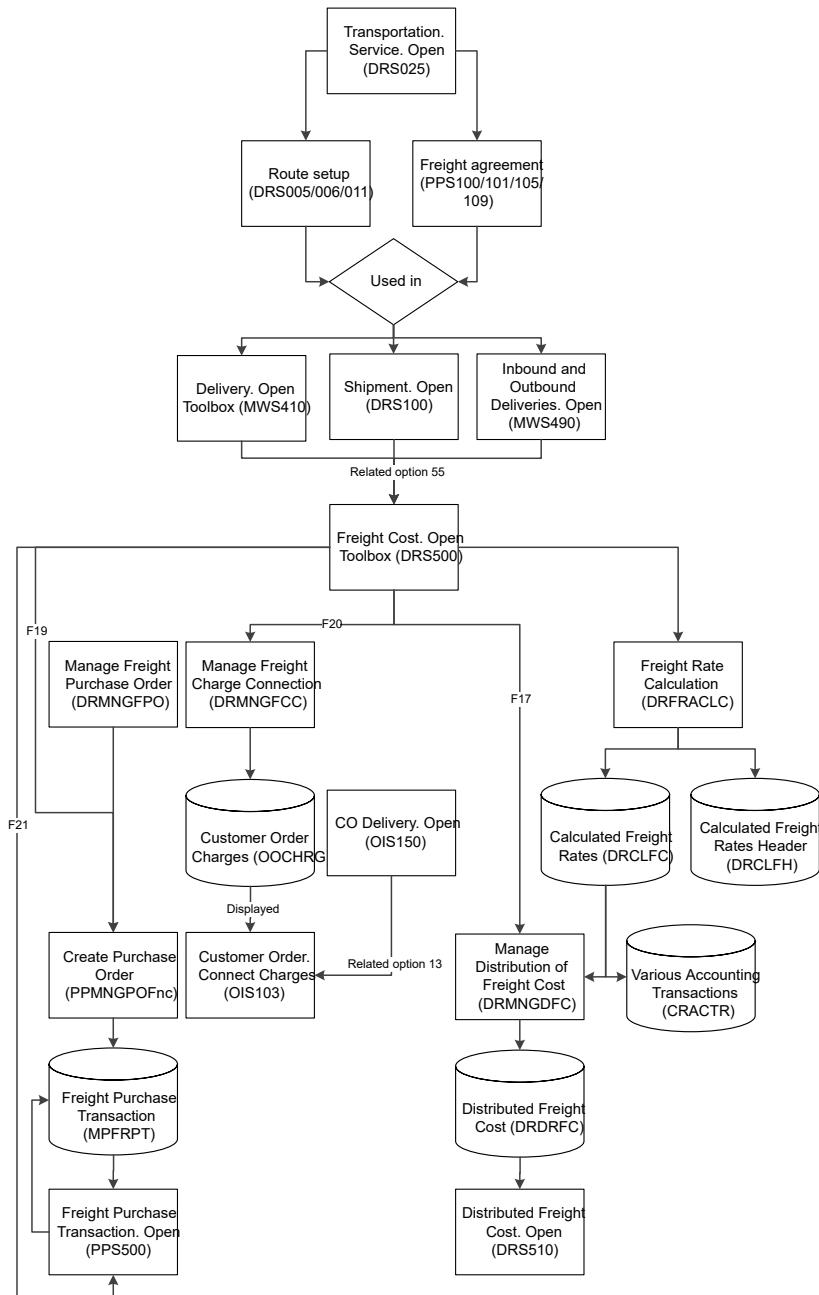
### **Manage freight charges**

- The freight charge from (DRS500) is updated by the use of function key F20='Update Freight Charge' after the freight cost is distributed. If a preliminary charge is connected to the order, the customer order delivery in (OIS150) will receive status 61, which is changed to 60 once the charge is confirmed and set to definite. Then, the charge may be invoiced.
- The process for freight shopping on customer order level is initiated from the order charge program (OIS103) when a customer order is created. If a charge is defined as 'From External system', it is possible to select related option 53='Trigger TEI' from 'Customer Order. Connect Charges' (OIS103) in order to send a trigger to an integration tool to initiate a contact with a freight shopping system. The trigger contains information about the order number, the charge ID, and all included deliveries. The answer from the Freight Shopping system will update the order charge via APIs (OIS100MI UpdConnCOCharge). This trigger is interactive, and if no answer is retrieved within 20 seconds, the user will be informed that something failed during the process. You can also send a general trigger from the 'Customer Order. Open

'Toolbox' (OIS300). This trigger will only contain order number and all deliveries connected to the order. In this case, the Freight Shopping is done in batch, and no message will be given to the user if it fails.

## Freight Cost Management

This document is an overview of freight cost related functionality. The related links in this document include more detailed description of the freight cost workflow, which is illustrated in the following diagram.



# Freight Detention

## Abstract

This functionality enables you to measure how much time a forwarding agent spends at the place of loading. By keeping track of this time, you can base an element cost in the freight cost model on the time spent at the place of loading. In the system, you can set a time that will be deducted from the time on which such a cost is based. This time is called the detention free-time. The remaining time is called the detention time, and it is this time that can be used as the basis for a cost element in the freight cost model, a cost for detention.

You can mark the detention time with a detention reason code, which explains the type of detention and its cause.

## Limitations

The times used to calculate detention time and the detention reason code can only be set manually. The system never sets these automatically.

## Detention time calculation

Detention time can be calculated for each delivery and for each shipment. In the calculation the actual departure time, the detention free-time and one of either forwarder's planned arrival time or forwarder's actual arrival time are used.

The forwarder's planned arrival time is automatically calculated by the system based on the planned departure time. To calculate the forwarder's planned arrival time, the forwarder's arrival lead time is deducted from the planned departure time.

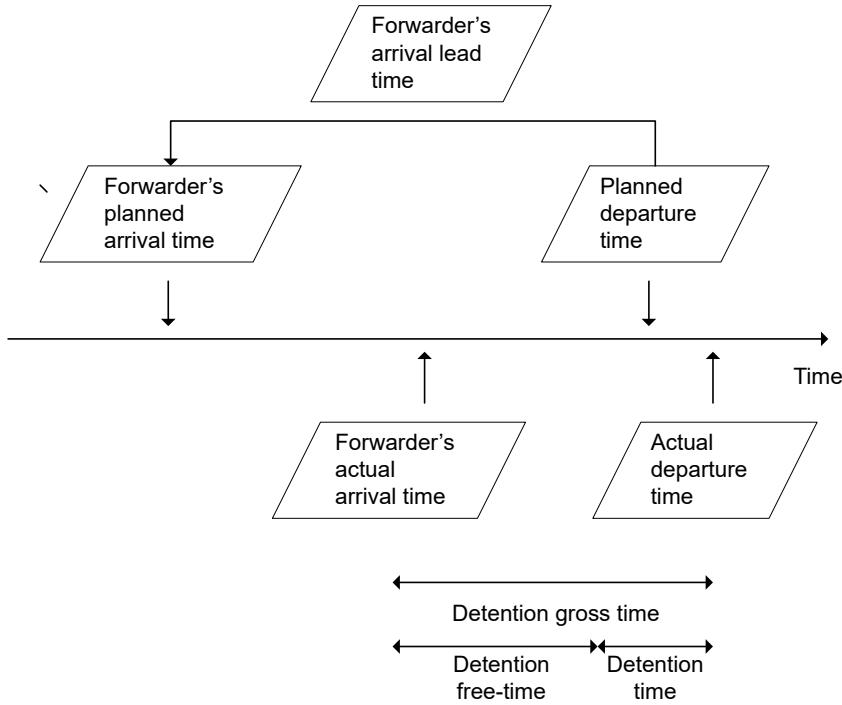
The forwarder's actual arrival time and the actual departure time are never set automatically by the system. They must be set manually by a user or an external system. The detention free-time is a period during which no detention costs are incurred.

The detention time is the period during which detention costs are incurred. The detention time is the time difference between the greater of forwarder's planned arrival time and forwarder's actual arrival time plus the detention free-time and the actual departure time.

Detention free-time starts at the forwarder's planned arrival time if that time is later than the forwarder's actual arrival time because it is understood that the work required to load the shipment is not planned to start until the planned arrival time. If the forwarder arrives early, detention free-time should not be consumed until the planned time occurs.

If the forwarder arrives late and the actual arrival time is later than the planned arrival time, then loading cannot start before the forwarding agent actually arrives at the place of loading. In that case, the detention free-time starts at the actual arrival time.

## Flowchart



## Detention time uses

The detention time can be used in the freight cost calculation to assign a cost for detention as part of the total freight cost.

The detention time can be used in two ways.

- Detention time is used as a base in a freight cost operator. Operator 19 uses detention hours as the base for freight cost elements with that operator. This means that the element amount for such an element is calculated as the detention time in hours multiplied by the freight rate (PPS109/E). A detention time of 1 hour and 15 minutes is transformed to 1.25 hours before it is multiplied by the freight rate.
- Detention time is used as a scale unit type. Scale unit type 5 uses detention hours. Hence it is possible to scale with detention time. In the scale (PPS109), the scale steps are entered in hours with two decimals. This means that a step in the scale that starts at 1 hour and 30 minutes of detention must be entered and 1.50 hours in the scale.

You can use these two methods for the same freight cost element. This means that it is possible to define different rates for each detention hour for different detention times.

Example: Rate scale for a freight cost element using freight cost operator 19 (rate per detention hours) and freight scale unit type 5 (detention hours).

<b>From value (detention hours)</b>	<b>Freight rate (cost per det. hour)</b>	<b>Detention hours (from delivery or ship- ment)</b>	<b>Cost</b>
0.00	10	15 min = 0.25 hours	10 * 0.25 = 2.50
0.50	15	45 min = 0.75 hours	15 * 0.75 = 11.25
1.00	20	2 hr, 18 min = 2.30 hours	20 * 2.30 = 46
10.00	25	2 days = 48 hours	25 * 48 = 1200

**Note:** The cost is calculated as the total time multiplied by the cost per detention time. The system does not calculate each step in the scale and then summarize the cost for each step. In the example where detention time is 45 minutes, the system applies the rate for that time for the entire time and not just for the time above 0.5 hours (the calculation is not  $0.50 * 10 + 0.25 * 15 = 8.75$ ).

#### Define detention reason code

Each detention should have a reason code. The reason code is set manually for each delivery on the delivery header (MWS410/J) and on each shipment (DRS110/E).

The detention reason code must be defined in the detention reason code table, managed in (DRS026).

#### Define detention free-time

Usually detention is not calculated right from the time the forwarding agent arrives at the place of loading but only after some time detention starts. The time between the forwarding agent's arrival at the place of loading and detention time start is called the detention free-time.

The detention free-time is defined for each transportation service ID on the freight agreement (PPS101/E). It is entered in number of days, hours and minutes.

#### Define forwarder's arrival lead time

The system calculates a planned arrival time for the forwarding agent for the delivery and for the shipment. This is done by subtracting the forwarder's arrival lead time from the planned departure time. The calculated time is the time when the forwarding agent is planned to arrive at the place of loading of the delivery or shipment.

The forwarder's arrival lead time is defined on the route departure (DRS006/E). This means that the system can only calculate the forwarder's planned arrival time when routes with route departures are used.

## Freight Purchase Orders

This document describes the functionality for generating and maintaining freight purchase orders used for freight shopping. The order is initiated from the freight costing model for a shipment/delivery, using a purchase

order type with order category 90 ('Freight') and a non-inventory item purchased as a service from a forwarding agent. The purchase order type is set in 'Transportation Service. Open' (DRS025).

Freight purchase orders are valid for both outbound and inbound deliveries and are strictly limited to the freight costing workflow.

This functionality also allows invoicing by an external forwarding agent for the entire or part of the freight cost.

## Limitations

You cannot enter purchase orders manually using an order type with order category 90 ('Freight').

### Before you start

Refer to these documents:

- See [Basic Settings for Freight Cost and Freight Cost Calculation](#) on page 615
- See [Manage Freight Cost Calculation](#) on page 652
- See [Settings for Freight Cost Distribution](#) on page 655
- See [Manage Freight Cost Distribution](#) on page 653

### Settings for freight purchase orders

- The 'Included in freight cost on PO trans' check box sets whether the freight cost amount is included when freight purchase transactions are generated. If this setting is enabled for the freight agreement header in (PPS100), all the elements in the model will have the same setup. If it is enabled for freight cost element level in (PPS105), it will only apply to that specific freight cost element.
- The 'Included in PO to third-party forwarder' check box sets whether the sum of the specific freight cost element should generate freight purchase transactions against the third-party forwarder (instead of against the main forwarding agent). In this case, the cost of this element will not be included in the freight purchase transaction against the main forwarding agent.
- The 'Third party forwarder' on (PPS105) sets which forwarding agent is used if a purchase-generating cost is paid to a forwarding agent other than the main forwarding agent from the freight agreement. When a freight purchase transaction is generated for the main forwarding agent, a freight purchase transaction will also be generated for a third-party forwarding agent using the same settings as for the main forwarding agent.

**Note:** There can only be one third-party forwarder in a freight cost element of a freight costing model.

- In (DRS025), the following settings are available:
  - On transportation service, an item number need to be selected. This item number is the objectification of the freight service and it needs to be a non-stock item.
  - On 'Purchase transaction level', you need to set the next manual function that must be performed for the freight purchase transaction when it is created.
  - On the 'Auto create freight at PO distribution', selecting the check box sets whether the creation of freight purchase transactions is done automatically when the freight cost is distributed, or not.
  - The 'Freight PO type' is used at creation of freight purchase transactions. The selected purchase order type must be connected to purchase order category 90 (Freight).

### Settings for freight purchase order on the purchase order batch origin

In order to get purchase order created from the freight purchase transaction, a batch origin must be set in the field 'Batch origin - freight' in 'Settings – Purchasing' (CRS780). The batch origin is created in 'Purchase Order Batch Origin. Open' (PPS090).

- The parameter '20 – level of automation – PO batch' sets whether the purchase orders created via the batch entry (PPS370) will stop in status 20 and wait for manual processing of the records, or if the purchase orders will be processed automatically to status 90 (unless errors are detected).
- Exceptions for the batch origin can be set per batch origin and supplier in 'PO Batch Origin. Connect Exceptions' (PPS091). It is reached via related option '11 - Exceptions'.

### Settings for freight purchase order on the freight PO type

In 'Purchase Order Type. Open' (PPS095), there are a few fields that can be set depending on how automatic freight purchase flow is desired.

- The parameter '360 – PO status – auto confirmation' determines the stage at which a purchase order should be assigned a confirmed status. On this parameter, the alternative '2 – Yes. Confirmed status assigned automatically after PO is released' is specific for freight purchase orders.
- The parameter '660 – Auto goods receipt' allows to perform automatic goods receipt. Purchase order status will be changed to '75-Put-away complete'.

### Manage freight purchase orders

The freight purchase order can be initiated manually in (DRS500) or automatically created.

- To create the freight purchase automatically, the 'Auto create freight at PO distribution' check box must be selected in (DRS025).
  - To initiate the freight purchase manually, use function key F19='Create Freight PO' in the freight cost toolbox (DRS500). This is only possible when the freight cost header status is 50 ('Distributed').
- Note:** To create a purchase transaction, the field 'Purchase transaction level' in (DRS025) must not be set to alternative 0. In this case, creation of freight purchase transactions is permitted.

To display the freight purchase transaction, use function key F21='Created Freight PO' in (DRS500). This opens (PPS500).

(PPS500) displays the record for the created freight purchase transaction, which shows status 10 ('Record created') if no automatic creation has occurred. For automatic creation of the purchase order, the 'Purchase transaction level' field in (DRS025) must be set to 1 (Freight purchase transactions are automatically released from (PPS500) to create PO via PO batch entry.)

To create the purchase order manually in (PPS500), the 'Purchase transaction level' field in (DRS025) must be set to 2 (Release freight purchase transactions manually from (PPS500)). Then either function key F14='Update PO' or related option 9='Update' is used in (PPS500). The freight purchase record status is then set to 90 ('Purchase order created').

To create a purchase order batch, open 'Purchase Order Batch. Open' (PPS370). In (PPS370), a PO batch order has been created and is in status '20 – Order entry completed'; if not, the purchase order is automatically processed. Use related option '30 - Process' and the status is set to '90 – Transferred, no errors'. After this, the freight purchase order will exist as a purchase order in (PPS200). If the prerequisites in 'Purchase Order

Type. Open' (PPS095) are set for a manual flow, the statuses are '15/15 – Ready for printout'. You can now handle the freight purchase order as a usual purchase order.

## Internal Accounting for Freight Cost

This document describes internal accounting for freight cost. Internal accounting for freight cost can only be performed when the freight cost has been distributed.

### Before you start

Refer to these documents:

See [Basic Settings for Freight Cost and Freight Cost Calculation](#) on page 615

See [Settings for Freight Cost Distribution](#) on page 655

See [Manage Freight Cost Calculation](#) on page 652

See [Manage Freight Cost Distribution](#) on page 653

### Settings for internal accounting for freight cost

- Settings on the freight agreement header (PPS100)  
The **Distribution accounting method** sets whether the distributed freight cost creates an internal account entry in (CAS950) or not. You cannot change the distribution accounting method after you created the freight cost elements. If you want any costing element in the freight costing model to be accounted, you must specify a value in this field.
- Settings on the freight agreement header and on freight cost element (PPS100/PPS105)  
The **Included in internal freight cost** check box sets whether the freight cost amount is included when internal account entries are generated.  
The **Included in freight cost on PO trans** check box sets whether the freight cost amount is included when freight purchase order transactions are generated. If these settings are enabled on the freight agreement header (PPS100), all the elements in the model have the same setup. If it is enabled on the freight cost element level (PPS105), it only applies to that specific freight cost element. A freight agreement or a freight cost element cannot have both these parameters selected as this controls whether the freight cost is internal or external.

### Manage internal accounting for freight cost

All distributed freight cost transactions are generated on accounting event DR10 and accounted on accounting type 940 (Freight cost), 941 (Offset account internal freight cost), and 942 (Accumulated freight purchase order cost).

Accounting event PP10 and accounting type 225 (Received not invoiced) and 942 (Accumulated freight purchase order cost) are created when the freight PO is received.

If there is a rounding difference between calculated total amount and distributed total amount, it is accounted on accounting type 280 (Rounding off).

**Note:** The status of the calculated freight rate header must have status 50 (Distributed) to be included when CAS953 will create the internal account entries.

To avoid any discrepancy between what is calculated, distributed and accrued, the status of the calculated freight rate header is set to 80 (Internal accounting started) when in (CAS953), an update to an internal account entry is for a specific transaction number is approved. When the internal account entry is finished, the status is set to 90 (Accounted)

To trigger the internal account entry in (CAS950), activate 'Other transaction' parameter, and then click **Next**. After that, the distributed freight cost transactions can then be displayed in (CAS300).

## Manage Freight Cost Calculation

This document describes how to manage freight cost calculation.

### Before you start

Refer to these documents:

See [Basic Settings for Freight Cost and Freight Cost Calculation](#) on page 615

See [Freight Cost Management](#) on page 644

### Freight cost calculation

The freight cost can be calculated upon request any time before the issue of a delivery or shipment. When the delivery or shipment is issued, the freight cost is automatically recalculated. The freight cost can then be calculated again whenever requested before the freight cost is distributed. If the calculation is performed from an API, it can be performed before the freight cost is posted to the accounts. The calculation is based on the freight agreement from 'Purchase Agreement. Open' (PPS100), the freight cost elements used on the freight agreement lines in 'Purchase Agreement. Connect Freight Cost Element' (PPS105) and the freight rates from 'PO Agreement. Connect Scaled Freight Rates' (PPS109).

### Automatic calculation of freight cost

The freight cost will be automatically calculated as soon as the delivery is dispatched and its status is 60 ('Not received') or higher in 'Delivery. Open Toolbox' (MWS410). The same is true for a shipment when the shipment status is 60/60 ('The shipment is reported') in 'Shipment. Open Toolbox' (DRS100). The calculated freight cost will also be saved at this point.

The calculated freight cost is displayed in 'Freight Cost. Open Toolbox' (DRS500). In (MWS410) and (DRS100), open (DRS500) using the related option 55='Freight cost toolbox'.

### Manual calculation of freight cost

The freight cost in (DRS500) can be manually updated for all delivery statuses and shipment statuses as long as the freight cost is not yet distributed.

The 'Manual update – freight rate' field in (PPS105) must be selected for a change of the values in (DRS500) that M3 calculates to be enabled. For each line with a freight cost element where manual update is permitted, the 'Freight element amount' field can be changed on the B and E panels in (DRS500).

The 'Manually locked' field indicates whether the specific line will be calculated or recalculated, and not the other lines. To lock and unlock all lines, use function key F14='Lock/unlock all'. To lock the selected line, type the value '1' in the 'Manually locked' field and press Enter. To unlock the selected line, type the value '0' in the same field and press Enter. You can also lock and unlock a line by activating and deactivating the 'Manually locked' check box on the E-panel. Value '1' means that no recalculation will be performed on the freight cost element line.

Function key F16='Recalculate values' retrieves the valid values for each operand and performs the calculation. The calculated amounts are displayed on the B panel. Note that using this action does not mean that the calculated value is saved. Function key F15='Confirm rates' saves the calculated freight cost.

### Markup and markdown in freight cost

In freight cost calculation, one can either calculate the freight cost based on elements adding to or deducting from the freight cost. If an element should add a positive value to the freight cost, select the Markup check box in 'Costing Element. Open' (PPS280). This costing element can then be connected to a purchase agreement in (PPS105). If you do not select the check box, the value is instead considered a markdown and is deducted from the total freight cost.

## Manage Freight Cost Distribution

### Before you start

Refer to these documents:

See [Freight Cost Management](#) on page 644

See [Basic Settings for Freight Cost and Freight Cost Calculation](#) on page 615

See [Manage Freight Cost Calculation](#) on page 652

See [Settings for Freight Cost Distribution](#) on page 655

### Follow these steps

When a shipment or delivery is reported as issued, the calculated freight cost can be distributed automatically if the setting 'Auto distribution at issue' in (PPS100) is enabled. If it is not enabled, the freight cost must be distributed manually. This is performed in (DRS500) using function key F17=Distribute.

When the freight cost is distributed, the status of the freight header becomes 50 ('Distributed').

When the freight cost is distributed, and if the freight costing model is connected to a shipment, the shipment is automatically marked as closed at this point. This is to avoid more deliveries getting automatically connected to the shipment after the cost is distributed.

**Note:** "Closed" in this case does not mean that the shipment status is 90/90. The shipment is blocked for new deliveries.

If the freight costing model is connected to a delivery, the freight cost elements are automatically calculated when the delivery is reported as issued. After this, it can be distributed either automatically or manually.

Depending on the setup in (PPS100), the freight cost can be distributed at two levels:

- It can be distributed on the delivery line level, where the freight cost is distributed to all delivery lines included using the selected distribution method, or
- It can be distributed on the delivery line and freight cost element level, where the freight cost per element is distributed to all included delivery lines using the selected distribution method.

For an overview of freight cost distribution, use function key F18='Distributed freight cost' in (DRS500). This opens 'Distributed Freight Cost. Open' (DRS510). If you open (DRS510) from the freight cost of a shipment, the 'Rate aggregation level' field will be initiated with 1 ('Shipment'). For delivery, the same field will be 2 ('Delivery'). The distribution will be shown on the delivery line level according to the distribution setup in (PPS100).

## Route

A route is defined by the place of load and one or more place(s) of unload. The place(s) of unload can be located in a geographical area or region, such as south-east Germany.

Routes are used to:

- Coordinate transportation to several consignees along a road or within a specified area.
- Distinguish deliveries needing special handling, such as special deliveries to be made with a company vehicle. If that is the case, the route can vary each time depending on the destination.

Routes are defined in 'Route. Open' (DRS005).

## Route Planning

Routes are used to plan transport in advance and to organize different transport requirements into common route departures. Place(s) of load and place(s) of unload are also specified to provide lower costs for a company. If the route is a circular route, several places of unload can be specified, as well as the order in which stops are made.

### Route Departures

When fixed shipping days are required, the appropriate days of the week can be specified, indicating when a shipment should be made for a particular route. The frequency of the route departure can also be specified, such as weekly departure, every other week, etc.

If a shipping agreement containing fixed delivery days has been made with a forwarding agent, the validity period of the agreement can be specified. Transfer to a new agreement is performed automatically.

### **Route Departure Exceptions**

For public holidays and other days when shipments are not to be made, the route departure can be either deleted or replaced by another one.

### **Unloading Order**

The unloading order at a location can be determined on an individual basis by specifying unloading zones or ZIP codes in the correct order.

## **Routing**

Routing is the part of a product structure listing the operations involved in manufacturing a product. Information regarding each operation in routing includes the work center performing the operation, setup and run times, tools required, etc.

### **Description**

Operations contained in routing are used for different calculations, of which the two most common are:

- 1** Load for planned orders in capacity requirements calculations and manufacturing orders in production activity control.
- 2** Product costing, including direct labor, subcontract costs, fixed and variable machine costs. These are based on setup and run times only, or on setup and run times plus number of persons or machines.

## **Settings for Freight Cost Distribution**

This document describes the settings for freight cost distribution.

### **Before you start**

Refer to these documents:

See [Basic Settings for Freight Cost and Freight Cost Calculation](#) on page 615

See [Freight Cost Management](#) on page 644

### Settings on the freight agreement header (PPS100)

- The 'Distribution level' sets at which transaction level the freight cost should be distributed. The freight cost can be distributed at delivery line level or delivery line and freight cost element level. The transaction level cannot be changed after the freight cost elements are created.
- The 'Freight distribution unit type' sets which unit that should be used in the distribution of the calculated freight cost. For distribution level 1 the distribution unit type is retrieved from the freight agreement header. For distribution level 2 the distribution unit type is retrieved from each freight cost element. The freight distribution unit type cannot be changed after the cost elements are created.
- The 'Auto distribution at issue' sets whether the calculated freight cost values of the shipment or delivery should be automatically distributed or not.
- If the freight rate aggregation level is 1 (shipment), then this field determines whether the distribution will be automatically triggered after the final calculation of freight cost when the shipment is reported as issued.
- If the freight agreement level is 2 (delivery), then this field determines whether the distribution will be automatically triggered after the final calculation of freight cost when the delivery is reported as issued.
- If the transaction is an inbound delivery, derived from a PO, then this parameter determines whether a distribution will be automatically triggered after the final calculation of freight costs has been performed when goods receipt is reported.

### Settings on the freight cost element (PPS105)

The 'Freight distribution unit type' indicates the unit that should be used in the distribution of calculated freight cost. For distribution level 1 the distribution unit type is retrieved from the freight agreement header. For distribution level 2 the distribution unit type is retrieved from each freight cost element. You cannot change the unit after the freight cost elements are created.

**Note:** Freight distribution unit Origin is only applicable when delivery line operators are used or if fixed amount operator and scale unit type '3-transaction quantity' is used.

## Settings for Transportation Management

This document explains how you define the settings for the transportation management workflow.

### Outcome

Settings for transportation management are defined for the following areas:

- Customer order type and dispatch policy
- Number series
- Loading platform
- Routes, route departures, unloading places and exceptions
- Route selections
- Document handling.

The settings can be used:

- To control a physical shipment throughout the dispatch flow
- For customer orders, requisition orders, distribution orders and service orders

The following tables are updated:

- Shipments are stored in the DCONSI table.
- Routes are stored in the DROUTE table.
- Route dispatches are stored in the DROUDI table.
- Connections between shipments/deliveries and documents are stored in the DDOCUX table.

### **Before you start**

The basic parameters for orders and order types are set.

### **Follow These Steps**

#### **1 Settings in Customer Order Type and Dispatch Policy**

The 'Dispatch policy' field must be filled in with a dispatch policy that contains the appropriate transportation management settings.

#### **2 Number Series Settings**

**Note:** Make sure that you set up these number series in the central (blank) division and that you provide enough 'room' for your future shipment numbers, etc. between the start number and the final number

#### **3 Loading Platform Settings**

A loading platform is the place where the shipment is loaded. The code is used for sorting and selection in 'Delivery Toolbox. Open' (MWS410). You can also define rules for automatic connection between delivery and loading platform in 'Available Object Control Parameters. Open' (CMS016) and 'Loading Platform. Define Outbound' (MWS140).

#### **4 Route, Route Departures, Unloading Places and Exceptions Settings**

A route always has a place of loading and may have one or more places of unloading. Routes do not have to have unloading places. In that case, the route is called an open route.

The route's place of loading must match the place specified in 'Warehouse. Open' (MMS005). The route and route departure are retrieved by the system (connected to a CO line) via the settings on the F panel in 'CO Type. Update Field Selection' (OIS014) and on the E panel in 'Route Selection Table. Open' (DRS011).

Depending on your system calendar (CRS900) and the reception days at the customer (the customer's calendar), you can define route departure exceptions. There are two alternatives:

- Cancel the departure
- Reschedule the departure to another time or select another route departure instead.

#### **5 Route Selections Settings**

The route selection setups determine rules for how the system should select routes when a customer order line is created (that is, a delivery is created).

#### **6 Document Handling Settings**

Delivery documents are either manually or automatically connected to a delivery and shipment. The documents are actually connected to the deliveries. Deliveries are connected to a shipment, which results in documents being indirectly connected to the shipment.

**Note:** Transportation management is no longer required to generate delivery documents. The only condition to get delivery documents is packing. No packing means no documents. Packing is set in 'Dispatch Policy' (MWS010) in the '240 Packing reporting method' field. Dispatch policy is connected to 'CO Type. Open' (OIS010) and 'Req/Distr Order Type. Open' (CRS200).

## Simulate Route Pre-Selection (MTS028)

Route pre-selection can have a complicated setup and it is important to test that the logic and basic data are correct. The purpose of this program is to give the user a good tool for tests and simulation of route pre-selection.

### Outcome

- Route information based on route pre-selection (mainly based on settings in (CRS727) and (DRS011)) can be retrieved.
- Order line date and time information based on different scenarios can be calculated.

MTS028 is used for testing DRRTVRDE.

### Before you start

Settings for route pre-selections are done as specified in [Define Settings for Transportation Management](#) on page 620.

### Purpose

The purpose of this program is to give the user a good tool for tests and simulation of route pre-selection.

### Description of input parameters

#### Date type (D4DTTP mandatory):

Tells DRRTVRDE what date/time to use as a starting point for the calculation.

- -1 = Use planning date/time (D4DPLDT/D4PLHM); planning date/time is also used as a filter value
- 1 = Use planning date/time (D4DPLDT/D4PLHM)
- 2 = Use departure date/time (D4DSDT/D4DSHM)
- 3 = Use requested delivery/date time (D4DWDT/D4DWHM).

#### Place of load (D4SDES mandatory):

You must enter at least one of these requested dates/times based on what date type you have entered:

- Date type -1 and 1: Planning date/time (D4DPLDT/D4PLHM)
- Date type 2: Departure date/time (D4DSDT/D4DSHM)
- Date type 3: Requested delivery/date time (D4DWDT/D4DWHM)

### Other fields

Fill in the following fields: DRRTVOBJ, Customer (D8CUNO), Address number (D8ADID), Delivery day number (D8DEWD), From warehouse (D8FWLO), To warehouse (D8TWLO) or Place of unloading (D8EDES mandatory if route type is 2, 3, 4 or 5). This is also used to find a route pre-selection in (DRS011), so one or more values must be entered.

### Operation codes

- \*BEC: Get ‘best choice’ departure. Retrieves the best possible route/departure according to the setup in (DRS011). This is the most widely used operation. Used in OIS101/OOLINEPI and MMS101/MMRTVROU.
- \*ALT: Get ‘best choice’ alternatives. Finds and stores the eight best route/departures according to the setup in (DRS011). Results are presented in (DRS146).
- \*ALTRR: Calculates a departure date/time based on a route (Route/departure D4ROUT/D4RODN. No setup required in DRS011). Used in OIS101/OOLINEPI.
- \*ALTR: Calculates the eight best departures based on a route (Route/departure D4ROUT/D4RODN. No setup required in DRS011). Results are presented in (DRS146).
- \*CHK: Check whether a route/departure exists and that the place of load/unloading matches that route. Used in OIS101/OOLINEPI and (MWS410).

### Examples

Example of route pre-selection setup in DRS011:

Enter the place of loading, requested delivery date/time (based on using date type 3), requested delivery/date time (D4DWDT/D4DWHM), customer number and place of unloading. This should produce the same result as entering a customer order line for customer 7500, from warehouse 001, with requested delivery date 20050127 16:00.

The result of the route pre-selection and the date calculations is presented at the bottom of the panel.

You can use the different dates/times together with the lead times presented to check the date calculation.

- Planing date/time + Internal lead time should equal Departure date/time.
- Departure date/time + Transport lead time should equal Confirmed delivery date/time.

If you have a customer or distribution order line, you can use the data from the order as a template instead of entering basic data yourself.

## Unloading Zone

Unloading zones are [Geographic Locations](#) on page 872 used in transport planning. By dividing a place of unload into several zones, loading can be structured so that all packages are in the correct unloading order on the transport.

An unloading zone is connected to a consignee and delivery address combination.

Loading lists per shipment, specifying which packages should be loaded on the transport vehicle, are sorted into different consignees depending on the unloading zone.

# Working with Transportation Management

This document explains how you work with transportation management.

## Outcome

A shipment is created, allocated, picked, packed, reported, and shipped.

- Shipments are stored in the DCONSI table.
- Routes are stored in the DROUTE table.
- Route dispatches are stored in the DROUDI table.
- Connections between shipment/deliveries and documents are stored in the DDOCUX table.

Working with transportation management allows you to control a physical shipment throughout the dispatch flow. It can also be used for customer orders, requisition orders, distribution orders, and manufacturing orders - only material issues.

A shipment can also be used for managing pick-up deliveries created from a customer return or a transportation order. Since these outbound deliveries are created with the purpose of planning the transport of a vehicle to a pick-up address, these deliveries do not affect transport capacities on the shipment.

## Before you start

The basic parameters for orders and order types are set.

## Follow these steps

These steps describe different methods when creating a shipment for picking. In the first method, you create a shipment before the release. In the second method, you create a shipment after the release.

### Create a shipment before picking lists are created

- 1 Create a customer order. A suitable route will be automatically connected when an order line is specified. The selected route is, among other things, dependent on the requested delivery date/time.  
**Note:** The Route field on the (OIS014/F) panel must be set for this automatic connection.
- 2 The connected route is displayed on the order lines panel (OIS101/B). If there are predefined route departures, those are also displayed.

Use option 44-'Delivery line' and note the delivery number for further actions:

- Automatically connect to a new or existing shipment.  
If the settings in 'Dispatch Policy. Open' (MWS010) specify that the order should be automatically connected to a shipment, continue with 'shipment. Open Toolbox' (DRS100) and begin to work with the shipment. See (DRS100).
- Manually connect to a new or existing shipment.
  - If the settings in (MWS010) specify that the order should be manually connected to a shipment, continue by starting 'Delivery Toolbox. Open' (MWS410). Select your delivery number.
  - Use option 25-'Connect to shipment' if there is an existing shipment to which you want to connect the delivery.
  - The I panel is started. In the 'Shipment' field, browse for a shipment number and make a selection.

- The 'Route' field is defaulted with the automatically connected route. You can change the route in this field as long as the delivery is not connected to a shipment. Press Enter to redisplay the (MWS410/B) panel. You now have a shipment number connected to your delivery.
- If you want to create a new shipment and connect the delivery to it, use option 24-'Create shipment'.
- 'Shipment. Open' (DRS110) is started. The Shipment field is defaulted with the new shipment number. The Route field is also defaulted and cannot be changed.
- Specify the 'Main delivery method'. If there is a forwarding agent connected to the route in (DRS005), you have to specify the 'Forwarding agent'.

Press Enter to redisplay the (MWS410/B) panel. You now have a shipment number connected to your delivery. Continue with Working with shipments.

## Working with shipments

**1** 'Shipment. Open Toolbox' (DRS100) is the core of transportation management and is used to manage all other steps in the dispatch flow for the shipment. How to work with the different dispatch functions (such as picking, packing, docking, picking resource planning, reporting, etc.) is described in [Dispatch Handling](#) on page 403.

**2** Start (DRS100). On the B panel, you can create user-defined sorting orders and views.

**3** Select from this list of available packing alternatives:

- Option 11-'Picking Lists' starts 'Picking List. Report' (MWS420). Perform packing from the (MWS420/B) panel. Use option 14-'Pick and pack' for manual simple packing, option 25-'Manual packing' for manual advanced packing, or option 22-'Auto packing' for automatic packing. See [Print, Pick, Pack and Report Picking Lists](#) on page 484.
- Option 14-'Packages' starts 'Delivery. Connect Packages' (MWS423).

This program is used for:

- Creating packages for simple packing, performed on the B panel
- Adding more packages after everything is packed, performed on the B panel
- Removing a package from a delivery and adding it to another delivery
- Displaying package structure by using option 24-'Expand'
- Moving packages by using option 36-'Move package'.

**Note:** When accessing (MWS423) from (DRS100), you are initially shown a list of deliveries, not packages, and to see the packages expand one or more of the deliveries. In this case, the delivery number is shown in the package structure.

See [Print, Pick, Pack and Report Picking Lists](#) on page 484.

After packing of a delivery is performed, the shipment status is raised to 40-'Deliveries connected, packing complete'. When all deliveries connected to the shipment have been packed, the shipment status is raised to 50-'Shipment packed complete, not reported'.

- 4 Option 11-'Report picking' starts (MWS420). See [Print, Pick, Pack and Report Picking Lists](#) on page 484. After reporting the shipment, the shipment status is raised to '60' which is the final status for the shipment. Status 90 means that shipment is cancelled.
- 5 Options 27, 28, 15-'Generate, print delivery documents'. The document status is raised from '00' to '20' after documents are generated and printed.
- 6 Use Option 16-'Print loading list' to start 'Loading List. Print' (DRS670). A loading list is used when loading the transportation equipment according to unloading sequence, etc.

More options are available in (DRS100).

Use option 2-'Open' or 5-'Display' on the (DRS100) panel to display the (DRS110/E) panel. This is the same panel as the one when a new shipment was created. If you use option 2, you can override many fields on this panel for the shipment.

- 7 The Transport equipment field on the (DRS100/E) panel is defaulted based on route but can be manually overridden. Optionally, Transportation Resource can be used and set manually.
- 8 In the 'Transport identity departure' field on the (DRS100/E) panel, specify the transport identity of, for example, the truck that will ship the goods.  
This is printed on the loading list 'Loading List. Print' (DRS670) and booking list 'Transport Booking List. Print' (DRS680), and can also be included in the view (field group DRPV4).
- 9 On the (DRS100/F) panel, weight, volume, and free unit are displayed for:
  - The transportation equipment's total capacity
  - The transportation equipment's used capacity
  - Already packed goods
  - Assigned goods
  - Goods remaining to be packed.
- 10 If a shipment contains a pick-up delivery, it must either be reported as closed or use option 58- 'Confirm pick-up', to report that all pick-up deliveries have been started. That means that the empty truck has left the warehouse to retrieve goods at customers site for a customer return or to arrive at the departure or delivery address in time for a transportation order.

#### Create a shipment after picking lists are created

- After the picking list has been created
  - After packing has been completed
  - After goods have been moved to the dock location
  - After the picking list has been completely reported.
- Settings for this method are defined in (MWS010).

These are the alternatives for connecting deliveries to a shipment after the release for picking:

- 1 Create a customer order.  
A suitable route will be automatically connected when an order line is specified. The selected route is, among other things, dependent on the requested delivery date/time.  
**Note:** The Route field on the (OIS014/F) panel must be set for this automatic connection.
- 2 The connected route is displayed on the order lines panel (OIS101/B). If predefined route departures are available, those are also displayed.  
**Note:** Use option 44-'Delivery line' and note the delivery number for further actions.
- 3 Continue with the order flow in the usual way, which means allocations and release for picking. The order status is raised to 33-'Picking list created'.

You can now connect deliveries to a new or existing shipment. You can also delay the connection and continue the dispatch flow for the delivery.

## Chapter 8: Transportation Management Interfaces

# M3 Business Engine Administrator's Guide for Transportation Execution Interface (TEI)

### Purpose

The purpose of the M3 Transportation Execution Interface (TEI) is to enable an interface where transportation and customs information can be exchanged with third-party best-of-breed applications or external partners using B2B messaging.

The reasons for using a Transportation Execution Systems vary, but are normally caused by variability or high volumes in one or more of the areas above. In some cases, the focus is on outbound logistics while other companies encounter variability and high volumes for inbound logistics. Requirements for customs declarations are stipulated by suppliers or customers in countries and trade unions that require customs procedures.

A Transportation Execution Systems can be provided as a standalone product or can be included as one part of a Transportation Management System (TMS). A Transportation Management System covers a wider scope than a Transportation Execution Systems. The following table describes a Transportation Management System.

### Audience

This document provides general tips and advice. The primary target group is Infor consultants and customer "super users". Some M3 experience and knowledge is important to fully understand the concepts in this document.

**Note:** This document does not describe the details of M3 Interface (MI) programs and their transactions, such as which files and fields are required and how they are used. For a detailed description of M3 Interface programs and their transactions, see the programs 'MI Repository. Open' (MRS001), 'MI Transaction. Open' (MRS002), and 'MI Transaction Layout. Open' (MRS003)..

### Limitations

These listed items are known limitations:

- Currently, there is no support to receive information in 'TEI Transfer. Open' (MYS500) with Message direction I=Input.
- No package information can be downloaded for inbound logistics. The requirement is limited and not analyzed in detail. The limitation currently is based on the assumption that package information is more

useful for outbound logistics. Inbound transports are normally produced by the counterpart, the external supplier in this case.

- Transaction type 30, Customer returns, is not supported currently regarding inbound logistics.
- Using the event RELEASE\_PICK is only applicable for dispatch policies with Auto level 3 (Issue made automatically when picking list reported).
- Manual creation of TEI transfers in 'TEI Transfer. Open' (MYS500) is only applicable for TEI transfers with connection to an event.
- When using a report version to create one or several TEI transfers from 'TEI Transfer. Manually Create' (MYS510) only detail levels of delivery number (outbound or inbound DO) or purchase order line (inbound) can be used. The reason for this limitation is that the manual triggering functionality aims to group deliveries or purchase order lines into groups based on a number of selection criteria. This means that it is not possible to create a TEI transfer from a report version with detail level of package number.
- **Note:** The parameters in Closing point and Packing reporting method fields for the dispatch policy control when some events will be triggered.
- Some of the events can be triggered multiple times which can result in sending several TEI transfer including the same information. To avoid this, use the parameter Allow duplicate details = 0 in 'TEI Partner. Open' (MYS015). This gives the result that the event is triggered and a TEI transfer is created but details that already exists on another TEI transfer will not be connected to the new TEI transfer. An example can be the event SHIPMENT\_CLOSED. Since the shipment can be closed and reopened several times the event is triggered every time the shipment is closed. But if the parameter Allow duplicate details = 0, a delivery that already has been created on a TEI transfer with the same detail type (1=Delivery) will not be created on the second TEI transfer created.

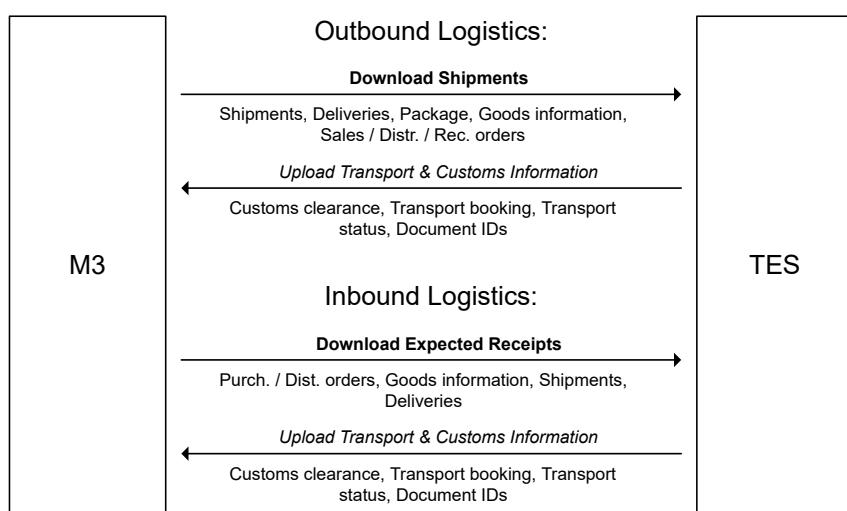
### Introduction to Transportation Management Systems

Transportation Management System consisting of Transportation Planning Systems, Transportation Execution Systems, and a Transportation Reconciliation Systems. Each area is divided into the functional content included. The Transportation Execution Systems is put into a wider perspective:

Transportation Management Systems					
Transportation Planning Systems		Transportation Execution Systems		Transportation Reconciliation Systems	
Strategic Planning	Operative Planning	Scheduling	Shipment Execution	Freight Management	Performance Measurement
<ul style="list-style-type: none"> <li>• Demand based Route Optimization</li> <li>• Transportation Network Planning</li> </ul>	<ul style="list-style-type: none"> <li>• Consolidation</li> <li>• Load Building</li> <li>• Freight Shopping</li> <li>• Delivery Time &amp; Freight Cost Optimization</li> </ul>	<ul style="list-style-type: none"> <li>• Reactive Scheduling</li> <li>• Deviation Handling</li> </ul>	<ul style="list-style-type: none"> <li>• Document Handling (Paper or B2B)</li> <li>• Forwarder Integration</li> <li>• Customs Integration</li> </ul>	<ul style="list-style-type: none"> <li>• Freight Auditing</li> <li>• Freight Invoice Entry</li> <li>• Freight Claims</li> </ul>	<ul style="list-style-type: none"> <li>• Carrier Performance</li> <li>• Delivery Performance</li> <li>• Fill Rate</li> </ul>

### Scenarios for using TEI

The major ERP systems on the market do not normally provide the depth of functionality as the Transportation Execution Systems do. To do so, the ERP vendors need to invest time and knowledge in a wide variety of market requirements. This situation leads us to the reasons to invest in ERP and Transportation Execution Systems integration. The information to exchange between M3 and the Transportation Execution Systems is related to transactional information that is exchanged in the latter part of the supply chain execution process. The Transportation Execution Systems should normally not have the possibility to reschedule orders, shipments, or deliveries. Planning capabilities are related to strategic or operative planning as described earlier. The initial integration point is established after the proactive shipment and delivery planning is finalized in M3. The final point of integration is placed when all documentation required for a physical delivery is produced. Integration capabilities related to post-processing is not a part of the TEI interface.



The figure displays business transactions that can be exchanged between M3 and a Transportation Execution Systems. The transactions in italics (upload) are currently not included in TEI solution.

For more detailed information on the available inbound and outbound logistics, refer to [Scenarios for Using M3 Transportation Execution Interface](#) on page 681.

### Business requirements and solutions

The primary goal of M3 TEI is to offer M3 customers the possibility to use third-party Transportation Execution Systems (TES) that manage the following:

- Transportation documents
  - Label documents
  - Freight documents
  - Customs documents
- Hauler integration
  - Freight booking and response
  - Electronic freight documents
  - Transportation process monitoring

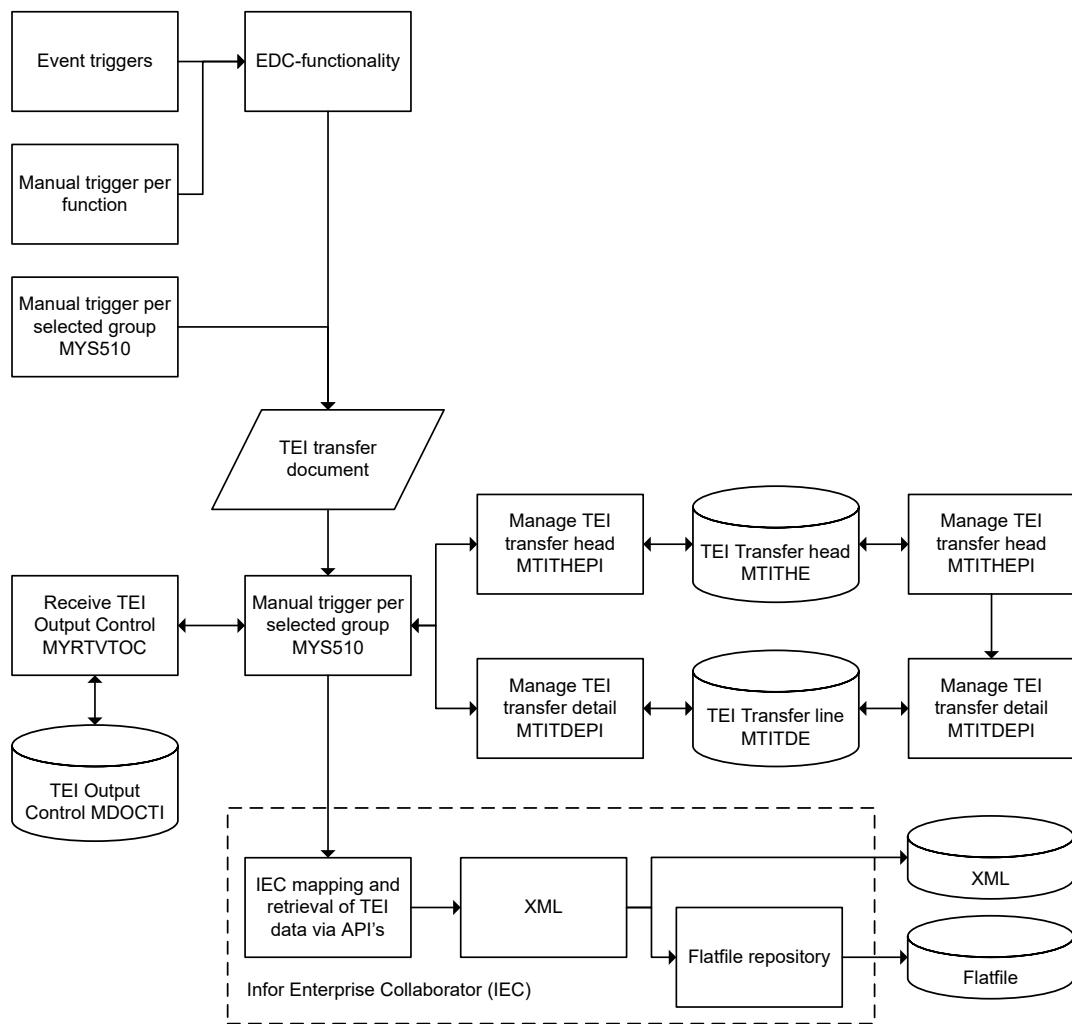
- Customs integration
  - Export and import declarations and response
  - Bonded warehouses
- Track & Trace
  - Shipment and delivery tracking
  - Parcel tracking

For more details and configuration recommendations, refer to [Business Requirements and Solutions for M3 Transportation Execution Interface](#) on page 672.

#### **TEI architecture**

The current solution is push-oriented, which means that the information is created within M3 and can be processed, viewed, and changed before it is sent to the external system. This solution enables a flexible, pull-oriented information flow of transportation information together with Infor Enterprise Collaborator (IEC). This means that the integration is more flexible and the data sent to a TEI system will be pulled from M3 via IEC by using M3 APIs.

The following figure illustrates the entire functionality.



For more details, refer to [Overview of TEI Architecture](#) on page 709.

### TEI Transfer triggers

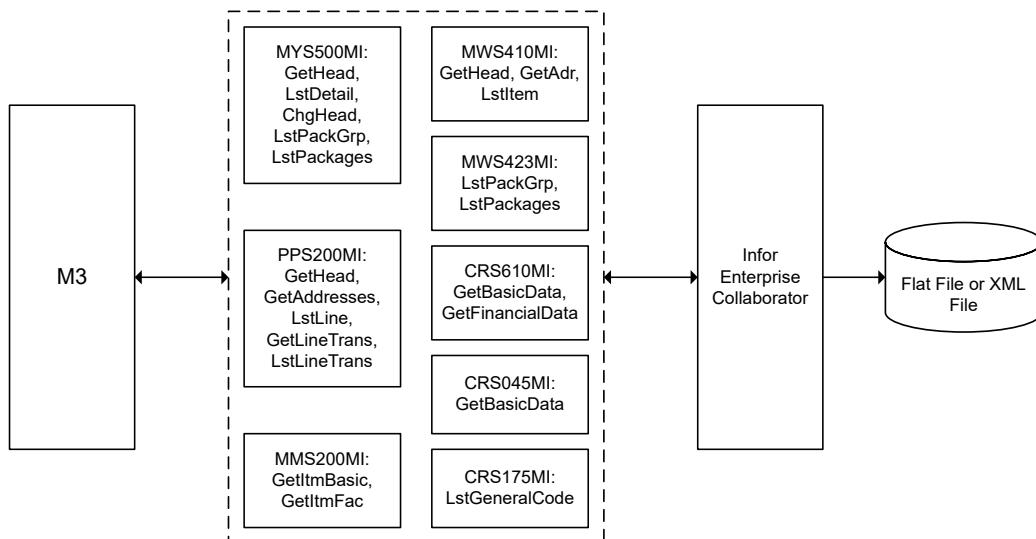
The current solution offers the following TEI Transfer Triggers:

- Settings for Automatic Triggering of TEI Transfer
- Automatic Triggering of TEI Transfer
- Manual Triggering of TEI Transfer per Function

For more details on Transfer Trigger settings, refer to [M3 TEI Transfer Triggers](#) on page 730.

### API overview for the TEI solution

The following figure illustrates the most common APIs involved when TEI is implemented.



The different API transactions available for the Transportation Execution Interface (TEI) are described in detail in this document: [API Overview of M3 Transportation Execution Interface](#) on page 720

For detailed description about M3 Interface programs and their transactions, refer to the API Repository in (MRS001), (MRS002), and (MRS003).

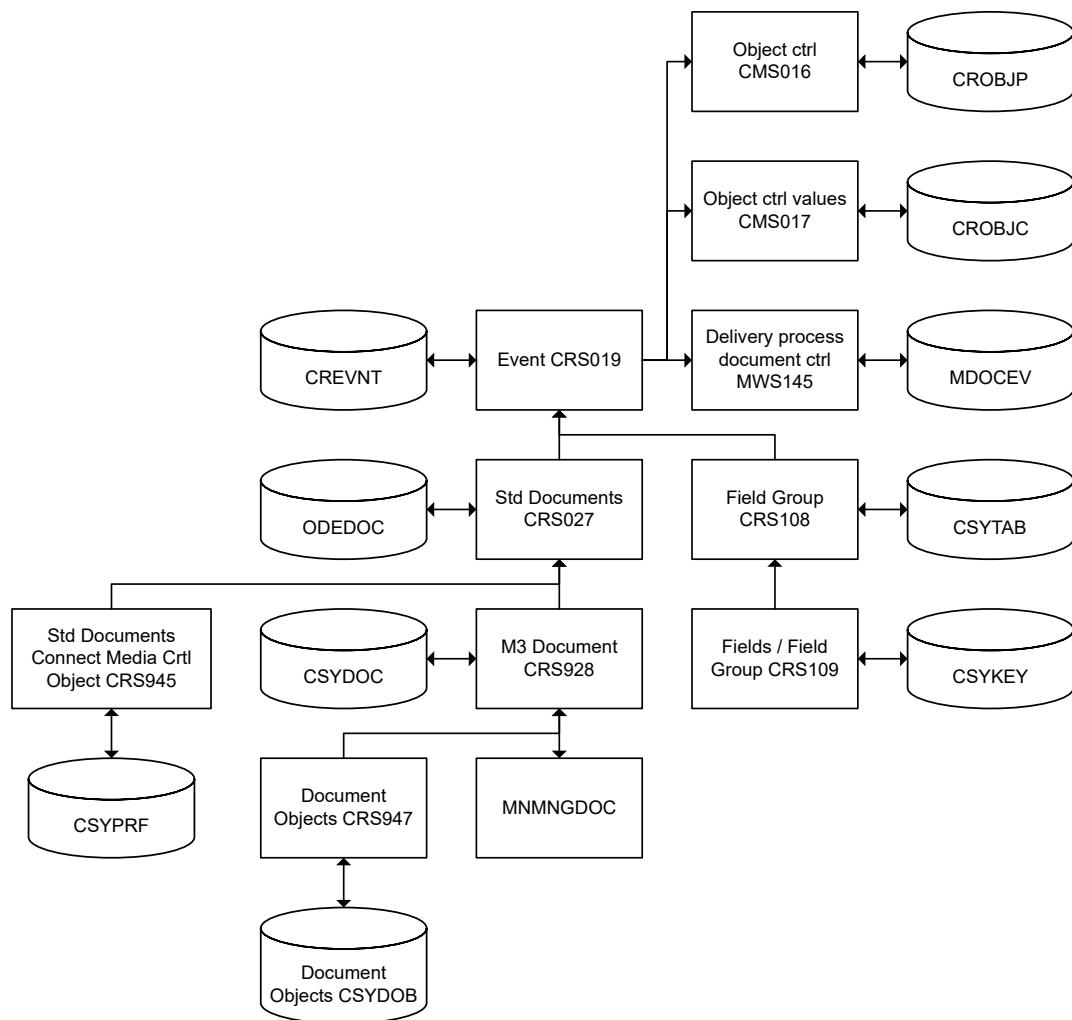
### M3 BE 15.1 Java

**Note:** In order to trigger the sending of TEI information from M3 BE to an external transportation system, the settings listed under the **TEI Transfer Triggers** topic must be met.

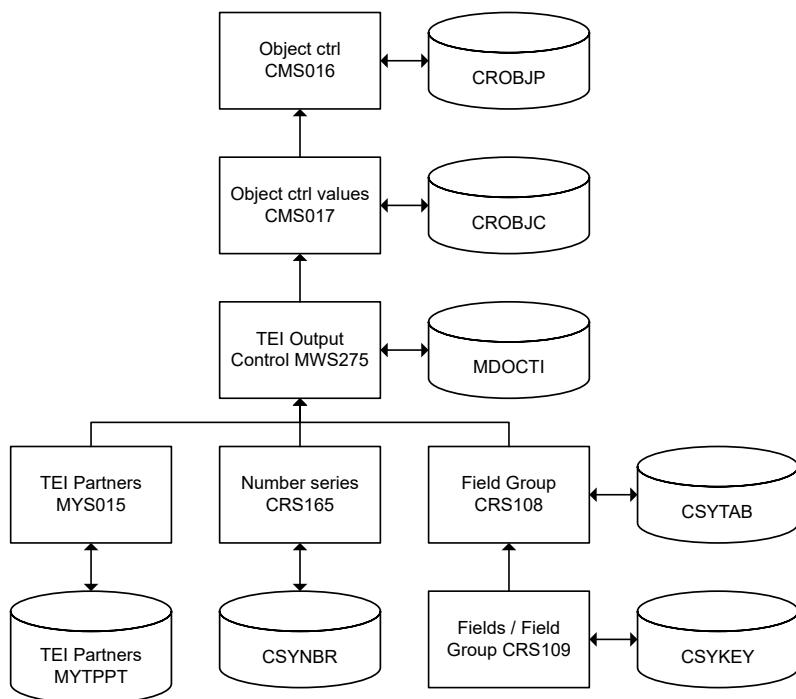
The following program flow charts illustrate the main functions, functional components, and tables involved when performing any of the four workflows.

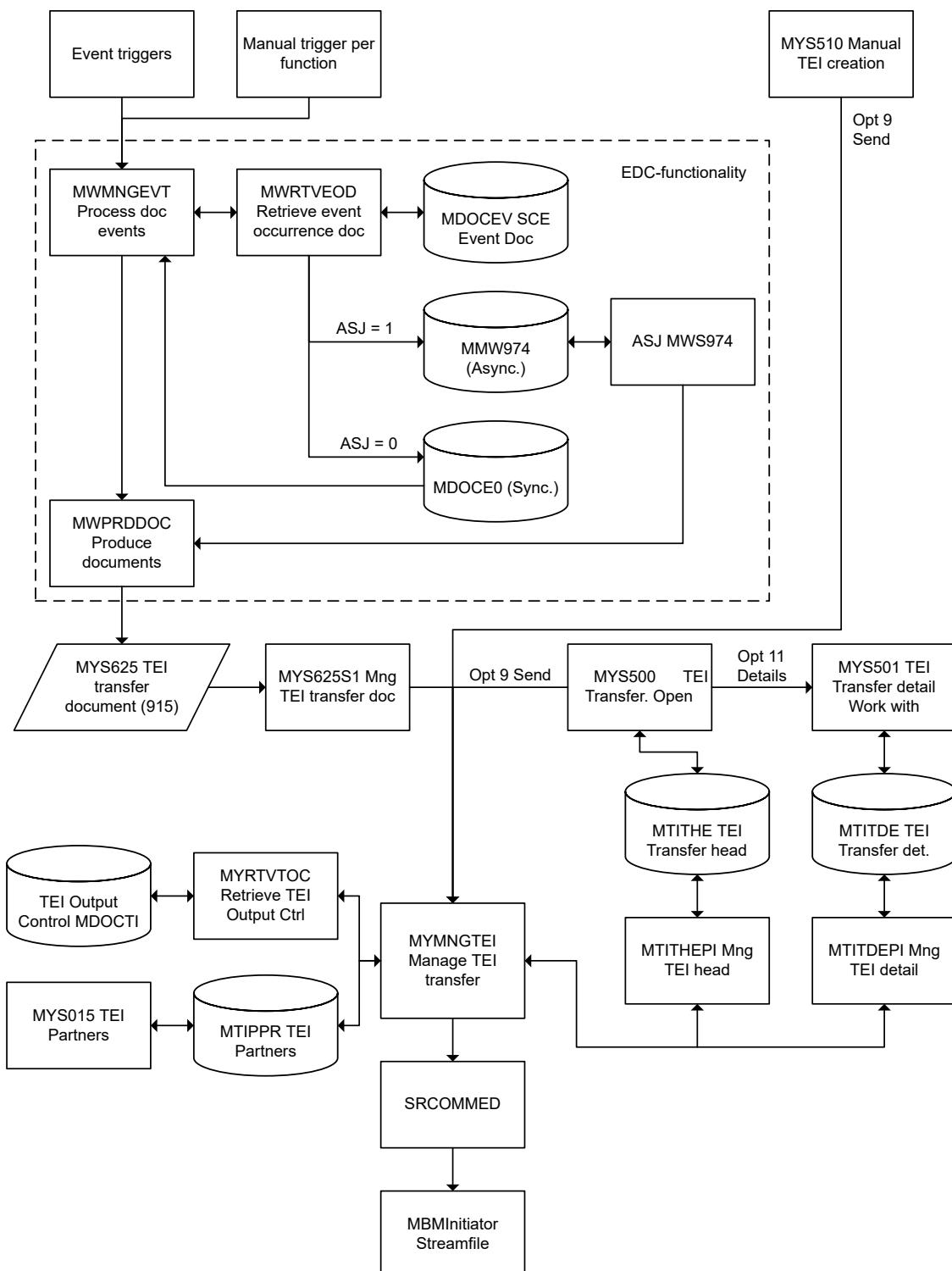
The first two flow charts details the master data functions and their relations. The third flow chart describes workflow that involves transaction management.

### Master data program flow – TEI Trigger Control



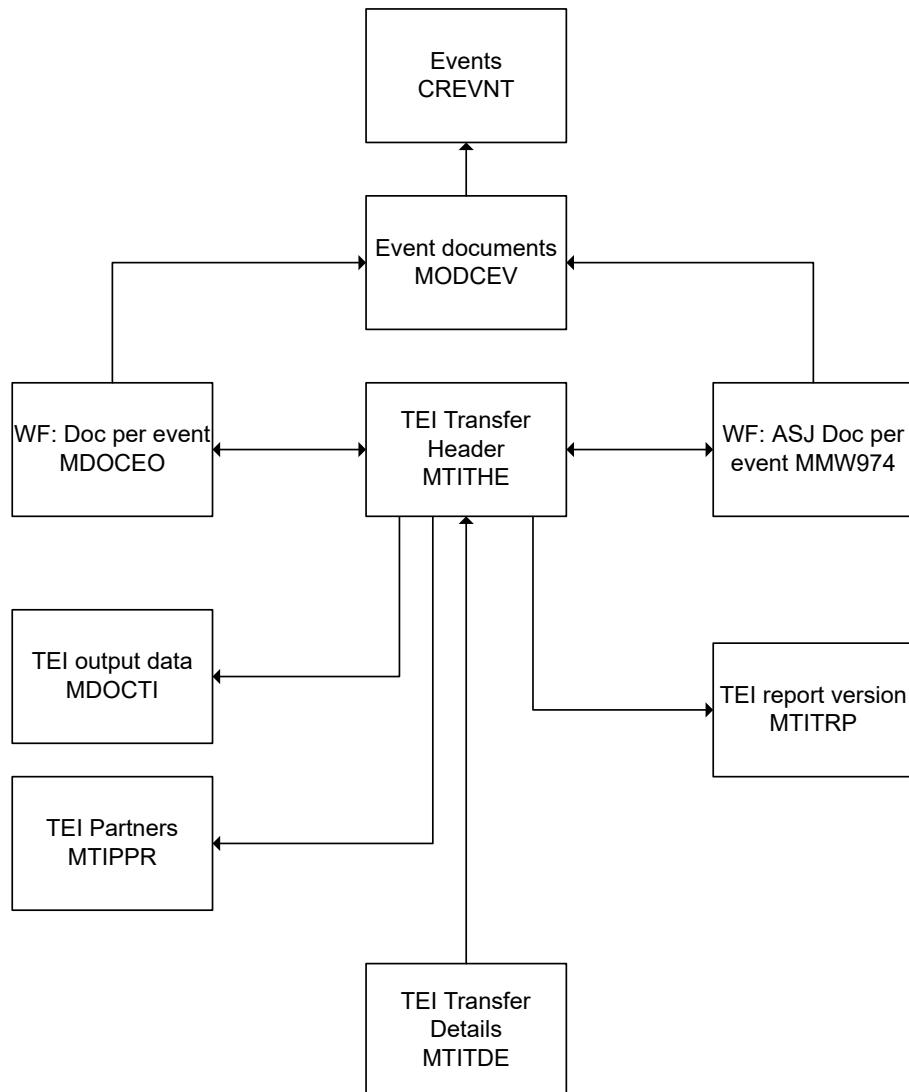
### Master data program flow – TEI Output Control

**Transactional program data flow**



## Data model

The data model contains key fields to describe the key relationships for basic understanding.



## Business Requirements and Solutions for M3 Transportation Execution Interface

This document provides an overview of the concepts and functional requirements to get an overview of how M3 Transportation Execution Interface (TEI) can be used.

**Note:** To support the described concepts and requirements, the implemented Transportation Execution Systems must contain such functionality.

## Transportation Documents

Often a Transportation Execution Systems is required when transportation documents vary between different forwarders, resulting in numerous layout requirements. Another deciding factor is that a company's export is directed to different countries, all requiring different sets of documents.

The Transportation Execution Systems is used in one of two ways: as a black box with no user intervention where documents are printed automatically via the Transportation Execution Systems, or it is used to send available information from M3 and then manually add the missing information in the Transportation Execution Systems before requesting a printout manually.

The characteristics of the major Transportation Execution Systems are that they are linked to the forwarders used on the local market and have knowledge and functionality to produce all types of forwarder documents.

By using event triggers in M3 TEI, you can select the event that suits the implementation and trigger a push of information to the Transportation Execution Systems at the right moment. If the event triggers do not work for you, use the manual events or the manual TEI creation function.

### Note: Configuration Recommendations

The event triggers that are recommended to use for transportation documents are:

- RELEASE\_PICK
- DELIVERY\_ISSUED or DELIVERY\_CLOSED or DELIVERY\_INV
- SHIPMENT\_ISSUED or SHIPMENT\_CLOSED or SHIPMENT\_INV

If the event triggers don't work use any of these manual events triggered by option 53 'Trigger TEI'.

- MANUAL\_PACKAGE (MWS423)
- MANUAL\_DEL (MWS410)
- MANUAL\_SHP (DRS100)

If the manual events also don't work for you, use the manual option to create a TEI transfer via 'TEI Transfer. Manually Create' (MYS510).

The type of Transportation Documents with configuration requirements are listed in the following

#### • Label Documents

Labels can be printed by M3 Supply Chain Execution, but you can also print them from the Transportation Execution Systems.

Depending on when you perform the packing operation in M3 and when you want to print package labels, different events can be used. The earliest step is when the picking list is released and the event RELEASE\_PICK occurs. However, this event requires that the packing operation is performed automatically based on the pick release. Any subsequent event in the Supply Chain Execution process can also be used to trigger the transfer of label information.

To supply the Transportation Execution Systems with package information, you can use a variety of APIs that retrieve package and label information.

The IEC mapping needed to support the transfer of label information is fairly simple. Based on the available delivery of the outbound logistics template IEC mapping, a label map is created with minimal customization.

### Note: Configuration Requirements

It is highly recommended that M3 shall control the business logic for creating the packages. If this is done inside the Transportation Execution Systems additional integration requirements arise that is currently not supported by M3 TEI.

If you use the RELEASE\_PICK event to send label information, that event requires though that the packing operation is performed automatically based on the pick release. Any following event in the Supply Chain Execution process can also be used to trigger transfer of label information as long as the packing operation is performed.

The recommended APIs used to supply the Transportation Execution Systems with package information are:

- MYS500MI Transaction LstPackages
- MWS423MI Transaction LstPackages
- MWS410MI GetPackage

Which API transaction to use from the list above depends on the event that triggers the TEI Transfer. If event RELEASE\_PICK or MANUAL\_PACKAGE is the trigger, 'TEI Transfer. Open Details' (MYS501) will contain a list of package numbers to transfer. In that case MYS500MI LstDetail will return this package list and the transaction to use is MWS410MI GetPackage for each detail record returned by MYS500MI LstDetail.

Any other event or manual creation should use either MWS423MI LstPackages or MYS500MI LstPackages. If the TEI transfer potentially consists of more than one delivery number, MYS500MI must be used. If a TEI Transfer ID always equals one Delivery number then MWS423Mi should be used.

- **Freight Documents**

Different types of freight documents, such as the SIS freight document or the CMR freight document, can be produced from M3 Supply Chain Execution.

If the export volume is high and shipments are sent to different countries with different document requirements, a Transportation Execution Systems is needed to manage this.

In contrast to labels, the trigger point for freight documents is normally later in the Supply Chain Execution process. The deciding factor is normally the earliest point when you are sure of the content of a delivery or shipment. This is most often near the departure of the physical vehicle. All delivery-based or shipment-based events can be used. It is not recommended to use events related to picking lists or packages.

If you want to create freight documents designated to a party other than the final consignee, this is possible by using the ship-via function. Examples of such parties are a customer distribution center, a grouping center, or an importer operating on behalf of the final consignee.

You can use a variety of APIs to supply the Transportation Execution Systems with freight document information.

The IEC mapping needed to support the transfer of freight document information should combine APIs that retrieve delivery information and grouped package information. Based on the IEC mapping deliverable for outbound logistics template, a freight document map is usually created with minimal customization.

**Note: Configuration Requirements**

Depending on which documents and how many different freight documents that are needed, the best option currently is to create the document identities in the Transportation Execution Systems system. Some possibilities exist to create document IDs inside M3 and then transfer the identity together with the rest of the document information. This requires that a single freight document is used per Delivery. Also no upload of identities is currently supported.

If you need the Ship-via functionality, configure so that the Ship-via address is connected to each delivery when the delivery number is created. The TEI Transfer ID in 'TEI Transfer. Open' (MYS500) will then automatically be grouped per Ship-via address when it is created. Then use API transactions that summarize information per TEI Transfer ID (MYS500MI) to get summaries per Ship-via. Refer to the template IEC mappings and the consignment level information for a reference to a Ship-via summary. Also use the Companion document Settings for Ship-via address to determine how you want to retrieve ship-via address.

The recommended APIs used to supply the Transportation Execution Systems with freight document information are:

- MWS410MI GetHead
- MWS410MI GetAdr
- CRS610MI GetBasicData, GetFinancial
- CRS175MI LstGeneralCode
- CRS045MI GetBasicData
- MYS500MI Transaction LstPackGrp
- MWS423MI Transaction LstPackGrp

Which API transaction to use from the list above depends on the information required for the specific freight documents used. The level of detail in 'TEI Transfer. Open Details' (MYS501) will most commonly contain a list of Delivery numbers. If a joint document for several Delivery numbers grouped by one TEI Transfer ID is requested, MYS500MI LstPackGrp should be used. If one document per Delivery is requested, MWS423MI LstPackGrp should be used.

- **Customs Documents**

When exporting goods to a third country (for example, a country outside the European Union), specific customs documentation is required. The most commonly used customs document is the Single Administrative Document (SAD) also called the ED document or the unit document. An export invoice is also mandatory that supports the SAD document with details. The export invoice can be in the form of a pro forma invoice. In certain cases additional customs documents such as movement certificates and certificates of origin are needed depending on the circumstances.

If your business needs to produce any of these documents, some Transportation Execution Systems manage the customs documents for the specific markets. Customs regulations are in most cases very specific for the importing country and a Transportation Execution Systems application must be able to support the local requirements.

In contrast to freight documents, the trigger point for customs documents is normally at the same point or later in the Supply Chain Execution or SLS process. The deciding factor is when all financial values can be calculated, such as prices and discounts, since customs documents must contain amounts in order to calculate correct customs fees. All delivery-based or shipment-based events can be used. It is not recommended to use events related to picking lists or packages.

If you want to create customs documents designated to a party other than the final consignee, this is possible by using the ship-via function. An example of such a party is an importer operating on behalf of the final consignee.

You can use a variety of APIs to supply the Transportation Execution Systems with customs document information. The IEC mapping needed to support the transfer of customs document information should combine APIs that retrieve delivery information and grouped item information with price information. Based on the IEC mapping deliverable for outbound logistics template, a customs document map is usually created with minimal customization.

**Note: Configuration Requirements**

The specifics regarding customs documents is normally the grouping criteria's required and the additional price information compared to freight documents. It's important that the setup in M3 regarding Customs statistical number, Country of origin and Customs procedure is analyzed and properly defined. The complexity of pricing is also an important issue as M3 TEI does not present all levels of detail as done for an SLS invoice.

The Ship-via functionality, as stated above for freight documents, can also be applicable for customs documents. Hence a case with an importer receiving goods for a number of final consignees inside a specific country, you might need to produce a SAD document for the importer instead of each final consignee. Configure Ship-via as stated above and use API transactions on the grouped level. The template IEC mapping on the consignment level as delivered already contains a SAD summary enabled by the MI MYS500MI and transaction LstStatNo.

The recommended APIs used to supply the Transportation Execution Systems with customs document information are:

- MWS410MI GetHead
- MWS410MI GetAddr
- CRS610MI GetBasicData, GetFinancial
- CRS175MI LstGeneralCode
- CRS045MI GetBasicData
- MYS500MI Transaction LstPackGrp

Which API transaction to use from the list above depends on the information required for the specific customs documents used. The level of detail in 'TEI Transfer. Open Details' (MYS501) will most commonly contain a list of Delivery numbers. If a joint document for several Delivery numbers grouped by one TEI Transfer ID is requested, MYS500MI LstStatNo should be used.

## Hauler Integration

Hauler integration involves activities that occur before, during, and after the actual transport assignment occurs. Often B2B messaging is used to integrate consignor, hauler, and consignee.

A possible scenario for the transportation process and the information exchanged between consignor, hauler, and consignee:

- Booking
- Booking Confirmation
- Transport Label
- Transport Instruction
- Status Inquiry
- Deviation Report
- Receipt Advice
- Scan Transport Label
- Delivery Confirmation
- Debit Confirmation
- Invoice / Self-bill

The process described above covers a wide area where the Transportation Execution Systems on the market covers some or all activities. Some information flows are managed solely inside the Transportation Execution

Systems and some are managed in the Transportation Execution Systems combined with interfaces to the backbone ERP.

The list below gives an overview of what you can achieve with M3 TEI combined with a Transportation Execution Systems that has such function built in.

#### **Note: Configuration Requirements**

The event triggers that are recommended to use for hauler integration depends on the activity. See activity sections for recommendations.

If the event triggers don't work use any of these manual events triggered by option 53 'Trigger TEI'.

- MANUAL\_DEL (MWS410)
- MANUAL\_SHP (DRS100)

If the manual events also don't work for you, use the manual option to create a TEI transfer via 'TEI Transfer Manually Create' (MYS510). Refer to section 4 for details regarding MYS510 and manual decision to create TEI transfers.

- **Freight Booking and Booking Confirmation**

The freight booking process can be advanced, and in that case includes freight shopping and tendering where criteria such as cost and delivery time are considered. Such processing is regarded as a delivery planning activity and is not included in a TEI scenario. The TEI process assumes that the response from the hauler does not affect the planning of deliveries. Please refer to the Transportation Operational Interface (TOI) for delivery planning capabilities.

The activity of booking transport is used when no fixed booking routine exists. Usually, the consignor asks the hauler if transport can be carried out and when, where and what should be transported. The hauler then responds with NOK or OK combined with booking references.

The trigger point for freight booking and confirmation is early in the Supply Chain Execution process. When the content of a shipment or delivery is known, you can start the booking activities. The Supply Chain Execution event triggers in general are not sufficient since they occur too late in the process. Use the manual TEI transfer function to imitate a push to a Transportation Execution Systems when the booking should be made.

If you want to book freight designated to a party other than the final consignee, this is possible by using the ship-via function. Examples of such parties are a customer distribution center, a grouping center, or an importer operating on behalf of the final consignee.

To supply the Transportation Execution Systems with freight booking information before the packing operation is performed, you need to produce such API transactions on demand. No suitable standard APIs exists in IAS 5.2US. If the booking takes place after the packing operations, the standard API capability can be used.

The IEC mapping needed to support the transfer of freight booking information should combine APIs that retrieve delivery or shipment information and grouped weight and volume information. Based on the standard Infor delivery of the outbound logistics template IEC mapping, a freight booking map needs to be created requiring some changes to the template.

#### **Note: Configuration Requirements**

The booking and confirmation process should be configured so that M3 TEI downloads booking information at a suitable occasion. The Transportation Execution Systems then manages the booking B2B communication with the hauler, both regarding the booking and the confirmation.

Instead of events, use the manual TEI Transfer option (Option 53) in 'Delivery. Open Toolbox' (MWS410) or 'Shipment. Open Toolbox' (DRS100). If that does not work, use 'TEI Transfer. Manually Create' (MYS510).

The Ship-via functionality, as stated above for freight documents, can also be applicable for freight booking. Configure ship-via as stated above and use API transactions on the grouped level. The template IEC mapping on the consignment level as delivered already contains a Package group summary enabled by the MI MYS500MI and transaction LstPackGrp.

The recommended APIs used to supply the Transportation Execution Systems with freight booking information are:

- MWS410MI GetHead
- MWS410MI GetAdr
- CRS610MI GetBasicData, GetFinancial
- CRS175MI LstGeneralCode
- CRS045MI GetBasicData
- MYS500MI Transaction LstPackGrp (If packages exists)
- MWS423MI Transaction LstPackGrp (If packages exists)

Which API transaction to use from the list above depends on the information required. The level of detail in 'TEI Transfer. Open Details' (MYS501) will most commonly contain a list of Delivery numbers. If you book transport before the pack operation is performed, the last two transactions above should not be used. Instead you need to develop a new API transaction that summarizes weights, volumes etc. on the level that you want to book on.

- **Electronic Freight Documents**

Electronic freight documents are managed before the actual transport occurs. The B2B freight document message is transferred from the consignor to the hauler to inform of the exact content of a transport assignment. If a fixed booking routine is used, this is the first B2B message exchanged. If no fixed routine is used, the B2B freight document details the previous booking.

The electronic variant of the freight document is a replacement of the paper-based variant. If the hauler prefers B2B messaging, the electronic variant is preferable for both parties.

For **Configuration Requirements**, refer to Freight Booking and Booking Confirmation.

- **Transportation Process Monitoring**

Transportation process monitoring includes the activities that occur after the vehicle leaves the warehouse. Different activities can be performed to monitor the progress of the transport and any deviations. These activities are normally performed inside the Transportation Execution Systems application, and no new information download is needed from M3 TEI.

As most of the activities occur in the Transportation Execution Systems to monitor the transportation process, no additional configuration is needed in M3 TEI.

## Customs Integration

Customs integration involves activities that occur before the actual export or import assignment occurs. Often B2B messaging is used to integrate consignor and customs authorities.

Support for customs processing is part of some Transportation Execution Systems, but not all. Quite often the functional requirement is specific to the markets to which you export or import.

The list below gives an overview of what you can achieve with M3 TEI combined with a Transportation Execution Systems that has such a function built in.

#### **Note: Configuration requirements**

The event triggers that are recommended to use for customs integration are so different comparing customs declaration and bonded warehouse.

If the event triggers don't work use any of these manual events triggered by option 53 'Trigger TEI'.

- MANUAL\_DEL (MWS410)
- MANUAL\_SHP (DRS100)

If the manual events also don't work for you, use the manual option to create a TEI transfer via 'TEI Transfer Manually Create' (MYS510).

#### **• Export and Import Declarations and Response**

The activity of declaring an export or import occurs when such an activity is required. This depends on the relation between the consignor's country and the consignee's country. In many cases, such as intra-EU trade, customs declaration is no longer required. But in other cases when, for example, an EU country is exporting to a non-EU country a customs declaration is required.

The declaration is done prior to the export or import in order to declare the content of the shipment and calculate the customs fees to be paid. Moreover, you save time so that the vehicle can travel directly to the border without stopping at the nearest customs office. Usually, the consignor produces an electronic B2B variant of the SAD document as described above. The customs authorities then respond if the declaration is approved with a returning B2B message.

For **Configuration requirements**, see Customs Integration.

#### **• Bonded Warehouses**

A customs procedure exists for bonded warehouses whereby you can delay payment of customs fees and VAT for imported goods until the point of time when the products are used or sold to another party.

**Note:** A bonded warehouse solution is specific to each implementation. The solution described here is one building block that must be combined with implementation specific solutions.

Some Transportation Execution Systems applications have support built in to manage bonded warehouses. Such support includes the following:

- Inventory management and control of the bonded warehouse items and goods receipts involved
- Import declaration of goods that resides in the customs trade union after consumption or sales
- Cost control of imported goods being sold to a third country outside the trade union

To enable a bonded warehouse solution, M3 TEI includes events that can trigger a download based on the receipt of goods for both purchase orders and distribution orders.

An API capability is also available that can retrieve inventory information for the specific goods receipts so that the bonded warehouse inventory balance can be increased.

As described in the previous sections, the issue of the delivery can be downloaded to manage sales to parties outside the trade union.

The IEC mappings needed to support a bonded warehouse solution should manage:

- 1** The goods receipts to the bonded warehouse
- 2** The issue from the bonded warehouse

The first mapping should use APIs that retrieve goods receipt transactions. The second mapping should use APIs that retrieve delivery information.

### **Note: Configuration requirements**

The bonded warehouse process should be configured so that M3 TEI downloads goods receipts to start with. For POs the event PO\_GOODS\_REC can be used as it occurs for every goods receipt transaction. For DOs the event PO\_GOODS\_REC should be used.

Combine these events with a IEC mapping for POs uses the API PPS200MI GetLineTrans or LstLineTrans. For DOs MWS410MI and LstItem can be used. By creating these maps the bonded warehouse inventory balance is increased when goods are reported as received. The standard APIs might need to be modified so that only items included in the bonded warehouse solution is downloaded to the Transportation Execution Systems.

The second integration point is more or less equal to any of the ones described above when an issued outbound delivery is downloaded with the purpose to create freight documents. The purpose of the transaction is to decrease the bonded warehouse inventory balance and serve as basis for the calculation of customs fees and VAT. The same situation applies here that the standard APIs might need to be enhanced to filter or identify the items unique for the bonded warehouse solution.

## **Track & Trace**

Track & Trace is a collection of features that enable different parties such as consignor, hauler, consignee, and final consignee to monitor a shipment and its present status.

When the transportation process has started, it is vital to be able to track where a certain parcel or shipment is located. Such a process requires both tracing capabilities and detailed reporting. The use of RFID, bar code scanning, and so on is important for enabling a track and trace process.

- **Shipment and Delivery Tracking**

Tracking of entire shipments or deliveries is more common in B2B scenarios where full truck loads must be possible to monitor. If deviations occur, the tracking can of course be done on the parcel level.

A tracking scenario with M3 TEI and a Transportation Execution Systems initially requires built-in functionality in the Transportation Execution Systems. M3 TEI performs a download of a shipment or delivery to produce a freight document as described earlier. The Transportation Execution Systems then stores this document and manages the integration with the hauler in order to track the delivery. The tracking can be done using B2B messaging or by using Internet tracing features supplied by the hauler.

M3 TEI plays no active role in the tracking process. This is managed by the Transportation Execution Systems.

### **Note: Configuration requirements**

The integration between M3 TEI and the Transportation Execution Systems is managed when the used documents, normally freight documents, are downloaded.

The additional information that can be needed regarding tracking is to download additional identities. Controlled by 'TEI Output Control. Open' (MWS275) several methods exists to retrieve a TEI Header alias ID. This ID can then be downloaded together with the document information and used as an additional tracking ID. Moreover the External tracking number defined in 'Delivery. Open Toolbox' (MWS410) can also be used.

- **Parcel Tracking**

Tracking of single parcels or packages is common in both B2B and B2C scenarios. All involved parties must be able to track individual parcels.

A parcel tracking scenario with M3 TEI and a Transportation Execution Systems initially requires built-in functionality in the Transportation Execution Systems. M3 TEI performs a download of packages as

described earlier. The Transportation Execution Systems then stores this label document and manages the integration with the hauler in order to track down the parcel. The tracking is most often done by using Internet tracing features supplied by the hauler.

M3 TEI plays no active role in the tracking process. This is managed by the Transportation Execution Systems.

**Note: Configuration requirements**

The integration between M3 TEI and the Transportation Execution Systems is managed when the used documents, normally the label, is downloaded.

The additional information that can be needed regarding tracking is to download additional identities. Controlled by 'TEI Output Control. Open' (MWS275) several methods exists to retrieve a TEI Detail alias ID. This ID can then be downloaded together with the label information and used as an additional tracking ID. Moreover the External tracking number defined in 'Delivery. Connect Packages' (MWS423) can also be used.

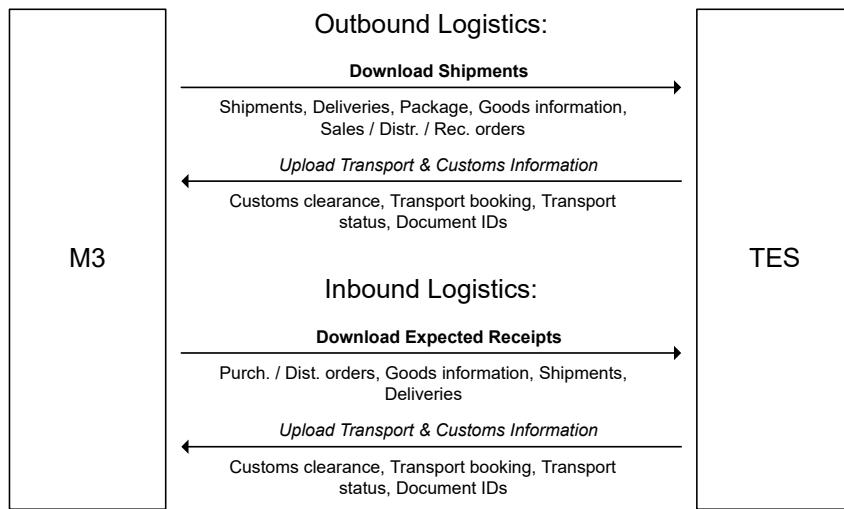
## Scenarios for Using M3 Transportation Execution Interface

This document describes the available inbound and outbound logistics for M3 Transportation Execution Interface (TEI).

### Overview

The major ERP systems on the market do not normally provide the depth of functionality as the Transportation Execution Systems do. To do so, the ERP vendors need to invest time and knowledge in a wide variety of market requirements. This situation leads us to the reasons to invest in ERP and Transportation Execution Systems integration. The information to exchange between M3 and the Transportation Execution Systems is related to transactional information that is exchanged in the latter part of the supply chain execution process. The Transportation Execution Systems should normally not have the possibility to reschedule orders, shipments, or deliveries. Planning capabilities are related to strategic or operative planning as described earlier. The initial integration point is established after the proactive shipment and delivery planning is finalized in M3. The final point of integration is placed when all documentation required for a physical delivery is produced. Integration capabilities related to post-processing is not a part of the TEI interface.

The figure displays business transactions that can be exchanged between M3 and a Transportation Execution Systems. The transactions in italics (upload) are currently not included in TEI solution.



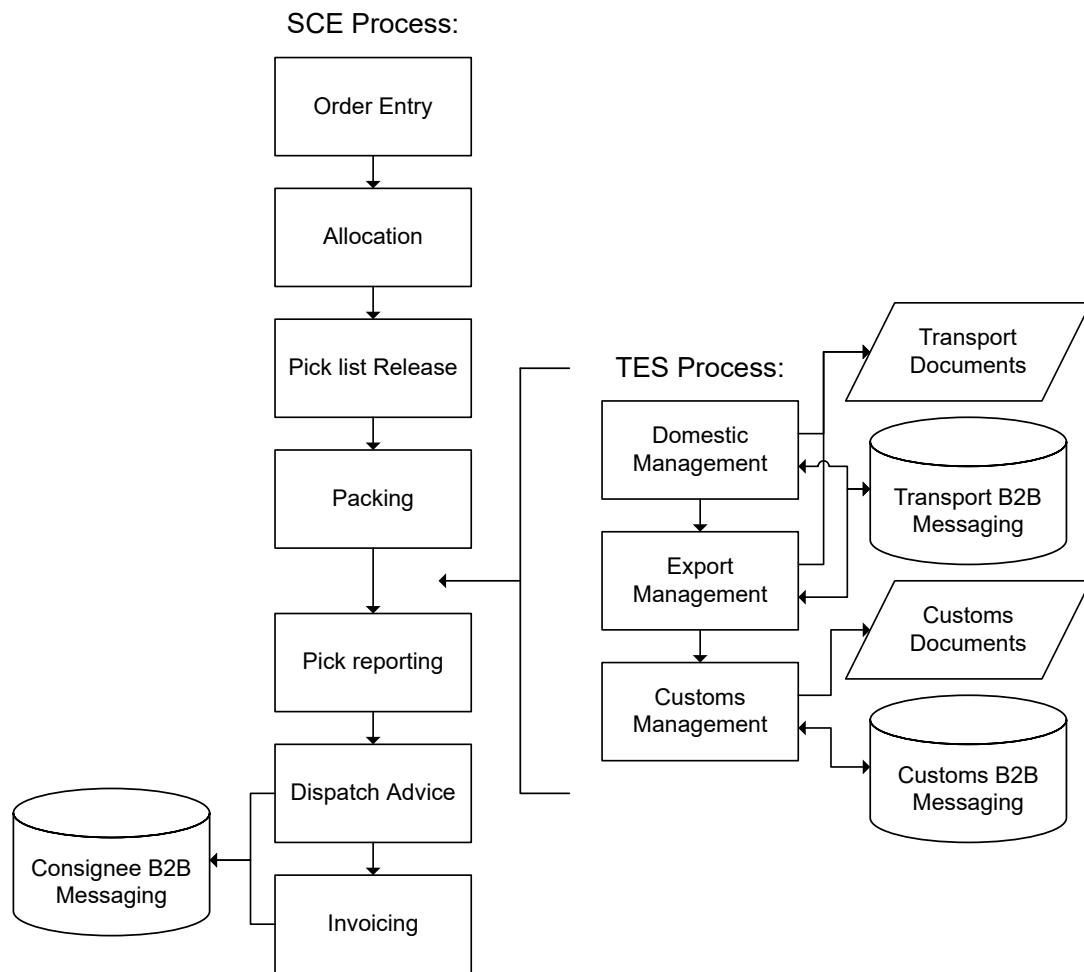
### Outbound Logistics Process

The relation between a Transportation Execution Systems and the outbound supply chain execution (SCE) process is normally started after the picking list is released and packages are created inside M3. This should be considered as the initial integration point.

The chosen initial integration point varies among users but is based on the dispatch process configuration and the functionality that should be managed by the Transportation Execution Systems.

Several additional integration points can be used depending on when documents must be produced and when forwarder integration and/or customs integration is required.

One example of how the outbound SCE process in M3 can relate to the process in a Transportation Execution Systems:



**Note:** M3 BE currently does not offer support for the upload of information. The main information to upload are identities and status information created in the Transportation Execution Systems. Uploading this information will enable tracking both in M3 and in the Transportation Execution Systems.

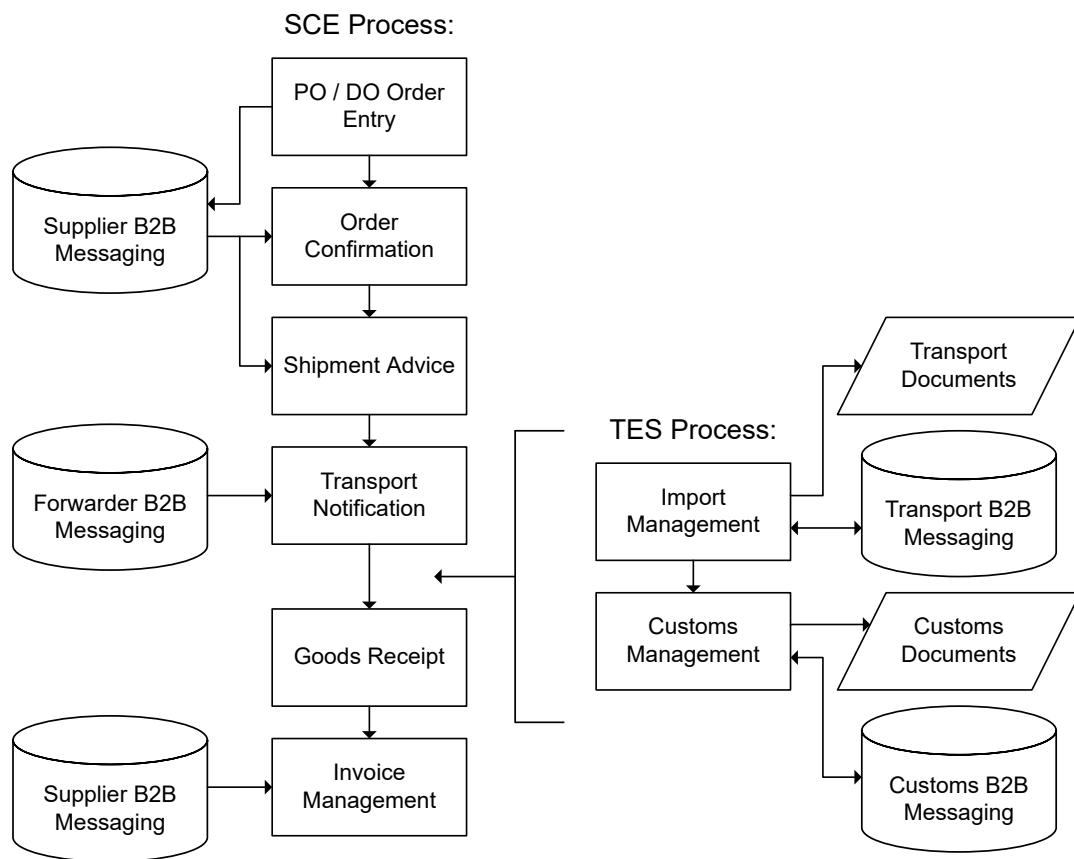
### Inbound Logistics Process

The relation between a Transportation Execution Systems and the inbound supply chain execution process is normally started when the shipment is confirmed from the supplier (external PO or internal DO).

The chosen initial integration point varies among users but is based on the characteristics of the inbound process and the functionality that should be managed by the Transportation Execution Systems. A Transportation Execution Systems is normally used to manage import and customs declaration for inbound logistics.

Several additional integration points can be used depending on when the customs documents must be produced and when customs integration is required.

One example of how the inbound SCE process in M3 can relate to the process in a Transportation Execution Systems:



**Note:** M3 BE currently does not offer support for the upload of information. The main information to upload are customs identities and customs status information created in the Transportation Execution Systems. Uploading this information will enable tracking both in M3 and in the Transportation Execution Systems.

## Settings for Transportation Execution Interface (TEI)

This document explains how you define the settings for the Transportation Execution Interface (TEI) function.

TEI provides an interface where transportation and customs information can be exchanged with third-party best of breed applications or external partners using B2B messaging.

### Outcome

The following settings for TEI are defined:

- Basic settings for dispatch flow

- Settings for documents
- Number series for TEI are created
- Documents are connected to a TEI partner
- An object control table for documents/event is created
- An object control table for TEI output control is created
- Integration principles for a TEI partner are created.

The primary goal of M3 TEI is to provide M3 customers with the capability to use third-party Transportation Execution Systems (TES) that manage the following:

- Transportation document management combined with transportation B2B messaging
- Track and trace of the transportation process
- Customs declarations combined with custom B2B messaging.

For more details, refer to [M3 Business Engine Administrator's Guide for Transportation Execution Interface \(TEI\)](#) on page 663.

### Before you start

- The dispatch flow settings must be defined. The settings and values depend on how the dispatch flow should be executed. Dispatch Handling contains information about dispatch descriptions, instructions, settings, and references to other documents.
- The object control parameter records, on the (CMS016/B) panel, must be generated so all available objects are displayed. Press F14=Generate data.
- The field groups must be generated for applicable fields in (CRS108) and (CRS109). Press F14=Generate data.
- If you are sending documents to a queue to be produced later from an auto start job (asynchronous), you must have the auto start job 'MWS974 –Manage Event Based Documents' running. See *Administrator's Guide for Auto Start Jobs and Subsystems*.
- If you are using the SHIPMENT\_ISSUED event, you must have the auto start jobs 'DRS900 – Monitoring Shipment' and 'DRS901 – Process Shipment Time Triggers'. See *Administrator's Guide for Auto Start Jobs and Subsystems*.
- The process enables you to send document output using different types of media, such as a printer, email, fax, or electronic data interchange (EDI). Document Output Management explains how you manage document output in M3 and how you define the settings.

### Follow these steps

#### Define basic settings for dispatch flow

- 1 Start 'Dispatch Policy. Open' (MWS010). Select auto level 3 (Issue made automatically when picking list reported) for the TEI dispatch policy.

- 2** 'Ship-via control' (MWS010/H) indicates if the ship-via address is retrieved automatically and how it is retrieved. The ship-via address is the address the goods are transported through before they arrive at the final address.

0 = No ship-via address is retrieved automatically when the delivery is created. The ship-via address is maintained manually from 'Delivery. Open Toolbox' (MWS410/F).

1 = The address is retrieved automatically from the consignee. Either the customer delivery address (OIS002) or the customer (CRS610) is used to propose the ship-via address. Applies only to order category 3 (customer order).

2 = The address is retrieved automatically from the route. The place of unloading that is connected to the delivery (MWS410) and route (DRS021) is used to propose the ship-via address.

3 = The address is retrieved automatically from the generic object control. The ship-via address in (CMS016), (CMS017) and 'Ship-via Address. Define' (MWS190) is used to propose the ship-via address.

### Generate documents and connect documents to partner reference objects

- 1** Start 'M3 Document. Open' (CRS928). Press F14='Gen standard' to generate all standard documents (for TEI it is document 915 00).  
(CRS928) is a global program involving all companies in M3.
- 2** Select document 915 00 and select option 12=Partner reference object. This starts 'Standard Document. Connect Partner Ref Obj' (CRS947). On the E panel you define partner reference settings for this document.
- 3** Display (CRS928) again, and select F15= Generate all. This will generate all settings in (CRS928) and (CRS947) for each document.
- 4** You can also create variants for document 915 in (CR928) and define partner reference settings for the variants in (CRS947).

Example:

Variant 10 sends package information to the external system when the pick list is printed. Variant 20 sends transportation information to the external system when the outbound delivery is reported.

Because it is two different document variant in this example, the external system will know which information every transfer ID contains.

### Generate documents per company

Start 'Standard Document. Open' (CRS027). Press F14='Gen standard' to generate all standard documents for the particular company you are working in.

### Define number series for TEI transfer

Start 'Number Series. Open' (CRS165). The following series types are valid for TEI:

- T1 = TEI transfer ID
- T2 = TEI header alias ID
- T3 = TEI detail alias ID

### Connect document to TEI partner and define settings for TEI partner

- 1 Start 'TEI Partner. Open' (MYS015). Define the settings for each partner and document variant. You can define several variants for each partner. Fill in appropriate fields on the E panel.
- 2 Start 'std Document. Connect Media Control Object' (CRS945). You can connect documents to partner for a specific division or for the entire company. The settings for the partner in (MYS015) will also be valid for the connection you make here.

#### **Create object control table for documents/event**

- 1 Start 'Available Object Control Parameters. Open' (CMS016). Select SCE Event Document and select option 11=Object table detailed lines.
- 2 'Generic Object Control Table. Open' (CMS017/B) is started.  
Set the 'Panel sequence' field to E (T) 1.
- 3 Enter program name MWS145 and select Create.
- 4 On the (CMS017/E) panel, specify the following:
  - Select the event. Depending on selected event you can select fields from different field groups (EVT01-09 and EVT20). See the parameter table.
  - Select the sequence number. If you leave this field blank, the system uses the next higher number.
  - Set to status 20 (Active).
  - Set the priorities from 0 to 9.

By default, sequence 10 corresponds to priority 0, sequence 20 to priority 1, and so on up to sequence 100, which corresponds to priority 9.

  - Fill in the 'Field 1(2,3 and 4)' fields with the selected fields from the field group (EVT01-09 and EVT20). Press F4 to select the valid fields.
- 5 Select the fields and display (CMS017/E) again.

Press Enter until you start 'Delivery Process Document Control. Open' (MWS145).

#### *Create Values for the Object Control Table*

- 6 You must define values for the defined control fields. You must repeat this for each priority. To the right of the Priority field you can view all priorities defined for this event/sequence number.
- 7 On the (MWS145/B) panel, define values for the fields.
- 8 The 'Value 1, (2, 3 and 4)' fields are the first, second, third, and fourth values to be compared to the contents of a control object.
- 9 Fill in the 'From date' field.

**Note:** F15='Delete old' can be used on the B panel to remove all expired document triggers.

- 10 On the (MWS145/E) panel, fill in the following fields:
  - To date - The document trigger applies up to and including this date.
  - Send to ASJ - Select the check box to produce the documents asynchronously (through an auto start job).  
If you are producing documents through an auto start job, you must have the ASJ MWS974 running.  
See *Administrator's Guide for Auto Start Jobs and Subsystems*.
  - Check CSFDEF – Indicates whether a check should be made ensuring that the output controls for each document are valid when retrieving each document trigger. If they are not valid, an M3 mail message is sent to the responsible person defined in the Responsible field.

Printer file, Work station, and User settings: This combination points to one or more entries in 'Output Media Selection. Open' (MNS205).

### Create object control table for TEI output control

- 1 Start 'Available Object Control Parameters. Open' (CMS016). Select SCE Event Document and select option 11=Object table detailed lines.
- 2 'Generic Object Control Table. Open' (CMS017/B) is started.  
Set the panel sequence to E (T) 1.
- 3 Enter program name MWS275 and select Create.
- 4 On the (CMS017/E) panel specify the following:
  - Select the event. Depending on the selected event, you can select fields from different field groups (TEI01-09 and TEI20). See the parameter table.
  - Select the sequence number. If you leave this field blank, the system uses the next higher number.
  - Set to status 20 (Active).
  - Set priorities from 0 to 9.  
By default, sequence 10 corresponds to priority 0, sequence 20 to priority 1, and so on up to sequence 100, which corresponds to priority 9.
  - Fill in the 'Field 1(2, 3 and 4)' fields with the selected fields from the field group (TEI01-09 and TEI20). Press F4 to select valid fields.
- 5 Select the fields and display (CMS017/E) again.  
Press Enter until you start 'TEI Output Control. Open' (MWS275).

### Create values for the object control table

- 1 You must define values for the defined control fields. You must repeat this for each priority. To the right of the Priority field you can view all priorities defined for this event/sequence number.
- 2 On the (MWS275/B) panel, define values for the fields. See the descriptions in the parameter list.

### Parameters to set

#### Generate Documents and Connect Documents to Partner Reference Objects

Program ID/Panel	Field	The field indicates...
(CRS928/B)	Document number	...the unique ID of a document. 915 – TEI transfer document.

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
(CRS928/B)	Document variant	<p>...the variants of a standard document as defined.</p> <p>For TEI, each document variant can contain different information as defined by the user.</p> <p>Example:</p> <p>Variant 00 sends package information to the external system when the picking list is printed. The purpose might be to print transportation labels.</p> <p>Variant 10 sends transportation information to the external system when the outbound delivery is reported. The purpose might be to print freight documents.</p> <p>In this example, since you use two different document variants the external system will know which information every transfer ID contains.</p>
(CRS928/E)	Media control selection	...whether object selection for media control is used for the current document. This must be defined for document 915.
(CRS928/E)	Printer file	...the name of the file that should be replaced temporarily with data from the definition.
(CRS928/E)	Field 1/ Object value for partner reference	<p>...the object value, which is used for partner reference selection.</p> <p>For TEI, the object value TETIPI (TEI partner) must be used.</p>
(CRS928/E)	Field 2/	<p>...the object value, which is used for partner reference selection.</p> <p>This field is not used for TEI.</p>
(CRS928/E)	External/internal doc	<p>...whether the document is internal or external.</p> <p>For TEI, a blank value (External) must be used.</p>

Program ID/Panel	Field	The field indicates...
(CRS928/E)	Document category	<p>...a classification that is entered for each standard document.</p> <p>For TEI, the document category must be 2 (Delivery documents).</p>
(CRS947/B)	Document object	<p>...the object value, which is used for partner reference settings in (CRS928) and (CRS945).</p> <p>In order to use a non-standard combination of document number and document variant in (CRS947), specific customer modifications must be made in functions that use partner control.</p> <p><b>Note:</b> For a TEI transfer document (document number 915), you can use non-standard combinations if the object is TETIPI without any further modifications in functions that use partner control.</p>
(CRS947/E)	Standard generated doc	<p>...whether the combination of document number, document variant, and document object is generated and used within standard functionality. This value cannot be changed by the user.</p> <p>The valid alternatives are:</p> <p>0 = A non-standard combination that must be manually generated.</p> <p>1 = A standard combination that is generated automatically when option F15 is selected in (CRS928) to generate all standard documents</p>

### Generate Documents per Company

Program ID/Panel	Field	The field indicates...
(CRS027/B)	Document number	...the unique ID of a document. 915 – TEI transfer document.

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
(CRS027/B)	Document variant	<p>...the variants of a standard document as defined.</p> <p>For TEI, each document variant can contain different information as defined by the user.</p> <p>Example:</p> <p>Variant 00 sends package information to the external system when the picking list is printed. The purpose might be to print transportation labels. Variant 10 sends transportation information to the external system when the outbound delivery is reported. The purpose might be to print freight documents.</p> <p>In this example, since you use two different document variants the external system will know which information every transfer ID contains.</p>
(CRS027/E)	External/internal doc	<p>...whether the document is internal or external.</p> <p>For TEI, a blank value (External) must be used.</p>
(CRS027/E)	Document category	<p>...a classification that is entered for each standard document.</p> <p>For TEI, the document category must be 2 (Delivery documents).</p>

### Define Number Series for TEI Transfer

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
(CRS165/B)	Number series type	<p>...the purpose of each number series. The following number series types are valid for TEI:</p> <p>T1 = TEI transfer ID (mandatory)  T2 = TEI header alias ID  T3 = TEI detail alias ID  (T4 = Transp. Op. Planning msg, is for transportation operational interface)</p>

Program ID/Panel	Field	The field indicates...
(CRS165/B)	Number series	...the number series. The same ID can be used by other number series if they belong to other types. For example, series A might be used for both order numbers and invoice numbers, although they have separate number ranges and start values.

### Connect Document to TEI Partner and Define Settings for TEI Partner

Program ID/Panel	Field	The field indicates...
(CRS945/B)	Document number	...the unique ID of a document. For TEI, you must select 915 and a document variant.
(CRS945/B)	TEI partner	...an external partner, for example with the internal number of the customer. This TEI partner is used within the TEI function to determine who will receive the TEI transfer. TEI partners are defined in 'TEI Partner. Open' (MYS015).
(MYS015/B)	Message direction	...the direction of the message. For TEI, the valid alternative is O (Outbound)
(MYS015/E)	TEI number series type	...the number series type to use for a TEI transfer. The number series type should be T1. A check is made to ensure that the specified series type exists in (CRS165).
(MYS015/E)	TEI number series	...the number series ID to use for a TEI transfer. Several different series can exist for one series type, but only one series ID for each combination of TEI partner, document number, and document variant can be used. A check is made to ensure that the specified series ID exists in (CRS165).

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
(MYS015/E)	Send TEI transfer automatically	<p>...whether a created TEI transfer (record in MYS500 in status 10) should automatically trigger an MBM initiator and send the transfer to the message broker immediately or if the MBM initiator should be manually triggered by option 9 in MYS500.</p> <p>The valid alternatives are:</p> <p>0 = No automatic trigger when a TEI transfer is created. Manually triggering must be done.</p> <p>1 = The TEI transfer will automatically trigger an MBM initiator when a new transfer is created.</p>
(MYS015/E)	Allow duplicate details	<p>...whether it is allowed to send the same detail value several times to the same external system.</p> <p>The valid alternatives are:</p> <p>0 = No duplicate details allowed. If the detail already exists for a TEI transfer, it will not be created for a new TEI transfer.</p> <p>1 = Duplicate details allowed. A TEI transfer detail will always be created regardless of whether it already exists for a TEI transfer.</p>

#### Create Object Control Table for Documents/Event

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
(CMS016/B)	Object control parameter	<p>...the available object control parameter, where you can define your objects and values.</p> <p>Select SCE Event Documents - MWS145.</p> <p>These values are generated automatically when you first enter CMS016 for the installation. If you have upgraded CMS016 you might need to press F14 to create any new values.</p>

Program ID/Panel	Field	The field indicates...
(CMS017/B)	View	...the view. Views are user defined, and determine the fields that are displayed and how the data is calculated. They are defined in (CRS020). See .
(CMS017/B)	Program name	...the program that is used for the object control table. In this case it is MWS145.
(CMS017/B)	Event/Start value 1	<p>...an event, which is a defined point in time when an M3 entity (such as a delivery) reaches a certain status. These events are predefined. They are specified in Event. Open (CRS019).</p> <p>By using event-based document control, you can automatically produce certain documents when a defined event occurs.</p>

#### Table of Available Events for Documents/Events

Event	Field Group (CRS109)	Description
DELIVERY_CLOSED	EVT04	The delivery is manually closed. No further order lines can be added. All possible backorder delivery lines are moved to a new delivery number. Applies to customer orders, requisition orders, and outbound distribution orders. Can only be used together with TEI.
DELIVERY_INV	EVT06	The delivery is fully invoiced. All included delivery lines are invoiced. The event occurs when the invoicing routine prints the invoice. Applies only to customer orders. Can only be used together with TEI.

<b>Event</b>	<b>Field Group (CRS109)</b>	<b>Description</b>
DELIVERY_ISSUED	EVT02	The delivery is issued. The delivery is fully issue reported, and all possible backorder lines are moved to a new delivery number. This event occurs when the status of a delivery becomes higher than or equal to 60. Applies to customer orders, requisition orders, and outbound distribution orders. Can be used without or together with TEI.
DO_GOODS_REC	EVT08	When the entire delivery is reported as goods received based on information provided with the physical delivery. The event occurs when the entire delivery number is reported as goods received. Applies to inbound distribution orders. Can only be used together with TEI.
MANUAL_DEL	EVT01	A manual request to retrieve a subset of shipments, packages and/or deliveries into a TEI transfer. Compared to the previous events, this event is performed without connection to a process activity and a status raise to an entity. It is a separate event that is performed when the user decides. It allows for creating a TEI transfer based on a manual user decision. Applies to customer orders, requisition orders, and outbound distribution orders. Can only be used together with TEI.

<b>Event</b>	<b>Field Group (CRS109)</b>	<b>Description</b>
MANUAL_PACKAGE	EVT09	A manual request to retrieve a subset of shipments, packages and/or deliveries into a TEI transfer. Compared to the previous events, this event is performed without connection to a process activity and a status raise to an entity. It is a separate event performed when the user decides. It allows for creating a TEI transfer based on a manual user decision. Applies to customer orders, requisition orders, and outbound distribution orders. Can only be used together with TEI.
MANUAL_SHP	EVT02	A manual request to retrieve a subset of shipments, packages and/or deliveries into a TEI transfer. Compared to the previous events, this event is performed without connection to a process activity and a status raise to an entity. It is a separate event performed when the user decides. It allows for creating a TEI transfer based on a manual user decision. Applies to customer orders, requisition orders, and outbound distribution orders. Can only be used together with TEI.
PO_GOODS_REC	EVT20	Each purchase order (PO) line or part of a PO line is reported as goods received based on information provided with the physical delivery. The event occurs when a PO line or a part of a PO line is goods received and a receiving number is created. Applies to inbound distribution orders. Can only be used together with TEI.

<b>Event</b>	<b>Field Group (CRS109)</b>	<b>Description</b>
RELEASE_PICK	EVT01	A delivery is released, either manually or time triggered, resulting in a new picking list (delivery number and picking list suffix). This event occurs when a picking list or group of picking lists is created after a delivery is released for picking. Depending on the configuration, pack reporting can be performed simultaneously. Applies to customer orders, requisition orders, and outbound distribution orders. Can be used with or without TEI. Note that this event can occur more than once depending on the closing point of the delivery. The event applies to picking lists that attain a status of 40 or higher for the first time. This means that the event is deemed to have occurred for picking lists going through pick resource planning only after release from pick resource planning.
SHIPMENT_CLOSED	EVT05	The shipment is manually closed. No further deliveries can be added. All possible backorder lines are moved to new delivery numbers and possibly a new shipment. Applies to customer orders, requisition orders, and outbound distribution orders. Can only be used together with TEI.
SHIPMENT_INV	EVT07	The shipment is fully invoiced. All included deliveries and delivery lines are invoiced. The event occurs when the invoicing routine creates the invoice. Applies only to customer orders. Can only be used together with TEI.

Event	Field Group (CRS109)	Description
SHIPMENT_ISSUED	EVT03	<p>The shipment is issued and the deadline has passed. All deliveries included in the shipment are issued, and no more deliveries will be added automatically. This event occurs when a shipment has status 60/60 and the shipment deadline has passed. All possible backorder lines are moved to new delivery numbers and possibly a new shipment. Applies to customer orders, requisition orders, and outbound distribution orders. Can be used with or without TEI.</p> <p><b>Note:</b></p>
(CMS017/E)	Sequence number	<p>The sequence number enables you to specify different sets of controlling objects for the same event. You might, for example, want to control picking lists with one set of objects and address labels with another. The SHIPMENT_ISSUED event requires that the auto start jobs DRS900 and DRS901 are running.</p> <p>If you do not enter a sequence number, one will be selected for you automatically. The system will take the next higher number for the event.</p>
(CMS017/E)	Status	<p>The status of the object control setting.</p> <p>10 = Preliminary 20 = Definite 90 = Blocked/expired. Only status 20 is used in the dispatch flow.</p>

Event	Field Group (CRS109)	Description
(CMS017/E)	Field sequence number	<p>The SHIPMENT_ISSUED event requires that the auto start jobs DRS900 and DRS901 are running.</p> <p>The order in which each information field should be displayed.</p> <p>Example:</p> <p>To move an object control line from priority 2 to 1, assign the sequence number for the line a number between 11 and 19. Press Enter. The line is then placed in the correct order.</p>
(CMS017/E)	Priority	<p>A priority for the selected fields. The object lookup is always performed in priority order. If no qualified objects are found according to priority one, M3 will try to find matching objects according to priority two, and so on.</p>
(CMS017/E)	Field	<p>A field or data element from a specific file. It is used to create keys or search paths for user defined tables and also to create the contents of user defined files.</p> <p><b>Note:</b> These fields will be protected if entries are found in (MWS145). That means that you cannot enter these fields if they are in use.</p>
(CRS109/B)	Field group	<p>A grouping of several fields from different files that regulate matrix entries. In this case, the EVT01, 02, 03, 04, 05, 06, 07, 08, 09, 20 field groups can be selected.</p> <p>Field groups are system-defined and cannot be changed.</p>

### Settings for Document Production

Program ID/Panel	Field	The field indicates...
(MWS145/B)	Priority	<p>...the table priority from the table in (CMS017). When the system searches after document event triggers, it searches object value entries in priority sequence, from 0 to 9, until a matching set of object values is found.</p>
		<p>All available priorities are displayed to the right and are separated by a slash, for example 0/1/2.</p>
(MWS145/B)	Value 1, 2, 3, 4	<p>These are the object values that must match for the given event to cause the documents entered in the corresponding MWS145/E panel to be produced.</p> <p>Example: A setting is defined here for event RELEASE_PICK. If the control objects are warehouse and stock zone, and the values entered here are 001 and AA, then the warehouse and stock zone for the picking list must be 001/AA for the documents in the corresponding MWS145/E panel to be produced.</p> <p>Example: Start value 1 is Warehouse (OQWHLO). Select a warehouse by pressing F4=Prompt.</p> <p>Start value 2 is stock zone (PISLTP). Select a stock zone by pressing F4.</p>
(MWS145/B)	From date	<p>...the date from which the document trigger will be active.</p>
(MWS145/E)	To date	<p>...the valid To date. The document trigger applies up to and including this date.</p>

Program ID/Panel	Field	The field indicates...
(MWS145/E)	Send to ASJ	<p>...whether the production of the specified documents for this event trigger will be produced synchronously or asynchronously.</p> <p>If the documents will be produced asynchronously, then the task is sent to an auto start job, which is a batch job. Otherwise, the print program is started and executed. The flow must wait for the print program to finish.</p>
	Check CSFDEF	<p>Select the check box to produce the documents asynchronously.</p>
		<p>For more information about auto start jobs, see <i>Auto Start Jobs and Subsystems in M3 12 Java Administrator's Guide</i>.</p>
(MWS145/E)		<p>...whether a check should be made ensure that the output controls for each document are valid when retrieving each document trigger.</p>
		<p>This check verifies that at least one output media selection entry exists in (MNS205) for this key. If no such entry exists, a message is sent to the M3 mailbox for the responsible person indicated in the trigger definition (MWS145/E).</p>
	Responsible	<p>Select the check box to make this check.</p>
		<p>...a unique user ID.</p> <p>The person responsible entered here will receive any M3 mail for errors related to missing media control settings.</p>

Program ID/Panel	Field	The field indicates...
(MWS145/E)	Doc number Doc variant Doc name	<p>...the document number and document variant together determine a specific variant of a document.</p> <p>Only documents defined for the event in (CRS019) can be used.</p> <p>The following documents are valid in EDC:</p> <ul style="list-style-type: none"> <li>Picking list (120)</li> <li>Delivery note (900)</li> <li>Dispatch advice (901)</li> <li>Package labels (912)</li> <li>Address labels (913)</li> <li>Loading list (909/00)</li> <li>Unloading list (909/01).</li> </ul> <p>The following documents are valid in TEI:</p> <ul style="list-style-type: none"> <li>TEI transfer document (915)</li> </ul>
(MWS145/E)	Printer file Work station User	<p>...the combination of printer file, work station, and user.</p> <p>This combination points to one or more entries in 'Output Media Selection. Open' (MNS205).</p> <p>When the connected document is produced, it will use these output services and media types.</p> <p><b>Note:</b> For picking lists, the media control entered here is only used if the printer entered for all relevant stock zones is set to blank.</p>
(MWS145/E)	Log level	<p>...the log level.</p> <p>If this check box is selected, then delivery documents produced using event-based document control will update the delivery document history and be visible in the connected delivery documents sorting order (MWS260).</p> <p>Select the check box to update the delivery document history.</p> <p>This is only valid for certain documents.</p>

### Create Object Control Table for TEI Output Control

Program ID/Panel	Field	The field indicates...
(CMS016/B)	Object control parameter	<p>...the available object control parameter, where you can define your objects and values.</p> <p>Select TEI Output Control-(MWS275).</p> <p>These values are generated automatically when you first enter (CMS016) for the installation. If you have upgraded (CMS016) you might need to press F14 to create any new values.</p>
(CMS017/B)	View	<p>...the view.</p> <p>Views are user defined, and determine the fields that are displayed and how the data is calculated.</p> <p>They are defined in (CRS020). See .</p>
(CMS017/B)	Program name	...the program that is used for the object control table. In this case it is (MWS275).
(CMS017/B)	Event/Start value 1	<p>...an event, which is a defined point in time when an M3 entity (such as a delivery) reaches a certain status. These events are predefined. They are entered in Event. Open (CRS019).</p> <p>By using event-based document control, you can automatically product certain documents when a defined event occurs.</p>

Program ID/Panel	Field	The field indicates...
(CMS017/E)	Sequence number	<p>...the sequence number.</p> <p>The sequence number enables you to specify different sets of controlling objects for the same event. You might, for example, want to control picking lists with one set of objects and address labels with another.</p> <p>If you do not enter a sequence number, one will be selected for you automatically. The system will take the next higher number for the event.</p>
(CMS017/E)	Status	<p>...the status for the object control setting.</p> <p>10 = Preliminary 20 = Definite 90 = Blocked/expired.</p> <p>Only status 20 is used in the dispatch flow.</p>
(CMS017/E)	Field sequence order	<p>...the order in which each information field should be displayed.</p> <p>Example:</p> <p>To move an object control line from priority 2 to 1, assign the sequence number for the line a number between 11 and 19. Press Enter. The line is then placed in the correct order.</p>
(CMS017/E)	Priority	<p>...a priority for the selected fields.</p> <p>The object lookup is always performed in priority order. If no qualified objects are found according to priority one, M3 will try to find matching objects according to priority two, and so on.</p>

Program ID/Panel	Field	The field indicates...
(CMS017/E)	Field	<p>...a field or data element from a specific file.</p> <p>It is used to create keys or search paths for user defined tables and also to create the contents of user defined files.</p> <p><b>Note:</b> These fields will be protected if entries are found in (MWS145). That means that you cannot enter these fields if they are in use.</p>
(CRS109/B)	Field group	<p>...a grouping of several fields from different files that regulate matrix entries. In this case, the EVT01, 02, 03, 04, 05, 06, 07, 08, 09, 20 field groups can be selected.</p> <p>Field groups are system-defined and cannot be changed.</p>

#### Settings for How TEI Output Should Be Processed to an External System

Program ID/Panel	Field	The field indicates...
(MWS275/B)	Priority	<p>...the table priority from the table in (CMS017). When the system searches for document event triggers, it searches object value entries in priority sequence, from 0 to 9, until a matching set of object values is found.</p> <p>All available priorities are displayed to the right and are separated by a slash, for example 0/1/2.</p>

Program ID/Panel	Field	The field indicates...
(MWS275/B)	Value 1, 2, 3, 4	<p>These are the object values that must match for the given event to cause the TEI output, specified in the corresponding (MWS275/E) panel, to be processed to an external system.</p>
		<p>Example: A setting is defined here for event RELEASE_PICK. If the control objects are warehouse and stock zone, and the values entered here are 001 and AA, then the warehouse and stock zone for the picking list must be 001/AA for the TEI output in the corresponding (MWS275/E) panel to be processed.</p>
		<p>Example: Start value 1 is Warehouse (OQWHLO). Select a warehouse by pressing F4=Prompt.</p>
		<p>Start value 2 is stock zone (PISLTP). Select a stock zone by pressing F4.</p>
(MWS275/E)	TEI partner	<p>...an external partner, for example with the internal number of the customer. This TEI partner is used within the TEI function to determine who will receive the TEI transfer.</p>
		<p>TEI partners are defined in 'TEI Partner . Open' (MYS015).</p>

Program ID/Panel	Field	The field indicates...
(MWS275/E)	TEI header Alias - method	<p>...whether transaction alias is used and how.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>0 = No transaction alias is used.</li> <li>1 = Transaction alias is used and it is retrieved from a number series type and series ID.</li> <li>2 = Transaction alias is used and retrieved via a user exit program.</li> </ul> <p>The transaction alias is an ID that is saved on the TEI transfer header. The alias can be used if the receiving system has specific requests on how the TEI transfer number should appear and the TEI transfer ID is insufficient.</p>
(MWS275/E)	TEI header Alias - number series type	<p>...the number series type that should be used for a TEI transfer. The number series type should be T2. A check is made to ensure that the entered series type exists in (CRS165).</p>
(MWS275/E)	TEI header Alias - number series ID	<p>...the number series ID that should be used for a transaction alias. Several different IDs can exist for one series type but only one ID per TEI output control record can be used. A check is made to ensure that the entered series ID exists in (CRS165).</p>
(MWS275/E)	TEI header Alias - user exit program	<p>...a program that will be used to calculate or retrieve a transfer alias. The program in this field will be called when a TEI transfer is created.</p> <p>The purpose is to enable the user to design the program. If the program name in this field does not exist as a valid program, method 0 is used.</p>

Program ID/Panel	Field	The field indicates...
(MWS275/E)	TEI detail Alias - method	<p>...whether a package alias is used and how it is used.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>0 = No package alias is used.</li> <li>1 = Package alias is used and it is retrieved from a number series type and series ID.</li> <li>2 = Package alias is used and retrieved via a user exit program.</li> </ul> <p><b>Note:</b> The user exit program must be designed in each implementation.</p> <p>The package alias is an ID that is saved on each TEI transfer detail. The alias can be used if there are specific requests on each TEI detail ID. An example is if each detail is a package and the package label is printed from an external system (TES). Then the package alias can be used as a reference on each package.</p>
(MWS275/E)	TEI detail Alias - number series type	<p>...the number series type that should be used for a TEI transfer. The number series type should be T3. A check is made to ensure that the entered series type exists in (CRS165).</p>
(MWS275/E)	TEI detail Alias - number series ID	<p>...the number series ID that should be used for a package alias. Several different IDs can exist on one series type but only one ID per TEI output control record can be used. A check is made to ensure that the entered series ID exists in (CRS165).</p>

Program ID/Panel	Field	The field indicates...
(MWS275/E)	TEI detail Alias - user exit program	<p>...a program that will be used to calculate or retrieve a package alias. The program in this field will be called when a TEI transfer detail is created.</p> <p>The purpose is to enable the user to design the program. If the program name in this field does not exist as a valid program, method 0 is used.</p>

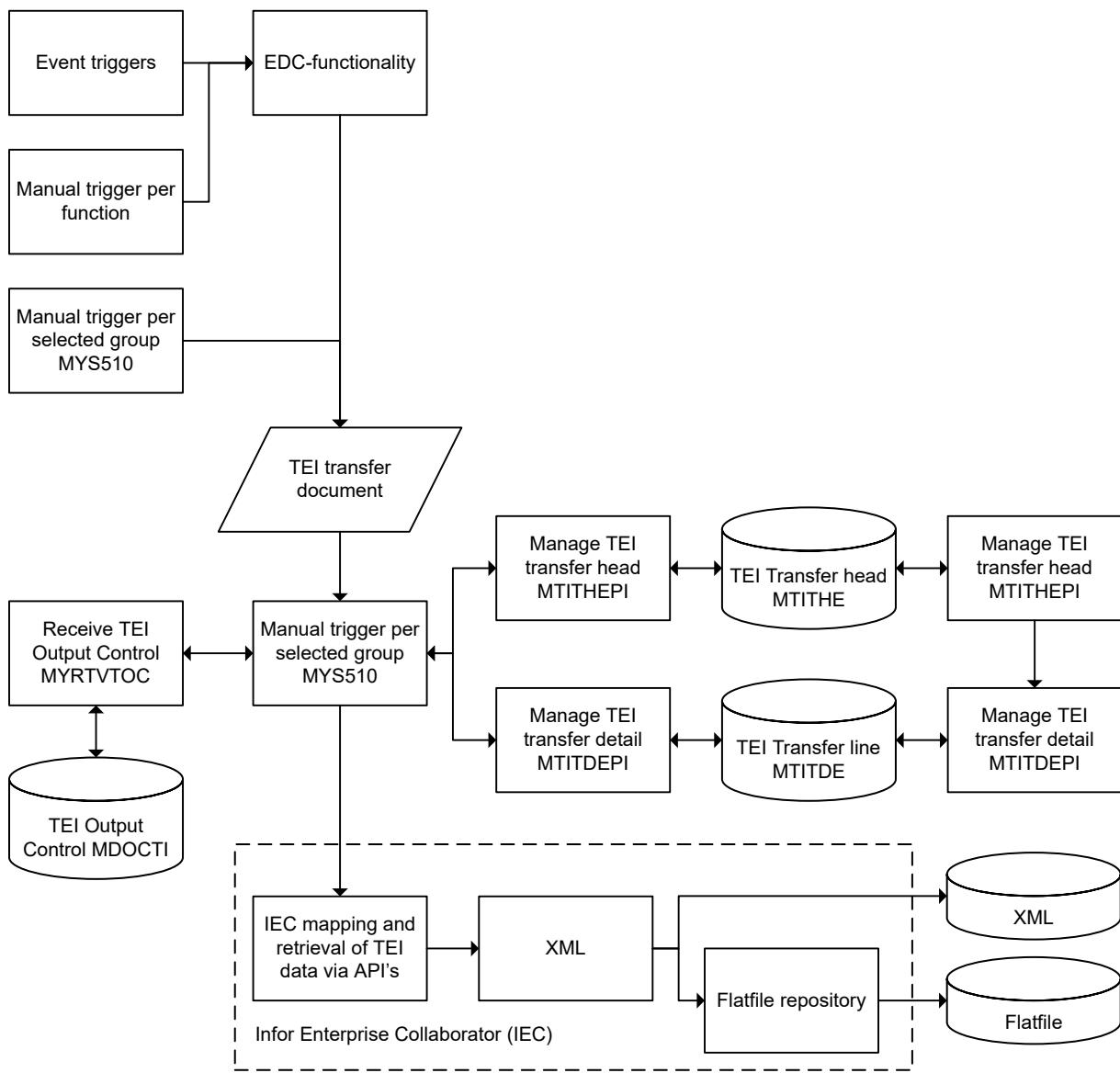
## Overview of TEI Architecture

### Introduction

This document provides a detailed information about the current architecture of the M3 Transportation Execution Interface (TEI) solution.

### TEI functionality

This figure illustrates the entire TEI functionality.



The M3 TEI solution is push-oriented, which means that the information is created within M3 and can be processed, viewed, and changed before it is sent to the external system. This solution enables a flexible, pull-oriented information flow of transportation information together with Infor Enterprise Collaborator (IEC). This means that the integration is more flexible and the data sent to a TEI system will be pulled from M3 via IEC by using M3 APIs.

The following list provides a brief explanation of the events in the M3 TEI solution.

- **Event triggers**

One way to trigger the creation of a TEI transfer is to use a predefined event. When this event occurs, the TEI transfer document can be triggered. Examples of events are the printing of a picking list or the issue of a delivery.

- **Manual trigger per function**

Another way to trigger the creation of a TEI transfer is to use the manual triggering that is added in some functions. By selecting option 53 from 'Delivery. Open Toolbox' (MWS410) OR 'Shipment. Open Toolbox' (DRS100), you can create a TEI transfer including delivery information. From 'Delivery. Connect Packages' (MWS423), you can select option '53' to trigger a TEI transfer including package information.

- **Manual trigger per selected group - (MYS510)**

The third way to create a TEI transfer is to do a manual selection in a report version and let the system create one or more transfers from the selection. When creating a TEI transfer for an outbound transaction, selection objects from shipment and delivery are used. For an inbound transaction, selection objects from either the delivery (DO) or the purchase order or purchase order line are used.

- **Event-based document control**

Event-based document control (EDC) is used to trigger a TEI transfer either from a system event (for example, a raise of status) or from a manual event (for example, using option 53 in the delivery toolbox). The EDC function is based on predefined events that are controlled by a selection table to detect when or whether a specific document should be printed. This function can be used for several documents and one specific document is the TEI transfer document.

- **TEI transfer document**

The TEI transfer document is not a regular document but rather a trigger used to start the creation of a TEI transfer. This document will only contain basic information about either the event that triggered the creation or information from the selection made in a report version. The document number used for the TEI transfer document is 915. Only document variant 00 is standard but any value up to 99 can be used. It is recommended to use one combination of document number and document variant for each set of output information that will be used. For example, if package information should be sent to an external transportation system one document variant should be used but another document variant is used if delivery information is sent to a Transportation Execution Systems.

- **Manage TEI transfers - MYMNGTEI**

This program is central for managing TEI transfers. It will call other programs to trigger specific tasks. For example, when the program MYRTVTOC is called to retrieve an output control record and to create a TEI transfer header, then the program MTITHEPI will be called. When a TEI transfer is sent to an external system, it is done by this program which creates an MBM trigger and sends it to IEC.

- **Retrieve TEI output control data**

Certain data that should be added to a created TEI transfer is object controlled. This data is retrieved from the MDOCTI table. The external transportation system that should receive a specific TEI transfer is one of the parameters that is managed in this function. This program will be called for every event triggered TEI transfer.

- **Manage TEI transfer header - MTITHEPI**

When a TEI transfer header is checked, added, or changed, the function MTITHEPI is used. Every managing of a TEI transfer in the MTITHE table is managed by this function.

- **Manage TEI transfer details - MTITDEPI**

In the same way as MTITHEPI manages TEI transfer headers, this function manages TEI transfer details. When a TEI transfer detail in MTITDE should be processed in any way, it is done by the function MTITDEPI.

- **Work with TEI transfer header**

This function is used to manage TEI transfer headers that are already created. From here a TEI transfer header can be changed, added, and manually sent to the external system.

- **Work with TEI transfer details**

This function is used to manage TEI details that are created and connected to a transfer header. TEI details can be added, deleted, or changed in this function.

- **IEC Mapping**

When the TEI transfer has been sent to IEC, it will be used to trigger a predefined template, a IEC mapping. These templates will use several different APIs to retrieve transactional information from M3 in a sequence.

- **XML**

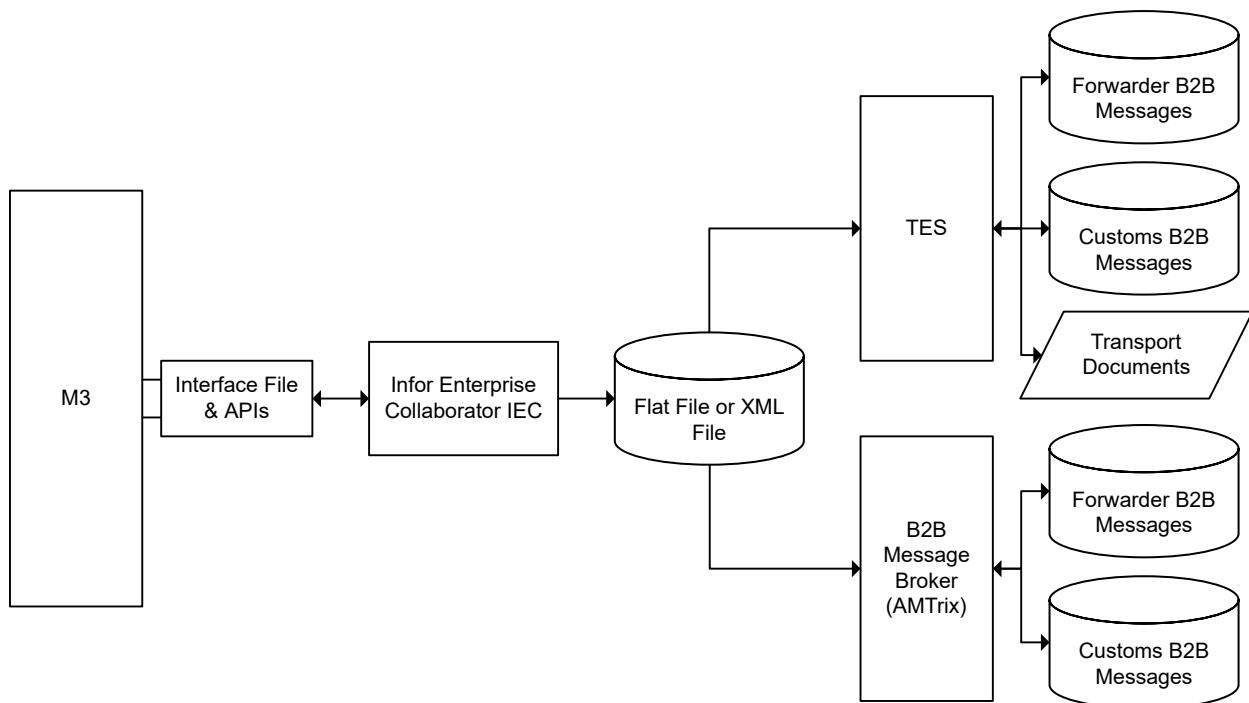
The output from the IEC mapping will always be in XML format. If the receiving system can manage XML files, there is no need for additional processing of the output file.

- **Flat file repository**

In those cases where the receiving system only can manage a flat file format, the XML file can be converted. This is done by using the flat file repository.

### Mapping IEC to TEI

The following figure illustrates the principles for using IEC and the APIs to download transportation information from M3 BE. The counterpart to IEC can either be a Transportation Execution Systems or an external partner (such as a customer, supplier, or forwarder) that receives B2B messages (EDI, XML, and so on).



The M3 BE business logic and the APIs in the TEI interface are considered standard functionality that is delivered and supported according to normal routines. The mappings in IEC that are needed to pull information from M3 BE and create any kind of output file that will be sent to a Transportation Execution Systems follow a different routine. Since no universal standard (compare ANSI X12, EDIFACT, etc.) exists, Infor cannot supply a standard delivery for this purpose.

The template IEC mappings delivered by Infor produce both an XML file (supporting supports outbound logistics) and a flat file output (supporting inbound logistics). The XML file and flat file output is produced based on a Transportation Execution Systems system called EDICOM and its interface file standard "CEDITRAN." Each implementation can then use these templates and modify them into its own format based on which Transportation Execution Systems is used. If EDICOM is used, smaller adjustments might be needed since each EDICOM implementation is unique.

B2B mappings can also be produced in IEC to support B2B messages (EDIFACT, XML, ANSI X.12, and so on) to forwarders or customs. These implementation-unique formats and B2B messages are not a delivery from Infor.

### General recommendations – Customized IEC mappings

Each customer unique IEC mapping must always consist of the following:

- 1 Initial API call to MYS500MI GetHead based on the MBM initiator sent containing the TEI Transfer ID.
- 2 API calls to MYS500MI ChgHead with field STAT = 15. Will update TEI Transfer ID in (MYS500) with status indicating IEC mapping has started.
- 3 API call to MYS500MI LstDetail to retrieve the list of detail records created in (MYS501). The nature of the details depend on the current event type and detail type.
- 4 Customized API calls based on what shall be produced as output from the current IEC mapping. Here IRDs template mapping solution must be replaced but re-used.
- 5 Optionally, perform an API call to MYS500MI ChgHead with field STAT = 19. Will update TEI Transfer ID in (MYS500) with status indicating IEC mapping has stopped processing before the planned end with an controlled error that should not create any output file.
- 6 Initial API call to the API MYS500MI ChgHead with field STAT = 20. Will update TEI Transfer ID in (MYS500) with status indicating IEC mapping has completed successfully.

### Concept log

To support the analysis of the event triggering, concept logs can be activated in server view. The concept logs will display data used during the triggering event and TEI creation.

**Note:** The concept log should only be activated during analyses to minimize the workload.

To activate the concept to log the event triggering, enable the concept:

#### **mvx.sce.edc.EventTriggering**

To activate the concept to log the creation of a TEI transfer, enable the concept:

#### **mvx.sce.tei.TransferCreation**

When the concepts are activated, information will be written to the JVM log during the process.

### Configurations in (MYS015)

In (MYS015), a TEI partner can be connected to document number 915 and to a document variant. It is recommended to use one document variant for each purpose and each TEI partner. For example to send package information to an external system should one document variant be used while another document variant should be used if it is transportation information that is going to be sent to the external system.

### Configurations in (MWS145)

It is possible to use several sequence numbers in (MWS145) to trigger a document several times. This functionality should be avoided in the case of triggering the TEI transfer document since it can result in several TEI transfers with the same details sent to the external system. If it is possible, use the TEI transfer document in only one sequence number or be careful when setting the controlling objects in MWS145 so the situation is avoided.

The event Release\_Pick can as mentioned before only trigger package details in the TEI transfer. Since this event is triggered when each picking list suffix is printed packing report method = 4 (automatically when printing the picking list) is the most useful. However, there is a limitation in this functionality. When picking list suffix 1 is printed and the included picking list lines are packed in 2 full packages and a third half full package a TEI transfer is created with one detail record per package number. When picking list suffix 2 is printed there is a possibility to continue packing in the third, half full package. This will cause a second TEI transfer with one detail record (the third package) already existing on a TEI transfer. So depending on the receiving system, this can cause some problems. If the receiving system can manage that the same detail record is sent several times this is no problem but if the receiving system can't manage the same detail record twice, the parameter Allow duplicate details should be set to 0 which will prevent that the detail is not connected to the TEI transfer according to the printing of picking list suffix 2 above.

The solution to this problem can be either to use another automatic event such as Delivery\_Issued or use the manual event Manual\_Package. In the later example can each package be triggered individually when the package is fully packed.

### Configurations in (MWS275)

The most important setting in (MWS275) is what TEI partner should receive a TEI transfer created from the TEI output control record. But the area where some extended explanations might be in place are the other fields in (MWS275) concerning TEI alias numbers. To each created TEI transfer header a TEI header alias can be connected and to each TEI detail a TEI detail alias can be connected. The main purpose of this functionality can be if the detail level is package number and if each package should have a unique number according to the receiver of the TEI transfer, for example a forwarder. Then TEI detail alias should be activated. Existing alias methods are 0 (no TEI detail alias), 1 (from number series) or 2 (from a user exit program). When method 2 is used, a customer modification program must be developed to fit the specific demands of that implementation.

### TEI transfer entities overview

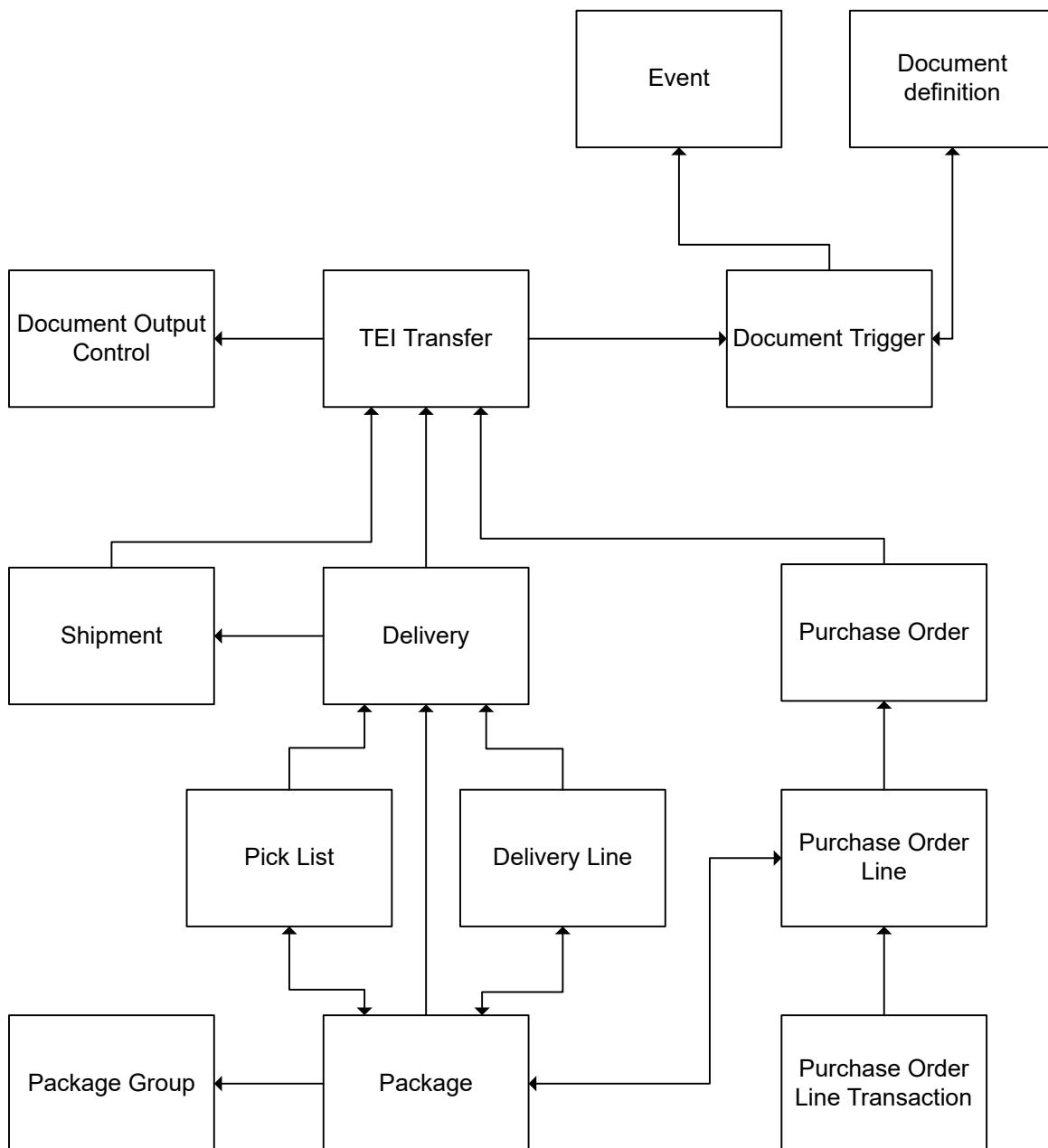
The TEI domain is oriented around the TEI transfer entity that is the result of a request for download of transportation related information. To each TEI transfer relations exist related to either outbound or inbound logistics with their respective entities.

Related entities such as shipments, deliveries, delivery lines, packages, purchase orders, and purchase order lines are created inside M3 based on the outbound and inbound process flow. The creation of the involved entities is configurable and has variations based on the flexibility when configuring the M3 product.

Event-based document triggers that are selected by the user automatically initiate a TEI transfer when an event occurs. Selected event triggers are chosen considering the normal processing activities inside M3. An example of such trigger is when a shipment is closed and no further deliveries will be added to the shipment. Another example is when a delivery is issued and all picking lists for a delivery number are issue reported. Alternatively, TEI transfers can be manually initiated allowing for user-defined grouping outside normal grouping identities such as shipments, deliveries, and purchase orders.

### **Entities outline**

The following entities outline contains some simplifications regarding the connection between a package and a delivery line and the relations to the picking list entity.



### TEI transfer entities description

Entity	Description
TEI Transfer	<p>Represents a request to download a set of information from M3 related to the TEI.</p> <p>The TEI Transfer holds several attributes with the purpose to represent key information for each request to download transportation information. These attributes are:</p> <p>Message direction, Direction, Transfer ID, Status, Event, Event Key, Document Number, Document variant, partner level.</p>
Document Definition	<p>Represents each M3 document number and document variant with program used to create document.</p> <p>The integration to a Transportation Execution Systems is represented by document number 915 but several document variants (00 - 99) can be used. Document variants are used to enable several integration points in the dispatch flow depending on what information that is needed at what stage in the process. One example would be to send label information when picking lists are released as variant 00. Later when the Delivery is issued variant 01 is used to send more information regarding all transport and customs documents.</p>
Event	<p>Available detectable events in the Supply Chain Execution (SCE) and Purchase Order Processing (PUR) process. Each event holds a list of allowed documents for the event. Some events will allow for and initiate a TEI transfer. For allowed events, see 'TEI Transfer Events'.</p>
Document Trigger	<p>Represents the combination of a detectable event, sequence number and object combination. Points at one or several document numbers and document variants to be triggered when the event occurs for the defined objects.</p>
Document Output Control	<p>Holds several control information related to the TEI document number and document variant.</p> <p>The control information includes e.g. identities, number series, document number and variant, transfer and package IDs and transfer variants.</p>
Shipment	<p>A Shipment collects a number of Deliveries that share the same characteristics regarding Departure date/time, Mode of delivery, Forwarder, Route, transport equipment, etc.</p>
Delivery	<p>A Delivery collects a number of order lines that share the same characteristics regarding Consignor, Consignee, Departure date/time, Terms of delivery, Mode of delivery, Forwarder, Route etc.</p>
Delivery line	<p>A specific delivery line categorized by order category (Customer order, Distribution order, Requisition order or Manufacturing order). The delivery line specifies the item number and quantities. It's linked to and is a result of an order line created in each order categories' order entry function.</p>

Entity	Description
Pick list	Represents each individual picking list created out of one delivery. Different rules, system defined and user defined, applies for how to split a delivery into several picking lists. The timing of stock entry and allocation can also result in split picking lists per delivery.
Package	Represents each physical package to be shipped (CO/DO/RO) or received (DO). The package either contains items, other packages or a combination of both. Holds information about the physical attributes (weight, volume, etc.) connected to a package.
Package Group	Represents a group of packages sharing the same characteristics regarding packaging or packaging group. The grouping can be requested with Delivery, Shipment or Transfer ID as grouping level.
Purchase order	Represents a purchase from a specific supplier.
Purchase order line	Represents the item to be purchased and quantities.
Purchase order line transaction	Represents each reporting transaction made against a PO line after the order line is entered. One example is a goods receipt transaction.

### TEI transfer events

Each event can be selected as the one that initiates the TEI transfer. All events except the manual TEI transfer are represented by a raised status on the entity.

### Events for outbound logistics

Event	Description
Pick list released	A picking list is released, either manually or time triggered, resulting in a new picking list (Delivery number and Picking list suffix). Depending on the configuration pack reporting can be executed simultaneously. Applies to CO, RO, and outbound DO.
Shipment Closed	The Shipment is manually closed meaning that no further deliveries can be added. All possible backorder lines are moved to new Delivery numbers and possibly a new Shipment. Applies to CO, RO, and outbound DO.
Delivery Closed	The Delivery is manually closed meaning that no further order lines can be added. All possible backorder delivery lines are moved to a new Delivery number. Applies to CO, RO, and outbound DO.
Shipment Issued	The Shipment is issued and the deadline has passed. Means that all included Deliveries has been issued and no more Deliveries will be added automatically. All possible backorder lines are moved to new Delivery numbers and possibly a new Shipment. Applies to CO, RO, and outbound DO.

Event	Description
Delivery Issued	The Delivery is issued. Means that the Delivery is fully issue reported and all possible backorder lines are moved to a new Delivery number. Applies to CO, RO, and outbound DO.
Shipment Invoiced	The Shipment is fully invoiced meaning that all included Deliveries and delivery lines are invoiced. The event occurs when the invoicing routine prints the invoice. Applies only to COs.
Delivery Invoiced	The Delivery is fully invoiced meaning that all included delivery lines are invoiced. The event occurs when the invoicing routine prints the invoice. Applies only to COs.
Manual_Del	This event is triggered by a manual action (option 53 in 'Delivery. Open Toolbox' (MWS410)) and not by a change of a status. This event is triggered per delivery and the event key will be the delivery number. Applies to CO, RO, and outbound DO.
Manual_Shp	This event is triggered by a manual action (option 53 in 'Shipment. Open Toolbox' (DRS100)) and not by a change of a status. This event is triggered per shipment and the event key will be the shipment number. Applies to CO, RO, and outbound DO.
Manual_Package	This event is triggered by a manual action (option 53 in 'Delivery. Connect Packages' (MWS423)) and not by a change of a status. This event is triggered per package and the event key will consist of a combination of delivery number and the package number. Applies to CO, RO, and outbound DO.

### Events for inbound logistics

Event	Description
Goods receipt DO	Each DO is reported as good received based on information supplied with the physical delivery. The event occurs when the full inbound delivery number is reported. Applies to inbound DO.
Goods receipt PO	Each PO line is reported as good received based on information supplied with the physical delivery. The event occurs when a single PO line goods receipt (Reporting number) is reported. Applies to PO.

## TEI report versions

Instead of using an event to trigger the creation of a TEI transfer, a report version with a manual selection can be used. The selection can be cross functional, which means that it is possible to select, for example, deliveries that are connected to different shipments and still get them on one TEI transfer. Each report version can be used several times but the parameter Report version type cannot be changed after creation. A report version can have report version 1 (Outbound), 2 (Inbound), or 3 (Inbound DO).

- **Type 1 (Outbound)**

This report version type should be used when creating TEI transfers including outbound transactions such as deliveries and shipments. Selection objects from delivery and shipment can be used to group deliveries into a TEI transfer. The detail level of the created TEI transfer from a report version with type 1 is always per delivery number.

- **Type 2 (Inbound)**

This report version type should be used when creating TEI transfers including inbound transactions such as purchase orders. Selection objects from purchase order head and purchase order lines can be used to group purchase order lines into a TEI transfer. The detail level of the created TEI transfer from a report version with type 2 is always per purchase order line.

- **Type 3 (Inbound DO)**

This report version type should be used when creating TEI transfers including inbound DO transactions such as delivery that is about to be goods receipt. Selection objects from delivery and shipment can be used to group inbound DO-deliveries into a TEI transfer. The detail level of the created TEI transfer from a report version with type 3 is always per delivery number.

# API Overview of M3 Transportation Execution Interface

This document describes the different API transactions available for the Transportation Execution Interface (TEI).

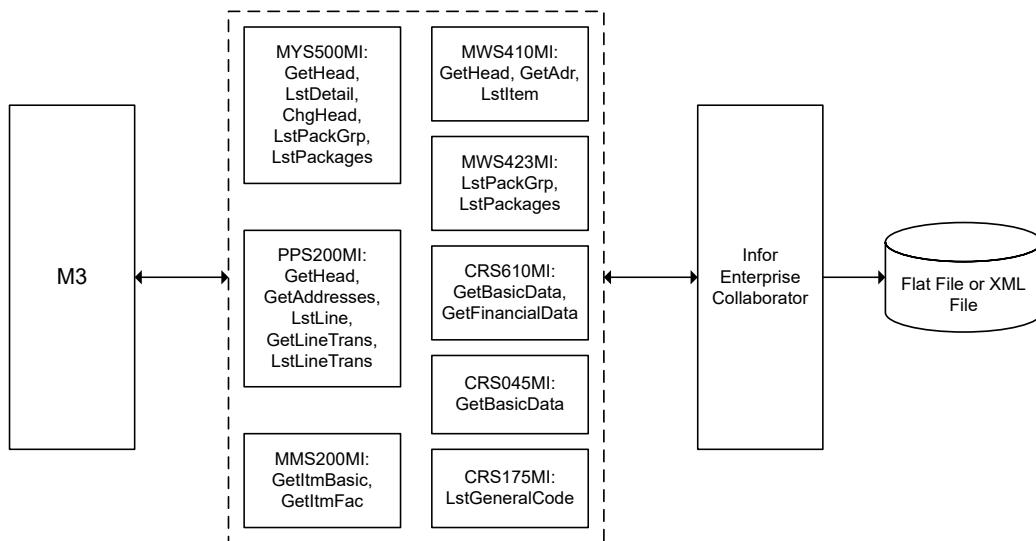
For detailed description about M3 Interface programs and their transactions, see the API Repository in 'MI Repository. Open' (MRS001), 'MI Transaction. Open' (MRS002), and 'MI Transaction Layout. Open' (MRS003).

## M3 Transportation Execution Interface (TEI) API overview

The different API transactions described in this document are meant to be used together with the Transportation Execution Interface (TEI). With the use of these transactions, you can retrieve logistics and commercial information from M3 BE and send them to Infor Enterprise Collaborator (IEC). IEC then creates an output file to be sent to an external Transportation Execution System (TES).

Other API transactions that are not described in this document can be used in each implementation. The ones listed are the central transactions that most commonly appear in each implementation.

The following figure describes the most common APIs involved when TEI is implemented.



The list below should provide an overview of the most common APIs involved.

- **MYS500MI - TEI Transfer Interface**

The API is to be used from IEC to manage information about TEI transfers and send back status information to M3 BE reporting about the IEC processing. MYS500MI also contains transactions that make it possible to retrieve logistics information across several delivery numbers or shipments. This APIs usage is vital when a Transportation Execution Systems needs to combine several delivery numbers into a joint document for customs declaration for example. Another situation is when several deliveries need to be combined into one freight document.

MYS500MI consists of the following transactions:

Name	Description
	<b>Retrieve and summarize package information for one Delivery number grouped by different packaging IDs.</b>
GetHead	Retrieve a list of packages for one Delivery number filtered by a series of fields.
LstDetail	Generate MFTRNS details when MWS010 field 240 (Pack report method) equals 0 (No pack reporting) or 1 (Simple pack reporting).

Name	Retrieve and summarize package information for one Delivery number grouped by different packaging IDs.
LstPackGrp	<p>The transaction <b>LstPackGrp</b> interfaces the function 'Delivery. Connect Packages' (MWS423). The purpose of the transaction is to retrieve aggregated package information. The grouping is performed for one TEI transfer header. This means that several delivery numbers are to be merged into one output reply.</p> <p>Regarding package grouping, it is possible to request this based on the fields Packaging or Packaging type. Packaging is the identity of a specific packaging used to pack goods onto or into. Packaging is defined in 'Packaging. Open' (MMS050). Packaging type is the identity for a group of packagings used to hold them together in a logical way. Packaging type is defined in 'Packaging Type. Open' (DRS080). One simple example would be two Packagings, one <b>small tote bin</b> and a second <b>large tote bin</b>. The Packaging type would then be <b>tote bin</b> independent of size. The usage of these two IDs differs between implementations so the API transaction can be used to group on any of the two identities.</p> <p>The output from LstPackGrp returns information that is kept on package level, table MPTRNS presented in 'Delivery. Connect Packages' (MWS423), and is suitable for package grouping.</p> <p>No information is supplied regarding items and lot numbers packed into a group of packages. This is because one package group can contain many items and / or many lot numbers. The LstPackGrp transaction is only used for TEI transfers related to outbound or inbound delivery numbers, not purchase orders.</p>

Name	<b>Retrieve and summarize package information for one Delivery number grouped by different packaging IDs.</b>
LstPackages	<p>The transaction <b>LstPackages</b> interfaces the function 'Delivery. Connect Packages' (MWS423). The purpose of the transaction is to retrieve a list consisting of the packages for one TEI transfer header. This means that several delivery numbers are to be merged into one output reply.</p> <p>The request to list a series of packages must be done for the main keys Company (CONO), Message direction (E0IO), Direction (INOU) &amp; TEI Transfer ID (TINR). In addition to these main keys, optional filtering on Package level (PACO), Packaging (MMS050) or Packaging type (DRS080) is possible. PACO is either filled with the level desired (000, 001 etc) or 999 if no filtering is wanted. PACT or PACK is filled with the code value that you want to filter on. All packages for one TRID are checked against the filter values and qualified / disqualified.</p> <p>The output from LstPackages returns information that is kept on package level, table MPTRNS presented in 'Delivery. Connect Packages' (MWS423). All relevant fields from MPTRNS is placed in the output.</p> <p>No information is supplied regarding items and lot numbers packed into a package. This is because one package can contain many items and / or many lot numbers.</p> <p>The LstPackages transaction is only used for TEI transfers related to outbound delivery numbers, not purchase orders or inbound distribution orders.</p>

Name	Retrieve and summarize package information for one Delivery number grouped by different packaging IDs.
LstStatNo	<p>The transaction <b>LstStatNo</b> interfaces the function 'Package Detail. Open' (MMS473).</p> <p>The purpose of the transaction is to retrieve a list consisting of the Customs statistical number, Customs procedure and Country of origin combinations for one TEI transfer header. This means that several delivery numbers are to be merged into one output reply.</p> <p>Customs statistical number, Customs procedure and Country of origin are linked to each item / facility in 'Item. Connect Facility' (MMS003). The Customs statistical number is used to group items with similar characteristics according to the customs codex. Customs procedure is used to describe the procedure used when exporting or importing goods. Country of origin identifies the country where the item originally was produced.</p> <p>The LstStatNo transaction is requested for the Company (CONO), Message direction (E0IO), Direction (INOU) &amp; TEI Transfer ID (TINR) fields. For each delivery number, package details from MFTRNS 'Package Detail. Open' (MMS473) is used as basis for building a summary as described above. Every package detail record is analyzed and summarized accordingly.</p> <p>The output from LstStatNo returns summarized information about gross weights, net weights, volumes, amounts, currencies and number of packages.</p> <p>The pricing of the output records should be priced according to the same rules as when producing an ED document / Unit document (MWS616) and Proforma invoice (MWS630). Different rules apply depending on order category.</p> <p>The LstStatNo transaction is only used for TEI transfers related to outbound delivery numbers, not purchase orders or inbound distribution orders.</p>

Name	Description
ChgHead	<p>The transaction <b>ChgHead</b> interfaces the function 'TEI Transfer. Open' (MYS500).</p> <p>The purpose of the transaction is to enable possibilities to update a TEI transfer header record in the table MTITHE. The update is requested for the Company (CONO), Message direction (E0IO), Direction (INOU) &amp; TEI Transfer ID (TINR) field's. The main field to update is STAT (Status). Update of status should be used from IEC to indicate that processing is started, performed initially in the IEC mapping. Another status updated is done with a "finished" status when the IEC mapping has ended successfully.</p>

- **PPS200MI - Purchase Order Interface**

The API is used from IEC to retrieve purchase order related information. It interfaces the order header, the order lines, order line transactions, order addresses and order texts.

PPS200MI also consist of several other transactions but these are not described here as they normally don't exist in a TEI solution.

PPS200MI consists of the following transactions related to TEI:

Name	Description
GetHead	<p>The transaction <b>GetHead</b> interfaces the function 'Purchase Order. Open' (PPS200).</p> <p>The purpose of the transaction is to enable retrieval of PO header information.</p>
GetAddresses	<p>The transaction <b>GetAddresses</b> interfaces the function 'Purchase Order. Open' (PPS200).</p> <p>The purpose of the transaction is to enable retrieval of all addreses connected to a PO header. The address information is presented in (PPS200/G).</p>
LstLine	<p>The transaction <b>LstLine</b> interfaces the function 'Purchase Order. Open Lines' (PPS201).</p> <p>The purpose of the transaction is retrieve a list of all lines connected to a PO header with it's related information.</p>

Name	Description
GetLineTrans	<p>The transaction <b>GetLineTransaction</b> interfaces the function 'Purchase Order. Display Line Trans' (PPS330).</p> <p>The purpose of the transaction is to enable retrieval of a single good receipt transaction. GetLineTrans is used to retrieve information from the MPLIND table, viewed in 'Purchase Order. Display Line Trans' (PPS330). The mandatory keys needed to return a single goods receipt transaction are PO number and a full Receiving number.</p> <p>The output consists of the information from the MPLIND table.</p>
LstLineTrans	<p>The transaction <b>LstLineTransaction</b> interfaces the function 'Purchase Order. Display Line Trans' (PPS330).</p> <p>The purpose of the transaction is to return the same output as transaction GetLineTrans. The only difference is that the input field Receiving number can be used as a prefix field where the last three digits are set to zero. This indicates that an output is requested for all Receiving numbers with the requested prefix.</p> <p>Apart from the difference in input fields, the same rules apply as for GetLineTrans.</p>

- **MMS200MI - Item Toolbox Interface**

The API is used from IEC to retrieve item master data.

MMS200MI also consist of several other transactions but these are not described here as they normally don't exist in a TEI solution.

MMS200MI consists of the following transaction related to TEI:

Name	Comment
GetItmBasic	Retrieve item related information viewed in (MMS001).
GetItmFac	Retrieve item / facility related information viewed in (MMS003).

- **MWS410MI - Delivery Toolbox Interface**

The API is used from IEC to get information about a specific delivery number. Initially overall delivery and address information is normally retrieved. Secondly package information can be retrieved both on detail level and on aggregated level.

MWS410MI also consists of several other transactions but these are not described here as they normally don't exist in a TEI solution.

MWS410MI consists of the following transactions related to TEI:

Name	Description
GetHead	<p>The transaction <b>GetHead</b> interfaces the function 'Delivery. Open Toolbox' (MWS410).</p> <p>The purpose of the transaction is to retrieve information connected to a single Delivery number.</p> <p>The GetHead transaction is only used for outbound delivery numbers, not purchase orders or inbound distribution orders.</p>
GetPackage	<p>The transaction <b>GetPackage</b> interfaces the function 'Delivery. Connect Packages' (MWS423).</p> <p>The purpose of the transaction is to retrieve a single package for one specific Delivery number.</p> <p>The main key field's that enables access to a package record are the Company (CONO), Delivery number (DLIX) and Package number (PANR) fields.</p> <p>The GetPackage transaction is only used for outbound delivery numbers, not purchase orders or inbound distribution orders.</p>
LstItem	<p>The transaction <b>LstItem</b> interfaces the function 'Package Detail. Open' (MMS473).</p> <p>The purpose of the transaction is to retrieve a list of item numbers for one Delivery number. The information is aggregated, based on MFTRNS information, initially per item number. If required, aggregation can be requested per Item and Customer order number or Item and Customer order number and Lot number. These two last options are specific requirements from the dispatch advice function and are normally not used in a TEI scenario.</p> <p>The LstItem transaction is only used for outbound delivery numbers, not purchase orders or inbound distribution orders.</p>
GetAddr	<p>The transaction <b>GetAddr</b> interfaces the function 'Delivery. Open Toolbox' (MWS410).</p> <p>The purpose of the transaction is to retrieve address information connected to a single Delivery number.</p> <p>The GetHead transaction is only used for outbound delivery numbers, not purchase orders or inbound distribution orders.</p>

- **MWS423MI - Package Interface**

The API is used from IEC to get information about packages for a specific delivery number. This API usage is vital when a Transportation Execution Systems needs summarized or individual package information to produce freight document, and package labels for a specific delivery.

In MYS500MI similar transactions exist that performs the same business logic but for a range of delivery numbers.

MWS423MI also consist of several other transactions but these are not described here as they normally don't exist in a TEI solution.

MWS423MI consists of the following transactions related to TEI:

Name	Description
LstPackGrp	<p>The transaction <b>LstPackGrp</b> interfaces the function 'Delivery. Connect Packages' (MWS423). The purpose of the transaction is to retrieve aggregated package information. The grouping is to be done for one Delivery number.</p> <p>Regarding package grouping, it is possible to request this based on the fields Packaging or Packaging type. Packaging is the identity of a specific packaging used to pack goods onto or into. Packaging is defined in 'Packaging. Open' (MMS050). Packaging type is the identity for a group of packagings used to hold them together in a logical way. Packaging type is defined in 'Packaging Type. Open' (DRS080). One simple example would be two Packagings, one <b>small tote bin</b> and a second <b>large tote bin</b>. The Packaging type would then be <b>tote bin</b> independent of size. The usage of these two IDs differs between implementations so the API transaction can be used to group on any of the two identities.</p> <p>The output from LstPackGrp returns information that is kept on package level, table MPTRNS presented in 'Delivery. Connect Packages' (MWS423), and is suitable for package grouping.</p> <p>No information is supplied regarding items and lot numbers packed into a group of packages. This is because one package group can contain many items and / or many lot numbers.</p> <p>The LstPackGrp transaction is only used for outbound or inbound delivery numbers, not purchase orders.</p>

Name	Description
LstPackages	<p>The transaction <b>LstPackages</b> interfaces the function 'Delivery. Connect Packages' (MWS423).</p> <p>The purpose of the transaction is to retrieve a list consisting of the packages for one Delivery number.</p> <p>The request to list a series of packages is done for the main keys Company (CONO), Direction (INOU) &amp; Delivery number (DLIX). In addition to these main keys, optional filtering on Package level (PACO), Packaging (MMS050) or Packaging type (DRS080) is possible. PACO is either filled with the level desired (000, 001 etc) or 999 if no filtering is wanted. PACT or PACK is filled with the code value that you want to filter on. All packages for one DLIX are checked against the filter values and qualified / disqualified.</p> <p>The output from LstPackages returns information that is kept on package level, table MPTRNS presented in 'Delivery. Connect Packages' (MWS423). All relevant fields from MPTRNS is placed in the output.</p> <p>No information is supplied regarding items and lot numbers packed into a package. This is because one package can contain many items and / or many lot numbers.</p> <p>The LstPackages transaction is only used for outbound delivery numbers, not purchase orders or inbound distribution orders.</p>
GenPackDetail	<p>The transaction <b>GenPackDetail</b> interfaces the function 'Package Detail. Open' (MMS473).</p> <p>The purpose of the transaction is to generate package detail data for one Delivery number. The transaction is to be used when the Packing report method (MWS010 field 240 / SHLV) and OQSHLV is set to use simple packing or no packing, value 1 or 0.</p> <p>The transaction will create necessary information in MFTRNS (MMS473) and MPTRNS (MWS423) so that later API calls have mandatory MFTRNS information.</p>

- **CRS610MI - Customer Interface**

The API is used from IEC to retrieve customer related information.

CRS610MI also consist of several other transactions but these are not described here as they normally don't exist in a TEI solution.

CRS610MI consists of the following transactions related to TEI:

Name	Comment
GetBasicData	Retrieve basic customer information.
GetFinancialData	Retrieve customer information in relation to financial accounting.

- **CRS045MI - Country Interface**

The API is used from IEC to retrieve country basic data.

CRS045MI consists of the following transaction related to TEI:

Name	Comment
GetBasicData	Retrieve a selected country and it's related information.

- **CRS175MI - Cross-Application Basic Data Interface**

The API is used from IEC to retrieve several types of basic data. As several basic data values are stored in one physical table (CSYTAB) this transaction retrieves selective records from CSYTAB.

CRS175MI also consist of several other transactions but these are not described here as they normally don't exist in a TEI solution.

CRS175MI consists of the following transaction related to TEI:

Name	Comment
LstGeneralCode	List basic data from the system table CSYTAB based on a selected constant value.

- **MNS100MI - Division Interface**

This transaction is part of the template map.

The API is used from IEC to retrieve division master data.

MMS200MI consists of the following transaction related to TEI:

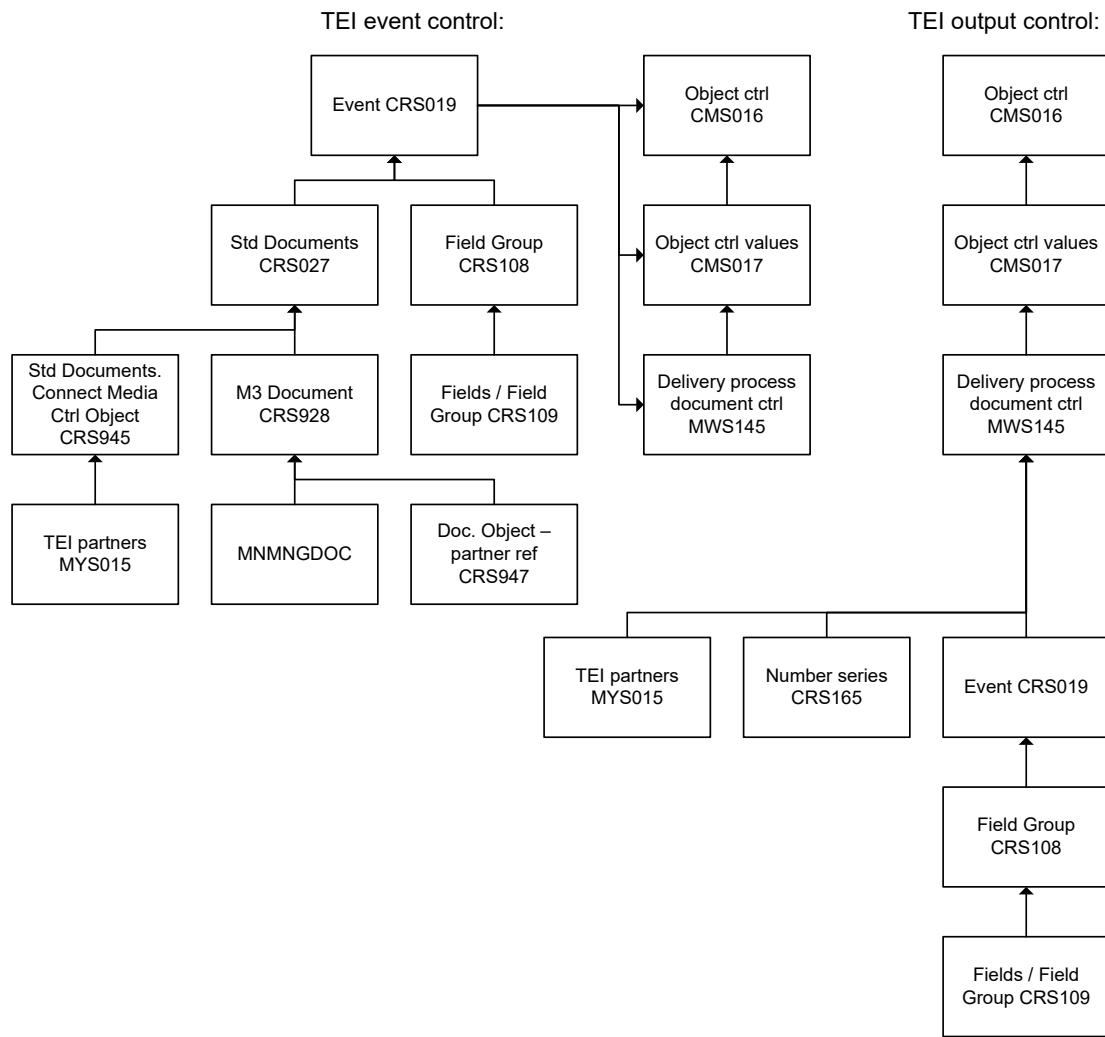
Name	Comment
GetBasicData	Retrieve basic data for a Division as presented in (MNS100).

## M3 TEI Transfer Triggers

This document provides an overview of the following TEI transfer trigger cases and settings:

- Settings for Automatic Triggering of TEI Transfer
- Automatic Triggering of TEI Transfer
- Manual Triggering of TEI Transfer per Function

### Settings for Automatic Triggering of TEI Transfer



The outlined settings are divided into the following parts:

- **Basic Settings for TEI Event Control**

The trigger control manages the basic settings needed to select a specific event and trigger a TEI request based on a variety of objects.

- **MNMNGDOC**

When you generate M3 documents in 'M3 Document. Open' (CRS928) by using F14 or F15, document 915 with standard variant 00 is created.

Regardless of the document variant used, the object used for partner reference control is always TEI partner (TETIPI).

- **Document Objects – Partner Reference (CRS947)**

This function replaces a hard-coded internal table that manages the objects that can be used to control the partner references in 'Std Document. Connect Media Ctrl Object' (CRS945). The standard setup is generated when the standard documents are created by using F14 or F15 in (CRS928). For manually added combinations of document numbers and variants, a record must be manually entered in this function.

- **M3 Documents (CRS928)**

When you generate the standard documents in M3 automatically (by using F14 or F15), document 915 and document variant 00 must exist in a table in the program MNMNGDOC.

The TEI transfer document is created in the CSYDOC table.

If any other document variant will be used for document 915, it must be manually created in (CRS928).

**Note:** The object value for partner reference is set to TEI Partner in object field 1. This establishes a connection for the partners that are allowed to use this document number and document variant. If this is not done, no partner can be connected in (CRS945).

- **Standard Documents. Connect Media Control Objects (CRS945)**

All partners that will use a TEI document and a specific variant must be connected by using option 12 and entered in (CRS945). The setup in (CRS945) is done by entering the TEI partner and connecting the communication media that this partner uses.

- **TEI Partners – MYS015**

You need to enter the TEI in 'TEI Partner. Open' (MYS015) to be able to connect a specific document number and document variant to the partner in (CRS945).

Data from this program is used for several purposes, first when the partner references are set up in (CRS945). The last example is when a record is found in TEI output control program 'TEI Output Control. Open' (MWS275) and the used combination of partner, document number, and document variant is known for a specific TEI transfer request.

When a TEI partner setting is retrieved from this table it will first try to find the record with the most detailed information, for example, in this case if the information in all three key fields is correct. If no record is found with the full key a search is done on the next level and so on.

- **Standard Documents per Company (CRS027)**

When you generate the standard documents per company in M3 BE (by using F14), document 915 and document variant 00 must exist in the program MNMNGDOC and in CSYDOC.

The TEI transfer document will be created in the ODEDODC table.

If any other document variant will be used for document 915, it must be manually entered in (CRS928) to be created automatically with function F14 in (CRS027).

It is also possible to manually create a record for document 915 with any document variant in (CRS027) without using F14. This is done with option 1 (Create) or 3 (Copy). However, the document and document variant must always be created in (CRS928) so the partner reference objects are set correctly.

- **Field Groups (CRS108 / CRS109)**

Field groups are created to provide a workflow in the setup of the object control table for the event trigger control.

Using field groups depend on the type of event. Objects from a delivery level cannot be used to select triggering or output data for any event on shipment number.

The TEI trigger control field groups are only valid for a specific event.

To manage the dependency between valid field group and event, use 'Event. Open' (CRS019).

- **Events (CRS019)**

This function is used to maintain the CREVNT table. If the CREVNT table is empty when 'Generic Object Control Table. Open' (CMS017) is run for the first time, a new file will be created.

Since the automatic triggering of a TEI transfer is controlled via a specific document number and the triggering is controlled by selectable objects, this information is maintained per event in (CRS019).

- **Generic Object Control (CMS016/CMS017)**

By using the existing program 'Delivery Process Document Control. Open' (MWS145) through 'Available Object Ctrl Parameters. Open' (CMS016), you can set up a selection table that controls the event that will automatically trigger the TEI transfer request.

The two key values used in the program (MWS145) are Event and Sequence Number. These can be used to obtain different document variants of the same document (915) controlled by different objects for the same event. The document variant can then be used as a key in IEC to select the information that should be retrieved from M3 BE and sent to the external Transportation Execution Systems.

- **Basic Settings for TEI Output Control**

Output control manages what the TEI transfer request will look like. The following chapters explain these different parts in more detail.

- **Number Series (CRS165)**

In order for the TEI document output control to work, you must first define the number series that will be used.

A number series type T2 must be created to manage the transfer alias ID. This number series can be used if the number series for the TEI transfer ID should be within a specific number series for specific objects that are defined, for example, for a specific forwarder or delivery method.

A number series type T3 must be created to manage the package alias ID. This package alias can be used if there are specific demands on the number series for the package numbers that are sent to the external Transportation Execution Systems for specific objects that are defined, for example forwarder or delivery method.

The number series type and number series be managed from blank division and created manually.

- **Field Groups to Control TEI Output Control Selection (CRS108/CRS109)**

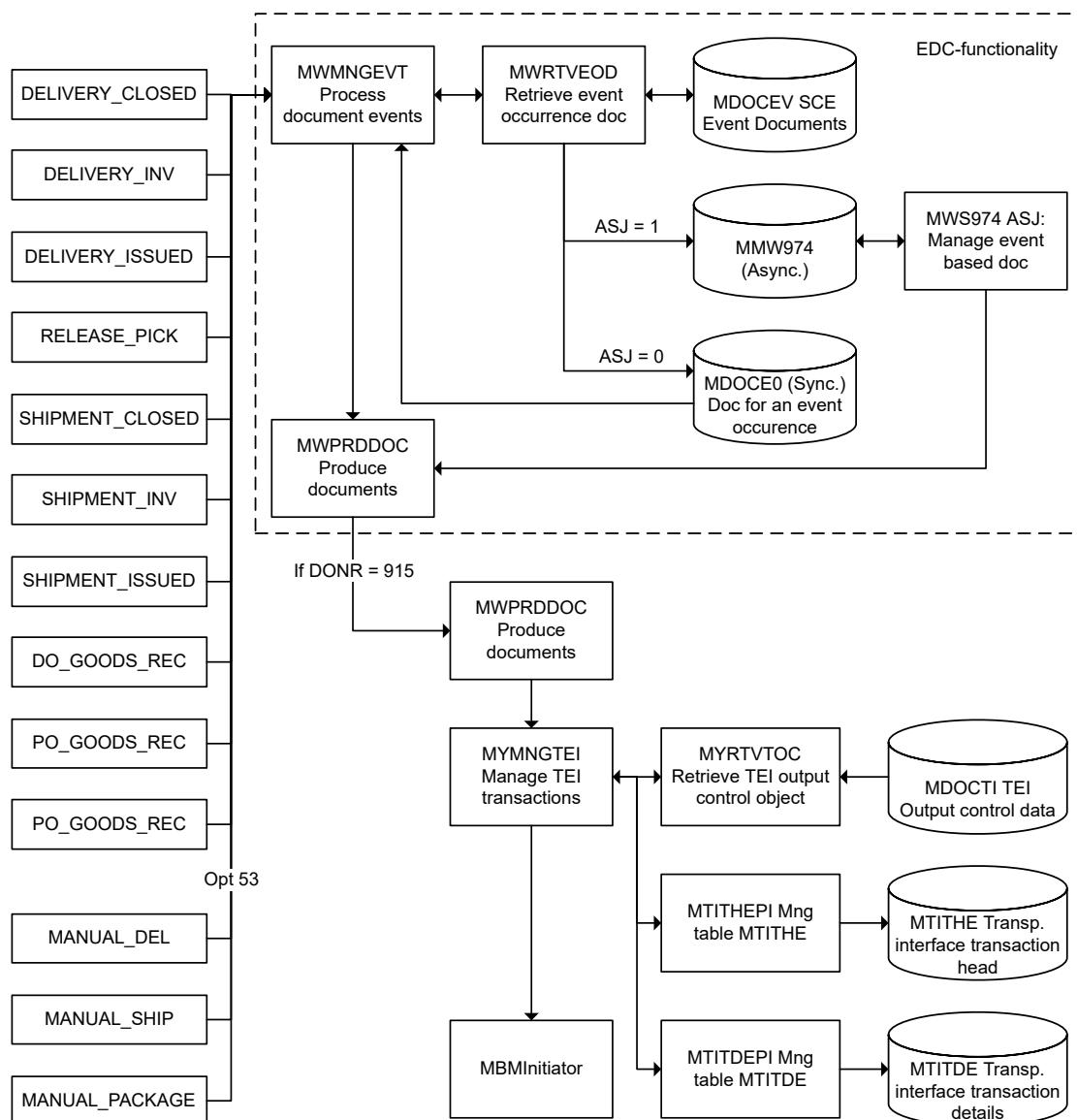
The TEI output control selection is object controlled using program (CMS017). Available objects to use are controlled by TEI field groups that are connected to each event in (CRS019) by the field TEI field group.

- **TEI Document Output Selection (CMS016/CMS017)**

A generic object parameter, TEI output control, is created to manage TEI document output data and since the key to MWS275 will be event, document number and document variant it is possible to use the TEI field groups from (CRS019) when prompting in (CMS017).

The entire workflow for creating the settings for automatic is done the same way regardless of the automatic trigger points that are used in the inbound or outbound flow.

### Automatic Triggering of TEI Transfer



- **Trigger Events, Outbound**

The following outbound events are included in the TEI solution. Some of these events already exist and are used in the EDC functionality, but since these events will be changed they are covered in this section.

<b>RELEASE_PICK</b>	<p>This event is used to trigger to retrieve package data from M3 to the Transportation Execution Systems. This is used if the Transportation Execution Systems should print any kind of package labels and packing reporting method = 4 (Automatic when picking list is created) is used.</p> <p>The event RELEASE_PICK occurs in program MMMNGDST immediately after delivery have gone to status &gt;=40. The event occurs after auto-pack has been performed. This is also applicable when pick resource planning is used.</p> <p>When this event occurs, the event (RELEASE_PICK) and the event key (Delivery number + range of picking list suffix) must be passed to the TEI transfer request.</p>
<b>DELIVERY_CLOSED</b>	<p>The purpose of this event is to trigger a TEI transfer request that can be used to send delivery or transport information per delivery to the Transportation Execution Systems before the issue has been made. The user must although be aware of the possibility that changes might occur to the content of a delivery after that it has been closed and before the issue is done that is not sent to the Transportation Execution Systems. If very few shortages in stock and few other changes to the delivery after it has been closed this might be a very useful event.</p> <p>A delivery can be closed from several different functions. For example it can be manually closed by option 37 in 'Delivery. Open Toolbox' (MWS410) or automatically when a delivery is going to be closed according to parameter 300 in 'Dispatch Policy. Open' (MWS010) (Closing point). What happens is that delivery lines or part of line is removed from the delivery and either connected to an open existing delivery or a new delivery number is created. When this event occurs, the event (DELIVERY_CLOSED) and the event key (Delivery number) must be passed to the TEI transfer request.</p> <p>A new TEI transfer will be created if it is the first time this event occurs for this combination of document number, document variant, event and event key. This event can only occur once since it is not possible to reopen a delivery number.</p>

**SHIPMENT\_CLOSED**

The purpose of this event is to make it possible to send package and/or transport information per shipment to a Transportation Execution Systems before the actual issue has been made. When the time to get information to a Transportation Execution Systems is crucial this is a good alternative. Also when the customer has few stock shortages and there are few changes to deliveries and shipments after the shipment has been closed.

The event SHIPMENT\_CLOSED is handled in program DRMNGCON. Since this event can happen more than once, it is controlled by the parameter Allow duplicate TEI details from TEI partner settings. This parameter is managing how the creation of transfers with an event key that already exists on another transfer would be done.

Since every Transportation Execution Systems has different way of managing transactions, it is up to each implementation to decide how this parameter would be set to handle information in an appropriate way according to the receiving system.

When this event occurs, the event (SHIPMENT\_CLOSED) and the event key (Shipment number) must be passed to the TEI transfer.

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**DELIVERY\_ISSUED**

This event is one of the most natural to use because at this point all details to a delivery is known. It is only if the time gap between the actual issue and until the information must be used is too short that this event might not be useful. Can be used both for package and transportation information.

In function MMMNGDIS, a delivery is flagged as issued and it gets the status >=60.

When this event occurs, the event (DELIVERY\_ISSUED) and the event key (Delivery number) must be passed to the TEI transfer request.

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<b>SHIPMENT_ISSUED</b>	<p>This event has the roughly the same characteristics as the event DELIVERY_ISSUED.</p> <p>The shipment is considered issued when it's lower status <math>\geq 60</math> and the field CONSI.MANC =2. If the status was <math>&lt; 60</math> and now <math>\geq 60</math> the event has occurred. This is done in function DRMNGCON. If this happens a record is written into a work file to be processed by the auto job DRS901. This auto job will trigger the event when the deadline or departure date has passed.</p> <p>When this event occurs, the event (SHIPMENT_IS-SUED) and the event key (Shipment number) must be passed to the TEI transfer.</p>
<b>DELIVERY_INV</b>	<p>This event can be used if the requirements of the package and/or transportation information is high and if it should have any information concerning invoicing. The accuracy of the information is very high since this event is done so late in the out-bound delivery flow.</p> <p>When a delivery get invoiced status =2 for the first time. This occurs in MMMNGINV when HDISH.IVSS is set to 2. This event is only valid for customer orders.</p> <p>When this event occurs, the event (DELIVERY_INV) and the event key (Delivery number) must be passed to the TEI transfer request.</p>
<b>SHIPMENT_INV</b>	<p>This event has the same characteristics as the event DELIVERY_INV except that it manages all deliveries that are connected to a shipment.</p> <p>When a shipment get invoiced status = 2 for the first time and the deadline has passed. This occurs in DRMNGCON when CONSI.IVSS is changed from &lt;2 to =2. And this event is only applicable on customer orders.</p> <p>When this event occurs, the event (SHIPMENT_INV) and the event key (Shipment number) must be passed to the TEI transfer.</p>

- **Trigger Events, Inbound**

The following inbound events are included in the TEI solution.

<b>DO_GOODS_REC</b>	<p>When sending transport information to a third part supplier (for example a forwarder) about what has been received at a warehouse coming from another warehouse, this might be a useful event. This might also be used if importing goods and customs integration is needed.</p> <p>When a distribution delivery is fully goods received in program MMMNGDOR the delivery get status 90 from a lower status. It is at this point the event will be triggered.</p> <p>When this event occurs, the event (DO_GOODS_REC) and the event key (Delivery number) must be passed to the TEI transfer request. This event can only occur once per delivery number.</p>
<b>PO_GOODS_REC</b>	<p>This can be useful when information about purchased goods that is received should be sent to a forwarder or a supplier. Another case when this event is useful is when the customer is using bonded warehouse to reduce the cost of paying customs taxes in advance. By reporting the goods receiving when the goods actually is taken from the bonded warehouse and at that point send information to the customs, the customs taxes can be paid at the right time.</p> <p>This event is triggered when a receiving number has been created due to a purchase order line or a part of a PO line has been goods received. This event will create one TEI transfer detail per reporting number. To be able to create one TEI transfer detail per PO-line, the manual creation of TEI transfers should be used.</p> <p>In this case the TEI transfer will contain the event (PO_GOODS_REC) and the event key (Receiving number) should event key receiving number be sent to the TEI transfer.</p>

- **TEI Transfer Document**

After an event has occurred and every condition is fulfilled for a creation of a TEI transfer, a batch job will be triggered to start the TEI transfer creation. The batch job is started by a printout of the TEI transfer document. This document is never printed as an actual document but rather used to make use of existing functionality of event based trigger points.

Document number 915 is the document number that controls the creation of a transfer ID and triggering IEC to retrieving data from M3 BE using APIs.

Document number 915 is first handled by programs (MYS625) and MYS625S1 then by the actually TEI managing function MYMNGTEI. Here is a short schedule of the functions of these programs. This will give a rough picture of the functionality of these programs.

By using the operation codes from the sending program, the next step is known. The following operation codes are handled in MYMNGTEI:

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**\*CRT**

\*CRT will handle the creation of the transfer header and details when the creation is triggered by an event. First the TEI document output control data according to the settings in MWS275 is retrieved. This is done by a call to MYRTVTOC to get info from table MDOCTI. After that a check of number series and parameters from the table MTIPPR in MYS015 is done. From here the TEI internal number series and the parameter DUDE (that controls if it is allowed to resend detail info) is retrieved. If it is not allowed, and it already exist one combination of document number, document variant and the detail identity (for example delivery number) on a transfer ID then no transfer will be created. If re-sending event keys and detail information is allowed, then mark the transfer header that it is a complementary TEI transfer (parameter on transfer header).

If every check is passed the TEI transfer header and details will be created and the transfer header status is set to 01.

For every transfer creation, a check must be performed if the transfer alias number or the package alias number should be retrieved from a specific number series or a specific program. These parameters are retrieved from MDOCTI.

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**\*CRTRPTH**

This operation code will manage the creation of a TEI header from a report version in 'TEI Transfer. Manually Create' (MYS510). In this case the first thing to do is to check what report type is used to define the kind of detail type to use when create a TEI transfer detail. Then parameters from the TEI Partner will be retrieved before the TEI header is created.

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**\*CRTRPTD**

This operation code will be used to create TEI transfer details to a TEI header triggered from a report version in MYS510. Here will the transactional data be retrieved.

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<b>*RPTEND</b>	When a TEI transfer triggered from a report version should be closed this operation code is used. Here will the TEI header status be raised and the TEI transfer will be sent to the external system if the parameter Send TEI aut = 1.
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### Manual Triggering of TEI Transfer per Function

You can print the TEI transfer document manually, if needed, from 'Delivery. Open Toolbox' (MWS410), 'Shipment. Open Toolbox' (DRS100) and 'Delivery. Connect Packages' (MWS423). To retrieve both the triggering control data to know what document number and variant to use, and the correct output control data to know which TEI partner to be used in each specific case, you need to enter the same settings as for automatic triggering.

**Note:** This action can be done almost anytime in the delivery / shipments dispatch cycle.

This functionality can primarily be seen as a back up to an automatic trigger. But it can also be used to print, for example, package labels via an external Transportation Execution Systems on demand.

## Manually Create TEI Transfers without Events

This document describes how to create a Transportation Execution Interface (TEI) transfer manually.

You can create one or more TEI transfers containing deliveries (outbound or inbound distribution orders) or purchase order lines (inbound) based on the selection criteria and the transfer break criteria.

### Outcome

A TEI transfer is created manually instead of automatically as is usually done. For example, you can select transactions based on a specific country and date.

After a TEI transfer is created, manually or from an event, it can be displayed and maintained from the programs (MYS500) and (MYS501). These programs can also be used to send a TEI transfer to Infor Enterprise Collaborator manually.

The MTITRP table stores all the basic data. All data that describes the actual selection is stored in the existing table for report versions, CSYSTP.

TEI transfer data is stored in the MTITHE table and MTITDE tables.

### Before you start

The following settings must be made in [Settings for Transportation Execution Interface \(TEI\)](#) on page 684:

- Basic settings for dispatch flow (MWS010, MMS040)
- Settings for documents (CRS928, CRS947, CRS027)
- Number series for TEI are created (CRS165)

- Documents are connected to TEI partner (CRS945, MYS015)
- Settings for ship-via functions (optional). See separate documentation.

### Follow These Steps

- 1 Start 'TEI transfer. Manually Create' (MYS510/B). Enter the TEI report version.
- 2 Open the E panel and enter the report version type. Possible values are 1 (Outbound), 2 (Inbound), or 3 (Inbound DO).
- 3 The report status is set to 10 (Preliminary) by default. You can raise this status to 20 (Active) or 90 (Deactivated).
- 4 Select the values in the fields on the E panel.

Use the E panel to maintain all fixed data for a specific report version. Compared to the event-triggered creation of a TEI transfer, this type of data is retrieved from (MWS275).

### Steps if the Report Version Type is 1 or 3

- 1 Open the F panel. This panel is only displayed if the report version type is 1 (Outbound) or 3 (Inbound DO). The F panel contains general information that is not specific for a particular sender or a receiver. Also, you make date selections on the F panel.
- 2 Open the G panel. This panel is only displayed if the report version type is 1 or 3. The G panel contains information for a particular sender and receiver. It is also used for outbound and inbound distribution order transactions.  
Use the first group of selection fields for the sender's geographical information. Use the second group of selection fields for the receiver's geographical information.

### Steps if the Report Version Type is 2

- 1 Open the H panel. This panel will only be displayed if the report version type is 2 (Inbound). On this panel, you select the purchase order data to include in a specific TEI transfer.
- 2 The I panel is used to select objects that directly depend on the purchase order, such as purchase order number, order status, and so on.

### Trigger the Creation of TEI Transfer

Redisplay (MYS510/B). Select option 9=Trigger TEI. This option will trigger TEI creation based on the selection criteria in the selected report version.

## Manually Create TEI Transfer with Event and Manage Created TEI Transfers

This document explains how you manually create a TEI transfer based on an event and how you manage the created TEI transfers.

## Outcome

A TEI transfer based on an event is created. The following data in M3 is updated:

- MTITIHE – Transaction interface header
- MTITDE - Transaction interface details
- CSFOUT – Header data to Streamserve

You can create, display and change TEI transfers. You can also send the transfers manually to a Transportation Execution System (TES). This triggers the transfer from M3 Business Messages to Infor Enterprise Collaborator.

## Before you start

Settings must be defined according to [Settings for Transportation Execution Interface \(TEI\) on page 684](#).

## Follow these steps

### Manually create a TEI Transfer based on an event

- 1 Start 'TEI Transfer. Open' (MYS500). Open the A panel.
- 2 Select option 1=Create.  
Do not fill in a transfer ID. It will later be retrieved automatically from a number series.
- 3 Select the TEI partner, document number, document variant, and event.
- 4 Press Enter twice to confirm. The E panel is opened
- 5 Continue with the following step.

### Manage TEI Transfer - Header

- 1 Start 'TEI Transfer. Open' (MYS500/B).
  - Sorting orders:  
TEI transfer ID - is used when a specific TEI transfer ID is known.  
Entry date - is used to track a specific TEI transfer that was generated on a specific date at a specific time.  
Event – is used to track a specific TEI transfer that was generated from a specific event and event key.  
Report version - is used to track a specific TEI transfer that was manually generated from a specific report on a specific date and at a specific time (MYS510).
  - The message direction must be O (Outbound) I (Inbound) is not currently available.
  - The direction can be 1 (Outbound delivery) or 2 (Inbound delivery).
  - The status indicates the status of the TEI transaction header.  
The valid alternatives are:  
00 = Manually created TEI header without details.  
05 = Temporary status during the creation of the TEI header.  
10 = TEI transaction is created but not sent to IEC. This status is set automatically.  
11 = TEI transaction sent to IEC but not processed. This status is set automatically.  
15 = IEC started to process the TEI transfer. This status is set by IEC.

19 = IEC completed processing but with errors. This status is set by IEC.

20 = IEC completed processing. This status is set by IEC.

90 = Transaction is closed for further processing. This status is set manually.

**2 The E panel:**

- The TEI partner is defined in (MYS015).
- Event - If the TEI transfer is created from an event, this is retrieved from (CRS019). The events are predefined. If the TEI transfer is created manually in (MYS510), this field is empty.
- Event key1/2/3 – See the field help for possible alternatives, depending on the event. If the TEI transfer is created manually in (MYS510), this field is empty.
- Export/Import indicates if the TEI transfer header and if each TEI detail includes export or import deliveries/purchase orders.

The valid alternatives are:

For TEI header:

0 = Not decided. This can only occur during the creation of the TEI header or if the nature of the transfer cannot be decided.

1 = Domestic. Only domestic details are connected to this header.

2 = Export. Only export details are connected to this header.

3 = Import. Only import details are connected to this header.

4 = Export and domestic. Both export and domestic details are connected to this header.

5 = Import and domestic. Both import and domestic details are connected to this header.

For TEI details:

1 = Domestic. Only domestic details are connected.

2 = Export. Only export details are connected.

3 = Import. Only import details are connected.

**3 The F and G panels are only for information and are not editable.**

### Manage TEI Transfer – Details

'TEI Transfer. Open Details' (MYS501) is mainly used to display the details that were involved when a TEI transfer was created and sent to an external TES. It is also used to change or add existing TEI transfer details before you send the TEI transfer to the TES.

- 1 Start 'TEI Transfer. Open Details' (MYS501) by selecting option 11=Details on the (MYS500/B) panel.
- 2 The content of the 'Object 1,2,3' and 'Data 1,2,3' fields depends on the event or the type of report version. See the table below.

Report version type (MYS510)	Event	Type of detail	Object 1	Object 2	Object 3
	Release_Pick	PANR	DLIX (Delivery no)	PANR (Package number)	
	Delivery_Closed	DLIX	DLIX (Delivery no)		

Report version type (MYS510)	Event	Type of detail	Object 1	Object 2	Object 3
	Ship- ment_Closed	DLIX	DLIX (Delivery no)		
	Delivery_Is- sued	DLIX	DLIX (Delivery no)		
	Shipment_Is- sued	DLIX	DLIX (Delivery no)		
	Delivery_Inv	DLIX	DLIX (Delivery no)		
	Shipment_Inv	DLIX	DLIX (Delivery no)		
	DO_Goods_Rec	IDLIX	DLIX (Delivery no)		
	PO_Goods_Rec	REPN	REPN		
	Manual_Ship	DLIX	DLIX (Delivery no)		
	Manual_Del	DLIX	DLIX (Delivery no)		
	Manual_Pack- age	PANR	DLIX (Delivery no)	PANR (Pack- age no)	
*RPTP=1 (Out- bound) or =3 (Inbound DO)		DLIX	DLIX (Delivery no)		
*RPTP=2 (In- bound)		PUNO	PUNO	PNLI	PNLS

#### Trigger the sending of a TEI Transfer

Redisplay (MYS500/B). Select option 9 = Send TEI transfer. This option will send a created TEI transfer to the external system.

## Transportation Operational Planning - Download and Upload Deliveries

This document explains how you download, upload, and display operational planning data.

## Outcome

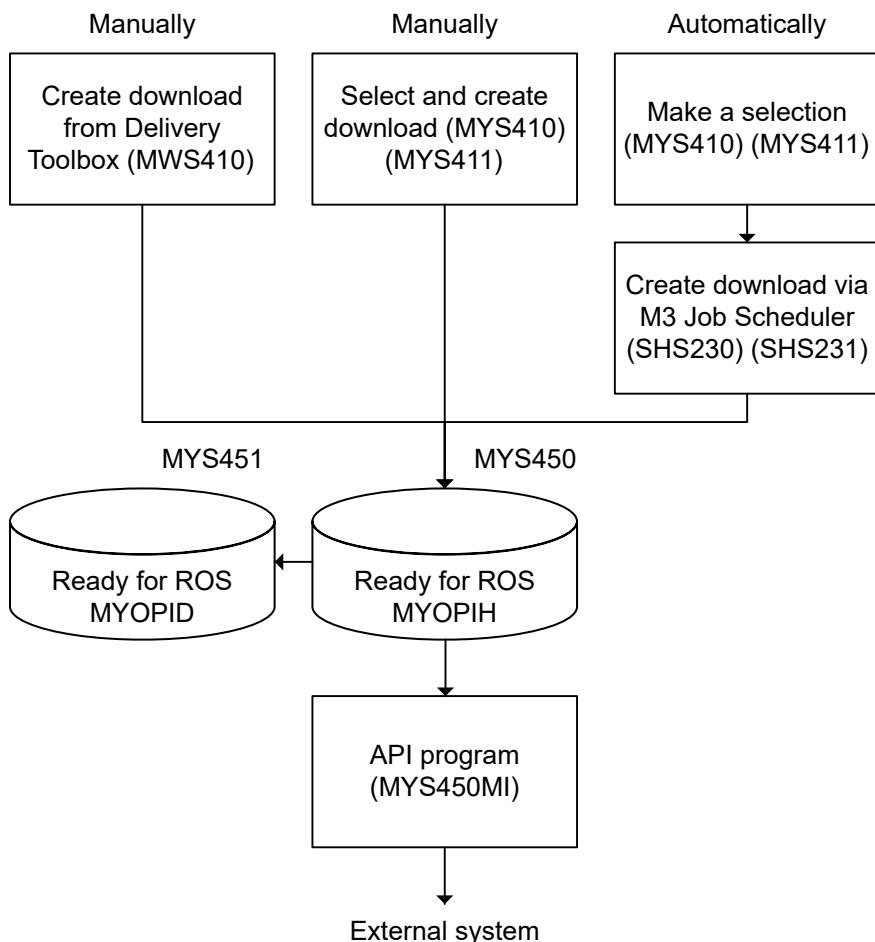
- Settings for downloading and uploading are defined.
- Downloaded and uploaded deliveries are created and executed.
- Downloaded and uploaded message headers are stored in the MYOPIH file.
- Downloaded deliveries are stored in the MYOPID file.
- Uploaded deliveries are stored in the MYOPIU file.

Deliveries are selected and downloaded to an interface layer. An external system, such as a route optimization system, can retrieve the deliveries and replan them. They can then be uploaded to M3 BE by the route optimization system and the changes will update the M3 core tables.

## Before you start

- A delivery, MHDISH, must be created.
- If you are scheduling the downloads, M3 Job Scheduler must be configured. See *Administrator's Guide* *M3 Java Job Scheduler*.

## Outline



## Download a delivery

- 1 Start 'Delivery. Open Toolbox' (MWS410). To download the selected delivery, select option 54='Download'. It can be added to an existing message with other downloaded deliveries, or it can create a new message.
- 2 On the (MWS410/F) panel, you can display the integration status and message number for the downloaded delivery.

## Make a manual selection of deliveries and download deliveries from the delivery toolbox

- 1 Start 'Delivery. Open Toolbox' (MWS410).
- 2 Prepare your selection of deliveries using function key F17.
- 3 Refine your selection by using option 22='Select/Deselect' to further exclude or re-include deliveries.
- 4 Press function key F11 Download all deliveries.

- 5 On the (MWS410/L) panel, choose the partner as defined in (MMS865). Select an existing message to add the deliveries with other downloaded deliveries, or let the message number blank to create a new message. Click Next.
- 6 On the (MWS410/F) panel you can display the integration status and message number for the downloaded deliveries. One or several messages may have been created; depending on the partner setup and the deliveries in the selection, deliveries have been downloaded into one message per warehouse or one message per place of load.

This method is only valid for a partner setup with the Download delivery field set to 1-'Yes per warehouse', or 2-'Yes per place of load'.

### **Make a standard selection of deliveries per warehouse and download deliveries**

(MYS410) is used to select deliveries for downloading. Different criteria such as warehouse, date, and dispatch policy, can be specified. To simplify when the same selection criteria is used every time, you can define a selection set in (MYS411).

- 1 Start 'Delivery. Select Downloads' (MYS410/E). Select the partner (a valid partner, in (MMS865)) and warehouse. You can also specify a selection set. Press F4. 'Selection Sets. Define' (MWS411) is started. Define a selection set on the B panel.
- 2 Open the (MWS410/F) panel.

Values on this panel will be retrieved from the selection set (MYS411) if a selection set is specified on the E panel. Otherwise, there will be no values in the entry fields. On the F panel, you can also override values that were retrieved from the selection set.

- 3 Press Enter. The download delivery is created.

This method is only valid for a partner setup with Download delivery field set to 1-'Yes per warehouse'.

### **Schedule the downloading using the M3 Job Scheduler**

The M3 Job Scheduler allows standard M3 reporting or batch functions to run automatically according to a schedule. This function can be used for automatic downloads.

These steps provide an overview of the workflow for setting up job scheduling and running the schedule:

- 1 Define job scheduling category in 'Job Schedule Category. Open' (SHS050).
- 2 Define job scheduling function in 'Job Schedule Function. Open' (SHS030).
- 3 Define job scheduling programs in 'Job Schedule Program. Open' (SHS031).
- 4 Define job scheduling fields in 'Job Schedule Field. Open' (SHS035).
- 5 Schedule function in 'Job Schedule Information. Open' (SHS230) (SHS231).
- 6 Change or delete function schedule in 'Job Schedule Entry. Update' (SHS010).

This method is only valid for a partner setup with the Download delivery field set to 1-'Yes per warehouse'.

### **Display downloaded messages and deliveries**

- 1 Start 'Transport Operation Planning. Open' (MYS450). Select the partner.
- 2 You can display the lowest and highest status for a message. These alternatives are valid for download:  
10='Download' - Download record created  
20='Download' - Downloaded to an external system and also retrieved by the external system

91='Download/Upload' - Closed, no update  
 99='Download' - Deleted \*)  
 \*) Status 99 is only valid for downloaded records. Uploaded records are just deleted and will not get status 99.

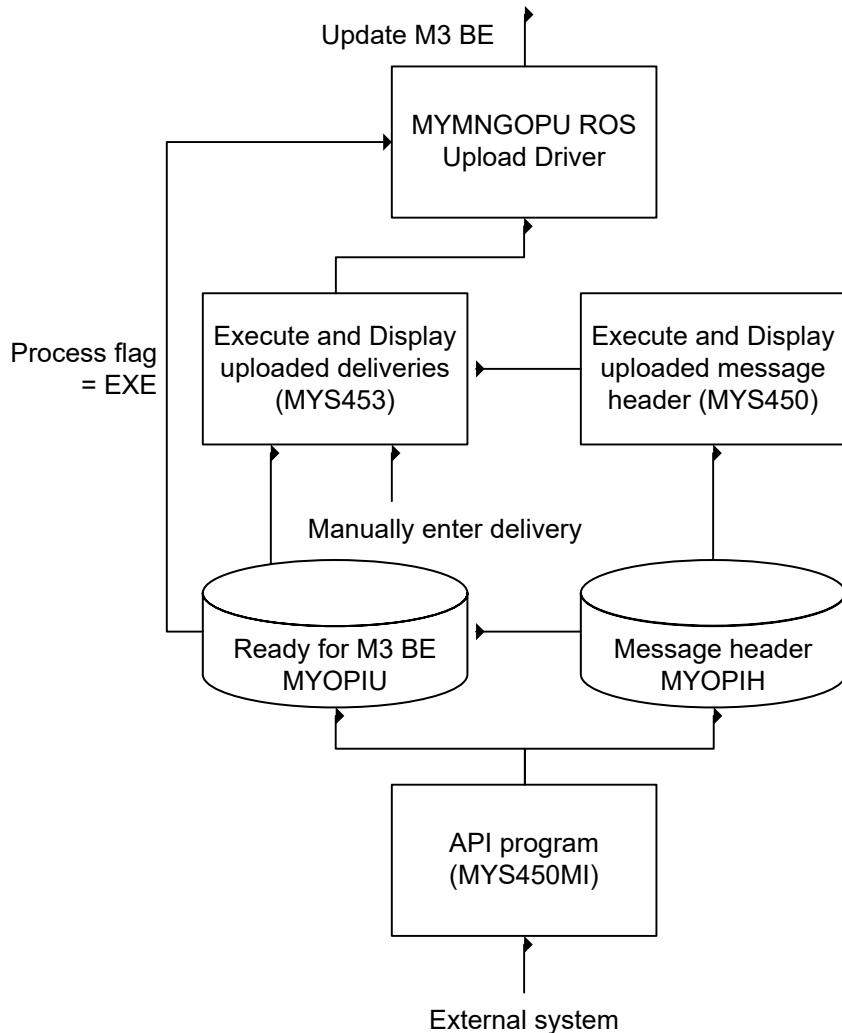
- 3** Options on the (MYS450/B) panel:
  - Option 2='Change' is only valid when the highest status is 10 (not downloaded)
  - Option 4='Delete' is only valid when highest status is 10 (not downloaded) or lowest status is 90 (executed)
  - Option 11='Deliveries download' displays the deliveries included in the message (MWS451)
  - Option 26='Close message' sets status to 91='Download/Upload - Closed, no update'
  - Option 31='Set status' to 20 on the header and all linked deliveries to simulate that the message has been retrieved by the external system (Only possible for records in status 10).
  - Option 32='Reset status' resets status to '10' on the header and all linked deliveries to facilitate download again (Only possible for records in status 20).
- 4** The E panel displays details about a message header.
- 5** To display details about the deliveries connected to a message, select option 11='Deliveries download'. 'Downloaded Deliveries. Open' (MYS451) is started.
- 6** The (MYS451/B) panel displays the downloaded deliveries and their status (see status on step 2 above).
  - Option 26='Close message' sets status to 91='Download/Upload - Closed', no update.
  - Option 31='Set status' to 20 on the header and all linked deliveries to simulate that the message has been downloaded.
  - Option 32='Reset status to 10' on the header and all linked deliveries to facilitate download again.
- 7** The E, F, and G panels display detailed information about a downloaded delivery.  
**Note:** The place of load is always populated on (MYS450) message header. The warehouse can be blank on (MYS450) message header, if the deliveries connected in (MYS451) belong to different warehouses.

#### Use API to get the downloaded deliveries

A set of APIs can be used by an external system to extract the list and details of deliveries downloaded and update the status to 20='Dely downloaded'.

MYS450MI	AddDelivery	Add delivery upload
MYS450MI	LstDelPlaceLoad	List delivery per Place of load
MYS450MI	LstDelivery	List delivery
MYS450MI	LstHead	List message header
MYS450MI	LstHeadSelect	List message header with selection
MYS450MI	PrcDelivery	Process delivery
MYS450MI	PrcHead	Process message header

### Upload operational planning



### Display and upload message and delivery

- 1 Start 'Transportation Operation Planning. Open' (MYS450).
- 2 You can display the lowest and highest status for a message. These alternatives are valid for uploads:
  - 30='Upload - Upload record created'
  - 45='Upload - Error found during validation by M3 BE'
  - 90='Upload - Executed, no errors'. M3 BE is updated.
  - 91='Download/Upload - Closed, no update'
- 3 The E panel displays details about a message header.
- 4 To display details about the deliveries connected to a message, select option 12='Deliveries upload'. 'Uploaded Deliveries. Open' (MYS453) is started.

- 5** The (MYS453/B) panel displays the deliveries connected to a message and the status. You can select a certain delivery for upload, select option 21='Execute'.

Deliveries with these statuses can be uploaded:

30='Upload - Upload record created'

45='Upload - Error found during validation by M3 BE'

- 6** The E, F, and G panels display detailed information about a delivery.

- 7** You can also manually create a delivery that is connected to a message on the (MYS453/A) panel.

#### Parameters to set

Program ID/ Panel	Field	The field indicates ...
(CRS165/B)	Number series type	...the number series type. Use type T4.
(MMS865/F)	Download deliveries	Select the check box appropriately to enable deliveries to be downloaded to an external system for transportation planning via the M3 Transportation Operational Interface.  0- No, don't download deliveries for the partner 1- Yes, download deliveries for the partner, TOI messages are created per warehouse 2- Yes, download deliveries for the partner, TOI messages are created per place of load  <b>Note:</b> For the download per place of load to be used, there must only one unique record for the outbound partner, defined with blank warehouse.
(MWS010/H)	450 Download deliveries	...if a delivery should be downloaded or not.
(MWS410/P)	Partner	... if the chosen partner exists and is eligible for delivery download.

# Transportation Operational Planning - Delete

This document explains how you delete 'Transport Operation Interface' (TOI) records. When TOI records reach the final status of 90, 91, or 99, they will no longer be updated and can be deleted.

## Outcome

Completed TOI messages are deleted, including related details in these 4 tables:

- MYOPIH stores message header displayed in 'Transport Operation Planning. Open' (MYS450).
- MYOPID stores downloaded deliveries displayed in 'Downloaded deliveries. Open' (MYS451).
- MYOPIU stores uploaded deliveries displayed in 'Uploaded deliveries. Open' (MYS453).
- MYOPAD stores downloaded delivery information displayed in 'Downloaded Additional Information. Open' (MYS454).

## Before you start

- TOI messages must have a status 90, 91, or 99.
- If you are scheduling the deletion of TOI records, the M3 Job Scheduler must be configured. See *Administrator's Guide M3 Java Job Scheduler*.

## Delete TOI messages:

- 1 Open the 'Transport Operation Planning. Delete' (MYS490).
- 2 Select a range for the entry date.

All records in MYOPID with an Entry within the set range will be included in the deletion.

- 3 Select a range of status. Only records with a status higher than 90 can be deleted:

90='Upload' - Executed, no errors. M3 BE is updated

91='Download/Upload' - Closed, no update

99='Download' - Deleted

- 4 Select a range of warehouses, or a range of places of load.

- 5 Select a partner. This is not a mandatory field.

## Chapter 9: Supply Chain Order

# Changing, Deleting and Releasing the Supply Chain

### **Deleting the Supply Chain**

When a supply chain is deleted, all levels below it are also deleted. If released orders exist, they remain but are disconnected from the supply chain, and the pre-allocations are removed.

The orders below the released order are still connected to the supply chain. A manual de-allocation or manual deletion must be carried out on the next level.

### **Changing the Supply Chain**

#### **Changing the Quantity**

If you change a quantity on a supply chain, it is regenerated. That is, proposals and existing orders are recreated. Quantities on released orders are not changed automatically.

If a quantity is changed manually on a released order via (PMS100), (PPS200), or (MMS100), only that specific order is changed, and the lower levels are not affected.

When 'Supply Chain Policy. Open' (CRS709) contains 'Link existing orders'=1 and 'Stop supply chain explosion'=1, supply orders on the lowest level manually connected via (MWS121) are not deleted when the quantity is changed. They are handled as released orders.

When (CRS709) contains 'Use existing orders'=2 and 'Stop supply chain explosion'=1, automatically connected supply orders are not affected when the quantity is changed. They are handled as released orders.

#### **Changing the Date**

You can change the date on a supply chain either on the top level, or via the Fashion Planning Workbench, as appropriate. In the Fashion Planning Workbench, you can reschedule the planned dates on all levels below the CO/DO line in a supply chain.

#### **Releasing a Supply Chain Order**

The behavior of a supply chain once a supply chain order is released depends on the type of proposal.

- Lowest level – performed in the same way as for a non-supply chain item

- Not lowest level – supply chain is checked to ensure that no current transaction is performed. For example, a quantity change, regeneration, etc.
- If the supply chain is updated from another function, the release is added to the supply chain job queue, and job RPS912 is submitted.
- If no other actions are performed on the supply chain, job RPS912 initiates the release automatically.

## Linking Supply Orders

### Manually connect lower level supply orders to a supply chain

'Supply Chain Policy. Open' (CRS709) settings:

- Link existing orders = 1
- Stop supply chain explosion = 1.

When manually connected supply orders are reused, for example, at a quantity change on a higher level, the available quantity is reused in the following order:

- 1 Use available quantity on existing connected and released supply orders
- 2 Reuse available quantity on existing connected supply order proposals
- 3 If not enough exists, no quantity can be used.

This also means that the pre-allocated share between the proposal and the order might be different after a supply chain quantity change or regeneration.

Example:

- CO entered for 100 pieces; 50 pre-allocated to a POP; 50 allocated to a PO
- CO amended to 140
- Pre-allocation subsequently changed to first take 100 from the PO and remaining 40 from POP.

	<b>CO Quantity</b>	<b>PO Proposal</b>		<b>PO</b>	
		Quantity	Pre-allocation	Quantity	Pre-allocation
Original	100	100	50	100	50
Changed	140	100	40	100	100

### Automatically connect lowest level supply orders to a supply chain

'Supply Chain Policy. Open' (CRS709) settings:

- Use existing orders = 2
- Stop supply chain explosion = 1.

When a supply chain is changed, or regenerated, and you want to reuse a previously automatically connected supply order, the demand quantity is used in the following order:

- 1 Reuse available quantity on existing connected and released supply orders

- 2 Reuse available quantity on existing connected supply order proposals
- 3 If available quantity is not enough, a search is carried out to find any free quantity available on an existing supply proposal or order. The order in which existing proposals and orders are automatically linked is controlled via the FIFO link parameter in (CRS709).

This also means that the pre-allocated share between the proposal and the order might be different after a supply chain quantity change or regeneration. See the previous section Manually connect lowest level supply orders to a supply chain.

### **Automatic late connection of a supply chain**

'Supply Chain Policy. Open' (CRS709) settings:

- Use existing orders = 2
- Stop supply chain explosion = 1
- Auto find supply chains = 1.

When releasing a lowest level supply order, or when confirming the delivery date of a PO (PPS250/260/270) with parameter 'Auto find supply chains'=1, a search for existing non-connected supply chains is performed. All demands with a later planning date are examined and checked if they are already pre-allocated. If not, the supply order is connected to that supply chain.

## **Order Environment Examples**

This topic provides examples of how to set up and use Supply Chain Order functionality in different environments.

### **Pure Make To Order (MTO)**

All levels must be set up as supply chain planned. That is, have a supply chain policy setup in 'Item. Connect Warehouse' (MMS002).

The supply chain policy must have the 'Link existing orders' field set to '0'.

When a CO line is entered, all levels below are created and automatically pre-allocated to each other. When changing the quantity on the CO, all levels change to reflect that change.

Rescheduling the whole chain can be done either by changing the date on the CO line or via the Fashion Planning Workbench.

Upstream change of quantities can also be used.

The main advantages of using the supply chain concept instead of order initiation in this scenario are:

- Release at any level
- Automatic quantity/date changes
- Use stock.

### Combined Distribute To Order and Make To Stock (DTO/MTS)

In this scenario, there might be a forecast on the MO that drives down all demands to lower levels. When a CO is entered, a distribution order is created to distribute the material to this specific CO. This shows that the link can be broken anywhere in the chain, and from that point MRP or re-order point etc., can be used.

The distributed item must have a supply chain policy on the receiving warehouse record only. That is, in 'Item. Connect Warehouse' (MMS002).

The supply chain policy must have the 'Use existing orders' field set as '0'.

All levels are MRP planned. A forecast is placed on the manufactured item to produce for stock.

When entering a CO line, a distribution order proposal is created and connected to the supply chain, and so is pre-allocated to the CO line.

The MO is received into stock and allocated to the DO as normal.

### Make To Order combined with lot sized Purchase To Order (MTO and PTO)

In this scenario, you might have a forecast on the CO/DO level that drives down all demands to the purchase order level, or have the forecast on the PO level.

When a CO is entered, a supply chain is created to source the material to this specific CO. The POs can be connected either manually or automatically to the supply chain.

All items must have a supply chain policy setup in 'Item. Connect Warehouse' (MMS002)

The supply chain policy must have the 'Use existing orders' field set as '0' on all items apart from the purchased ones. These should be set to '1' or '2' depending on how the POs are to be connected).

The 'Auto find supply chains' field can be set to either '0' or '1' depending on how the connection to the supply chain is to be activated.

All levels are MRP planned. A forecast is placed on the distributed or purchased item. The proposals for all levels, except the PO level, must be left in status 10, as they are currently only used for exploding the demand to the purchase level.

When receiving a CO line, the forecast is consumed, and a supply chain is created, thus creating proposals for all levels except the PO level. The old proposal in status 10 is removed, or the quantity decreased by the MRP.

The PO level is either manually connected to the supply chain via 'Preallocation. Perform Detailed' (MWS121), automatically connected when the supply chain is created (depending on the 'Use existing orders' setting), or automatically connected at release or confirmation of the PO (depending on the 'Auto find supply chain' setting).

### Make To Order combined with lot sized Distribute To Order (MOT and DTO)

In this scenario, the supply chain is generated from CO/forecast on the DO level. When releasing the DO proposals, a supply chain is created. The CO lines are then manually pre-allocated to the DOs.

All items must have a supply chain policy in Item/Warehouse (MMS002/E), except for the receiving item/warehouse record for the DO (top level).

The supply chain must have the 'Use existing orders' field set as '0'.

All levels are MRP planned. COs and/or a forecast is placed on the DO level and the MRP drives down the demand to all lower levels, including lot sizing of the DO level.

The status on all levels must be left as '10'. When releasing the lot sized DO, a supply chain is created which can then be manually pre-allocated to the COs as they arrive. This is a normal pre-allocation and the CO does not belong to the supply chain. That is, it is not part of the supply chain identity.

An alternative to this could be to have a supply chain on the CO-DO part as well. This means that there is one supply chain connected to another supply chain, which still gives full traceability, including the CO level.

## Supply Chain Rules Introduction

Supply chain rules are set up in 'Supply Chain Policy. Open' (CRS709).

The general rule for a supply chain is that whenever it is changed (quantity, release of proposal or allocation of stock) the supply chain relationships (pre-allocations) and all proposals for the levels below it are deleted, and the supply chain is recreated.

The recreation reuses all the existing allocations and released orders that were connected to the original supply chain, but proposals are not reused. They are deleted and recreated.

An exception is when a proposal is APP planned. Depending upon parameter settings, the APP planned proposals can be reused, or when a proposal on the lowest level is connected to several supply chains.

### **Creating the Supply Chain**

An item is considered a supply chain item when a supply chain policy has been added to the item/warehouse record in (MMS002/E). The supply chain is either generated interactively or in a batch, depending on the setting in (CRS709).

The supply chain generation is managed through an internal job queue which ensures that two events are not performed at the same time on a single supply chain.

The supply chain is always generated from a customer order line or from a released distribution order line. This is always the starting point for a supply chain.

## Pre-allocation and Allocation of the Supply Chain

### **Manually pre-allocating in a supply chain**

Manual pre-allocation of supply order proposals can be done in 'Pre-allocation. Perform Detailed' (MWS121). You can confirm or release a supply order proposal on the lowest level and later connect it manually to, for example, a MO proposal.

### Manually change a supply chain from pre-allocation to allocation

If you have products in stock that you want to use in a supply chain instead of manufacturing new ones, you can transfer a pre-allocation against the proposal to an allocation against stock.

In (MWS121) make an allocation of the supply chain demand to the stock and the existing pre-allocation (against the supplying order) is transferred to a real allocation against stock.

### Automatic allocation of a supply chain against existing stock

If parameter 'Allocate stock' in 'Supply Chain Policy. Open' (CRS709) is selected, the sequence in which the supply chain determines how to explode the supply chain is changed. This means that before creating the next level in the supply chain, a check is made against existing stock to see if there is anything that can be used.

Search order for supply chain generation:

Allocate stock = 0

- 1 Reuse any existing allocations
- 2 Reuse any existing pre-allocated released order
- 3 Reuse any existing pre-allocated proposals (APP or manually linked supply order proposals)
- 4 Create new proposals for remaining quantity.

Allocate stock = 1

- 1 Reuse any existing allocations
- 2 Reuse any existing pre-allocated released order
- 3 Reuse any existing pre-allocated proposals (APP or manually linked supply order proposals)
- 4 Find available stock and allocate
- 5 Create new proposals for remaining quantity.

Allocate stock = 2

- 1 Reuse any existing allocations
- 2 Reuse any existing pre-allocations to orders
- 3 Allocate existing stock with respect to DTF
- 4 Create new proposal.

## Receiving a Supply Chain Order

When a supply chain order is received, the pre-allocation is transformed into an allocation. The type of allocation is defined on 'Supply Chain Policy. Open' (CRS709) or on Item/Warehouse (MMS002/G). This allocation is used if a regeneration or a quantity change of the supply chain occurs.

The supply chain is not triggered by reporting. That is, if reporting 95 (including the finish mark), the supply chain demand is still 100, but only 95 is allocated to stock. The MRP takes care of the remaining 5, but a manual pre-allocation must be performed. The exception to this is when the upstream changes of a supply chain

have been activated on the supply chain policy, as described in the section ‘Upstream Changes of a Supply Chain’.

The supported scenarios are:

- MO:
  - Put-away
  - Put-away + quality inspection
  - 2 step put-away
- PO:
  - Direct put-away
  - Goods receipt + put-away
  - Goods receipt + quality inspection + put-away
  - 2 step put-away
- DO:
  - Issue + put-away
  - 2 step put-away

## Supply Chain Header

This document explains how to use the header in supply chain functionality using ‘Supply Chain Header. Open’ (RPS200). From here, several supply chain options can be executed.

A supply chain can have status 20 (active) or 90 (inactive) plus a number in progress statuses such as 21 – 29. If a status remains at 21 – 29 for a length of time, something has probably gone wrong in the generation.

Two possible ways of solving erroneous statuses are:

- Option 21 regenerates the supply chain from the top level. It regenerates the complete supply chain, that is, it deletes the chain and recreates it.
- Option 22 restarts the generation of the supply chain from the point where it was interrupted. This assumes that last action on the supply chain has been interrupted. That is, it assumes that the delete step has already been performed and just continues with the action that is present in the trigger file. Such as, option 22. During a restart the status is raised to 29 just to prohibit a new restart being made before the previous restart has been finished.

Use option 21 and 22 only when needed since the supply chain is inactive whilst performing these actions.

When generating a supply chain, a detailed message log logs all error messages that occur. If messages exist, the supply chain order gets a red flag. The detailed message log can be reached via option 12.

By using option 20 it is possible to view the whole supply chain in ‘Active Supply Chain. Display’ (MWS150).

You can also add attributes on the supply chain header via option 24, used purely as information.

The following table shows the parameters to be set:

Program ID/Panel	Field	The field indicates...
RPS200/B	Supply chain entry	<p>.... the unique identification of a supply chain.</p> <p>The supply chain number acts like an order number for the supply chain, since it is an ID that keeps the entire supply chain together. This number can also be included in a macro order, thus allowing planning to be done on a supply chain level via Multi Site Planner (MSP).</p> <p>The number series 43A is used for the supply chain number.</p> <p>The supply chain number is displayed in (RPS200) where you can also take the following actions:</p> <ul style="list-style-type: none"> <li>• Regenerate the supply chain</li> <li>• Restart an interrupted supply chain</li> <li>• View the complete supply chain.</li> </ul>
RPS200/E	Supply chain status	<p>.... the current status of the supply chain.</p> <p>Alternatives:</p> <p>10 = Preliminary      20 = Normal      21 = Create in progress      22 = Change in progress      24 = Delete in progress      29 = Restart in progress      90 = Finished.</p> <p>Note:</p> <p>If the supply chain gets stuck or blocked from further processing in status 21-29, for example, due to a technical breakdown, you can restart or regenerate the supply chain in (RPS200).</p>

Program ID/Panel	Field	The field indicates...
RPS200/E	Remaining quantity	<p>... the remaining quantity on the supply chain.</p> <p>Remaining quantity equals the transaction quantity – reported quantity. That is, the same as the transaction quantity in the material plan on the top level of the supply chain.</p>
RPS200/E	Allocated quantity - basic U/M	<p>... the allocated quantity on the supply chain and displays the allocated quantity in the material plan on the top level of the supply chain.</p>
RPS200/E	Pre-allocated quantity	<p>... the pre-allocated quantity on the supply chain and displays the pre-allocated quantity in the material plan on the top level of the supply chain.</p>
RPS200/E	Manual adjustment	<p>... the manually adjusted quantity on the supply chain. When entering a value in this field, the supply chain re-exploses to reflect the quantity deviation.</p> <p>This is intended to be used together with the upstream functionality. If the quantity deviation is outside the tolerance rules specified in (RPS380), you must decide how to handle the deviation and which supply chain should be affected by this. This field is used if you decide to adjust the quantity for the supply chain.</p>

#### Additional information about these fields

##### **Remaining quantity**

Remaining quantity displays the top level quantity of the supply chain. That is, the non-delivered part of the CO/DO (the transaction quantity according to MITPLO).

##### **Allocated quantity**

Allocated quantity displays the top level allocated part of the supply chain (the allocated quantity according to MITPLO).

### Pre-allocated quantity

Pre-allocated quantity displays the top level pre-allocated part of the supply chain (the pre-allocated quantity according to MITPLO).

### Manual adjust

When manually entering a value in this field you can trigger a regeneration of the supply chain with another quantity than the quantity on the top level order. The difference that should be entered, that is, if you want the supply chain to be adjusted from 100 to 98 you should enter -2. The adjusted quantity is always based on the remaining quantity and not the pre-allocated quantity, meaning that if remaining quantity = 100 and pre-allocated quantity = 95, and you want to adjust the chain to 92, you should enter -8 as manual adjust.

Note that changing the quantity on the CO line overrides any adjustments made in (RPS200). That is, the regenerated quantity reflects the CO line quantity.

## Supply Chain Policy

This document explains how to set up a supply chain policy in 'Supply Chain Policy. Open' (CRS709).

The supply chain policy controls the behavior of the creation and changes of the supply chain.

Parameters to set:

Program ID/Panel	Field	The field indicates...
CRS709/E	Order link type	<p>... which type of link to use when generating a supply chain and whether allocation should be performed according to the pre-allocated quantity, or according to the allocation type on the item warehouse record.</p> <p>Alternatives:</p> <p>1 = Pre-allocation link with automatic allocation according to the pre-allocated quantity at stock receipt.</p> <p>2 = Pre-allocation link with automatic allocation according to the allocation type on the item warehouse record. Use option 2 when you want the pre-allocated quantity to be, for example, soft allocated at receipt.</p>
CRS709/E	Create in batch	<p>... if planned orders should be created/updated interactively or in batch.</p> <p>Select the check box if planned orders should be created/updated in batch.</p>

Program ID/Panel	Field	The field indicates...
CRS709/E	Rem Sup chain p	<p>... if the supply chain policy should be remembered. The Supply Chain Policy that was used to generate the supply chain will be saved and used during upstream and downstream changes or during regeneration even if it is changed or removed in 'Item Connect Warehouse' (MMS002).</p> <p>Select the check box if the supply chain policy should be remembered and used during changes or regeneration on the supply chain.</p> <p>If you do not select the check box, the supply chain policy will not be remembered and any changes or regeneration will not use the policy that was used to create the supply chain if it is removed or changed in (MMS002).</p>
CRS709/E	Stop supply chain explosion	<p>... indicates if the supply chain will continue or will stop the creation of the acquisition order for the demand.</p> <p>Alternatives:</p> <p>0 = Always creates supply order for the demand.</p> <p>1 = Does not create supply order but finds an existing order to link in the chain. Can find manually or automatically depending on the 'Link existing orders' setup.</p> <p>2 = Same as alternative 1 if the demand is triggered by customer order or distribution order. If the demand is a demand order, it has a continuous explosion. Recommended 'Link existing orders' setup is 2.</p>

Program ID/Panel	Field	The field indicates...
CRS709/E	Link existing order	<p>... whether the supply chain automatically creates a new proposal, or if non-allocated quantities for existing proposals/orders are used.</p> <p>Alternatives:</p> <p>0 = No. New proposals are always generated by the supply chain.</p> <p>1 = Manually. The supply chain never generates any new proposals. Instead, existing proposals /orders can later be manually pre-allocated to the supply chain.</p> <p>2 = Automatic. The supply chain never generates any new proposals. Instead, existing proposals /orders are automatically pre-allocated to the supply chain (if an unallocated quantity exists).</p> <p>Note:</p> <p>You usually enter value 1 or 2 when you have a supply chain where you want Material Requirement Planning (MRP) to plan and lot size the lowest level, but still want to connect to a supply chain later.</p>
CRS709/E	Automatically find supply chain	<p>... if releasing a supply proposal on the lowest level of a supply chain should trigger an automatic search to find existing supply chains to connect to.</p> <p>This option is only valid when 'Link existing orders' is set to 1 or 2.</p> <p>This can be useful when the lowest supply level is planned via MRP and forecast. Later, the customer order arrives, and supply chains are created. When the actual releasing of an existing supply proposal takes place, it automatically tries to find one or several supply chains to connect to.</p>

Program ID/Panel	Field	The field indicates...
CRS709/E	FIFO link	<p>... how a demand connected to a supply chain should find existing supply order proposals.</p> <p>Select the check box if supply orders are considered first, and if not enough, supply proposals are considered. The search order is that earliest supply order is selected first.</p> <p>If you do not select the check box, supply proposals are considered first, and if not enough, supply orders are considered. The search order is that the latest supply proposal is selected first.</p> <p><b>Note:</b></p> <p>This field is only valid if the ‘Link existing orders’ parameter is set to 2. Also, be aware that this parameter is considered only when creating a supply chain.</p>
CRS709/E	Multiple order links	<p>... whether an item connected to a supply chain should be able to use existing supply orders/proposals that do not cover the required supply chain quantity.</p> <p>Select the check box if the demand quantity can be sourced from several supply proposals /orders.</p> <p>If you do not select the check box, then the entire demand quantity must be sourced from only one supply order /proposal.</p> <p><b>Note:</b></p> <p>This parameter is only valid if the ‘Link existing orders’ parameter is set to 2. Also, be aware that this parameter is only used when creating a chain.</p>

Program ID/Panel	Field	The field indicates...
CRS709/E	Safety time control	<p>... whether the supply chain should consider safety time when automatically connecting supply orders. Safety time in this context is the time before the actual demand date that a supply order should be completed.</p> <p>Respecting safety time can be useful if the supplier does not always keep their delivery times.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>0 = Respect safety time</li> <li>1 = Respect safety time for proposals only</li> <li>2 = Do not respect the safety time.</li> </ul> <p>Example:</p> <p>A supply order due on Friday has two days safety time. A supply chain is created and generates a demand for that Friday. If alternative 0 is selected, the supply order is not included in the supply chain. If alternative 1 is selected, the supply order proposal is not included in the supply chain, but a released supply chain will be included. If alternative 2 is selected, the order is included in the supply chain.</p>
CRS709/E	Allocate stock	<p>... whether the supply chain generation should try to allocate existing stock.</p> <p>See Allocate Stock Parameters sections below for more information.</p>
CRS709/E	APS decision tolerance	<p>... how a change in quantity on the top level should be exploded to lower levels for Advanced Production Planner (APP) proposals, and if the APP decisions made earlier should be kept.</p> <p>The explosion setting on (MMS037/E) and (RPS999/E) normally determines if proposals with status 20 consider any product structure changes. That is, done through the MRP where re-explosion setting 2 means to re-explode APP planned proposals but keep the APP planning decisions. In the supply chain, this setting has some influence on the APP proposal management.</p> <p>See the section APS Decision Tolerance Parameters below for more information.</p>

Program ID/Panel	Field	The field indicates...
CRS709/E	Tolerance control	<p>Select the check box if the Advance Production Planner (APP) planned proposal should be considered as a release order and therefore not be changed.</p> <p>If you do not select the check box, then the APP planned proposal is removed and a new proposal is created.</p> <p>See the APS tolerance field help in (CRS709) for more information.</p>
CRS709/E	Material upstream	<p>... if a quantity difference must trigger an upstream quantity change in the supply chain.</p> <p>For detailed information about the upstream rules, refer to the User Documentation Library - Supply Chain Order / Upstream Rules in Supply Chain.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>0 = No upstream change is to be performed.</li> <li>1 = Only a decrease of the quantity is to trigger an upstream change.</li> <li>2 = Only an increase in quantity is to trigger an upstream change.</li> <li>3 = Both an increase and a decrease of quantity are to trigger an upstream change.</li> </ul> <p><b>Note:</b> The tolerances set up for the upstream rules on 'Upstream Rules. Open' (RPS380/E) determine if an actual change is made in the supply chain.</p>
CRS709/E	Upstream priority	<p>... in what order the upstream quantity change should be performed.</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>1 = By customer line/distribution order line priority</li> <li>2 = By planning date</li> </ul> <p>When the put away is finished marked, the received quantity is calculated upstream in the empty chain, to find the quantity that it corresponds to at the top level.</p> <p>The top level quantity is then used for regenerating the supply chain. Since the lowest level of a supply chain can be connected to several supply chains, some sort of priority must be used to control the order and which supply chains should be regenerated.</p>

Program ID/Panel	Field	The field indicates...
CRS709/E	Upstream date change	<p>... indicates if an early or delayed supply should trigger an upstream date change in the supply chain. The triggering is performed when an order within a supply chain at a lower level is rescheduled. For example, a material plan rescheduling for a planned manufacturing order, a confirmation of a purchase order, a receipt of a manufacturing order etc.,)</p> <p>Alternatives:</p> <ul style="list-style-type: none"> <li>0 = No upstream change.</li> <li>1 = Trigger upstream change when supply is delayed.</li> <li>2 = Trigger upstream change when supply is delayed or rescheduled earlier.</li> </ul> <p>The date tolerances set for the upstream rules on (RPS380/E) determine whether actual changes are made in the supply chain.</p> <p>The early upstream date change function only applies for one-to-one relationships in the supply chain.</p>
CRS709/E	Date filter	<p>... can be used as a filter for the following scenarios:</p> <ul style="list-style-type: none"> <li>• An upstream date change should be performed.</li> <li>• An APP planned proposal can be automatically moved.</li> </ul> <p>If the delay of the supply order exceeds the date filter, an upstream date change is triggered. The delay of the supply order is calculated as the difference between the planning date of the demand, and the supply.</p> <p>If an APP planned proposal in the supply chain must be moved, a check is made against this filter. If the planned move is greater than the filter days, the APP planned proposal is re-explored. If the planned move is less than the filter days, the APP planned proposal is left as is.</p> <p>Note that it is enough that one of either the APP quantity check, or the APP date check, is true for the proposal to be re-explored.</p>
CRS709/E	Attribute model	<p>... indicates the ID of an attribute model.</p> <p>Attribute models are connected to items and used to set the attributes that can be connected to the item.</p>

Program ID/Panel	Field	The field indicates...
CRS709/E	Rescheduling Method	<p>... indicates how the higher levels are rescheduled during upstream change.</p> <p>Alternatives</p> <p>0 = Reschedule the top level order by the same number of days as the order that initiated the upstream change.</p> <p>1 = Perform forward scheduling of orders, starting from the new planning date of the order that initiated the upstream change. Option 1 is suitable if the supply chain contains distribution orders or internal customer orders that do not deliver daily.</p> <p>Regardless of upstream rescheduling method, the top level order cannot be rescheduled more than what is indicated by the upstream rule date tolerance as defined in (RPS380).</p> <p>Example</p> <p>A manufacturing order receipt is delayed by one day, causing a distribution order in the supply chain to miss its weekly route departure. With option 1, this DO will be forward scheduled to the next route departure the next week, and a top level customer order is rescheduled out one week rather than only one day.</p>

### Allocate stock parameters

The following table gives more information about allocate stock parameters:

Value	Priority	Activity
0	1	Reuse any existing allocations
	2	Reuse any existing pre-allocations to orders
	3	Create new proposals
1	1	Reuse any existing allocations
	2	Reuse any existing pre-allocations to orders
	3	Allocate existing stock
	4	Create new proposals
2	1	Reuse any existing allocations
	2	Reuse any existing pre-allocations to orders
	3	Allocate existing stock with respect to DTF

Value	Priority	Activity
	4	Create new proposal

### APS decision tolerance parameters

The following table gives more information about APS decision tolerance parameters:

Explosion setting	Action
0 or 1	APP decisions are not kept. All proposals are deleted and recreated.
2	APP decisions can be kept according to the rules below.

## APS Decision Tolerance in Supply Chain

The APS (Advanced Production Scheduler) decision tolerance setting enhances the supply chain order function as it is the combination of re-explosion setting 2, and the APP (Advanced Production Planner) tolerance setting that determines how the supply chain links act when a quantity changes. If the quantity change is greater than the percentage share, and the APP tolerance control is 0, then the APP decisions should be disregarded. That is, act as if the re-explosion setting would be 0 or 1.

0% means that no tolerance has been specified and current functionality is used. In other words, consider the APP planned proposal as a released order. This means that if the quantity decreases then no changes are made. If the quantity increases, then the APP planned proposal remains and a new proposal is created for the missing quantity.

For example, if 10% is specified then a quantity change greater than 10% deletes the APP proposal and creates a new proposal for the entire quantity (only if APP tolerance control is 0). If a quantity change is less than 10% then the quantity on the APP proposal is changed, but the decisions are kept.

### Example

- 1 Order 100 pieces changed to 95 (-5%)
- 2 Order 100 pieces changed to 105 (+5%)
- 3 Order 100 pieces changed to 85 (-15%)
- 4 Order 100 pieces changed to 115 (+15%)

The following table shows an example of using APP tolerance control = 0:

Example (Tolerance control = 0)	APP tolerance = 0%	APP tolerance = 10%
1	Nothing, APP proposal left as is	Change APP proposal to 95 but let decisions remain
2	APP proposal left as is + new proposal (5)	Change APP proposal to 95 but let decisions remain

<b>Example (Tolerance control = 0)</b>	<b>APP tolerance = 0%</b>	<b>APP tolerance = 10%</b>
3	Nothing, APP proposal left as is	Delete APP proposal, create new proposal (85)
4	APP proposal left as is + new proposal (15)	Delete APP proposal, create new proposal (115)

The following table shows an example of using APP tolerance control = 1:

<b>Example (Tolerance control = 1)</b>	<b>APP tolerance = 0%</b>	<b>APP tolerance = 10%</b>
1	Nothing, APP proposal left as is	Change APP proposal to 95 but let decisions remain
2	APP proposal left as is + new proposal (5)	Change APP proposal to 105 but let decisions remain
3	Nothing, APP proposal left as is	Nothing, APP proposal left as is
4	APP proposal left as is + new proposal (15)	APP proposal left as it + new proposal (15)

## Upstream Rules in Supply Chain

This document describes how to set up and use upstream functionality.

Upstream rules are set up in 'Upstream Rules. Open' (RPS380).

### Upstream changes of a supply chain

#### Prerequisites

The upstream functionality is controlled through several parameters in the 'Supply Chain Policy. Open' (CRS709), where the triggering of an upstream change is defined. For example, if a receipt should be a trigger, or if only a higher quantity, a lower quantity, or both, should be triggers. There is also an option to trigger an upstream change when a change in date is done.

You can also define the order in which the supply chain should be affected by the upstream change. That is, either by order priority or by planning date. This is useful if there are several supply chains connected to, for example, one purchase order (PO).

The last set of parameters are the tolerances set in (RPS380). These tolerances finally decide if an upstream change should be done and how big the change can be.

#### Workflow

The upstream functionality is activated in these situations:

- Confirmation or shipment advice or notification of a released purchase order. This applies to both quantity changes and date changes.
- Goods receiving or put away of a released order, that is manufacturing order (MO) and PO. This applies to both upstream quantity changes and date changes.
- For the date change, it is the transaction date that is compared to the planning date of the demand.
- Changing a manufacturing order proposal (MOP). This applies only to date changes, no upstream functionality for quantity changes.
- Changing a released manufacturing order through 'Manufact Order. Reschedule' (PMS010). This applies to both quantity changes and date changes.

When upstream changes are activated on the supply chain policy and the quantity change is within tolerances in (RPS380), the supply chain is adjusted according to the confirmed/received quantity. The change is propagated up to the top level of the supply chain and then, at the top level, the supply chain is regenerated according to the new quantity. The normal rules at generation also apply here, that is, only proposals are changed, released orders are not changed etc.

If the received quantity is outside of the tolerances set in (RPS380) then firstly the supply chains are adjusted up to the maximum or minimum tolerance. If there is still a quantity left to be distributed, a message is sent to the user responsible for the received item, informing them that a shortage or excess of material exists. Any excess material is put into stock.

When that user receives the message, they can decide what to do with the excess/shortage quantity. If they want to use the excess/shortage quantity on specific supply chains, they can enter that supply chain in the 'Supply Chain Header. Open' (RPS200), and manually adjust the supply chain quantity on the E-panel. That is, regenerate the supply chain with a new manually set quantity. They could decide not to implement the excess quantity but use it for other supply chains.

If a shortage quantity exists and the user does not want to decrease an existing supply chain, the MRP generates a proposal for the missing quantity, which can be manually pre-allocated to the supply chain having the shortage, or automatically pre-allocated at, for example, release.

Since a top level supply chain customer order (CO) involves a customer, no automatic changes of the CO quantity occur. This must be done manually. However, all levels below the CO are affected by the upstream change. As the top level CO is not changed, the supply chain must be over pre-allocated or over allocated at the level in order to reflect the real need.

Top level distribution order (DO) quantities are always adjusted automatically to reflect the real quantity on the receiving warehouse.

Note that the tolerance percentage is checked at the top level and the changed quantity is compared with the order line quantity. This means that if the CO line quantity is manually changed to reflect the upstream quantity, this new CO line quantity is used as a comparison at the next upstream change. This is also true for top level DOs as they are always changed automatically.

If supply chains are stretched over warehouse or facility levels and you do not want automatic upstream changes through the whole supply chain, you must ensure that separate supply chains are used for each warehouse. To do this, set the DO item with a supply chain policy on both the sending and the receiving warehouses, but set the supply chain policy on the receiving warehouse at the lowest level. In that case, there is one supply chain number on warehouse 1 and one supply chain on warehouse 2, linked together by a pre-allocation. When an upstream change is performed on warehouse 2, only that supply chain changes.

## Upstream examples

### Example 1

At put away of a PO 225 pieces are received instead of 200.

These are connected to two supply chains of 100 pieces each.

Supply chain 1 has a tolerance of 10% and so can be increased to 110 pieces.

Supply chain 2 has a tolerance of 20% and so can be increased to 115 pieces.

No excess or shortage quantity exists, so no manual interaction is needed.

### Example 2

At put away of a PO 150 pieces are received instead of 200.

These are connected to two supply chains of 100 pieces each.

Supply chain 1 has a 10% tolerance and so can be decreased to 90 pieces.

Supply chain 2 has a 20% tolerance and so can be decreased to 80 pieces.

This results in a shortage, so a PO proposal is generated for 20 pieces ( $90+80-150 = 20$ ).

**Note:** In contrast to a theoretical supply chain, in which goods flow from the supplier downstream to the customer, we define the demand order as the top level because this is the starting point from which we generate the supply chain. Therefore, a change to a top-level order such as a customer order can trigger a downstream effect on supplying orders, while a change to a bottom-level order such as a purchase order can trigger an upstream change on demand orders.

### Example 3

There is a supply chain of 100 pieces with a 10% tolerance.

PO confirmed with a quantity of 75 pieces and finish marked.

Supply chain created of 90 pieces ( $100-10\%$ ) but as the PO is only 75 pieces, a new PO proposal of 15 is created.

If you reverse the transaction, the upstream functionality considers this as an increase of 25 pieces ( $100-75$ ). So, the supply chain tries to increase to 115 pieces ( $90+25$ ) but the tolerance says 110 ( $100+10\%$ ). This means that the supply chain ends at 100 pieces, and since the PO was for 100 pieces, a new PO proposal of 10 pieces is created.

The supply chain needs to be manually adjusted to the correct quantity.

In the table, there are the parameters to be set:

Program ID/Panel	Field	The field indicates...
RPS380/E	Start value 1	<p>... the first valid value to be compared to the contents of a control object. If the contents are greater than or equal to this start value, the record is accepted.</p> <p>If there are several start values, the one that is the closest lowest value is valid.</p> <p>Example:</p> <p>You have item number as the control object, and have set start value = A100, A200, and A300. If the content of the control object is A150, the record with start value = A100 is accepted. If the content of the control object is A375, the record with start value = A300 is accepted.</p>
RPS380/E	Start value 2	<p>... the first valid value to be compared to the contents of a control object. If the contents are greater than or equal to this start value, the record is accepted.</p> <p>If there are several start values, the one that is the closest lowest value is valid.</p> <p>Example:</p> <p>You have item number as the control object, and have set start value = A100, A200, and A300. If the content of the control object is A150, the record with start value = A100 is accepted. If the content of the control object is A375, the record with start value = A300 is accepted.</p>
RPS380/E	Start value 3	<p>... the first valid value to be compared to the contents of a control object. If the contents are greater than or equal to this start value, the record is accepted.</p> <p>If there are several start values, the one that is the closest lowest value is valid.</p> <p>Example:</p> <p>You have item number as the control object, and have set start value = A100, A200, and A300. If the content of the control object is A150, the record with start value = A100 is accepted. If the content of the control object is A375, the record with start value = A300 is accepted.</p>
RPS380/E	From date	<p>... the start date of the version.</p> <p>The date must not overlap with other version records. Validation is performed to ensure that conditions are met.</p>
RPS380/E	Upstream changes	<p>... if the quantity changes at rescheduling, confirmation, or receiving on lower levels affect the upstream supply chain orders.</p> <p>If the check box is selected, the quantity changes on lower levels are propagated upstream in the supply chain according to the sourcing tolerance fields in (RPS380).</p>

Program ID/Panel	Field	The field indicates...
RPS380/E	Sourcing tolerance -	<p>... the allowed tolerance percentage for when a decrease in quantity at put away should be propagated upstream in the supply chain.</p> <p>If it is left blank, no upstream changes occur.</p> <p>If the value entered is greater than 0%, only a decrease in quantity within the tolerance is propagated upstream.</p> <p>Note:</p> <p>Top level customer orders are not changed automatically.</p>
RPS380/E	Sourcing tolerance +	<p>... the allowed tolerance percentage for when an increase in quantity at put away should be propagated upstream in the supply chain.</p> <p>If it is left blank, no upstream changes occur.</p> <p>If the value entered is greater than 0%, only an increase in quantity within the tolerance is propagated upstream.</p> <p>Note:</p> <p>Top level customer orders are not changed automatically.</p>
RPS380/E	Upstream date changes	<p>... indicates if date changes at put-away, or MO rescheduling on lower fields, should affect the upstream supply chain orders.</p> <p>If the check box is selected, then date changes on lower levels affect dates upstream in the supply chain, according to the date tolerance fields in (RPS380).</p>
RPS380/E	Date tolerance -	<p>... indicates the allowed tolerance (in days) for how an early date change at put-away should be propagated upstream in the supply chain.</p> <p>Only a date change within the tolerance range is propagated up to the top level of the SCO. Outside of the tolerance, only the levels below the top level are changed. If this field is left blank, no upstream change takes place on the top level.</p>
RPS380/E	Date tolerance +	<p>... indicates the allowed tolerance (in days) for how a delayed date change at put-away should be propagated upstream in the supply chain.</p> <p>Only a date change within the tolerance range is propagated up to the top level of the SCO. Outside of the tolerance, only the levels below the top level are changed. If this field is left blank, no upstream change takes place on the top level.</p>

## Chapter 10: Defining Basic Settings

### Administration Lead Time

This document explains the settings for the administration lead time. This is the time allocated to perform activities required before a planned order can be released.

#### Outcome

The administration lead time is set.

The administration lead time is used to define the time that is allocated to perform activities required before a planned order can be released. This would be used, for example, in a quotation inquiry, where it is used as a lead-time component to calculate the total lead time per item/warehouse connection.

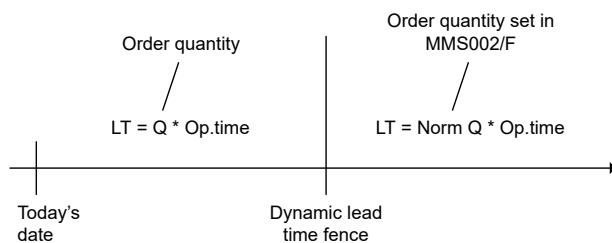
Administration lead time is specified per item/facility (M9LEA4/MITFAC).

#### Before you start

Basic data for inventory management must have been set.

#### Follow these steps

- 1 Start 'Item. Connect Facility' (MMS003). On the E panel the 'Administration lead time' field is filled in for items with acquisition code 1=Manufacturing or 2= Purchasing (MMS002/E).
- 2 Go to the (MMS003/F) panel. Fill in the 'Manufacturing order lead time method' field and the 'Dynamic lead time fence' fields.



- 3 The administration lead time is displayed on the (MMS002/E) panel.

### Parameters to set

Program ID/Panel	Field	This field indicates...
MMS003/E	Administration lead time	This is specified per item and facility and is added to the total lead time for each item/warehouse (MMS002)
MMS003/F	Manufacturing order lead time method	Controls whether the operation lead time should be calculated dynamically (according to the order quantity) or use the lead time offset (fixed lead time according to normal order quantity). Most often this parameter is activated.
MMS003/F	Dynamic lead time fence	This is for performance reason. This is the horizon for planned orders where dynamic lead time should be calculated, as above. Outside the dynamic lead time fence, fixed lead time according to normal order quantity will be used for planning

## Connect Item to Warehouse

This document explains how you connect an item to one or several selected warehouses. This connection must be performed before you can handle the item in production and inventory.

The connected item per warehouse is used in the material planning process and in different order processes.

### Outcome

- An item is connected to one or several warehouses.
- The connection between the item and the warehouse facilities is performed automatically, without any user modification.
- Information about acquisition, material planning, method safety time, planning horizon, supply lead-time, time fences, safety stock method, and so on is set for the item/warehouse combination.
- The connected item is displayed in 'Item. Connect Warehouse' (MMS002) and 'Item. Connect Facility' (MMS003). These tables are updated: MITBAL, MITFAC, and MITMAS.

### Before you start

- An overall physical inventory structure must have been created. See [Define Warehouse Structure](#) on page 870.

- An item must exist. See [Create Item](#) on page 813.

### Follow these steps

- 1 Start 'Item. Connect Warehouse' (MMS002) and set the panel sequence to E, F, G, and I. The H panel displays information only and is therefore not necessary when specifying data.
- 2 The I panel is only specified if you have lot or serialized items with expiration date information. VAT information for purchased items is specified here.  
**Note:** You can start 'Item. Connect Warehouse' (MMS002) automatically when you have created an item in 'Item. Open' (MMS001).
- 3 On the B panel, set the sorting order to 1 or 2.  
Select the item and warehouse to connect.  
Populate the necessary data on the E, F, and G panels. See the Parameters to set section for detailed parameter descriptions.
- 4 Repeat all steps to connect the item to additional warehouses.

### Parameters to set - (MMS002/E)

E panel in 'Item. Connect Warehouse' (MMS002)

Program ID/Panel	Field	The field indicates...
(MMS002/E)	Planner	<p>...the person responsible for the acquisition of items for each warehouse. Order proposals and shortage analysis are sorted and handled per planner.</p> <p>The default planner is the person that is indicated as responsible for the item on 'Item. Open' (MMS001/E).</p>
(MMS002/E)	Acquisition code	<p>...how acquisition is to be performed for each item/warehouse in case of a requirement (immediate or planned). This is required information.</p> <p>The valid alternatives are:</p> <p>1 = Manufactured      2 = Purchased      3 = Distributed      6 = Maintenance.</p> <p><b>Note:</b> The acquisition code can be overridden, and you can have both purchasing and manufacturing existing simultaneously.</p>

Program ID/Panel	Field	The field indicates...
(MMS002/E)	Period frame template	<p>...a period frame template which is used to group days in appropriate periods. Each template ID is user-defined and can include up to 50 periods/columns with varying lengths. The period frame template specified per planning unit is also used for forecast distribution, if appropriate.</p> <p>Each period template is defined by specifying this information in four intervals:</p> <ul style="list-style-type: none"> <li>• Number of periods/columns</li> <li>• Unit multiplier, that is the number of units that will form the period/column</li> <li>• Unit, expressed in one of these alternatives:           <ul style="list-style-type: none"> <li>1 = Days</li> <li>2 = Weeks</li> <li>3 = System periods</li> </ul> </li> </ul> <p>In addition, you can control the way in which changes from one unit to another should be processed, by specifying whether overlapping should be used.</p>
(MMS002/E)	Planning method	<p>... material planning method to be applied when creating an acquisition order for the item/warehouse. In principle, these basic methods are available to plan and create acquisition orders.</p> <ul style="list-style-type: none"> <li>• Reorder Point (ROP): the inventory level set that triggers an acquisition order. If the total on-hand balance plus stock on order falls to or below the reorder point, action is taken (the acquisition order) to replenish the stock.</li> <li>• Material requirements planning (MRP): a set of techniques that use bills of material, inventory data and the master production schedule to calculate requirements for materials.</li> </ul> <p><b>Note:</b> The planning method is a key parameter and it affects the entire material planning process in M3 BE.</p> <p>Order-initiated (alternative 3) means that the order is created and released only in direct relation to the controlling order.</p> <p>These are the valid alternatives for this field:</p> <ul style="list-style-type: none"> <li>0 = Manually planned</li> <li>1 = Material requirement planned (MRP)</li> <li>2 = Reorder point (ROP) planned per item/warehouse</li> <li>3 = Order driven: acquisition orders are only triggered, created and released by a requiring order</li> <li>4 = Reorder point (ROP) planned per item and facility</li> <li>5 = Reorder point (ROP) planned per item and global facility.</li> </ul>
(MMS002/E)	Planning policy	...the planning policy that determines how generation of planned orders, action messages, and warning messages are to be applied. Each planning policy is user-defined in 'Planning Policy. Open' (MMS037).

Program ID/Panel	Field	The field indicates...
(MMS002/E)	Master scheduled	<p>Number of periods/columns, whether the item is part of the master schedule. The master schedule represents what the company plans to produce expressed in specific configurations, quantities, and dates. The master schedule considers the forecast, the production plan and other important considerations, such as backlog availability of material and capacity, management policies and goals.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>0 = Not a master scheduled item</li> <li>1 = Master scheduled item - may be used for manufactured, purchased, or distributed items. By selecting this option, planned orders will not automatically be scheduled inside the planning time fence. The system will instead apply an A3 action message to the planned order and place it on the planning time fence with an alternative date.</li> <li>2 = Master scheduled item which always contains a customer order-unique configuration - may be used for scheduling of products which display a relatively low item volume, are very specialized to customer needs, and generate high inventory costs.</li> <li>3 = Planning entity - used for forecasting on a more aggregated level. For instance, pasta could be an appropriate item to forecast when selling macaroni and spaghetti. If pasta is the planning entity, the forecast on pasta will be consumed when macaroni or spaghetti is sold. The planning entity should have inventory accounting = 2. The connection between the items that you sell and the planning entity is defined in 'Planning Entity. Open' (RPS045).</li> <li>4 = Process planning item - used for items to be defined as process planned and whose inventory accounting code in (MMS001) must equal 2. For end items connected to a planning process, the master schedule code should be 0 or 1.</li> </ul> <p>The parameter also defines if the product should be included in the rough-cut capacity planning calculation 'Resource Reqmnt. Create' (RCS050). Only products with master schedule code 1-4 are selected. An item is qualified to be included in the master schedule for one of these reasons:</p> <ul style="list-style-type: none"> <li>Significant effect on capacity</li> <li>Significant effect on material</li> <li>Manual evaluation of change requirement</li> <li>Manual evaluation of change capability</li> </ul>

Program ID/Panel	Field	The field indicates...
(MMS002/E)	Continuous net change	<p>...how often M3 BE checks the material planning situation for the item/warehouse. M3 Material Planning creates planned orders (MO, DO, PO, or WO) and suggests activities to the user by displaying action messages.</p> <p>Action messages are created in 'Action Message. Change' (RPS001) and set by the selected planning policy. These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>0 = In batches, usually at the end of the day</li> <li>1 = Immediately, so requirements planning is performed through a queue system that is processed in real time.</li> </ul>
(MMS002/E)	Planning horizon	<p>...how many days are covered by the requirements planning from the current system date. There may well be requirements beyond the date fixed by the planning horizon, but these do not generate planned orders. There is no reason to use a longer horizon in requirement planning than what is necessary to plan the item with the longest lead-time.</p>
(MMS002/E)	Safety time	<p>...how many days before the actual requirement date a planned order should be available in stock. The purpose is to protect the scheduling from any fluctuations in the item's delivery time.</p> <p>This information is only used when planning method is set to 1=material required planning.</p>
(MMS002/E)	Supply lead time	<p>...the supply lead time in days. That is the number of days from an order or a requirement to an actual delivery of an item.</p> <p>For manufactured items (acquisition method 1) and distribution items (acquisition method 3) the lead-time is always expressed in workdays.</p> <p>For manufactured items, the supply lead-time is updated automatically (from the product header). It always includes direct ordered acquisition of included material regardless of whether the acquisition occurs through manufacture or purchase.</p> <p>For purchased items, (acquisition method 2) you can set the supply lead-time to either five or seven days per week using parameter 33 in 'Settings- Purchase' (CRS780).</p> <p>For purchased items, this field is updated manually in (MMS002) or for the main supplier in 'Supplier. Connect Item' (PPS040). When one program is updated, the other one is updated automatically if the main supplier is the same. This field is also updated when a new purchase agreement becomes valid (order date) during a separate user-initiated run.</p>

Program ID/Panel	Field	The field indicates...
(MMS002/E)	Demand time fence	<p>...the number of days from the point an order is registered to the point the item is shipped. Items with a defined demand time fence are generally included in the master production schedule (MPS).</p> <p>In the MPS, the demand time fence is set between the current date and the planning time fence to establish two regions.</p> <p>The first region between the current date and the demand time fence establishes the area where orders are frozen, that is, no unanalyzed and unapproved changes are made to the MPS.</p> <p>The second region, between the demand time fence and the planning fence, is the area where the actual orders may consume the forecast. The field also controls the time for automatic allocation. If the field is blank, the value in 'Settings – Warehouse Planning Control' (CRS701) is used.</p>
(MMS002/E)	Planning time fence	<p>...the planning time fence which is a time in the planning horizon of the master scheduling process that marks a limit. Inside of this planning time fence, the planner responsible should review changes to the material plan. Planned orders beyond the planning time fence can be changed using system-planning logic.</p>
(MMS002/E)	Forecast method	<p>...the ID of a forecast method, which defines how the item is processed during forecasting. The forecast method ID is created in 'Forecast Method. Open' (FCS300).</p>
(MMS002/E)	Forecast logic	<p>...how the forecast should be managed when transferred to material requirements planning. The parameters defined for each forecast logic mainly determine how reservations should be matched against forecasts. Forecast calculation methods are defined in 'Forecast Logic. Open' (FCS305).</p>
(MMS002/E)	Order type	<p>...the order type that is planned to be in connection with procurement. The acquisition method defines which acquisition process (purchase, manufacturing or distribution) that is used by the order type.</p> <p>The order type is a group ID for a number of rules that determine how the order is processed in the order flow.</p>
(MMS002/E)	Supplier number	<p>...the supplier considered as the main supplier for an item.</p>
(MMS002/E)	Supplying warehouse	<p>...the warehouse that is planned to supply the current warehouse, if necessary. This field should be specified only when acquisition code 3 (see above) is used.</p>

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
(MMS002/E)	Multiple supply	<p>...from where to acquire items in a purchase or distribution order. These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>1 = Single supply only from the supplier or warehouse set for the item - no override</li> <li>2 = Multiple supply, the supplier or warehouse set for the item is defaulted, but can be overridden</li> <li>3 = Different warehouses according to a percentage set in the distribution relationship table for distribution orders</li> <li>4 = Multiple supply, the required quantity supplied according to different supply methods - valid supply methods and percentages are set in (RPS090).</li> </ul>
(MMS002/E)	MO consolidation method	<p>...how to consolidate the manufacturing orders for packaged items as a means of optimizing your planning. These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>0 = Discrete order, which is the default field value</li> <li>1 = Process order, the option to consolidate the manufacturing of an item as process orders</li> <li>2 = Pack order, the option selected if you want the consolidation to occur in the form of pack orders.</li> </ul>
(MMS002/E)	Supply chain policy	<p>... the supply chain policy which determines whether to include the item in the supply chain link function.</p> <p>If you add a supply chain policy to an item, then this item is included in the supply chain function and gets proposals automatically generated according the demand from the level above. The demand and the generated proposal is pre-allocated and assigned a supply chain number. So, it is possible to have full traceability between demand and supply.</p> <p>Note that a supply chain can only be started via a customer order or a released distribution order, and the generated proposals are always lot sized according to lot-for-lot. You can, however, to manually pre-allocate lot-sized purchase order proposals to one or more supply chains afterwards. You can plan the purchase order proposals separately from the rest of the supply chain, for example, through MRP.</p>

#### Parameters to set - (MMS002/F)

F panel in 'Item. Connect Warehouse' (MMS002)

Program ID/Panel	Field	The field indicates...
(MMS002/F)	Safety stock	<p>...a buffer quantity for the item at this warehouse which is only used during unexpected circumstances such as unpredicted increase in demand or difficulties in delivery.</p> <p>The safety stock method that is selected determines how the safety stock is specified.</p>
(MMS002/F)	Safety stock method	<p>... how the safety stock is calculated and updated. These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>0 = Manually</li> <li>1 = Automatically according to the formula: Number of safety stock days * Daily consumption</li> <li>2 = Automatically according to the formula: Safety stock percentage * lead time * daily consumption</li> <li>3 = Automatically according to the formula: Safety factor * 1.25 * MAD1 * square root of lead-time in number of periods</li> </ul> <p>MAD is an abbreviation for Mean Absolute Deviation.</p> <ul style="list-style-type: none"> <li>4 = Number of safety stock days in accordance with settings done in 'Safety Stock Control Table. Open' (MMS093)</li> <li>5 = Number of average issues in accordance with the safety stock control table.</li> <li>6 = 3rd party, Mercia links</li> <li>7 = Automatically according to Poisson table</li> <li>8 = Average quantity per issue, optionally multiplied with safety stock factor</li> </ul> <p>Average quantity per issue = Demand last 12 periods / Number of issues last 12 periods.</p>
(MMS002/F)	Safety stock unit	<p>...a value used for calculating the safety stock level.</p> <p>The value is specified either in days or as a percentage, depending on the safety stock method selected, as follows:</p> <ul style="list-style-type: none"> <li>For safety stock method 1, specify safety stock value in days.</li> <li>For safety stock method 2, specify safety stock value in percentage.</li> <li>For safety stock method 7, specify safety stock value in days (used as 'safety days' in the formula).</li> <li>For safety stock method 8, specify a number of average issues.</li> </ul>
(MMS002/F)	Service level	<p>...the service level expressed in the form of a percentage and defines what level is planned, per item, with regards to the possibility of immediately meeting demands.</p> <p>The service level is connected to a table that converts the percentage values to security factors.</p>

Program ID/Panel	Field	The field indicates...
(MMS002/F)	Reorder point	<p>...the reorder point (ROP). When the on-hand balance falls below the level displayed in this field, a planned order is automatically created. The reorder point is calculated either manually or as the safety stock plus usage during the lead-time.</p>
(MMS002/F)	Reorder point method	<p>...the method to determine the reorder point. These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>0 = Reorder point (ROP) is set manually</li> <li>1 = Calculated automatically according to the formula: <math>ROP = Safety\ stock + (daily\ usage * lead-time)</math></li> </ul> <p>The daily usage referred to in alternative 1 can be established in a number of ways, as shown in 'Safety Stock/Reorder Point. Calculate' (MMS615)</p> <ul style="list-style-type: none"> <li>2 = Reorder point is 0 (zero)</li> <li>3 = 3rd party – defined by an external system</li> <li>4 = Automatically according to Poisson table</li> <li>5 = Average quantity per issue.</li> </ul> <p>Average quantity per issue = Demand last 12 periods / Number of issues last 12 periods</p> <p><b>Note:</b> If ROP method 1 is selected and the ROP is 0, planned orders will not be generated for this item/warehouse.</p>

Program ID/Panel	Field	The field indicates...
(MMS002/F)	Point of time table	<p>...the ID of a time table containing planning points specified in days, hours and minutes. The table type determines how the time table is used.</p> <p>A time table with table type 10 is used to total the requirements when order policy 15 is used in MRP.</p> <p>A time table with table type 20 is used as a supplier calendar when purchase orders are created in MRP.</p> <p>A time table with table type 30 is used to collect deliveries to allow forecast pacing in delivery windows.</p> <p>A time table with table type 40 is used to collect orders to monitor orders as well as forecast pacing.</p> <p>A time table with table type 50 is used to calculate the expiry date within a period bucket when expiry date table on (MMS002/I) is filled.</p> <p>Time tables are created in 'Point of Time Table. Open' (RPS080). When defining a time table, you can use facility, warehouse and table type to control the extent of its validity. This means that the same time table ID can be used in different situations and have different settings.</p> <p>To define a time table:</p> <ul style="list-style-type: none"> <li>• for an entire company, leave facility and warehouse blank.</li> <li>• for a specific facility, specify the facility ID and leave warehouse blank.</li> <li>• for a specific warehouse, specify the warehouse ID and leave facility blank.</li> <li>• with different time periods, define the time table ID twice and use different start and end dates.</li> <li>• with different table types, define the time table ID twice and use different table types.</li> </ul>
(MMS002/F)	Order quantity	<p>...the Economic Order Quantity (EOQ). It is a type of fixed order-quantity that determines the amount of an item to be purchased or manufactured at one time.</p> <p>The intent is to minimize the combined costs of acquiring and carrying inventory. The value is set manually or updated from a calculation program 'Max Stock/Order Quantity. Calculate' (MMS620). The order quantity is always specified in the basic U/M of the item.</p>
(MMS002/F)	Order policy	<p>...how the order quantity (EOQ) should be calculated. The purpose of an order policy is to define how to convert the expected requirement to one or more replenishment orders.</p>
(MMS002/F)	Order quantity days	<p>...the number of days demand that is to apply when calculating the order quantity in accordance with the rules which apply for each order quantity method.</p> <p>If nothing has been specified per item/warehouse combination, the number of days is obtained from the ABC sales volume class.</p>

Program ID/Panel	Field	The field indicates...
(MMS002/F)	Maximum stock percentage	<p>...the percentage used for calculation of the maximum inventory quantity. The percentage specified in the field is multiplied by the sum of the reorder point and the reorder quantity.</p> <p>Example:</p> <p>Order quantity = 500 unit</p> <p>Reorder point = 100 units</p> <p>Max. Inventory % = 150</p> <p>This results in the following maximum inventory quantity: <math>150/100 * (500 + 100) = 900</math> units.</p>
(MMS002/F)	Maximum stock	<p>...the maximum quantity that is allowed for each combination of warehouse and item.</p> <p>If the planned on-hand balance exceeds the maximum stock level, an action message is issued.</p> <p>If the on-hand balance exceeds the maximum stock level, a planning message is issued to a so-called planning mailbox.</p>
(MMS002/F)	Maximum stock method	<p>...whether the maximum stock should be calculated automatically. These are the valid alternatives:</p> <p>0 = No</p> <p>1 = Yes</p> <p>2 = Yes, max stock 0</p> <p>Automatic calculation of maximum stock is performed according to the following formula: <math>(\text{Reorder point} + \text{order quantity}) * \text{Maximum inventory \%}</math>.</p>

Program ID/Panel	Field	The field indicates...
(MMS002/F)	Annual demand	<p>...the annual demand per warehouse/item. This may be specified manually or calculated automatically.</p> <p>The automatic calculation can either be performed as an integrated part of the forecast calculation (calculated in 'Automatic Forecast. Calculate' (FCS100)) or based on the demand calculation result (calculated in 'Annual Demand &amp; Item Statistics. Update' (RPS620)). The annual demand is used on different occasions, such as calculation of sales value analysis and order quantity.</p> <p>Update is performed if the 'Update annual dmd' field is activated on (RPS620/F) and the 'Annual demand method' field is activated on (MMS002/H). Calculation is based on the negative transactions (take out from stock) in the material plan ('Material Plan. Open' (MMS080)) for the selected periods and includes forecast and forecast consumption logic. If forecast is used, the condition for update in 'Automatic Forecast. Calculate' (FCS100), is that the F/C method field must be selected with a forecast method ('Forecast Method. Open' (FCS300)) that has the 'Upd annual dmd' field activated.</p> <p>Quantity calculated is based on the current period and the period ahead for one year. If data for future does not exist, it will be replaced by actual demand from item history according to demand types.</p>
(MMS002/F)	Annual demand method	<p>...the annual demand method per warehouse or item. These are the valid alternatives:</p> <p>0 = Annual demand is specified manually</p> <p>1 = The annual demand is calculated and updated automatically - this is either integrated with the forecasting or based on the demand calculation results.</p>
(MMS002/F)	Minimum order quantity	<p>...the minimum order quantity allowed for each combination of item or warehouse. The information is used at calculation of batch size in connection with requirements calculation, but only if it is greater than zero.</p>
(MMS002/F)	Maximum order quantity	<p>...the maximum order quantity allowed for each combination of item or warehouse. The information is used at calculation of batch size in connection with requirement calculation, but only if the batch size is greater than zero.</p>

Program ID/Panel	Field	The field indicates...
(MMS002/F)	Order multiple	<p>...the purchase order multiple quantity in the basic unit of measure (U/M). It is used to avoid the need to break up packages, etc.</p> <p>The order multiple can be specified per item/warehouse, or per item/supplier. Also, you can specify a unique order multiple for each alternate U/M. When alternate U/Ms are used for purchasing, the order multiple is not checked per item/warehouse. When an order is planned or created, a check is made to ensure that the order quantity is divisible by the order multiple without any remainder. A check is also made during lot sizing (calculation of the order quantity).</p>
(MMS002/F)	Issue multiple	<p>...the minimum issue multiple. The value is checked in connection with order entry of the item and warehouse combination.</p>
(MMS002/F)	Average issue quantity	<p>...the quantity that is typically requested or issued in a single delivery. It is specified manually and not calculated automatically.</p> <p>When safety stock is calculated, it will not be set lower than the average issue quantity.</p> <p><b>Note:</b> Calculations such as reorder point methods 4 or 5, and safety stock methods 5, 7, or 8, will use an automatically calculated average issue quantity based on actual historic issues or requests, even if a value is specified in the 'Average issue quantity' field.</p>
(MMS002/F)	Minimum safety stock	<p>...the minimum safety stock level. When safety stock is calculated, it will not be set lower than the minimum safety stock.</p>
(MMS002/F)	ABC class - volume	<p>...a code, usually A, B, or C, used to group items according to how they affect the total sales volume (the sales volume is the product of an item's annual usage multiplied by a particular price).</p> <p>The ABC class is defined in the parameter file. ABC class sales volume can also be used as selection criteria when printing reports, taking inventory, or determining stock control values.</p> <p>The sales volume is updated per warehouse/item, either automatically or manually depending upon the method you have chosen.</p>
(MMS002/F)	ABC class - frequency	<p>..a code from A to J, used to group historical information on items. The code is based on one of these:</p> <ul style="list-style-type: none"> <li>• Movement frequency (number of transactions/movements)</li> <li>• Unit frequency (number of basic U/M)</li> <li>• Weight frequency (number of kilograms)</li> <li>• Volume frequency (number of cubic meters)</li> </ul> <p>When the ABC frequency is calculated automatically as in 'ABC Classification Frequency. Print' (MMS675), specify the division basis to be used. The ABC frequency is updated for each warehouse/item. Depending on the ABC frequency method, this is done manually or automatically.</p>

Program ID/Panel	Field	The field indicates...
(MMS002/F)	ABC class - contribution	<p>...a value used to group items based on their contribution margin for each item/warehouse. This value can be set manually or automatically. The valid values are A to J.</p> <p>When grouping is performed automatically, the contribution is calculated by multiplying the sales quantity by the contribution margin for each unit. The contribution margin is calculated by subtracting the item file's sales price or a price list price with the specified costing price.</p>
(MMS002/F)	ABC class - manual	...an optional ABC class that is to be used to group item numbers per warehouse according to the definition per installation.
(MMS002/F)	ABC method - volume/frequency/contribution.	<p>....the ABC method for each ABC class and warehouse or item. This method determines how the ABC class is updated. These are the valid alternatives:</p> <p>0 = Manual update</p> <p>1 = Automatic update.</p>
(MMS002/F)	Inventory segment	...a classification of items in a selected warehouse. Inventory segments are defined in 'Inventory Segment. Open' (CRS121).
(MMS002/F)	Product line	...the product line for an item which is used to facilitate purchase planning by grouping similar types of items from a supplier. Product lines are defined in (CRS099). These product lines can be specified either for each item record (MMS001/E) or for each item/warehouse record (MMS002/F), depending on the value of the product line level on (CRS780/H).

#### Safety stock and reorder point based on Poisson table

For reorder point method 4 and safety stock method 7, the Poisson table is defined in 'Poisson Table. Open' (MMS094). The lookup in the table is based on the service level and estimated number of issues during lead time. It is calculated as:

$$\text{Average quantity / issue} = \frac{\text{Demand last 12 months}}{\text{Issues last 12 months}}$$

$$\text{Planned issues / year} = \frac{\text{Annual demand}}{\text{Average quantity / issue}}$$

$$\text{Estimated issues}_{LT} = \text{Planned issues / year} \times \frac{\text{Lead time + Safety stock days}}{\text{No. working days}}$$

The service level and the estimated number of issues during lead time are key values for a lookup in the Poisson table. If a record is found, safety stock is calculated as:

$$\text{Number of issues (from Poisson)} \times \text{Average quantity / issue}$$

If no record is found, a fallback formula for the safety stock is used:

$$\text{Average qty / issue} \times \text{Est. issues}_{LT} + \text{Security factor} \times \sqrt{\text{Est. issues}_{LT}}$$

The security factor is fetched from the service level as defined in 'Service Level. Open' (FCS320).

### Order policy

Regardless of which order policy (OP) you use, its purpose is to convert expected requirements into one or more replenishment orders. The appropriate OP depends on the character of the requirement information, which is the basis of an order placement. For example, only methods 00-04 and 23 can be used when the planning method is based on similar reorder point techniques.

On the other hand, all the methods may be used when material requirements planning (MRP) is used. MRP is a time-phased method, meaning that a time dimension is added to the traditional inventory status information. Since all requirements and inventories always relate to an Order policy specific date, planning can be accomplished with greater precision.

Regardless of the OP used, these pieces of information must be checked. Note that they are all maintained manually:

- 1** Order multiple - the order quantity that must always be a multiple of this quantity
- 2** The minimum order size - the minimum quantity that can be ordered
- 3** The maximum order size - the maximum quantity that can be ordered

For methods based on a fixed-order quantity, the quantity is always increased when the daily requirement is greater than the fixed-order quantity (incl. increases to the order multiple).

**The valid alternatives for fixed quantity/variable period are:**

- 00 = Manually specified quantity
- 01 = Fixed quantity calculated from run-out time - the number of run-out days is specified either per item/warehouse or per sales volume class.
  - Order quantity = Order quantity days × Daily usage
  - Daily usage is calculated according to the parameters on (MMS620/E).

02 = Economic order quantity, where according to Wilson's formula:

$$\text{EOQ} = \sqrt{\frac{2 \times \text{Annual usage} \times \text{Ordering cost}}{\text{Unit cost} \times \text{Inventory} \times \frac{\text{CoC}}{100}}}$$

**The valid alternatives for variable quantity/fixed period are:**

11 = Discrete order quantity - when using this method, an order is created for each requirement even if there are several requirements for the same day.

12 = Manually specified run-out time - the order quantity is calculated dynamically according to the logic used in MRP - as requirements arise, orders are placed that cover the number of days specified manually as the run-out time.

13 = Economic run-out time - the order quantity is calculated dynamically according to the logic used in MRP - as requirements arise, orders are placed that cover the number of days specified manually as the run-out time. This formula applies:

The order quantity is calculated according to Wilson's formula, and then divided by the average usage per calendar day. This average usage is based on the yearly volume or on running yearly usage. The run-out time = EOQ/daily requirement.

The run-out time is calculated in the same function that calculates the fixed quantities.

15 = Requirements are summarized according to the planning points specified in 'Point of Time Table. Open' (RPS080). For example, if the planning points specified are set up as every day at 10:00, then the system will summarize all requirements between day one 10:01 to day two 10:00, then summarize requirements between day two 10:01 to day three 10:00, and so on.

The valid alternatives for variable quantity/variable period are:

21 = Least unit cost - this method estimates different order quantities by accumulating one daily requirement at a time. Afterwards, the order receives the quantity that has the least unit cost. These formulas apply:

$$\text{Inv. cost} = \frac{\text{Interest}}{100} \times \frac{\text{Lay days}}{365} \times \text{Price} \times \text{Order qty}$$

$$\text{Unit cost} = \frac{\text{Ordering cost} + \text{Inv. cost}}{\text{Number of units in the order}}$$

**Lay days** is the number of calendar days that elapse from the order's delivery date up to and including the last requirements date that the order covers

**Note:** Interest = Inv. cost of capital according to parameter.

22 = Least unit cost with discount. This method is the same as 21, but is only suitable for purchase items since it is designed to incorporate and value quantity-dependent net purchase prices - a minimum of two discount situations are valued. This method is not activated - it works the same as method 21.

23 = Period-based order quantity without balance check. This method is developed specifically for environments where an Order policy requirements-determined order initialization is desirable, while at the same time production should be balanced and evenly distributed according to the max/min order quantities per day - the method requires that a production calendar is established for the product.

24 = Period-based order quantity with balance check. This method is based on the same principle as method 23, with a few exceptions. The method considers the opening balance for each period and evens out the surplus requirements both backwards and forwards - as with the other cases, neither released nor fixed planned orders may be rescheduled automatically.

25 = Up to maximum on-hand balance - this method is mainly designed for reorder point determined ordering, which means that the order quantity is always calculated so the calculated balance after the transaction is the same as the maximum on-hand balance minus one.

#### Parameters to set - (MMS002/G)

G panel in 'Item. Connect Warehouse' (MMS002)

Program ID/Panel	Field	The field indicates...
(MMS002/G)	Location	...the default location that is proposed upon receipt, issue etc. If storage method 1 (single location) is used, it is not possible to change this location. Even if storage method 2 or 3 is used, a standard location can be specified.

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
(MMS002/G)	Storage method	<p>...the storage method for each item/warehouse, which determines how the item is distributed at different locations. These are the valid alternatives:</p> <p>1 = Single location      2 = Multiple location      3 = Multiple locations where reorder points are used</p> <p>For alternative 1, the item can only be stored at one approved location (status 2). This must be set for each item/warehouse.</p> <p>For alternative 2, the item can be stored in an unlimited number of locations.</p> <p>Alternative 3 is the same as alternative 2, but in addition certain combinations contain a reorder point level which is automatically monitored. If the storage method is changed from 2 to 1, a check is made to ensure that the item does not have multiple balance records with status 2.</p>
(MMS002/G)	Pack location	...the location normally used for packing operations.
(MMS002/G)	Dock location	...the normal docking location used for packaged goods ready to be shipped.
(MMS002/G)	Container management	<p>...the level of container usage desired. Container management is used to account for items in inventory through a container ID, such as a pallet number. These are the valid alternatives:</p> <p>0 = Containers not used      1 = Containers used. Check is not performed to determine the existence of the container in the container master.      2 = Containers used. Check is performed to determine the existence of the container in the container master.      3 = Containers used. These must be defined as a lot number. An existence check is performed against the lot master file.      4 = Same as method 1, but the container may only be stored in one location at a time.      5 = Same as method 2, but the container may only be stored in one location at a time.      6 = Same as method 3, but the container may only be stored in one location at a time.      7 = The container number indicates a package in stock (MMS470) and can only be stored in one location at a time.</p> <p>Methods 3 and 6 are to be used in situations where the container is a packaging item that is serial number controlled.</p>

Program ID/Panel	Field	The field indicates...
(MMS002/G)	Stock zone	<p>...the ID of a stock zone, which is used to divide a warehouse into different areas. The stock zone is specified in three different programs, depending on the desired purpose:</p> <ol style="list-style-type: none"> <li>1. Stock zone per 'Stock Location. Open' (MMS010) is a central search key for making inquiries regarding locations, for example when searching for available locations (using (MMS010) or 'Location Select - Available Locations' (MMS160)). Entering a stock zone in (MMS010) is required.</li> <li>2 Stock zone per 'Balance Identity. Display' (MMS060) is automatically retrieved from the location when the balance ID is created and is used to split an order into several picking lists (one picking list per stock zone). The printers used to print the picking lists are defined per stock zone in ('Stock Zone. Open' (MMS040)).</li> <li>3. Stock zone per 'Item. Connect Warehouse' (MMS002) is used to suggest locations when performing stock receipt through (MMS160). The stock zone specified here is also suggested as the From stock zone on proposed replenishment orders (MMS170). The stock zone in (MMS002) is specified manually and is not required.</li> </ol>
(MMS002/G)	Location type	<p>...a group of locations based on the characteristics (size etc). The information can be used to locate unoccupied locations of the right size in connection with receipt of goods.</p>
(MMS002/G)	CTP policy	<p>...the CTP policy to be used. The CTP policy determines how the ATP and CTP calculations are performed.</p>
(MMS002/G)	Physical inventory cycle	<p>...the applicable physical inventory cycle. The inventory cycle contains information as to how many days are to elapse before inventory for the item is once again taken. A physical inventory cycle is created in 'Physical Inventory Cycle. Open' (CRS110).</p>
(MMS002/G)	Statistic storage group	<p>...how the inventory statistics are to be saved. The group is defined in a separate table in 'Statistics Storage Group. Open' (CRS255) and can be specified for each item/warehouse.</p>
(MMS002/G)	Time phased safety stock exists	<p>...if a date dependent safety stock is activated. The valid alternatives are: 0 = No 1 = Yes</p>

Program ID/Panel	Field	The field indicates...
(MMS002/G)	History storage method	<p>...if and how stock transactions are stored in the stock transaction history file. The valid alternatives are:</p> <p>0 = No storage. Item statistics will not be updated, and financial transactions will not be created.</p> <p>1 = Detailed storage, that is, each transaction corresponds to one record in the transaction history file.</p> <p>2 = Accumulated storage on daily level per order and transaction type.</p> <p>3 = Accumulated storage on daily level per transaction type.</p> <p>For alternatives 2 and 3, all receipts are stored on a detail level (as for alternative 1).</p>
(MMS002/G)	Allocation method	<p>...how allocation is carried out. The valid alternatives are:</p> <p>1 = Manual allocation</p> <p>2 = Automatic allocation using the allocation table if one is created for the item. If there is no table, allocation is performed using FIFO without considering the location type.</p> <p>3 = Automatic allocation for the location entered per item/warehouse. Overallocation is permitted per location but not per warehouse. This method may not be used if the item is lot controlled.</p> <p>4 = Automatic allocation for the location specified per item/warehouse. Allocation is performed without a balance check. This method may not be used if the item is lot controlled.</p> <p>5 = Automatic allocation using the allocation table, but only one lot number can be allocated. This method can only be used in combination with lot control.</p> <p>6 = Soft automatic allocation with a check against allocatable balance on warehouse level. See note 1.</p> <p>7 = Soft automatic allocation without balance check. See note.</p> <p>In the allocatable quantity check, only the allocatable balance IDs that have status 2 and have not been allocated before, are included in the quantity.</p> <p>When allocation method 0 is specified, the item/warehouse balance can only be reduced by backflushing or syncroflushing. This is only appropriate for manufacturing orders without a picking list.</p> <p><b>Note:</b> For methods 6 and 7, actual issued balance identities are specified manually when reporting picking lists in 'Picking List. Report' (MMS421) if manual allocation has not been performed before.</p>

Program ID/Panel	Field	The field indicates...
(MMS002/G)	Quantity controlled allocation	<p>...if a quantity controlled allocation table is connected to the item/warehouse. This information is maintained automatically. The table is maintained in 'Item. Connect Stock Location Type' (MMS057). The valid alternatives are:</p> <p>0 = Allocation can only be made in relation to the specified location or location type</p> <p>1 = Allocation is made according to defined quantity limits.</p> <p>The table enables allocations to be made repeatedly and to be placed in the location type that is consistent with the quantity that remains to be allocated. This means that the allocation of a reservation can affect several different location types, for example, a whole pallet or picking inventory.</p>
(MMS002/G)	Issue method	<p>...when and how material issues to work orders and material orders are reported. The valid alternatives are:</p> <p>0 = Material issue method 0 may be used for non-stocked items for maintenance work orders in (MOS101). The material transaction status is set to 90 as soon as the transaction is done.</p> <p>1 = Material is issued against a picking list according to the allocation method used. Note that this method should be used if the item is order-initiated.</p> <p>2 = Material is issued against a requisition and is reported manually.</p> <p>3 = Material is issued automatically based on the quantity reported as put away. The issue is always from the location specified per item/warehouse.</p> <p>4 = Material is issued automatically based on the quantity reported as produced in the operation where it is used. The issue is always from the location specified per item/warehouse.</p> <p>5 = Material is issued automatically based on the quantity reported as put away. The issue is from the location specified in the work center for the operation to which the material is connected.</p> <p>6 = Material is issued automatically based on the quantity that is reported as produced in the operation where it is used. The issue is from the location specified in the work center for the operation to which the material is connected.</p> <p><b>Note:</b> The planning groups, to which the material is connected must be set as <b>Item location issue</b> on 'Work Center. Open' (PDS010/F) when issue method 5 or 6 is used. Otherwise, the issue method will automatically be reset to 3 or 4 for the manufacturing orders created.</p>

Program ID/Panel	Field	The field indicates...
(MMS002/G)	Warehouse equipment	<p>...a specific piece of warehouse equipment used in a warehouse. This is used when special equipment is required for in-house movements of certain items, or to/from certain locations.</p> <p>Warehouse equipment can be set for each item/warehouse (MMS002/G) and location (MMS010/F). Of the two, the item/warehouse has the highest priority.</p> <p>When the special equipment is required for an issue, separate picking lists are created in M3 for different pieces of warehouse equipment.</p>
(MMS002/G)	Allocate non-approved balance ID	<p>...whether automatic allocation should be possible for non-approved balance IDs, for example balance IDs with status 1. The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes</p> <p>Automatic allocation of non-approved balance IDs applies only to order lines connected to a distribution order.</p>
(MMS002/G)	Delivery split rule	<p>...the delivery split rule for the item, which is used to group items when delivery shares are defined.</p>
(MMS002/G)	Buyer	<p>...the buyer is normally responsible for purchasing. The buyer can, for example, be responsible for purchase orders, agreements, item/supplier combinations, or item/warehouse combinations.</p> <p>The specified buyer for each item/warehouse is copied to the planned orders generated by M3.</p>
(MMS002/G)	Inspection location	<p>...the location where goods received are stored while waiting to be quality inspected in the purchase component group.</p> <p>If the item is to be inspected, this location is proposed by default in 'Purchase Order. Receive Goods' (PPS300). If the location is left blank per item/warehouse the location is proposed by default from the goods receiving method.</p>

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
(MMS002/G)	Distribution/supplier calendar check	<p>...how a check of the distribution and supplier delivery calendars is to be performed when an order's delivery date is determined. The valid alternatives are:</p> <p>0 = Calendar not used</p> <p>1 = Back scheduling. The issue data/receiving data are computed starting with the planned date for the order and working backward to determine the first distribution day/receipt day.</p> <p>2 = Forward scheduling. The issue data/receiving data is computed starting from a known start date and working forward to determine the completion date for an order, proceeding from the first operation to the last.</p> <p>3 = Closest date possible is selected, regardless if a previous or later delivery date will be selected.</p> <p>The calendar used is determined by the acquisition method.</p>
(MMS002/G)	Distribution group	...a distribution group which is used to group similar items distributed to the same warehouse.
(MMS002/G)	Fill partly empty locations	...whether M3 BE should look for partly empty locations and try to fill them when finding put-away locations. The valid alternatives are:
		<p>0 = No</p> <p>1 = Yes</p>
(MMS002/G)	Minimum remaining quantity	<p>...the minimum quantity that should be left on a balance ID after a stock issue (allocation).</p> <p>This allows checking that an unusable quantity is not left in stock after issuing. This control is performed during allocation. Cables and floor coverings are examples of the types of items that can use this.</p>
(MMS002/G)	Cross-dock	<p>...whether cross-docking is allowed in the warehouse.</p> <p>The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes</p>

#### Parameters to set - (MMS002/H)

H panel in 'Item. Connect Warehouse' (MMS002).

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
MMS002/H		Displays on-hand balance and status information.

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
MMS002/H	Annual usage	<p>Calculates and updates (MBUSYE) for selected item/warehouse records. Calculated by 'Item Statistics. Period Run' (MMS805). The usage is calculated as the sum of the last years usage ending with the to period specified in (MMS805).</p> <p>Quantities used are the 'Demand Types' (FCS100) from item statistics (MITSTA, 'Stock Transaction. Display' (MWS070) / 'Stock Transaction. Display History' (MMS070) that are connected to the items forecast method.</p>
MMS002/H	Fixed annual demand	Moves (MBYEQT) to (MBLYQT) for selected item/warehouse.

**Parameters to set - (MMS002/I)**

I panel in 'Item. Connect Warehouse' (MMS002).

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
(MMS002/I)		Displays expiration date, aging and VAT information.

Program ID/Panel	Field	The field indicates...
(MMS002/I)	Exp date tab (Point of time table)	<p>... the ID of a time table containing planning points specified in days, hours and minutes. The table type determines how the time table is used.</p> <p>A time table with table type 10 is used to total the requirements when order policy 15 is used in MRP.</p> <p>A time table with table type 20 is used as a supplier calendar when purchase orders are created in MRP.</p> <p>A time table with table type 30 is used to collect deliveries to allow forecast pacing in delivery windows.</p> <p>A time table with table type 40 is used to collect orders to monitor orders as well as forecast pacing.</p> <p>A time table with table type 50 is used to calculate the expiry date within a period bucket when expiry date table on (MMS002/I) is filled.</p> <p>Time tables are created in (RPS080). When defining a time table, you can use facility, warehouse and table type to control the extent of its validity. This means that the same time table ID can be used in different situations and have different settings. To define a time table:</p> <ul style="list-style-type: none"> <li>• for an entire company, leave facility and warehouse blank.</li> <li>• for a specific facility, specify the facility ID and leave warehouse blank.</li> <li>• for a specific warehouse, specify the warehouse ID and leave facility blank.</li> <li>• with different time periods, define the time table ID twice and use different start and end dates.</li> <li>• with different table types, define the time table ID twice and use different table types.</li> </ul>

#### Parameters to set - (MMS001/J)

J panel in 'Item. Connect Warehouse' (MMS002).

Program ID/Panel	Field	The field indicates...
(MMS002/J)	Consignment level	<p>...how consignment goods are tracked in stock. The valid alternatives are:</p> <p>0=No consignment</p> <p>1=Consignment on warehouse level – this is used when consignment quantities are accumulated per warehouse. It can be used if your own goods and supplier owned goods can be mixed on the same balance ID. The possibility to track goods through inbound and outbound processes is limited.</p> <p>If item is lot controlled, the consignment quantities are accumulated per warehouse, item and lot.</p>
(MMS002/J)	Consignment usage rule	<p>...how the usage of consignment goods is calculated and reported. The valid alternatives are:</p> <p>0 = No rule</p> <p>1 = Consume own stock first, then supplier owned stock</p> <p>2 = Consume supplier owned stock first, the own stock.</p>
(MMS002/J)	Detailed sequence of supplier usage 1, 2, 3	<p>...the sequence of usage of supplier owned goods, if existing consignment stock for an item is owned by several different suppliers. The valid alternatives are:</p> <p>0=No detailed sequence</p> <p>1=First receipt date</p> <p>2=Last receipt date</p> <p>3=Suppliers priority</p> <p>Valid combinations are 1 2 3 and 2 1 3. If several records have the same detailed sequence, the supplier's ID is used as the last object to select which supplier goods are to be used.</p>
(MMS002/J)	Consignment on Hand Balance	<p>...the on-hand balance quantity of goods under consignment per item/warehouse. The quantity is the total of all goods owned by a supplier.</p> <p>Note that supplier owned goods in status under inspection with a reporting number, and in status rejected with a reporting number are not included</p>
(MMS002/J)	Consignment on Hand - inspection	<p>...the on-hand balance quantity of consignment goods under inspection.</p> <p><b>Note:</b> Only the balance IDs of consignment goods in status under inspection with a reporting number are included.</p>
(MMS002/J)	Consignment On Hand - Rejected	<p>...the on-hand balance quantity of consignment goods with status Rejected.</p> <p>Note that only the balance IDs of consignment goods in status Rejected with a reporting number are included.</p>

Program ID/Panel	Field	The field indicates...
(MMS002/J)	Consignment on Hand – Catch Weight	... the on-hand balance of goods under consignment in catch weight U/M.
(MMS002/J)	Consignment on Hand – inspection – Catch Weight	...the on-hand balance of consignment goods under inspection expressed in catch weight U/M. <b>Note:</b> This only includes balance IDs with reporting number in status = Under inspection.
(MMS002/J)	Consignment on Hand – Rejected – Catch Weight	...the on-hand balance of rejected consignment goods expressed in catch weight U/M. <b>Note:</b> This only includes balance IDs with reporting number in status = Rejected

## Create and Apply User Authorization to Different Objects

This instruction explains how you create authorization for users and also prevent unauthorized users from monitoring or maintain data in M3. An object access group will qualify users to monitor and maintain different objects in M3, such as sales price lists, statistic reports, orders, etc.

### Outcome

An object access group is created and applied to an object.

The object access group is saved in the CSYTAB table and can be reviewed in 'Object Access Group. Open' (CRS006).

The primary use is to prevent unauthorized users from monitoring or maintaining selected data in M3.

Function where you can use Object Access Groups

Function	
AHS010	'Ad Hoc Report Location. Open'
AHS100	'Ad Hoc Report Group. Open'
AMS200	Archiving log
APS060	'AP Standard Document. Open'
BUS100	Budget definition
CAS006	Resource driver Units version
CAS007	Resource driver Rate version
CAS040	Resource driver

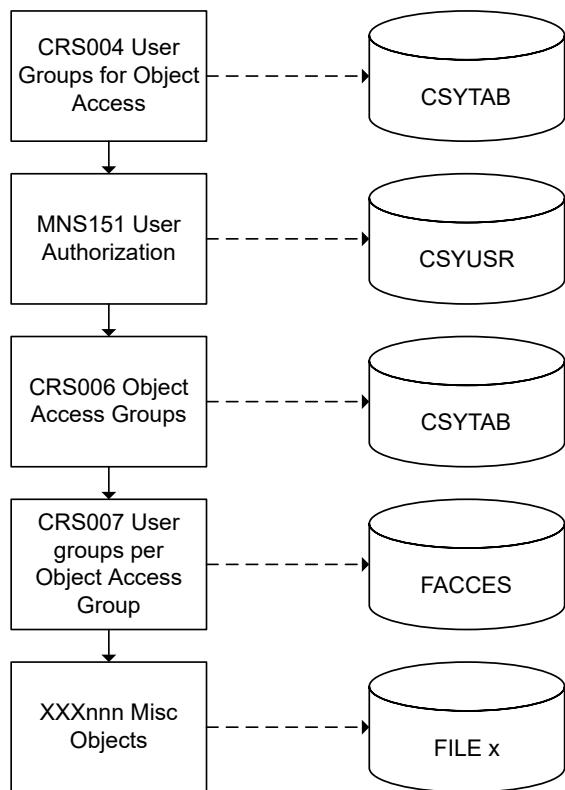
Function	
CAS050	Cost center model
CFS020	Cash flow models header
CRS006	Object access group
CRS007	Access group entries
CRS008	Facility
CRS100	Salesperson
CRS117	Address format rules
CRS278	Charge models
CRS406	'FAM Function. Open Details'
CRS418	'Program Problem. Solve'
CRS609	Customer. Select Fields
CRS610	Customer
CRS630	Chart of accounts file
CRS692	Bank accounts
CRS965	Re-create sorting options
MFS610	Customer local exceptions
MMS005	Warehouses
MMS056	'Supply Model. Open'
MMS250	Template for list panels
MNS100	Division
OIS017	Sales price list master
OIS022	Sales price calculation models
OIS060	Customer agreement header
OIS370	'Bulk Order Batch. Open Toolbox'
OIS412	Bonus agreements
OIS530	Price list - select
OIS800	Discount models
OIS820	Discount campaigns
OIS840	Promotions
OIS860	Supplier rebate agreement

Function	
OSS412	Stat. & bud. report definitions
PPS100	Agreement
PPS285	Procurement cost ID
RGS600	FAM report generator
RGS640	Report generator - list definition
SES505	Object access group reports
SOS022	Price lists
STS017	Rental price list master
TAS001	Project
TAS002	Project activity
TAS003	Connect activity project
TAS010	Prices, head
TAS045	Approval identity
TAS050	Authorization identity

#### Before you start

No special prerequisites are needed.

### Follow these steps



#### Create a user group for object access group

- 1 Start 'User Group. Open' (CRS004)
- 2 Create an optional group identity, for example, USRGRP-ONE.

#### Connect users to this user group

- 1 Start 'User. Open' (MNS150), and select the user to be connected to a user group.
- 2 Start 'User. Access per Company Division' (MNS151) by using option 11='User ID' in (MNS150). A list of companies and divisions the user is authorized to will be visible.
- 3 Specify the User Group (for object access) for each combination of company and division. The field is available on the E-panel.

**Note:** The same user could be connected to different User Groups (for object access) in different companies and/or divisions. If the specific combination of company and division are missing for a certain user, the record containing company and \*blank division will be used when performing the authorization check.

#### Create object access group

- 1 Start 'Object Access Group. Open' (CRS006).
- 2 Create an object access group identity, for example, ACCGRP-ONE.

#### Connect the user groups to the object access group

- 1 Start 'Object Access Group. Connect User Group' (CRS007) by using option 11 in (CRS006).
- 2 Connect one or several user groups to the object access group.

Connect object access group to an actual object

- 1 Connect an object access group to objects. This is done in different functions, for example 'Facility. Open' (CRS008), 'Sales Price List. Open' (OIS017), 'Sales Stats/Budget Report. Open' (OSS412).
- 2 Fill in the 'Object access group' field and select the actual object access group for this object (function).

## Copy Items in Different Ways

This document explains how you can copy items in two different ways.

- Copy Item - Included all Data as below:
  - Items (MMS001)
  - 'Item. Connect Warehouse' (MMS002)
  - 'Item. Connect Facility' (MMS003)
  - 'Item. Connect Alias Number' (MMS025)
- Copy Item – Select one, several or all of the Related Data:
  - Text in (MMS001)
  - Alternate Unit of Measure (MMS015)
  - Relations (MMS020)
  - Alias (MMS025)
  - Additional Information

This support for item copying is an optional step that gives the user flexibility to use different automatic copying flows for a large amount of data and standardized volumes of items.

This document also explains how to set up the two different ways in M3.

### Outcome

- Basic data and rules for four different ways of create items are set.
- Items are created according to specific rules.

This support for item creation is an optional step that gives the user flexibility to use different automatic creation flows for in data of large, standardized volumes of items.

For more information on how the system is affected, refer to [Item Flow Create, Copy and Display](#) on page 161.

### Before you start

An item must be created.

### Follow these steps

#### **Copy Item - Included all Data (MMS001, MMS002, MMS003, MMS025)**

- 1 Start 'Item. Open' (MMS001).
- 2 On the B panel, select option 3=Copy in front of the item you want to copy.
- 3 The item you want to copy from must have an Item type with 'Automatic copying: Item /Whs/Fac/Alias' activated on the (CRS040/F) panel
- 4 Press Enter.
- 5 On the (MMS001/C) panel you fill in the 'Copy to: Item no' field. If you have a numbering which create the number automatically you leaves the field blank.
- 6 The 'Item type' field can only be changed if the 'Copy from Item' field have status 05=Template item.
- 7 Press Enter and the copying will be executed in all the programs there the copied item is updated (MMS001, MMS002, MMS003, MMS025).
- 8 You will now display the (MMS001/E) panel. You can go back to the B panel by using F12.  
This setting must be done for the item type that should be copied.
- 9 Start 'Item Type. Open' (CRS040). On the F panel you activate the 'Automatic copying: Item /Whs/Fac/Alias' field.  
These settings must be done for the item type that should be used for the copy.  
(They can also be set for the item type that should be copied but it is not mandatory.)
- 10 On the (CRS040/B) panel option 11=Field control starts 'Item Type. Select Fields' (MWS041). This field control sets the fields displayed for the item in (MMS001), the item/warehouse in (MMS002), and the item/facility in (MMS003).
- 11 On the (CRS040/B) panel, select option 12=Item type/Whs and activate the 'Automatic copying' field on the (MWS042/E) panel.
- 12 On the (CRS040/B) panel, select option 13=Item type/Alias and activate the 'Automatic copying' field on the (MWS043/E) panel.

#### **Copy Item – Select from related data:**

You can select related data as:

- (MMS001) Text
  - (MMS015) Alternative Unit of Measure
  - (MMS020) Related Items
- 1 Start 'Item. Open' (MMS001).
  - 2 On the B panel, select option 3=Copy in front of the item you want to copy.
  - 3 The item you want to copy from must have an Item type with any or all of the fields below activated on the (CRS040/F) panel:
    - Text
    - Alternative Unit of Measure
    - Related Items
    - Additional Info
  - 4 Press ENTER.

- 5 On the (MMS001/C) panel you fill in the 'Copy to: Item no' field. If you have a numbering which create the number automatically you leave the field blank.  
The 'Item type' field can only be changed if the 'Copy from Item' field have status 05=Template item.
- 6 Press Enter and the copying will be executed included all the related data that exists.
- 7 You will now display the (MMS001/E) panel. You can go back to the B panel by using F12.
- 8 Start 'Item Type. Open' (CRS040). The item you want to copy from must have an Item type with any or all of the fields below activated on the (CRS040/F) panel:
  - Text
  - Alternative Unit of Measure
  - Related Items
  - Additional Info

## Connect Warehouse to Warehouse Group

This document explains how you connect a warehouse to a selected warehouse group. This allows you to place warehouses into categories (i.e. supplier, manufacturing plant, distribution center, or market).

### Outcome

Warehouse groups are created as a means of categorizing the warehouse assigned to each group.

### Before You Start

Warehouses must be created in 'Warehouse. Open' (MMS005), as described in the document, [Create Warehouse](#) on page 861.

### Follow These Steps

- 1 Launch 'Warehouse. Connect to Whs Group' (MMS009).
- 2 Enter a new ID in the 'Warehouse group' field.
- 3 Select the Create option.
- 4 On the E panel, select a value from the 'Node icon type' drop-down field to indicate whether the warehouse group is to be categorized as a supplier, manufacturing plant, distribution center, or market.
- 5 Select the 'Build inventory' check box if the items in the warehouse/warehouse group are being managed using an engineering change order (ECO).  
**Note:** The Engineering Change Order Management module must be installed to enable this function.
- 6 Click Next to save your changes.

# Create Facility

This document explains how you create a facility shell and then complete the creation of the facility by connecting it to one or several warehouses.

Facilities are used to set authorization in time reporting component groups, and for activities such as sales, production or distribution.

A facility is a superior organizational level to a department but lower than a division, that is, a facility belongs to a division, which in turn belongs to a company. A facility can contain one or more warehouses. A user is always connected to a preselected facility. All product data and production data are stored per facility, and several facilities can exist in the same database.

## Outcome

A facility is created and connected to a main warehouse and a division.

A facility is necessary when defining the overall inventory structure for your company. Facility is also the product structure and costing level.

Facilities are stored in the (CFACIL) table.

## Before you start

- A company must have been created in 'Company. Open' (MNS095).
- A division must have been created in 'Company. Connect Division' (MNS100).
- The conditions in the following documents must have been fulfilled:
  - [Create Warehouse Type](#) on page 866
  - [Create Warehouse Subtype](#) on page 865.

## Parameters to set

Program ID/Panel	Field	The field indicates ...
(CRS008/E)	Division	... to which division the facility is to be connected. The division is a legal unit and the level for financial planning. Mandatory information.
(CRS008/E)	Main warehouse	...the main warehouse connected to the facility. A production warehouse is recommended. When creating a facility, it is always necessary to create a main warehouse at the same time.
(CRS008/E)	Object access group	...the predefined user group that is to have access to some objects; facility, divisions and accounting identities. Optional information.
(CRS008/E)	Our invoice address	...the address when invoicing the facility. Addresses of type 3='Invoicing Address' are defined in 'Internal Address. Open' (CRS235). Optional information.

Program ID/Panel	Field	The field indicates ...
(CRS008/E)	APS enabled	<p>...the check box to activate M3 APS products for the facility.</p> <p>Activating APS will, among other things:</p> <ul style="list-style-type: none"> <li>Enable the APS client application.</li> <li>Modify panel layouts in Work Center. Open (PDS010), Product. Connect Materials/Operations (PDS002) and Manufact Order. Open Lines (PMS101).</li> <li>Place the load on the work center resource level instead of on the work center level.</li> </ul>
(CRS008/E)	M3 SWB active	<p>...if the module M3 Scheduling Workbench (SWB) is to be activated for the facility. These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes</li> </ul> <p>For more information, see the M3 SWB module documentation.</p>
(CRS008/E)	Shift planning	<p>...if shift planning should be used for manufacturing orders at this facility.</p> <p>These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes</li> </ul> <p>If shift planning is used, capacity and load planning are generated to the minute.</p> <p>If shift planning is not used, planning is carried out by the day.</p> <p>For further information, see the product data documentation.</p>
(CRS008/E)	Shift pattern adjustments	<p>...whether shift pattern adjustments are used in the facility.</p> <p>These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes</li> </ul> <p>If yes, the system remembers changes of shift pattern by work center and date interval. This allows you to change a work center's shift pattern temporarily, for example from working one shift to two shifts.</p> <p>For further information, see the product data documentation.</p>

Program ID/Panel	Field	The field indicates ...
(CRS008/E)	Version management	<p>...whether version management of product structures is used in the facility.</p> <p>These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = Not used</li> <li>• 1 = Version management is allowed</li> <li>• 2 = Version management is mandatory</li> </ul>
(CRS008/E)	Process manufacturing	<p>...if process manufacturing functionality should be activated in this facility. If enabled, the system allows the selection of the MO consolidation method (MOCM) in 'Item. Connect Warehouse' (MMS002/E).</p> <p>These are the valid alternatives:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes</li> </ul> <p>If Process manufacturing is not enabled in the facility, the system does not allow you to specify an output in 'Output Items. Open' (PDS029) for formula or packaged item types of product structures.</p>
(CRS008/E)	Global facility	<p>...the global facility used to accumulate the balance per item from several facilities.</p> <p>This information can be used to make common purchases when the accumulated balance falls below a specified reorder point.</p> <p>A prerequisite for global facility to work is that planning method is indicated in 'Item. Connect Warehouse' (MMS002/E).</p>
(CRS008/E)	Geo code X, Y, Z	<p>... the longitude coordinate of the node (X), latitude (Y).</p>

Program ID/Panel	Field	The field indicates ...
(CRS008/E)	Retain APS date	<p>...if the start and finish date/time planned by an APS tool is to be retained or not in this facility, when a planned or released manufacturing order is updated in M3 BE.</p> <p>If the setting is activated (check box is selected), updates of start and finish date/time are restricted for planned manufacturing order processed in APS, for example disabling editing of start/finish date in 'Planned MO. Open' (PMS170) and planning date in 'Material Plan. Rescheduling' (RPS102).</p> <p>Changes made in the planned or released manufacturing order that triggers rescheduling will not affect the values of start and finish date/time.</p> <p>The 'SWB processed' value in the planned manufacturing order (MMOPLP) and MO header (MWOHED) will be retained to 1 (order processed outside M3 BE) even if the order is updated in M3 BE.</p> <p>If the setting is not activated (check box is not selected), an update of planned or released manufacturing order can trigger date rescheduling regardless if the order is processed in the APS tool or not.</p>

### Create facility shell and details

- 1 Start 'Facility. Open' (CRS008).
- 2 On the B panel, indicate the alphanumeric value of the facility and select the Create option.
- 3 On the E panel, specify the Name and Division fields.
- 4 On the same panel, connect the main warehouse to the facility by filling in the Warehouse field.  
To create a main warehouse, see [Create Warehouse](#) on page 861.
- 5 For the Facility ID just created, select the Change option on the B panel.
- 6 On the E panel, specify any of the remaining information to create a complete facility corresponding to your needs:
  - a Object access group - Select a group ID to restrict access to different objects such as accounting identities, divisions, and facilities.
  - b Our invoicing address - Select the Address ID that reflects the facility's invoicing address.
  - c APS enabled - Select the check box to activate the APS client application for the facility.
  - d Shift planning - Select the check box if shift planning is to be used for this facility's manufacturing orders.
  - e Shift pattern adjustments - Select the check box to enable the use of shift pattern adjustments where the system remembers changes of shift pattern by work center and date interval.
  - f Version management - Select alternative 1 or 2 to allow/require product structures in the facility to use version management. Versions may be applied to product structures representing manufacturing processes when this facility setting is enabled.

- g** Process manufacturing - Select the check box to activate functionality related to Process manufacturing in the facility.
- h** Global facility - Select an appropriate Facility ID which represents a global facility used to accumulate the balance for each item from multiple facilities.
- i** Facility numeric name - Specify a numeric identifier for the facility, if desired. It can be used as part of the setup for invoice numbering for the facility.
- j** Geographical code X - Specify the longitude coordinate of the node, if desired.
- k** Geographical code Y - Specify the latitude coordinate of the node, if desired.

## Create Item

This document explains how you create an item with basic, sales and purchase data.

### Outcome

An item is created containing information about item type, inventory accounting, lot handling, whether the item is manufactured or purchased, basic unit of measurement, sales or purchase price and so on.

Items are stored in the (MITMAS), (MITMPR) and (MITMAD) tables.

The data about an item are used not only in warehouse management, but also in material and production planning, procurement management, sales management and cost accounting.

### Before you start

An overall physical inventory structure must have been created. See [Define Warehouse Structure](#) on page 870.

### Follow these steps

- 1** Start 'Item. Open' (MMS001).
- 2** On the B panel, set the panel sequence to EFGH.
- 3** Panels I, J, and K are also available. On the I panel, you can enter measurement and lot handling information. On the J and K panels, you can enter measurement for the aviation industry application and the maintenance application. The M panel is for building an item hierarchy, see [Managing Item Hierarchy Structure](#) on page 194.
- 4** You can add other alternatives to the panel sequence. See the field help for all alternatives. Here are a few examples: 1, 2, 3, 4 or 5. These numbers are used to start item-related data programs automatically after the item itself has been created, as follows:
  - Alternative 1 starts 'Item. Connect Warehouse' (MMS002)
  - Alternative 2 starts 'Item. Connect Alternate U/M' (MMS015)
  - Alternative 3 starts 'Item. Define Relations' (MMS020).
  - Alternative 4 starts 'Item. Connect Alias Number' (MMS025).
  - Alternative 5 starts 'Item. Enter Names/Language' (MMS030).

- 5 On the B panel, specify the **Item number** and the **Item type** fields and choose option **1=Create**. Press **Enter**.
- 6 On the E, F, and G panels, specify relevant item data. See the Parameters to Set section for a more detailed description.
- 7 On the H panel, specify data on sales and procurement. See the Parameters to Set section for a more detailed description.
- 8 After you have created an item, you can use the options displayed on the B panel, as follows:

<b>Choose option</b>	<b>To start...</b>
11	'Item. Connect Warehouse' (MMS002)
12	'Item. Connect Alternate U/M' (MMS015)
13	'Item. Define Relations' (MMS020)
14	'Item. Connect Alias Number' (MMS025)
15	'Item. Enter Names/Language' (MMS030)
16	'MSDS Item. Open' (MSS050)
17	'Style. Open' (MMS016)
18	'Item. Connect Facility' (MMS003)
19	'Supplier. Connect Item' (PPS040)
20	'Equipment/Serialized Item. Open' (MMS240)
21	'Custom Field. Query Item' (CMS474)
22	'Custom Field. Query' (CMS476)
23	'Product Structure. Connect to Item No' (CRS784)
30	'Model/Site. Open' (MOS400)
31	'On-hand. Display Summarized per Itm/Whs' (MMS200)
32	'Balance Identity. Open Toolbox' (MWS068)
33	'Availability. Display All Warehouses' (MMS081)
34	'Material Plan. Open' (MMS080)
35	'Stock Transaction. Display History' (MWS070)
36	'Item Statistics. Display' (MMS090)
37	'Product Costing. Display' (PCS300)
50	'Style. Connect Feature' (MMS017)
51	'Item. Open Service Supplement' (SOS001)

**Parameters to set on the E panel in (MMS001)**

The E panel in 'Item. Open' (MMS001) displays the MITMAS table – Basic Data.

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates...</b>
(MMS001/B)	Item type	<p>...the item type controls the item's life cycle and is mandatory for the item creation. It is not possible to change an item type when the item has been created. The only time an item type can be changed is when copying template items.</p> <p>The functionality connected to the item type includes:</p> <ul style="list-style-type: none"> <li>• Template item containing default values for creating items.</li> <li>• Numbering rule to assign the correct item number based on settings in (MWS050).</li> <li>• Field control in (MWS041) that sets the fields displayed for the item in (MMS001), the item/warehouse in (MMS002), and the item/facility in (MMS003).</li> <li>• Warehouse/item type in (MWS042) to set the item/warehouse records generated when you create an item.</li> <li>• Alias/item type in (MWS043) that is used to set the alias number(s) generated when you create an item. Alias numbers are EAN13, UPC, popular numbers, and such.</li> </ul> <p>The item type can also be used as a selection criteria to find any type of items, such as raw material, purchased components, semi-finished and finished products.</p> <p>Item types are defined in (CRS040), where they can also be linked to an item category.</p>
(MMS001/E)	Drawing No	...a unique ID for the drawing used in designing the item. The drawing number is set per item and can also be used as a search key in both the item table and product structures.

Program ID/Panel	Field	The field indicates...
(MMS001/E)	Status	<p>...a two digit code indicating the status of the item in the system. The valid alternatives are:</p> <ul style="list-style-type: none"> <li>• 00-04 = User-defined status for an unreleased item number.</li> <li>• 05 = Template item used to auto-create items. It is connected to the item type in (CRS040).</li> <li>• 06-09 = User-defined status for unreleased item numbers.</li> <li>• 10 = Preliminary item. For purchase only.</li> <li>• 11-14 = User-defined status for an unreleased item number.</li> <li>• 15 = Replacement item. Status remains at 15 until the balance of the replaced item is zero. Then status is automatically changed to 20.</li> <li>• 20 = Released item.</li> <li>• 30 = Alternate items are available.</li> <li>• 40 = Item is released but has a low turnover. Items with low turnover can be mass updated into status 40 in 'Item. Calculate Status' (MMS530).</li> <li>• 50 = Item is to be used and then removed from the assortment. When available balance is zero, the status is automatically changed to 80.</li> <li>• 80 = Item no longer stocked but such transactions as returns from customers or suppliers are permitted.</li> <li>• 90 = Item no longer stocked. This status can be entered manually or in 'Create Item Filing or Deletion' (MWS810).</li> <li>• 99 = Item no longer stocked due to item number change. The item only exists in the item table.</li> </ul> <p>The most common status for an item is 10, 20 or 90.</p>
(MMS001/E)	Make/buy code	<p>...whether the item is manufactured in-house or purchased. The valid alternatives are:</p> <ul style="list-style-type: none"> <li>• 1 = Manufactured</li> <li>• 2 = Purchased</li> </ul>
(MMS001/E)	Item group	<p>...the item group to which the item is connected. This information is used as selection and sorting criteria for printouts and calculations. The item group is created in 'Item Group. Open' (CRS025). Custom fields can be linked to the item group using related option 11 (conn u-d fld gr) in 'Item Group. Open' (CRS025/B).</p>

Program ID/Panel	Field	The field indicates...
(MMS001/E)	Procurement group	...the procurement group for an item, which is used to facilitate selections by grouping similar items together. Procurement groups are defined in (CRS037), and are entered for each item in the item table. Classifications are defined by the user.
(MMS001/E)	Product group	...the product group to which the item is connected. This information is used as selection and sorting criteria for printouts and calculations. The product group is defined in 'Product Group. Open' (CRS035).
(MMS001/E)	Account control object	...the user-defined accounting control object, which is added as a further specification to an accounting string.  For example, if you have items that are posted to the same accounting strings, you can separate different items by using this account control object.  Accounting control objects are created in 'User-defined TST Field 2. Open' (CRS355).
(MMS001/E)	Business area	...the business area for this store. This business area is a tool used to group information for budgeting and statistical purposes and is created in (CRS036).
(MMS001/E)	Revision number	...the revision number. An item that is revised will be given a revision number, which is a version number. This is an optional information.
(MMS001/E)	ECO managed	...whether an item or document is managed using an engineering change order (ECO). The field is usually used when you have complex products. You must have the ECM module installed for this.  The valid alternatives are these: <ul style="list-style-type: none"><li>• 0 = No</li><li>• 1 = Yes</li></ul>

Program ID/Panel	Field	The field indicates...
(MMS001/E)	Inventory accounting	<p>...whether the stock kept for the item is to be accounted for in the inventory records. The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No.</li> <li>• 1 = Yes, the item is inventory accounted.</li> <li>• 2 = No, the item is not inventory accounted, but it is planned as demand in the material planning process in (MMS080).</li> <li>• 3 = No, the item is not inventory accounted, but it is planned as a function number. A function number is a dummy number for items that can replace each other. So material planning for the item is done on the function number level instead of the item level.</li> </ul>
	Lot control method	<p>For alternative 0, the on-hand balance is always zero. There are no transactions in the material plan or the table that is updated when inventory accounting is done. Alternative 1 is the most commonly used one.</p> <p>...if and how lot control is to be applied, which is whether the items should be assigned lot numbers. The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = Lot control not used.</li> <li>• 1 = Lot control used. Lots do not have to be defined in the lot master table. This is used when you want to separate items into different lots in your stock, but you do not keep any data on the lots.</li> <li>• 2 = Lot control used. All lots must be entered in the lot master and each lot number is considered to be a serial number.</li> <li>• 3 = Lot control used. All lots must be entered in the lot master. This is the most commonly used alternative.</li> <li>• 5 = Lot control used. All lots must be entered in the lot master. Serial number specification is connected to each lot.</li> </ul>

**Note:** Quality inspections only can be performed for items with lot control methods 2, 3, 5.

Program ID/Panel	Field	The field indicates...
(MMS001/E)	Lot number method	<p>...how the lot or serial number is generated.</p> <p>The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = Manually</li> <li>• 1 = Automatically using YYMM plus a 6 digit sequence number</li> <li>• 2 = Automatically, using YY plus an 8 digit sequence number</li> <li>• 3 = Automatically, using a 7 digit sequence number</li> <li>• 4 = Goods receiving number generated during goods receipt, but this must be entered manually</li> <li>• 5 = Order number - only used with manufacturing orders</li> <li>• 6 = Automatically, using YYMMDD plus a 4 digit sequence number.</li> <li>• 8 = Simple lot tracing for outbound deliveries, mandatory to fill in a lot reference when reporting pick lines</li> <li>• 9 = Simple lot tracing for outbound deliveries, optional to fill in a lot reference when reporting pick list lines</li> </ul> <p><b>Note:</b> Lot or serial numbers can only be generated in those cases where accounting is done from the lot/serial number table, since this is the only location where new numbers can be generated.</p>
(MMS001/E)	Basic unit of measure	<p>...the basic unit of measure, which is the unit in which each item is recorded in inventory, even if alternate inventory units of measure are used. All balance information for the current item is always stored in this unit. The basic unit cannot be changed once the item has a balance ID.</p>

Program ID/Panel	Field	The field indicates...
(MMS001/E)	Alternative unit of measure in use	<p>...whether an alternate unit of measure can be used for an item. This can be used if, for example, you sell items in pieces and there is a customer who wants to buy pieces, but wants to be able to order in kilograms as well.</p> <p>The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No alternate units of measurement can be used</li> <li>• 1 = Alternate units of measurement exist but must never differ from the standard U/M - purchase order, defined in (MMS015/E). This alternative applies to purchase orders only.</li> </ul> <p>It is used when items are purchased in the basic unit of measure, but the item is stocked in another unit of measure. Then it is necessary to define an alternate unit of measure for the conversion factor. For example, the supplier sells the item in boxes of 100, but you stock the item in boxes of 10.</p> <ul style="list-style-type: none"> <li>• 2 = Alternate units of measurement exist and are permitted, under the condition that the unit is entered for the item.</li> </ul> <p>Alternate units of measurement are defined per item in 'Item. Connect Alternate U/M' (MMS015).</p>

#### Parameters to set on the F panel in (MMS001)

The F panel in 'Item. Open' (MMS001) displays the MITMAS table – Basic Data.

Program ID/Panel	Field	The field indicates...
(MMS001/F)	Inspection code	<p>...whether the item should be quality inspected. The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes, but without the quality request.</li> <li>• 2 = Yes, together with the quality request.</li> <li>• 3 = Yes, together with the quality request; automatic creation of records in (PPS300) and lots in (MMS235).</li> </ul> <p>Alternatives 0 and 1 apply only to quality inspection in the module for production activity control. Alternative 2 refers to both production control and purchasing.</p> <p>If you wish to perform a quality inspection using the Laboratory and Inspection request, the Laboratory and Inspection Control module must be installed.</p>
(MMS001/F)	Expiry date method	<p>...how the expiration date is calculated. This is used to set the expiration date, which is primarily used to obtain a correct priority date for lots in 'Balance Identity. Open Toolbox' (MWS068). This, in turn, is used for automatic allocation when following FIFO principles. The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = Expiration date missing. The receipt date is used as priority date for allocation if lot control is used.</li> <li>• 1 = The expiration date is calculated from the goods receiving/receipt date using the item's shelf life. This date can be overridden in goods receiving for purchasing and in receipt for manufacturing orders.</li> <li>• 2 = The expiration date is calculated from the production date specified (either in goods receiving for purchasing or in receipt for manufacturing orders).</li> </ul> <p>A manually entered expiration date is always used as the priority date.</p>
(MMS001/F)	Number decimal places	<p>...how many decimal places are to be used in connection with processing quantities.</p> <p>Zero to six decimal places may be used.</p>

Program ID/Panel	Field	The field indicates...
(MMS001/F)	Purchase order U/M	<p>...the unit of measure (U/M) in which the quantity on the purchase order is expressed.</p> <p>The purchase order U/M can be the alternate U/M or the item's standard purchase U/M, if an alternate does not exist. If there is no standard purchase U/M, the item's basic U/M is used.</p>
(MMS001/F)	Number of price decimal places	<p>...how many decimal places are used when displaying or entering prices.</p> <p>The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No decimal</li> <li>• 1 = One</li> <li>• 2 = Two</li> <li>• 3 = Three</li> <li>• 4 = Four</li> </ul> <p><b>Note:</b> This value is ignored in the customer order processing functionality, where the number of decimal places is determined by the currency. It is also possible to define the number of decimals to use for sales prices if the currency's regular number of decimals should not be used.</p> <p>If cost element 99 is selected in 'Costing Element. Open' (PCS015/E), the maximum number of decimal places that can be used is 2, regardless of the number specified on the (PCS015/E) panel.</p>
(MMS001/F)	External instruction	<p>...a reference code for standard text, which is to be printed on external POs and quotation request documents for the item.</p> <p>Standard texts are entered in 'External Instruction. Open' (MMS135). The specified code is entered in (MMS001) and proposed by default. However, it may be changed on the purchase order lines. The standard text printed is not saved on the purchase order.</p>
(MMS001/F)	Internal instruction	<p>...a reference code for a standard text that is to be printed on (PPS307). The standard text that corresponds to this code is entered in 'Internal Instruction. Open' (MMS145).</p>

Program ID/Panel	Field	The field indicates...
(MMS001/F)	Goods received method	<p>...the method that controls processing of the goods receiving flow. Depending on the method, quality inspection may be performed, certain documents may be printed, etc. On the purchase order line, a default goods receiving method is proposed. This method may be overridden. The proposal comes from one of three sources according to this priority ranking:</p> <ul style="list-style-type: none"> <li>• 1 = Combination of item and supplier</li> <li>• 2 = Item</li> <li>• 3 = Purchase order type</li> </ul>
(MMS001/F)	Issue message	<p>...whether a person entering a requirement for this item should receive a message in 'Application Message. Open' (CRS420).</p> <p>The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes.</li> </ul> <p><b>Note:</b> This applies only when the corresponding parameter '145-Apply message for item with issue message' is defined in (CRS200).</p>
(MMS001/F)	Group technology class	<p>...a technical relationship used to group items and is used as a selection criterion. The groups are defined in 'Group Technology Class. Open' (MMS042). This grouping is used for detailed release of printouts on lines in the picking list.</p>
(MMS001/F)	Distribution group technology	<p>... item groupings according to the items' technical relations. The groups are user-defined in 'Distribution Group Technology. Open' (MMS043).</p>
(MMS001/F)	Gross weight General unit for weight	<p>...the item's weight per basic U/M including the weight of any product packaging material.</p> <p>The information is used when creating packages for transportation purposes and should not include transportation packaging material such as transportation boxes, pallets, containers, and so on.</p> <p>General unit for weight - Must be defined in 'Unit of Measure. Open' (CRS050) and is connected to all items for the company in 'Settings - User-def Item Fields' (CRS703).</p>

Program ID/Panel	Field	The field indicates...
(MMS001/F)	Net weight General unit for net weight	...the item's net weight per basic U/M. General unit for weight - Must be defined in 'Unit of Measure. Open' (CRS050) and is connected to all items for the company in 'Settings – User-def Item Fields' (CRS703).
(MMS001/F)	Volume General unit for volume	...the item's volume per basic U/M, including any product packaging material. General unit for volume - Must be defined in 'Unit of Measure. Open' (CRS050) and is connected to all items for the company in 'Settings – User-def Item Fields' (CRS703).
(MMS001/F)	Number of free capacity units General unit for free capacity	The transport capacity requirement per unit, expressed in the user-defined capacity U/M. General unit for free capacity - Must be defined in 'Unit of Measure. Open' (CRS050) and is connected to all items for the company in 'Settings – User-def Item Fields' (CRS703).
(MMS001/F)	Sublot controlled	...the item is subplot controlled. The prerequisites for a subplot controlled item include: being defined as an Inventory accounting item and having a Lot control method. Field control in 1F panel of Item Type. Select Fields (MWS041) determines whether the Sublot controlled field is editable for the item in Item. Open (MMS001/F).
(MMS001/F)	Fragility	...the item's fragility, which is used to sort items on a picking list. The order type usually determines how items are sorted. Items with the higher fragility value are printed last on the picking list, and are then placed highest in the package. <b>Note:</b> The sorting order for picking lists must be set at 2 (by item priority) in 'CO Type. Open' (OIS010), 'Req/Distr Order Type. Open' (CRS200), or 'Manufacturing Order Type. Open' (PMS120).

#### Parameters to set on the G panel in (MMS001)

The G panel in 'Item. Open' (MMS001) displays the MITMAS table – Basic Data.

Program ID/Panel	Field	The field indicates...
(MMS001/G)	Consumption code- trade statistics	...the consumption code, which is defined for each item and is used in some countries for calculating trade statistics.
(MMS001/G)	Reference ID	...either a customer number, project number or optional text depending on the reference ID code.
(MMS001/G)	Reference ID code	<p>...the reference ID. The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = Missing</li> <li>• 1 = Customer number</li> <li>• 2 = Project number</li> </ul>
(MMS001/G)	Configuration code	<p>...whether the item is configured when ordered or configured as a maintenance item. The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes</li> <li>• 2 = Yes, as a family item from which product variants with item numbers are created</li> <li>• 3 = No. The item is a product variant with the item number retrieved from the family item.</li> <li>• 4 = The item is a maintenance item. (This alternative regulates the item's costing.)</li> <li>• 5 = The item is a maintenance item. It is possible to answer inquiries to get a better planned maintenance order.</li> </ul>
<b>Note:</b> Inventoried variants can only be created as unique variants of the family product in 'Product Variant. Open' (PDS060).		

Program ID/Panel	Field	The field indicates...
(MMS001/G)	By/co-production code	<p>...whether an item is considered a normal item, a by-product, or a co-product. The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = Normal item.</li> <li>• 1 = By-product that is usable material resulting from the manufacture of another product. This is considered a standard value and is defaulted during material line entry.</li> <li>• 2 = Co-product that results in a usable item.</li> <li>• 3 = Main product that orders production and costing for co-products.</li> </ul> <p>If you select alternative 1, the product is entered in the bill of material with a positive quantity and treated as a negative structure. During costing, the by-product's cost is subtracted from that of the product from which it results.</p> <p>If you select alternative 2, the co-product results from a specific operation and is entered in that operation. You cannot enter a structure for the co-product, it can only be included in the main product. Allocate production costs between the main product and the co-product (using the percentage set for the co-product) up to the operation in which the co-product is produced (for costing purposes).</p> <p>If alternatives 0 or 1 are set for the item, you can change this when the item is defined as material included in a standard product in (PD) or as additional material in a manufacturing order in (PS).</p>
(MMS001/G)	Yield calculation	<p>...whether yield for an item should be calculated when it is prepared as a product. The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes</li> </ul> <p>If the product is to be prepared through the indication of the bill of material and routing per production batch, then yield calculation must have been activated for the product.</p>
(MMS001/G)	Normal waste	<p>...the normal waste of an item in production, entered in percentage and used to estimate material consumption in production.</p>

Program ID/Panel	Field	The field indicates...
(MMS001/G)	Normal potency	...the normal potency for an active item. (See explanation of the Active or catch weight item field.)
(MMS001/G)	Active or catch weight item	<p>...whether this is an active or a catch weight item. The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = Neither</li> <li>• 1 = Active item</li> <li>• 2 = Catch weight item inspected for both receipt and delivery.</li> <li>• 3 = Catch weight item inspected for receipt.</li> <li>• 4 = Catch weight item inspected for delivery without requiring lot control. An active item is an item that contains an active substance with a certain concentration, for which normal potency must always be specified. Active items are mainly found in the chemical industry.</li> </ul>
		<p>On-hand balance and other planning quantities are expressed using the concentration of the item's normal potency. The quantity of active items used in any bill of material must always be specified using their normal potency. When active items are received, a potency value different from the normal potency can be entered for each lot.</p> <p>Catch weight items are items stocked in one U/M but valued and priced using another U/M. For example, an item stocked per piece, but priced per kilogram. For these, both the carrying U/M and the catch weight U/M are always requested when entering stock transactions.</p>
(MMS001/G)	Environment group	...the environment group. Each item can be connected to a group that is defined in 'Environment Group. Open' (CRS038).
(MMS001/G)	Danger indicator	<p>...whether this item is connected to a danger class of any sort. The danger class is displayed on the (MMS001/I) panel.</p> <p>The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes</li> </ul>

Program ID/Panel	Field	The field indicates...
(MMS001/G)	Attribute managed	<p>...whether the item is processed using attribute control. The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes, the attribute panel is displayed automatically.</li> <li>• 2 = Yes, the attribute panel is always displayed for receipt to stock. The panel is displayed for order entry only when an attribute value is incorrect.</li> </ul>
(MMS001/G)	Item category	<p>...the category that best corresponds to the actual item. It is defaulted from item type, but can always be overridden here.</p> <p>The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 00 = Normal item</li> <li>• 02 = Phantom item</li> <li>• 03 = Subcontracted item</li> <li>• 04 = Tool</li> <li>• 05 = Fixed machine</li> <li>• 07 = Repairable item</li> <li>• 08 = Recyclable item</li> <li>• 11 = Extended Catalog Item (ECI)</li> <li>• 12 = Non-coded Extended Catalog Item</li> </ul> <p>The alternatives are used for control and informational purposes. A subcontracted item refers to an item purchased as a service but recorded as a normal item after the last subcontracted operation is completed. Recyclable items can also, broadly, be considered repairable. However, repairable items require greater operational follow-up than recyclable items.</p> <p>ECI and Non-coded ECI are only to be used in combination with line types 1 and 2 in customer order entry. When using an ECI template item in customer order entry, a new item is created based on item master data from the template item.</p> <p>The alternatives are used for control and informational purposes. A subcontracted item refers to an item purchased as a service but recorded as a normal item after the last subcontracted operation is completed.</p>

Program ID/Panel	Field	The field indicates...
(MMS001/G)	Attribute model	...the ID of an attribute model. Attribute models are connected to items and used to set the attributes that can be connected to the item.
(MMS001/G)	Sales item	<p>...whether the item is a sales item, which indicates if customer orders can be entered for the item.</p> <p>The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No, customer orders/service orders may not be entered.</li> <li>• 1 = Yes, customer orders/service orders may be entered.</li> <li>• 2 = Yes, but customer orders/service orders may only be entered if the item is a component in a KIT.</li> </ul>
(MMS001/G)	VAT code - purchase	<p>...the VAT code to use for purchased items. VAT codes are defined in (CRS030).</p> <p>The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = VAT not used</li> <li>• 1-99 = User-defined VAT codes</li> </ul>
(MMS001/G)	VAT code - sales	<p>...the VAT code to use for sold items. VAT codes are defined in (CRS030).</p> <p>The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = VAT not used</li> <li>• 1-99 = User-defined VAT codes</li> </ul>
(MMS001/G)	User-defined fields - item	<p>...user-defined information, which can be used for custom report templates as well as for displaying and storing your own information.</p> <p>The field headings for these fields are user-defined and are entered in 'Settings – User-def Item Fields' (CRS703).</p>

#### Parameters to set on the H panel in (MMS001)

The H panel in 'Item. Open' (MMS001) displays the MITMAS table - Procurement and Sales Information.

Program ID/Panel	Field	The field indicates...
(MMS001/H)	Fixed or dynamic sales price U/M	<p>...whether the sales price U/M is fixed or dynamic.</p> <p>The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = Item is not a sales item</li> <li>• 1 = Fixed</li> <li>• 2 = Dynamic</li> </ul> <p>With alternative 2, the sales price U/M can be changed when entering customer order lines if it is allowed according to the settings in 'CO Type'. Update Field Selection' (OIS014/J). If *PRI is entered in the 'Sales price U/M' field in (OIS014/J), the sales price U/M is retrieved from the price source when the CO line is created. See <a href="#">for more details</a>.</p> <p>Alternative 0 can only be used if alternative 0 is specified in the 'Sales item' field in (MMS001/G).</p>
(MMS001/H)	Purchase price	<p>...the purchase price. The price information is affected by the purchase price quantity, purchase price U/M, currency, and discount. All factors must be considered to understand the purchase price correctly.</p> <p>The price is retrieved from the agreement line or the item/supplier record and displayed by default on the purchase order line. The standard default price is the price that has the latest 'From' date.</p> <p>If an agreement price exists, it is not necessary to enter a price in (PPS040) or (MMS001). If no price exists in the agreement or in (PPS040), then (MMS001) is checked for a purchase price.</p>
(MMS001/H)	Purchase price per quantity	<p>...the purchase price per item when purchased in a specific quantity.</p>
(MMS001/H)	Purchase price U/M	<p>...the purchase price unit, U/M, which is the U/M in which the purchase price has been expressed. Several purchase prices U/M may be entered for each item with conversion factor to the basic U/M of the item.</p> <p>One of the prices U/M may be defined as standard purchase price U/M. The standard purchase price U/M is used as suggestion for purchase price U/M in connection with entry of purchase order lines.</p>
(MMS001/H)	Purchase price date	<p>...the date when the purchase price in the item table was entered or last changed.</p>

Program ID/Panel	Field	The field indicates...
(MMS001/H)	Sales price	...the sales price for each sales price unit and price quantity. Sales price is used during automatic pricing of customer order lines when agreed prices or price lists are not available.
(MMS001/H)	Sales price quantity	...the quantity to which the sales price applies. Sales price quantity is defined for each item and is expressed in the item unit of measure.
(MMS001/H)	Sales price unit of measure	...the sales price U/M. This is the U/M on which the item's price is based. Every item has a standard sales price U/M specified. However, order lines can be entered using a different U/M. If *PRI is entered in the 'Sales price U/M' field in (OIS014/J), the sales price U/M is retrieved from the price source when the CO line is created. See for more details.
(MMS001/H)	Sales price date	Sales price date is the last time the sales price in the item table was changed.
(MMS001/H)	Supplier number	...the supplier number. This number is mainly for informational purposes, but is also used as a default proposal during entry in (PPS180) and (PPS170).

Program ID/Panel	Field	The field indicates...
(MMS001/H)	Bonus generating and Commission generating	<p>...if and how the item (in other words, the customer order line) affects a bonus/commission agreement.</p> <p><b>Note:</b> The agreement is defined in 'Bonus/Comm Agreement. Open.' (OIS412) and the agreement type must have been set on the E panel to 9 for bonus and 1-8 for commission.</p>
		<p>The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = Does not affect agreement</li> <li>• 1 = Generating</li> <li>• 2 = Generating and paying This information can be specified for each of these:           <ul style="list-style-type: none"> <li>• item (MMS001/H)</li> <li>• price list (OIS017/E)</li> <li>• blanket agreement (OIS060/F)</li> <li>• discount campaign (OIS820/E)</li> <li>• customer order type (OIS010/I)</li> <li>• customer order line (OIS101/G)</li> </ul> </li> </ul>
		<p>The lowest of the above alternatives (0, 1 or 2) will be proposed by default in the customer order line (OIS101/G). If the customer is not qualified for bonus/commission (see CRS610/H), the value in the field is always set to 0.</p>
		<p>Generating indicates that the item is included in the value used to determine the percentage for bonus. The b/c agreement's paying amount is not affected. This is the amount used to calculate the bonus percentage.</p>
		<p>Paying indicates that the item can be included in the b/c agreement's paying amount. This is the amount used to calculate the bonus percentage. Items that pay out bonus also generate bonus.</p>
(MMS001/H)	Bonus group and Commission group	<p>...the bonus and commission group is a selection criterion for each item which can be used to create bonus matrices for items.</p>
		<p>Bonus matrices are used when creating bonus or commission agreements in order to specify which items are affected by an agreement.</p>
(MMS001/H)	Statistics identity 3-4	<p>...an optional field, which can be used for accumulation of sales statistics information for an item.</p>

Program ID/Panel	Field	The field indicates...
(MMS001/H)	Alternate U/M	<p>...alternate unit of measure (U/M) for the basic U/M for an item. An unlimited number of alternate U/Ms may be defined for each item. Alternative U/Ms for an item are entered in (MMS015) along with an alternate U/M type, that controls how it is used.</p> <p>The alternative U/M that is used as default value in different situations is also entered in the program. When transactions are entered, the default U/M is received as a suggested U/M. If no default value is registered, the item's basic U/M is retrieved. It is, however, always possible to enter any alternate U/M manually.</p>
(MMS001/H)	Statistical U/M	<p>...orders received and sales statistics in conjunction with basic U/M and alternate U/M. This way quantity statistics can be processed even if items have different basic and alternate units of measure.</p>
(MMS001/H)	Update buying pattern	<p>...whether an item updates a customer's buying pattern.</p> <p>The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes, the update is regulated by customer and customer order type.</li> </ul> <p>Buying patterns can be updated and used in Customer Order Processing, depending on the customer, customer order type, and item.</p>
(MMS001/H)	Assortment check	<p>...if an assortment check should be made when customer order lines are entered. If such a check is activated for the customer, the item must be included in an assortment that is connected to the customer. The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No, the item can always be purchased by all customers.</li> <li>• 1 = Yes. The item must be included in an assortment connected to the customer if the customer is activated for assortment check.</li> </ul>
For more information, see (OIS071) and (OIS072).		

Program ID/Panel	Field	The field indicates...
(MMS001/H)	Order total discount generating	<p>...whether the item value of a customer order line is included in the basis for a total order discount. The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No</li> <li>• 1 = Yes</li> </ul> <p>Alternative 1 indicates that the item value of the order line is included in the amount used to find a quantity-dependent percentage discount. All order lines will be charged with the order total discount that applies for the order.</p> <p>This information can be specified for each item, customer, price list, and customer order type. The lowest alternative specified for any of these is the one used in the order line.</p>
(MMS001/H)	Discount group - item	...the item discount group. Item discount groups are entered per item in (MMS001) and may be used as a control object for calculating customer order line discounts.

#### Parameters to set on the I panel in (MMS001)

The I panel in 'Item. Open' (MMS001) displays the MITMAS table – Measurement and Specifications.

Program ID/Panel	Field	The field indicates...
(MMS001/I)	Manufacturer	...the company or organization that manufactured the item, regardless of supplier. Manufacturers are created and maintained in 'Supplier. Open' (CRS620).
(MMS001/I)	Single manufacturer	<p>...whether an item must be manufactured by a certain defined manufacturer, regardless of supplier. The valid alternatives are:</p> <p>0 = No 1 = Yes</p>
(MMS001/I)	Storage requirement	...special requirements for storage of the item, such as dryness, freezer and so on. Each requirement is defined in a separate file.
(MMS001/I)	Storage packaging	...the ID of the packaging that is to be used when the item is stored. The ID is created in 'Packaging. Open' (MMS050).

Program ID/Panel	Field	The field indicates...
(MMS001/I)	Lot restricted release	<p>...the ID of the template containing all restrictions applicable to the item. In order for a lot belonging to a semi-finished product to be approved with restrictions, a restriction ID must be entered here. Also, the item should be quality-inspected using laboratory and inspection management.</p> <p>When a lot is approved with restrictions it is assigned balance status 2, but lot reference 1 must be filled in with a restriction having the above code set at 1. Only lots for semi-finished products can be approved with restrictions. A finished product's lot is therefore always placed in quarantine (status = 1) if the semi-finished products used are approved with restrictions. The finished product's lot can only be approved (status = 2) when the lot used is finally approved. This means that during reclassification (programs MMS130 or PMS130) lot reference 1 must be changed to a restriction having the above code set at 0 or the restriction must be completely deleted.</p>
(MMS001/I)	UN number	...the number used for identifying transport documents. This number is defined in 'Hazardous Material table. Open' (CRS213).
(MMS001/I)	UN pack code	...the packaging class (I, II, or III) that applies to the item according to UN regulations. This number is defined in (CRS213).
(MMS001/I)	Bulk Item	<p>...whether an item is a bulk item/stored. The valid alternatives are these:</p> <ul style="list-style-type: none"> <li>• 0 = No, not a bulk item</li> <li>• 1 = Yes, a bulk item</li> </ul>
(MMS001/I)	Lot restricted release	<p>When a quality checked item is approved and the item is a bulk item, the original lot is reset to a lot number equal to 9999999999-99. This means that a mix of several lot numbers is assumed when approving the separate lot.</p>
(MMS001/I)	Lot restricted release	<p>...the ID of the template containing all restrictions applicable to the item. In order for a lot belonging to a semi-finished product to be approved with restrictions, a restriction ID must be entered here. The item should be quality-inspected using laboratory and inspection management.</p>

Program ID/Panel	Field	The field indicates...
(MMS001/I)	Transportation packaging	...which packaging is to be used when transporting the item. The alternatives are defined in 'Packaging. Open' (MMS050).
(MMS001/I)	Measurement 1-3	...a user-defined measurement in an optional unit.
(MMS001/I)	Description 1-3	<p>...a breakdown of panel E's description field:</p> <ul style="list-style-type: none"> <li>• positions 1-10 is description 1</li> <li>• positions 12-21 is description 2</li> <li>• positions 23-32 is description 3.</li> </ul> <p>The field enables you to search on segments of a description using, for example, user-defined search views in (MMS022).</p> <p><b>Note:</b> If you change the contents of this field on the E panel, the value on the I panel is also changed and vice versa.</p>
(MMS001/I)	Specification 1-5	...user-specified information. It can be defined to be included in an inquiry key in the (MMS022).

### The M panel in (MMS001)

On the M panel in 'Item. Open' (MMS001) you connect the item to a defined hierarchy structure. See document [Managing Item Hierarchy Structure](#) on page 194.

## Creating Items in Different Ways

This document explains how you can create items in four different ways.

- Create Item - Number Manually. Forced Panel Sequence (EFGH)
- Create Item - Number Manually. Item Values from Item Template and Item Type.
- Create Item - Number from a Numbering Rule. Forced Panel Sequence (EFGH)
- Create Item - Number from a Numbering Rule. Values from Item Template and Item type.

There is also a fifth way to create items - fashion items. These items are called style and SKUs. See document [Create Style and Stock Keeping Units](#) on page 855.

This support for item creation is an optional step that gives the user flexibility to use different automatic creation flows for in data of large, standardized volumes of items.

This document also explains how to set up the four different ways in M3.

## Outcome

- Basic data and rules for four different ways of create items are set.
- Items are created according to specific rules.

This support for item creation is an optional step that gives the user flexibility to use different automatic creation flows for in data of large, standardized volumes of items.

For more details, refer to [Item Flow Create, Copy and Display](#) on page 161.

## Before you start

The conditions in [Define Warehouse Structure](#) on page 870 and [Create an Item Numbering Rule and Connect It to an Item Type](#) on page 839 must be fulfilled.

## Follow these steps

### Create Item - Number Manually. Forced Panel Sequence (EFGH)

- 1 Start 'Item. Open' (MMS001). Open the P panel.
- 2 Select E, F, G and H in the 'Panel Sequence' field.
- 3 Create an item id and select an item type on the B panel.
- 4 Fill in the E, F, G and H panels.  
See [Define Warehouse Structure](#) on page 870.
- 5 Start 'Item Type. Open' (CRS040). Create an Item type on the B panel.
- 6 On the E panel, fill in appropriate fields. Leave the 'Item template' and 'Numbering Rule' fields blank.
- 7 Leave the fields on the F panel blank.
- 8 On the (CRS040/B) panel option 11=Field control starts 'Item Type. Select Fields' (MWS041). This field control sets the fields displayed for the item in (MMS001), the item/warehouse in (MMS002), and the item/facility in (MMS003).

### Create Item - Number Manually. Item Values from Item Template and Item Type.

- 1 Start 'Item. Open' (MMS001).  
You do not have to specify the panel sequence. It is the template item's panel sequence that is valid and will be used.
- 2 Create an Item id and select Item type on the B panel.
- 3 Select an item type with a specified Item template connected.
- 4 Press Enter, the E panel is displayed. Fill in Name and Description.
- 5 Press ENTER again and the auto creation is performed.  
The items values will be the same as the templates values  
Depending on the settings below, also (MMS002), (MMS003) and (MMS025) is created automatically with the template values.
- 6 Start 'Item Type. Open' (CRS040). Create an Item type on the B panel.
- 7 On the E panel, fill in appropriate fields. Select a template item in the 'Item template' field.

Template item is created in (MMS001) as a normal item, but it must have status 05. Connect the template item to warehouse in (MMS002) as usual, also here it must have status 05.

**Note:** The template item must have the same Item type connected as you will use when you create these items.

This means that you first have to create the item type, then create the item template using the created item type, then go back into the item type and connect the item template.

- 8 Leave the 'Numbering rule' field blank.
- 9 Leave the fields on the F panel blank. Press Enter and the B panel is redisplayed
- 10 If you will have (MMS002), (MMS003) and (MMS025) also auto created with values from the item template you have to do the following:
- 11 On the (CRS040/B) panel option 11=Field control starts 'Item Type. Select Fields' (MWS041). This field control sets the fields displayed for the item in (MMS001), the item/warehouse in (MMS002), and the item/facility in (MMS003).
- 12 On the (CRS040/B) panel, select option 12=Item type/Warehouse. This starts 'Item types. Connect Warehouse' (MWS042). On the B panel, enter your Item type and the Warehouse, which should be auto created. On the E panel you activate the Auto creation field.
- 13 On the (CRS040/B) panel, select option 13=Item type/Alias. This starts 'Item types. Connect Alias' (MWS043). On the B panel, fill in your Item type and the Alias category. On the E panel you have to select a Numbering rule for the alias number (This is created in 'Numbering rule. Open' (MWS050). Activate also the 'Auto creation' field.

#### Create Item - Number from a Numbering Rule. Forced Panel Sequence (EFGH)

- 1 Start 'Item. Open' (MMS001). Open the P panel.
- 2 Select E, F, G and H in the 'Panel Sequence' field.
- 3 Create an Item id and select Item type on the B panel.
- 4 Select an item type with a specified Numbering rule connected.
- 5 Fill in the E, F, G and H panels.  
See Document 'Create and Connect Item to Physical Inventory Structure'
- 6 Start 'Item Type. Open' (CRS040). Create an Item type on the B panel.
- 7 On the E panel, fill in appropriate fields. Leave the 'Item template' field blank.
- 8 Select a numbering rule in the 'Numbering rule' field.  
How to create a numbering rule is explained in the document 'Create an Item Numbering Rule and connect it to an Item Type'.
- 9 Leave the fields on the F panel blank.
- 10 On the (CRS040/B) panel option 11=Field control starts 'Item Type. Select Fields' (MWS041). This field control sets the fields displayed for the item in (MMS001), the item/warehouse in (MMS002), and the item/facility in (MMS003).

#### Create Item - Number from a Numbering Rule. Values from Item Template and Item type

- 1 Start 'Item. Open' (MMS001).

You do not have to specify the panel sequence. It is the template item's panel sequence that is valid and will be used.

- 2 Select an Item type with a specified Numbering rule and Item template connected. Select option 1=Create.
- 3 Press Enter, the E panel is displayed. Fill in Name and Description.
- 4 Press ENTER again and the auto creation is performed.

The items values will be the same as the templates values

Depending on the settings below, also (MMS002), (MMS003) and (MMS025) is created automatically with the template values.

- 5 Start 'Item Type. Open' (CRS040). Create an Item type on the B panel.
- 6 On the E panel, fill in appropriate fields. Select a template item in the 'Item template' field. Template item is created in (MMS001) as a normal item, but it must have status 05. Connect the template item to warehouse in (MMS002) as usual, also here it must have status 05.

**Note:** The template item must have the same Item type connected as you will use when you create these items.

This means that you first have to create the item type, then create the item template using the created item type, then go back into the item type and connect the item template.

- 7 Select a Numbering rule. How to create a numbering rule, see document 'Create an Item Numbering Rule and connect it to an Item Type'.
- 8 Leave the fields on the F panel blank. Press Enter and the B panel is redisplayed
- 9 If you will have (MMS002), (MMS003) and (MMS025) also auto created with values from the item template you have to do the following:
- 10 On the (CRS040/B) panel option 11=Field control starts 'Item Type. Select Fields' (MWS041). This field control sets the fields displayed for the item in (MMS001), the item/warehouse in (MMS002), and the item/facility in (MMS003).
- 11 On the (CRS040/B) panel, select option 12=Item type/Warehouse. This starts 'Item types. Connect Warehouse' (MWS042). On the B panel, enter your Item type and the Warehouse, which should be auto created. On the E panel you activate the 'Auto creation' field.
- 12 On the (CRS040/B) panel, select option 13=Item type/Alias. This starts 'Item types. Connect Alias' (MWS043). On the B panel, enter your Item type and the Alias category. On the E panel you have to select a Numbering rule for the alias number (This is created in 'Numbering rule. Open' (MWS050). Activate also the 'Auto creation' field.

## Create an Item Numbering Rule and Connect It to an Item Type

This document explains how to create an item numbering rule and connect it to an item type. The numbering rule controls which item numbers you are allowed to register.

## Outcome

An item numbering rule, which is well defined according to your needs, will have been created. The item numbering rule defines how item numbers are constructed. One example of such a rule is that only certain letters or numbers may be allowed for an item number. Another example of an item numbering rule is that the item number will be given a certain length.

Numbering rules are stored in the MITNUM table.

You use numbering rules when you register item numbers in 'Item. Open' (MMS001). By using numbering rules, you will minimize the risk of making errors. For example, only the allowed item numbers will be accepted.

When you have large volumes of items to register, part of the item number can be predefined in 'Item Numbering Rule. Define Component' (MWS051).

## Before You Start

Item type must have been defined in 'Item Type. Open' (CRS040).

## Follow These Steps

**1** To create an item numbering rule, start 'Item Numbering Rule. Open' (MWS050/B).

**2** Select panel sequence.

This instruction is based on sequence E1, where 1 starts 'Item Numbering Rule. Define Component' (MWS051).

**3** Choose option 'Create>Select'. Fill in a short name for your numbering rule.

**4** Fill in the 'Number Type' field.

**5** Fill in a Description for the numbering rule.

**6** Fill in the length of your item numbering rule.

For item type=1, the maximum is 15 positions, for item type=2 it is 30 positions.

**7** Fill in the 'Skip Blank' field.

Alternative 1 is used if you do not want blanks to be displayed, except when the blank has the function of a separator. Alternative 0 is used if you want blanks to be displayed.

**8** For Character list, choose from between the following alternatives:

**9** If you want to select one of the already existing character lists, prompt F4 once in the Character List field and select one of the lists. Press Enter and go to step 16 'Define Components for Numbering Rules'.

**10** If you want to create a new character list, go to step 11.

**11** To create a new character list, press F4 twice in the Character list field. This starts 'Character List. Open.' (CRS039/B). Choose 'Create>Select' and a name in the List field. The characters in the list will be the only ones allowed for the item number.

**12** Fill in the Description field.

**13** Specify all the letters or numbers allowed for the item number in the 'Allowed Characters' field. When you press Enter, the B panel is redisplayed. Select your created character list and return to (MWS050/E) by pressing enter.

If you do not define a character list, all characters will be allowed in the item number.

- 14** Press Enter and 'Item Numbering Rule. Define Component' (MWS051) will be started (if the panel sequence is E1).
- 15** Selecting option 11 on the (MWS050/B) panel also starts (MWS051).
- 16** To define components for the numbering rule on 'Item Numbering Rule. Define Component' (MWS051/B), fill in the 'From Position' field. The 'From position' and 'To position' fields show which parts of the item number are defined by a specific rule component.
- 17** Choose one of the qualifiers in the Qualifier field.
- 18** Open the E panel and fill in the appropriate fields. The fields that will be displayed depend on the selected qualifier. Press Enter.
- 19** If you want to check your newly created item numbering rule, you may use the option 12=Simulate on the (MWS050/B) panel.. This starts 'Item Numbering Rule. Simulate' (MWS052/E). The simulated item number will be displayed.
- 20** To connect to an item type, start 'Item Type. Open' (CRS040/E). In the 'Numbering rule' field, press F4 once and select one of the numbering rules.
- 21** Press Enter. Now you have connected your item numbering rule to an item type.

#### Parameters to Set

Program ID/ Panel	Field	The field indicates ...
(MWS050/B)	Numbering rule	...the item numbering rule that defines how item and alias numbers should be created.
(MWS050/E)	Number type	...the number type to which the item number refers. The valid alternatives are: 1='Item Numbering' 2='Alias Numbering'. An alias number is an alternative ID for an item. This could be an EAN code or a supplier's number.
(MWS050/E)	Skip blanks	...whether blanks will be displayed or not. The valid alternatives are: 0=If you want blanks to be displayed 1=If you do not want blanks to be displayed, except when the blank has the function of a separator. For example, if you have chosen 1 in the 'Skip blanks' field and then write item number 124_5, this will be shown as 1245.

<b>Program ID/ Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MWS050/E)	Character list	...the characters that are valid when creating item numbers. If you specify a character list, only the specified characters will be allowed. If you do not specify a character list, all characters will be allowed.
(CRS039/B)	Allowed characters	...the characters allowed for the item number.
(MWS051/B)	From position	<p>...the position in the item number where the qualifier starts to be valid.</p> <p>For example, if you have the item number 795484 and have given the value 3 in the 'From position' field, and the value 5 in the 'To position' field, then the qualifier will only be valid for the numbers 5, 4 and 8 in the item number.</p>

Program ID/ Panel	Field	The field indicates ...
(MWS051/B)	Qualifier	<p>...the number component qualifier, which defines the object upon which the number component is based.</p> <p>The valid alternatives are:</p> <ul style="list-style-type: none"> <li>1= Manually entered values are a value from (MMS001)</li> <li>2 = Object – based on a field in (MITMAS)</li> <li>3 = Constant – could be an alphanumeric value</li> <li>4 = Sequence – consists of a series of numbers in order, such as 3, 4, 5</li> <li>5 = Number series – you may give your own number series</li> <li>6 = Feature – used for fashion, could be quality, size or color</li> <li>7 = Option – used for giving more details about the features</li> <li>8 = Feature group (only used in the fashion flow. Based on the values of X, Y and Z)</li> <li>9 = Check digit – the last number in the EAN or UPC code. This last number is a check number that is given by the rest of the code.</li> <li>10 = Separator.</li> </ul>
(CRS040/E)	Numbering rule	...the item type to which the numbering rule should be connected.

## Create Location Group

This document explains how to create a location group to be assigned on one or more location records.

### Outcome

A location group is created and may be assigned to one or more locations.

The location group is referenced in the preferred location group table. This table is used during system-directed put-away to find the best locations for the put-away of goods, as defined in 'Location. Connect Location Groups' (MMS011).

Locations are stored in the (MITPCE) table.

### Before you start

There are no prerequisites for creating a location group.

### Follow These Steps

- 1 Start 'Location Group. Open' (MMS036) and on the B panel, enter a Location group and select the Create option.
- 2 On the E panel, enter a description and name for this location group.
- 3 Click Next to save the record.
- 4 Start 'Stock Location. Open' (MMS010) and go to the E panel to enter the desired location group ID for the selected location.

## Create Location in Warehouse

This document explains how to create a location that usually corresponds to a shelf in a stock zone.

### Outcome

A location connected to a stock zone and a warehouse is set up. This location has parameters that among other things define the following:

- whether or not the location may contain several balance identities.
- whether or not orders should be allocated individually or all at once.
- whether a container can be embraced by the location.
- whether and how to compile statistics for it.

The location is used for further specification in handling different types of orders and helps determine how to handle items and lots stored at a location inside a warehouse.

Locations are stored in the MITPCE table.

### Before you start

- A company must have been created in 'Company. Open' (MNS095).
- A division must have been created in 'Company. Connect Division' (MNS100).
- A facility must have been created in 'Facility. Open' (CRS008).
- A warehouse must have been created in 'Warehouse. Open' (MMS005).
- A stock zone must have been created in 'Stock Zone. Open' (MMS040).

- A location type must have been created in 'Location Type. Open' (MMS035).

### Follow these steps

- 1 Start 'Stock Location. Open' (MMS010).
- 2 The sorting order in (MMS010) is used to show the sequence in which locations are retrieved according to the scenarios described in this table:

Preferred Buffer Locations Specified in (MMS011)	Stock Zone Specified on (MMS002/G)	Sorting order
Yes	Yes	5
Yes	No	6
No	Yes	2
No	No	4

The stock zone always acts as a filter (if defined).

The sequence in which location types are searched can be defined in 'Item. Connect Location Type' (MMS057).

- 3 On panels E and F, specify the required information and optional information that are useful for this location.
- 4 End the setting of this location by pressing Enter.

### Parameters to set

Program ID/Panel	Field	The field indicates ...
(MMS010/B)	Sorting order	<p>...Sorting order controls what information should be presented. The following sorting orders exist:</p> <p>1 = Location, Name stock zone, Multi-storage location, Occupied location, Picking priority.</p> <p>2 = Stock zone, Location type, Number of balance identities, Multi-storage location, Distribution identity, ABC-frequency, Transport flow, Location, Picking priority.</p> <p>3 = Location Group, Location, Name, Stock Zone, Multiple balance ID flag, Number of balance IDs.</p> <p>4 = Location Type, Number of Balance IDs, Multi-Storage location flag, Distribution Identity, ABC Code, Transport Flow, Location, Location Group.</p> <p>5 = Location Group, Stock Zone, Location Type, Number of Balance IDs, Multi-Storage location flag, Distribution Identity, ABC Code, Transport Flow, Location</p> <p>6 = Location Group, Location Type, Number of Balance IDs, Multi-Storage location flag, Distribution Identity, ABC Code, Transport Flow, Location</p>

Program ID/Panel	Field	The field indicates ...
(MMS010/E)	Customer number	<p>...a certain customer connected to a specific location, according to the setup in 'Allocation Control Selection Table. Open' (MMS124).</p> <p>This is used for example if you manufacture items with special features for a customer. Then, you can reserve this location for storage of items allocated only to this customer.</p>
(MMS010/E)	Location type	<p>...a group of locations that have the same characteristics. This grouping can be used when trying to find an empty location that is the right size. A location type is created in 'Stock Location Type. Open' (MMS035). Mandatory information.</p>
(MMS010/E)	Location group	<p>...a location group and is used in the preferred location group table. This table is used during system-directed put-away to find locations close to the picking location defined in the Location field on the (MMS002/G) panel.</p> <p>When system-directed put-away is searching for locations, it first looks for free locations belonging to location groups defined for the picking locations in 'Stock Location. Connect Location Groups' (MMS011). This is done in the sequence specified in (MMS011).</p>
(MMS010/E)	Location check	<p>...the location check code, which is used to verify that the correct location has been used by the person picking or putting away stock. You enter a location check code for a location in (MMS010).</p> <p>Whenever a check code exists for a location, it must be entered in the panels where it is implemented on 'Picking List. Report' (MWS420/A) and 'Picking List. Report Lines' (MWS422/E).</p> <p>When confirming a put-away on 'Pending Put-Away. Process' (MWS460/A), you read the location check code from the place you put the stock and enter the code on the panel together with the put-away number. M3 then checks that the location check code entered is the correct one.</p>
(MMS010/E)	Status proposal	<p>...the location's default status, which is proposed when an item is placed in the location. The valid alternatives are:</p> <ul style="list-style-type: none"> <li>1 = Under inspection</li> <li>2 = Approved</li> <li>3 = Rejected</li> </ul> <p>This status will connect to the balance identity at this location and is displayed in 'Balance Identity. Open Toolbox' (MWS068). The status can be reclassified for a unique balance identity in 'Balance Identity. Reclassify' (MMS130).</p>

Program ID/Panel	Field	The field indicates ...
(MMS010/E)	Multi-storage location	<p>...whether the location may contain several balance identities. A balance identity is a compilation of information containing item ID or lot number, its quantity and location. The valid alternatives are:</p> <p>Note: Alternative 2 and 3 are implemented in Java 12.4 SP11:</p> <p>0 = No. Only one balance identity is permitted at the location. An occupied location can not be reused unless the stock being put there is the same item, lot, and container.</p> <p>1 = Yes. Several balance identities may be stored at the location. There are no restrictions on the reuse of the location.</p> <p>2 = Yes, different containers in the same location provided they are the same item and lot.</p> <p>3 = Yes, different lot and/or container provided the item number is the same. Note that all put-aways are still subject to checks on weight, volume, and fill rate, regardless of the value of this flag.</p>
(MMS010/E)	Allocatable	<p>...whether the balance identities created for the respective location should be allocatable. (This field is related to the previous field, Status proposal. If the status proposal code is set to 1, this parameter is probably set to No. That is, you cannot allocate balance identities that are under inspection). The valid alternatives are:</p> <p>0=No 1=Yes</p> <p>When creating new balance identities, in connection with receipts from stock, this code is obtained from the location for which the receipt is made. If there are any exceptions, the allocation code may be changed in 'Balance Identity. Open Toolbox'. (MWS068).</p>
(MMS010/E)	Delay	<p>...the hours that may elapse before the location is marked as available after issue reporting has been performed and the on-hand balance is zero. The function is normally used when an issue is reported before the actual issue is made from the location.</p> <p>This functionality only applies to locations with multi-storage set to '0'</p>
(MMS010/E)	Single allocation	<p>...if locations can only be allocated to one order at a time. In that case, other reservations will remain unallocated until the single allocation is processed. The valid alternatives are:</p> <p>0 = No 1 = Yes, a balance identity at this location can only be allocated to one order at a time.</p>

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates ...</b>
(MMS010/E)	Automatic deletion	<p>...whether a balance identity is to be deleted automatically when the on-hand balance and allocated quantity equal zero. The valid alternatives are:</p> <p>0 = No 1 = Yes</p> <p>The code is specified per location and is copied to the balance ID when it is created. The code does not apply for items stored in a single location without batch numbers. For these, only one balance ID should exist per warehouse/item combination.</p>
(MMS010/E)	Automatic deletion delay	<p>...the number of days a balance identity is to remain in the system before being automatically deleted. (This is valid only when the previous field 'Automatic deletion' is set to Yes). By defining days of delay, you decrease the risk of incorrect information on on-hand balance reported by the system and the real on-hand balance.</p> <p>Automatic deletion can only occur if the on-hand balance and allocated quantity are equal to zero.</p> <p>If you do not want the location identity to be deleted, this should be marked in the location file for the locations, which are included in the balance identity.</p>
(MMS010/E)	Exclude location	<p>...if this location should be excluded from system directed put away. For example, this location should never be used in the search logic for system directed put away</p> <p>Valid alternatives are:</p> <p>0 = No, do not exclude this location for system directed put away. Use this location. 1 = Yes, exclude this location for system directed put away</p> <p>If this location should be used in the search logic, enter 0 here.</p> <p>See <a href="#">Basic Settings for System-Directed Put-Away</a> on page 230</p>
(MMS010/E)	Container management	<p>...whether container management is used for the current location. The valid alternatives are:</p> <p>0 = No 1 = Yes</p>

Program ID/Panel	Field	The field indicates ...
(MMS010/E)	Auto-adjust negative on-hand balance	<p>...whether an inventory adjustment should be created automatically when reporting material issue is greater than on-hand balance (OHB) for lot-controlled item in 'Manufacture Order. Report Issue' (PMS060).</p> <p>The valid alternatives are:</p> <p>0 = No, adjusting negative on-hand balance is not allowed.</p> <p>1 = Yes, auto adjusting negative on-hand balance to zero is allowed.</p> <p>The field is active only in M3 Manufacturing.</p> <p>The adjustment is managed by the autojob MMS855. It creates a physical inventory transaction record (TTYP 90) in 'Stock Transaction. Display History' (MWS070) to cover for the negative on-hand balance at the manufacturing order (MO) issue.</p> <p>Prerequisites:</p> <ul style="list-style-type: none"> <li>- Autojob MMS855 must be running.</li> <li>- 'Partner' and 'MessageType' in 'Settings - Manufacturing Orders' (CRS785) must be selected.</li> <li>- The material requires to have an item setup lot control method set to 3 on 'Item. Open' (MMS001/E), subplot controlled set to 0 on (MMS001/F) and active/catch weight set to 0 on (MMS001/G). Furthermore, the issue method of the material must be set to a value between 2 and 6 on (PMS101/E).</li> </ul>
(MMS010/F)	Warehouse equipment	<p>...a specific piece of warehouse equipment. This is used when special equipment is required for in-house movements of certain items, or to/from certain locations.</p> <p>Warehouse equipment can be set for each item/warehouse 'Item. Connect Warehouse' (MMS002/G) and location (MMS010/F). Of the two, the item/warehouse has the highest priority.</p> <p>When the special equipment is required for an issue, separate picking lists are created in M3 for different pieces of warehouse equipment.</p>
(MMS010/F)	Editing position 1	<p>...the location ID position on which the first editing character should be printed for receipt and issue documents.</p> <p>The field is only active in M3 purchasing.</p>
(MMS010/F)	Editing character 1	<p>...the character that is to be printed in the location ID's editing position 1 on receipt and issue documents. This is used to help you to find the locations included in the document.</p> <p>The field is only activated in the purchase module.</p>
(MMS010/F)	Editing position 2	<p>...the location ID position on which the second editing character should be printed for receipt and issue documents.</p> <p>The field is only active in M3 purchasing.</p>

Program ID/Panel	Field	The field indicates ...
(MMS010/F)	Editing character 2	<p>...the character that is to be printed in the location ID's editing position 2 on receipt and issue documents. This is used to help you to find the locations included in the document.</p> <p>The field is only activated in the purchase module.</p>
(MMS010/F)	Transportation flow	<p>...how to code coordinates, with the purpose of minimizing the transportation time during put-away and picking. The transportation flow is entered for each location and is used to override the location ID.</p>
(MMS010/F)	ABC class frequency	<p>...the location's ABC class according to international ABC classification standards. The actual definition for each class, A to Z, is set in 'ABC Class. Open' (CRS015).</p> <p>This parameter is used to match locations and items with the same ABC class according to sales volume logic. The matching of the item/warehouse ABC class frequency with the location ABC class frequency is considered when locations are suggested through System-directed Put-away.</p> <p>A has the highest frequency.</p> <p>Frequency is the frequency percent used to divide the items in A-, B-, C-groups etc.</p> <p>The ABC value for a lot or item is calculated and printed in 'ABC Classification Frequency. Print' (MMS675).</p>
(MMS010/F)	Distribution identity	<p>...where to find locations that are unoccupied during put-away, under the condition that the stock zone to which the location belongs utilizes distribution.</p> <p>This field influences the sequence of the search for available locations during system directed put-away. It can be used for example to:</p> <ul style="list-style-type: none"> <li>- enable distribution of an item to several aisles in a warehouse. This is done in order to minimize effect of, for example, a broken forklift that can only operate in one aisle.</li> <li>- cause preferred buffer locations to be chosen only when all unassigned reserve locations are full. This helps ensure that preferred buffer locations are used for the intended items unless shortage of free locations forces their unplanned usage.</li> </ul> <p>The field can also be used to ensure preferred buffer locations get filled last except when filled as the preferred buffer. For example, if you have a four pallet high rack, the first level (ground level) locations are picking locations, second are buffer locations for the picking locations, and the third and fourth level are for general reserve stock. When two pallets are received, the first should go into the preferred buffer for the items main location, and the second should go into general reserve, NOT into another locations preferred buffer. i.e., the second pallet should go into the third or fourth level, not the second level. To achieve this, locations on the third and fourth level could have distribution code 01, and those on the second</p>

Program ID/Panel	Field	The field indicates ...
(MMS010/F)	Transaction statistics	<p>...if and how statistics for stock transactions on this location should be created and presented in a statistic log to be reviewed in 'Location Statistics. Display' (MMS012). Valid alternatives are:</p> <p>0 = No 1 = Yes, annually 2 = Yes, for each period</p>

## Create Stock Location Zone in a Warehouse

This document explains how you create a stock location zone in a warehouse. Stock zones are used for grouping purposes and can be further divided into locations.

### Outcome

A stock zone with information about location calculation data is created.

The stock zone is used as a selection criterion for items to be counted and in the dispatch flow to control where the picking list should be printed.

The stock zone is also used when selecting locations and making stock transactions.

Stock zones are stored in the table MITARE.

### Before you start

- A company must have been created in 'Company. Open' (MNS095).
- A division must have been created in 'Company. Connect Division' (MNS100).
- A facility must have been created in 'Facility. Open' (CRS008).
- A warehouse must have been created in 'Warehouse. Open' (MMS005).
- A warehouse type must have been created in 'Warehouse type. Open' (MMS006).

### Follow these steps

- 1 Start 'Stock Zone. Open' (MMS040).
- 2 From the display options, select **Create** and provide an ID for your stock zone.
- 3 Specify the panels to display in the **Panel sequence** field, for example E. Press Enter.
- 4 On the E panel, specify this information:

#### Name

Provide a name for this record.

#### Sorting

Select a value from the sorting options.

**Printer**

Browse or provide the printer from which the printout should be printed.

**Responsible**

Provide your user name.

- 5 For the remaining fields, provide all relevant information for this record. Refer to the parameters for each field to determine the required information.
- 6 Press Enter. The B panel is redisplayed.

**Parameters to set**

Program ID/Panel	Field	Description
(MMS040/E)	Volume Calculation	<p>Indicates whether a volume calculation should be performed for the locations within the area at deliveries and receipts. This is used for stored goods that are appropriate for volume calculation.</p> <p>The valid alternatives are:</p> <p>0=No 1=Yes</p>
(MMS040/E)	Weight check	<p>Indicates how the weight check is used for this stock zone. The check function acts as a warning.</p> <p>The valid alternatives are:</p> <p>0 = No check 1 = For each location and horizontal axis 2 = For each location and vertical axis 3 = For each location and both axes, and a stock zone check</p>
(MMS040/E)	Weight check from position	<p>Indicates how to define the maximum or minimum position for weight control per stock zone. The information is used to define the number of positions and where they are positioned in the location identity as the first part of the weight limitation identity.</p> <p>This value is used to update valid weight controls by the current weight during stock movements.</p> <p>For example, a location that is named (AF0302) means:</p> <p>AF = shelf entrance 03 = horizontal axis 02 = vertical axis</p>
(MMS040/E)	Weight check to position	See 'Weight check from position'.

Program ID/Panel	Field	Description
(MMS040/E)	Horizontal axis from position	Indicates the horizontal axis from position. The information is entered for each stock zone and is used to calculate weight stored on a defined horizontal axis for each weight limitation identity. Location identities must be logically constructed for positions so that the horizontal axis is always in the same position within the stock zone.
(MMS040/E)	Horizontal axis to position	See 'Horizontal axis from position'.
(MMS040/E)	Container used for storage	Indicates if, for each stock zone, a freight container must be entered upon put-away. The valid alternatives are: 0 = No 1=Yes
(MMS040/E)	Vertical axis from position	Indicates how to calculate weight stored on a defined vertical axis for each weight limitation identity. The vertical axis from and to position is entered for each stock zone. <b>Note:</b> Location identities must be logically constructed for positions so that the vertical axis is always in the same position within the stock zone.
(MMS040/E)	Vertical axis to position	See 'Vertical axis from position'.
(MMS040/E)	Sorting	Indicates the sorting order on picking lists created by location movements entered manually. The valid alternatives are: 1 = By location 2 = By transportation flow stated on each location record in 'Stock Location. Open' (MMS010). Manual entry of location movement is performed by program 'Movement. Change Loc - Item' (MMS175) moving a single balance ID to a new location, or 'Movement. Change Location - All Items' (MMS180) moving all balance IDs from one location to a new location.
(MMS040/E)	Filling rate calculation	Indicates if the filling rate should be calculated at the locations within the zone for incoming/outgoing deliveries. The valid alternatives are: 0 = No 1 = Yes The calculation gives the current filling rate, which shows the percentage of the location's maximum quantity being used. The rate is calculated as the sum of the filling rate for each balance identity that is stored at the location. This field is only activated in Purchase Order Processing.

Program ID/Panel	Field	Description
(MMS040/E)	Two step put-away	<p>Indicates whether two-step put-away is activated. This activation occurs in two places in the stock zone, and in the goods receiving method or order type. Both these places must have this field active for two-step put-away. (For purchase orders, the activation is in goods receiving method. For manufacturing orders and DO/RO orders, it is in the respective order types).</p>
		<p>The valid alternatives are:</p>
		0=No
		1= Yes
(MMS040/E)	Printer	<p>Indicates the printer is to be used when printing picking lists for this stock zone. Provide a printer name or one of these alternatives:</p>
		*SYSVAL = The printer to be used according to the system value.
		*JOB = The printer associated with the job creating the printout.
		Required information.
(MMS040/E)	Responsible	<p>Indicates the person responsible for updating the record information. Mandatory information.</p>
(MMS040/E)	Picking team	<p>Indicates a team ID. A picking team has several pickers, each defined as a user in 'User. Open' (MNS150), and can be connected to a stock zone. In this way the picking team is connected to picking lists and put-away tasks created for that zone.</p>
		The picking team for picking lists can be changed in 'Picking List. Plan Pickers' (MWS415), but only before the picking list is printed.
		The picking team for put-away tasks can be changed in 'Pending Put-Away. Process' (MWS460).
(MMS040/E)	Location check code – put-away confirmation	<p>Indicates whether the location check code must be validated at put-away confirmation.</p>
		<p>The valid alternatives are:</p>
		1 = No validation.
		2 = Location check code must be validated. Whenever a check code exists for a location, it must be provided at put-away confirmation on (MWS460/A).
(MMS040/E)	Location check code – picking list reporting	<p>Indicates whether the location check code must be validated at picking list reporting.</p>
		<p>The valid alternatives are:</p>
		1 = No validation.
		2 = Location check code must be validated. Whenever a check code exists for a location, it must be provided at picking list reporting, on 'Picking List. Report' (MWS420/A) and 'Picking List. Report Lines' (MWS422/E).

Program ID/Panel	Field	Description
(MMS040/E)	Print put-away	<p>Indicates whether if put-away labels are printed in this stock zone.</p> <p>The valid alternatives are:</p> <p>0 = Yes</p> <p>1 = No</p> <p>2 = Yes, print the labels in batch. This alternative is valid for PO, DO, RO, MO and WO receipts.</p> <p>The print file for the document is MWS450PF.</p>
(MMS040/E)	Print package label	<p>Indicates whether if package label should be printed when package-based receipt is performed in this stock zone.</p> <p>The valid alternatives are:</p> <p>0 = Yes</p> <p>1 = No</p> <p>2 = Yes, print package labels in batch.</p> <p>The print file for the document is MMS474PF. This parameter applies when using package-based receipt and applies only for DO. Package label can be printed on demand in (MMS470) or using API MMS470MI.</p>

## Create Style and Stock Keeping Units

This document explains how you create style and Stock Keeping Units (SKUs) used by the fashion industry.

### Outcome

Basic data and alias for style and SKUs are created. The master table for style is MMODMA.

Style is a comprehensive term for a number of similar items and is used in the fashion industry.

SKU is the item(s) connected to a certain style.

When the SKUs are created, a number of tables are created in the programs 'Item. Open' (MMS001), 'Item. Connect Warehouse' (MMS002), 'Item. Connect Facility' (MMS003), and 'Product Structure. Open' (PDS001). Fashion specific data are created for 'Item. Connect Alias Number' (MMS025) and 'Product Variant. Open' (PDS060).

### Before you start

The settings in [Settings for Style and Stock Keeping Unit \(SKU\)](#) on page 203 must be done.

## Follow these steps

These steps require that you have an item type with connected item template, numbering rules, and auto create for warehouse and facility. See [Settings for Style and Stock Keeping Unit \(SKU\)](#) on page 203.

### Create item (style item) and connect to warehouse and facility

- 1** Start 'Item. Open' (MMS001).

You do not have to specify the panel sequence. The template item's panel sequence is valid and will be used.

- 2** Select the Item type you have created for your style and SKUs. It must have specified numbering rules (one for the style and one for the SKUs) and also an item template connected.

- 3** Select option 1='Create'.

- 4** Press Enter to display the E panel. Specify name and description.

- 5** Press Enter again.

The created style values will be the same as the template values

- 6** Depending on the settings, data in (MMS002), (MMS003) and (MMS025) are also automatically created with the template values.

- 7** If you have not activated the 'Auto creation' field in 'Item Type. Connect Warehouses' (MWS042) you must connect the style to warehouse and facility manually.

### Create optional information about style

- 1** 'Style. Open' (MMS016) lets you connect styles to different seasons so the style can be used different times during the year. The season field is optional and can be left blank if the style is not seasonal (that is, the style is therefore valid year-round as a so-called 'basic' item)

- 2** Select option 2='Change' for your style and open the E panel.

- 3** Specify 20='Definite' in the Status field..

- 4** The 'Season control' field indicates whether the season is checked during customer order entry. This sets how the item is processed during entry. When the order type (OIS010/F) has the field Season in use = 0, then only items with Season control = 0 can be entered. This check is not done for other values in the 'Season in use' field.

The 'Season control' field (Only Season Orders)

1=Yes, all SKUs in this creation can ONLY be ordered as part of a season specific order.

0=No, SKUs are not seasonal OR if they may be sold as part of a season specific order AND on non-seasonal orders.

The Season Select field

1=Yes, SKUs being generated or changed in this creation run need to be attached to a season. The attachment is done in 'Style. Create Item' (MMS276). This flag must always be 1 if the 'Only season orders parameter' is 1.

0=No, SKUs being generated or changed in this run are not to be attached to a season.

- 5** The User defined field – Heading 1 – 20 are used for user defined information about the style. The field headings are defined in 'Settings - User-def Style Fld Headings' (CRS759).

### Attach features to the style

- 1** Start 'Style. Connect Feature' (MMS017).

- 2 The 'Sequence number' field indicates the order in which features and valid options are displayed. This sort order is only valid for style related full screen views (MMS016/P).  
The sequence number is either entered manually or set automatically. The interval is defined on the (MMS017/P) panel
- 3 The Feature field is entered. At least two features are normally attached to a style (one X and one Y feature), thereby creating the matrix.
- 4 A style can be connected to several features within the same feature groups.

### Attach feature options to the style

- 1 Start (MMS017), and select option 11='Options/Feature' to start 'Feature. Connect Options' (PDS056) where you change the options for a feature.
- 2 The 'Include' field indicates whether to include the option in the style creation proposal, worktable MMM076.  
If you specify 1, the feature option will be included in the MMM076 worktable.  
If you specify 0, the feature option will be excluded. Items can still be created in a subsequent generation.
- 3 Select all feature options from all features and all feature groups connected to the style in (MMS017) to enable SKU creation.

**Note:** The work table will be cleared when you exit program 'Style. Connect Feature' (MMS017). A warning message "WARNING - Options selected in (PDS056) will be cleared" is displayed. If you accept the message, the work table is deleted.

### Create SKUs

'Style. Create Item' (MMS276) displays the combination of the selected options (work file MMM076).

- 1 From (MMS017), use function key F17='View Proposal' or the button with the same name in program 'Style. Connect Feature' (MMS017) to start (MMS276).
- 2 Everything included in the style creation proposal, work table MMM076, is displayed. The SKU creation proposal, worktable MMMS076, can be reviewed and changed from here before SKUs are created.
  - a The 'Include' field indicates whether to create an item for the current combination of options.  
Specify 1 to include the item in the SKU creation.  
Specify 0 to exclude the item from the SKU creation. Items can still be created in a subsequent generation.
  - b You can include more feature options in the work table MMM076 by using RO 11 that starts (PDS056) where you can select which options to include.
  - c You can clear the work table MMM076 and start over using the function key F16='Delete Proposal' in (MMS276) or use the button in the program header with the same name.
- 3 Select F14='Create items' or the button 'Create' to create all accepted item proposals.  
**Note:** If you have activated the 'Season select' field in 'Style. Open' (MMS016) the season selection will be prompted. This process is described in the document *Connect a Season to an Item Number* (see related topics).

### View created SKUs (in matrix)

The program 'Style. List Created Items by Matrix' (MMS277) displays the created SKUs in matrix form.

- 1 Start the program (MMS277) to display all combinations of X and Y options for already created SKUs in a matrix form. If there is also a Z option, it is displayed in the header of the program, retrieved from (PDS056).
- 2 You can also start (MMS277) by:
  - a Using function key F16='Created' or the button with the same name in program 'Style. Connect Feature' (MMS017).
  - b Using function key F18='Created' or the button with the same name in program 'Style. Create Item' (MMS276).
  - c Include it in the panel sequence on 'Style. Open' (MMS016).
- 3 The 'Created items' field in the matrix indicates whether to create an item for the current combination of options. The valid alternatives are:
  - 2 = Only alias, can only be set by the system
  - 5 = Create composition information

This field can be changed per SKU, per line, and per column.

#### To re-create MITPOP

If the item alias in 'Item. Connect Alias Number' (MMS025), table MITPOP, needs to be recovered, you can re-run the SKU creation process in 'Style. Create Item' (MMS276). Alias category 88 will always be created (if missing) and alias categories 84-87 are created for any missing item aliases based on the set up in 'Item type. Connect Alias' (MWS043).

- 1 In 'Feature. Connect Options' (PDS056), select the options for each feature where MITPOP should be re-created. This selection setup is saved in the worktable (MMM076) and is used in the re-creation process.
- 2 Re-create MITPOP using function key F14 in 'Style. Create Item' (MMS276) or using button with the same name in the program header.
- 3 Open 'Item. Connect Alias Number' (MMS025) and check that all alias 84-88 have been created for the selected SKUs.

## Create and Use Item Hierarchy Structure

This document explains how you create and use item hierarchy structure.

#### Outcome

- An Item Hierarchy Structure is created. Vertical and a horizontal search can be done.
- Item hierarchy structure can be displayed in some programs.
- Item hierarchy fields be used as a path for user-defined tables, and also to create the contents of user-defined files:

The main use is to give the possibility to search for items in a structured way and to have statistics on other terms than we have today. Item hierarchy fields be used as a path for user-defined tables, and also to create the contents of user-defined files:

- The Item master (MITMAS) table is changed.

- The System parameters (CSYPAR) table is changed.
- The Item hierarchy definitions (MITHRY) table is new.

### Before you start

Items are registered; see [Create and Connect Item to a Warehouse Structure](#) on page 143.

### Follow These Steps

#### Create an Item Hierarchy Structure

- 1 Start 'User Defined Fields. Settings' (CRS704). On the E panel you define the length of the Item hierarchy level fields.  
Each field can contain a maximum of 15 characters. The maximum allowed for all five fields together is also 15 characters. So if you assign each field a length of 5 characters, then you can only have 3 levels ( $5 \times 3 = 15$ ). If each field has 2 characters, you can permit 5 levels ( $2 \times 5 = 10$ , max allowed=15).
- 2 The 'Number of positions' field is entered with the total length of the 'Item hierarchy level' fields together. If you allow 3 characters per field and 4 levels, then the Number of position field should be entered with 12.
- 3 The 'Use of group' field determines the rules for the search groups. Search groups can be used as a complement to do a horizontal search.  
Valid alternatives in the 'Use of group' fields are:  
0 = Search group not used .Not displayed in (MMS001/M)  
1 = Search group used as free fields. No validations performed.  
2 = Default search group identities from item hierarchies identities, possible to change.  
3 = Default search group identities from item hierarchies identities. Not possible to change.  
The 'Default text' field indicates if there should be default text displayed from level above (0 = No, 1 = Yes).
- 4 Start 'Item Hierarchy. Open' (MMS021). Here you built the structure and make the relations between the levels.
- 5 On the B panel, fill in the Level field with 1=Highest level. Enter the 'Hierarchy Id' field in accordance with the identity rules set in (CRS704).
- 6 On the E panel fill in the Description and Name fields.  
In the 'Search group' field on the (MMS021/E) panel, press F4 twice. 'Search Group. Open' (MMS022) will be displayed. This field is defaulted if rule 2 or 3 is used (see above).  
On the (MMS022/B) panel, fill in the field Search group level with the appropriate level.  
In the 'Search group' field, you fill in the identity for the search group according to the rules set up in (CRS704).  
On the E panel fill in the Description and Name fields and press ENTER.  
The B panel is redisplayed. Choose your created search group and press Enter. On the (MMS021/E) panel your chosen search group will be displayed.
- 7 Go back to the (MMS021/B) panel by pressing F12 and continue with level 2. The settings in (CRS704) determine the number of allowed levels.

Example: The allowed number of characters for the hierarchy id is 2.

Level Hierarchy Id

1 10  
2 1020 1021  
3 102030  
4 10203040

- 8** In 'Search Group. Open' (MMS022) you define search groups (optional), which is a free field without any table behind it that can be used as a complement to the item hierarchies. The purpose of the search group is to allow a horizontal search. The use of item search groups is controlled by (CRS704). A search group can be linked to an item hierarchy in (MMS021).

Start 'Item. Open' (MMS001). On the M panel you connect the item to the right place in the structure. Fill in the 'Hierarchy level' fields, which are defined in (MMS021). Fill also in the 'Search group' fields. These fields are defaulted if rule 2 or 3 is used (see above).

Example of (MMS001/M). Rule 1='Search groups as free fields' is used:

Item no 4515 Normal sales item  
Hierarchy lvl 1 AA Dan Computer  
Hierarchy lvl 2 AAB2 Dan Computer Hardware  
Hierarchy lvl 3 AAB2C1 Dan Computer Hardware Hdd  
Hierarchy lvl 4 AAB2C1D1 Dan Computer Hardware Hdd Fast  
Search group 1. AA Dan Computer  
Search group 2. B2 Dan Computer Hardware  
Search group 3. C2 Dan Computer Hardware Ram  
Search group 4. D1 Dan Computer Hardware Ram Fast

### Displaying Item Hierarchy Structure

Items Hierarchy can, for example, be displayed in by create a user defined view the must contain the following fields: HIE1, HIE2, HIE3 and HIE4.

In the warehouse area, item hierarchy structure can be displayed in following programs:

Field Group	Program
MM200	Item toolbox (MMS200)
MMKV1	Item toolbox (MMS200)
MMIT1	Views supply chains (MWS051)
MMPV5	Stock transactions (MWS070)
MWPV2	Balance id (MWS068)

### Using Item hierarchy Fields as a Path for User-Defined Tables, and as Contents of User-Defined Files

In following programs can item hierarchy fields be used as a path for user-defined tables, and also to create the contents of user-defined files:

Field Group	Program
MMAD1	Allocation control table (MMS123)
MMAD2	Allocation control location (MMS124)
MMAD3	Joint allocation rules, groups (CRS016/MWS125/E)
MMAD4	Joint allocation rules (CRS016/MWS125)
MMAD5	Cross dock location matrix (CRS016/MWS130)

## Create Warehouse

This settings document explains how to create a warehouse that corresponds to your current inventory structure such as warehouse type, what facility the warehouse is to be connected to, and so on.

### Outcome

A warehouse is created with information about warehouse type, connected facility, where it is located, whether or not an item record can be added during purchase entry, and where the shipment from this warehouse is loaded.

The warehouse is used as a planning level for material and production. Stock zones, stock locations, and items are connected to the warehouse.

Warehouses are stored in the table MITWHL.

### Before you start

- Conditions in the following must be fulfilled:
  - [Create Facility](#) on page 809
  - [Create Warehouse Type](#) on page 866
  - [Create Warehouse Subtype](#) on page 865
- A place for the warehouse must have been registered in 'Place. Open' (MMS008).
- A language must have been registered in 'Language. Open' (CRS010).

### Parameters to set

Program ID/Panel	Field	The field indicates....
(MMS005/E)	Warehouse Type	...a group of warehouses of the same type. It also indicates whether the warehouse balance is to be summed up to facility level. See related document <a href="#">Create Warehouse Type</a> on page 866. Mandatory information.

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates....</b>
(MMS005/E)	Warehouse Subtype	...a subtype to a warehouse type. This is used to differentiate warehouses within the same type and is defined in 'Warehouse Subtype. Open' (MMS007). Mandatory field for informational purposes.
(MMS005/E)	Facility	...the facility to which the warehouse should be connected. This is the level closest above a warehouse and it is also where products are structured and costing is calculated. A facility is created in 'Facility. Open' (CRS008). Mandatory information.
(MMS005/E)	Language	...the language that is to be used when printing external documents. This parameter can be overruled when printing invoices for customers with another language defined in 'Customer. Open' (CRS610).
(MMS005/E)	Area/State	...the area, place or province where the warehouse is located. This parameter is used for US sales and for trade statistics.
(MMS005/E)	Customer Number	...the customer number to be used when Intrastat records are created in connection with issues of distribution orders shipped from this warehouse. This is only used if distribution is being done between different warehouses in countries inside the EU and if other parameters necessary to run Intrastat in M3 are set. For example, if you have one or several warehouses in another EU country and you distribute goods to them from this warehouse, you should register the receiving warehouses as one customer in 'Customer. Open' (CRS610), then indicate this customer in this field. Optional information.
(MMS005/E)	Supplier Number	...the supplier number to be used when Intrastat records are created in connection with receipts of distribution orders shipped to this warehouse. This is only used if distribution is being done between different warehouses in countries inside the EU and if other parameters necessary to run Intrastat in M3 are set. For example, if you have one or several warehouses in another EU country and you receive goods from them to this warehouse, you should register the supplying warehouses as one supplier in 'Supplier. Open' (CRS620), then indicate this supplier in this field. Optional information.
(MMS005/E)	Copy from Warehouse	...from which warehouse to import item information and warehouse information when you receive an item that is not already registered and connected to this warehouse. This field is required only if the Auto Add Permit field is set to 1='Yes'.
(MMS005/E)	Auto Add Permit	...whether it is permitted to add an item/warehouse record during purchase entry. The valid alternatives are: 0 = No 1 = Yes  If you select alternative 0, you will get a message during entry telling you that the item does not exist in the warehouse.

<b>Program ID/Panel</b>	<b>Field</b>	<b>The field indicates....</b>
(MMS005/E)	Alias Ware-house	...the location definitions for the warehouse used for the current warehouse.
(MMS005/E)	Alias Activate	<p>...if this warehouse should be able to use another warehouses location. The valid alternatives are:</p> <p>0 = No</p> <p>1 = Yes</p> <p>Note that the functionality for using locations from another warehouse not is implemented in the current version of M3.</p>
(MMS005/E)	Purchase Organization	...the purchase organization which is used to consolidate or group warehouses that can be defined in 'Purchase Agreement. Open' (PPS100). The purchase organization is created in 'Purchase Organization. Open' (PPS099).
(MMS005/F)	Our reference	...the reference for internal ordering and distribution. Optional information.
(MMS005/F)	Place of loading	...the geographical location where a shipment from this warehouse is loaded. This information is used when planning shipment and route in M3. The place of loading must be defined in 'Place. Open' (MMS008). Mandatory information.
(MMS005/F)	Place of export	...the geographical place where a shipment leaves the sender's country which is printed on an international waybill for car transport (CMR). If you have Customer Delivery Schedule installed, this information will be printed on an item or container label. Optional information.
(MMS005/F)	Consignor	...the name of the sender. This is printed on a transport label. If you have Customer Delivery Schedule installed, this information will be printed on an item label or container label. Optional information.
(MMS005/F)	Responsible	...a unique user ID that can be used for sorting and selecting. Mandatory information.
(MMS005/F)	To Location	...a stock location used by default for a distribution order when receiving goods from another warehouse. If not indicated, this information will be retrieved from 'Item. Connect Warehouse' (MMS002/G).
(MMS005/F)	Separation number	...an identification number for separating Intrastat when reporting to authorities. This is only relevant for warehouses inside EU. Optional information.

Program ID/Panel	Field	The field indicates....
(MMS005/F)	Blk PL qty move	<p>...whether to block the movement of balance identity from one location to another if the balance identity, or a part of it, is already included in a picking list.</p> <p>The valid alternatives are:</p> <p>0 = No 1 = Yes</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li><b>1</b> The movement programs (MMS177), (MMS175), (MMS105), MMS105MI/Add, and MMS850MI/AddMove are affected by this parameter.</li> <li><b>2</b> If this parameter is activated and MMS850MI/AddMove is used, 'Moveable net calculation' with option 2 selected is not allowed.</li> </ul>
(MMS005/F)	Object Access Group	<p>...an object access group, which is used to restrict access to different objects such as accounting identities, divisions, and facilities.</p> <p>These objects can be connected to an object access group, and different users can be connected to user groups. For each user group, you can specify a number of object access groups.</p> <p>Therefore, if an object is connected to an access group, access is only granted to users that belong to a user group connected to that access group.</p>
(MMS005/G)	All fields	<p>...allocation settings that are not necessary to create an inventory structure. These settings are described in the allocation documentation.</p>
(MMS005/F)	Reference text type	<p>...the requested contents of the 'reference text' field in a historical stock transaction for non-order related movements within the warehouse (transaction types 92 and 93). This also applies to movements in the pending put-away process. The reference text is used as additional information.</p> <p>The valid alternatives are:</p> <p>0 = From/to location 1 = From/to location/container</p> <p><b>Note:</b> Stock transactions for container movements in 'Movement. Change loc - Container' (MMS105) and location movements in 'Movement. Change Loc - Item' (MMS175) are not affected by this reference text type.</p>

### Follow these steps

#### Create warehouse

- 1 Start 'Warehouse. Open' (MMS005). On the B panel, specify the warehouse number and select option 1='Create'.

- 2** On the E and F panels, specify the mandatory and significant data for this warehouse.
- 3** The G panel only contains fields concerning allocation settings. These fields have no impact on how to create an inventory structure. See allocation documentation – settings.

## Create Warehouse Subtype

This settings instruction document explains how to create a new type of warehouse under a warehouse type in the hierarchy. This subtype is not a logical level and is used for information purposes only.

### Outcome

A warehouse subtype is created.

The subtype is used when there is a need for further structuring of information on a warehouse type level.

Subtypes are stored in the (CSYTAB) table.

### Before you start

There are no prerequisites for this setting instruction.

### Parameters to Set

Program ID/Panel	Field	The field indicates ...
(MMS007/B)	Warehouse sub-type	<p>...the warehouse subtype, which is used to differentiate warehouses within each type.</p> <p>The field is defined in a separate table and is used for informational purposes only.</p> <p>Note that it is possible to create a warehouse type with a blank name in this field.</p>
(MMS007/E)	Description	... the description should reflect the significance of the current warehouse subtype in your warehouse structure. Mandatory information.

### Follow These Steps

#### Create a Warehouse Subtype

- 1** Start ‘Warehouse Subtype. Open’ (MMS007) and enter an alphanumeric value.
- 2** Select option 1=Create.
- 3** On the E panel, enter the Description and Name fields.

# Create Warehouse Type

This document shows you how to define warehouse types, which in connection with a specific warehouse determines if the balance for the warehouse should be totaled up to facility level.

## Outcome

A warehouse type is created.

This is a group of warehouses of the same type. In addition to being used as classification, the term also determines whether the warehouse balance should be accumulated by facility level.

The warehouse types are stored in the (CSYTAB) table.

## Before you start

There are no prerequisites for this setting instruction

## Parameters to set

Program ID/Panel	Field	The Field Indicates...
(MMS006/B)	Warehouse Type	<p>...a group of warehouses of the same type. In addition to being used as classification, the term also determines whether the warehouse balance should be accumulated by facility level.</p> <p>Note that it is possible to create a warehouse type that has a blank name in this field.</p>
(MMS006/E)	Description	...a description of the current identity. Mandatory information.
(MMS006/E)	Name	...the name of the current warehouse type identity. If not indicated when creating a new warehouse type, the description will be defaulted as name.
(MMS006/E)	On-Hand Total	<p>...whether average prices and on-hand balance for this warehouse type are to be summed up with those from other warehouses connected to the same facility. Mandatory information.</p> <p>The valid alternatives are:</p> <p>0=No</p> <p>1=Yes, on-hand balance and average prices are totaled for the facility.</p> <p>Note that alternative 1 = Yes, must be chosen, when the inventory accounting method is set to alternative2 = Average cost, in 'Item. Connect Facility' (MMS003/E) and registered with planning method 4 in 'Item. Open' (MMS001/E).</p> <p>See related document <a href="#">Display Item per Facility</a> on page 41</p>

## Follow these steps

### Create warehouse type

- 1 Open 'Warehouse Type. Open' (MMS006).
- 2 On the B panel, enter an alphanumeric value on the 'Warehouse type' field.
- 3 On the E panel, enter the Description and Name fields
- 4 On the E panel, you indicate whether to apply the 'On-Hand Total' for the warehouse type.

# Define Hazardous Material Table

This document explains the settings for managing hazardous material.

## Outcome

Required fields from Hazardous Material Transportation Regulation table (CFR49) are saved in 'Hazardous Material table. Open' (CRS213) table (MTUNNA). You can use the records later to define the hazardous classification of an item.

## Before you start

You must define danger class in 'Danger Class. Open' (CRS210).

You can add information about the material in 'Supplementary Information. Open' (CRS214). These are the examples of supplementary information:

- **marine pollutant**
- **waste**
- **molten**
- **stabilized**
- **solution**
- **mixture**

## Follow these steps

- 1 Start (CRS213).
- 2 On panel E, specify the **ID type**. These are the options:
  - **1 = UN**: for international transportation or domestic transportation
  - **2 = NA**: for transportation in the United States
- 3 Click **New**.
- 4 On (CRS213/E), specify these fields:
  - **Identification Number (IDNM)**: UN number or NA number, depending on the type specified. This identification number is a four-digit number that is assigned to specific hazardous materials and substances for transportation and regulatory purposes.
  - **Proper shipping name (PSHN)**: The hazardous materials description and proper shipping names.

- **Supplementary information (EXTN):** Chosen from (CRS214), the field indicates the supplementary information about the hazardous substance.
- **Packing group (PCKG):** The field indicates the degree of danger posed by the material. These are the options:
  - **I**= High danger
  - **II**= Medium danger
  - **III**= Low danger
- **RQ value (RVQA):** The field indicates reportable quantity (RQ) for a Hazardous Substance in kilogram.
- **Danger class 1, Danger class 2, Danger class 3:** These fields indicate the label codes.
- **Symbol:** The field indicates the hazardous symbols that provide additional information about the requirements or restrictions for a specific hazardous material. These are the examples of symbols:
  - A - Aircraft transportation
  - D - Domestic transportation
  - G - Generic description
  - I - International transportation
  - W - Vessel transportation

Each record is identified by a unique **ID number** (HMID) in table MTUNNA. This ID is system-generated and has no other purposes than identifying one record.

(CRS213) can also be managed using API CRS213MI.

### Examples

**Table 8:**

<b>ID Type</b>	1-UN
<b>Identification Number</b>	1089
<b>Identification Number</b>	Acetaldehyde
<b>Packing group (PCKG)</b>	I
<b>RQ value</b>	454
<b>Danger class 1</b>	9
<b>Danger class 2</b>	
<b>Danger class 3</b>	
<b>Symbol</b>	

**Table 9:**

<b>ID Type</b>	1-UN
<b>Identification Number</b>	2692
<b>Identification Number</b>	Boron tribromide

Packing group (PCKG)	I
RQ value	
Danger class 1	8
Danger class 2	6.1
Danger class 3	
Symbol	+

## Define Item-related Data

This document explains how you connect related data to an item. Related data include alternate units of measure, related items that can replace an out-of-stock item, languages for external documents, and alias numbers that allow you to identify an item by something other than the item number.

### Outcome

The following data will be defined and connected to the item:

- Alternate unit of measure.  
'Item. Connect Alternate U/M' (MMS015) is stored in the (MITUCV) table.
- Related items.  
'Item. Define Relations' (MMS020) is stored in the (MITALT) table.
- Alias number.  
'Item. Connect Alias Number' (MMS025) is stored in the (MITPOP) table.
- Names and language.  
'Item. Enter Names/Language' (MMS030) is stored in the (MITLAD) table.

This setting is used for purchasing, sales and manufacturing.

### Before You Start

- A warehouse structure must be created. See [Define Warehouse Structure](#) on page 870.
- An item must have been created. See [Create Item](#) on page 813.

**Note:** There is no natural internal order for executing these activities.

### Workflow

#### 1 Define Alternate Unit of Measure in (MMS015)

The purpose of an alternate unit of measure is flexibility in the unit of measure and selection of the most appropriate unit for a specific order. For example, you may have set the main standard unit of measure

to pieces. If a customer wants to buy a large quantity of the item, it is more practical to sell in kilograms as a unit of measure.

The purpose of an alternate unit of measure is flexibility in the unit of measure and selection of the most appropriate unit for a specific order. For example, you may have set the main standard unit of measure to pieces. If a customer wants to buy a large quantity of the item, it is more practical to sell in kilograms as a unit of measure.

**2 Define Related Items in (MMS020)**

By defining related items, you make it possible to meet distribution or customer orders even if you do not have the required item in stock.

In 'Item. Define relations' (MMS020) you define the items to be related. You also define replacement type, such as whether an item is interchangeable with another item, and if there are restrictions to be defined.

**3 Define Alias Number for Items in (MMS025)**

The alias number allows you to identify an item by something else than the item's number. Alias numbers can include manufacturer's number, customer number, EAN number and so on.

In 'Item. Connect Alias Number' (MMS025) you define both an alias number and what item the alias number is to be used for.

**4 Define Names and Languages for External Documents in (MMS030)**

Defining names and languages for external documents is used if, for example, you have customer documents that are to be printed for a foreign customer in a foreign language. Note: This language cannot be used for internal use.

In 'Item. Enter Names/Languages' (MMS030) you define a language code and a name to be printed on the document.

## Define Warehouse Structure

This document explains how to define the overall structure of facilities, warehouses, stock zones and locations. The structure for company and division is not described in this document. This process is run in the same way in a multi unit company and a single unit company.

### Outcome

Inventory is structured according to specific needs, with locations connected to certain stock zones in warehouses, which in turn are connected to specific facilities.

- The overall inventory structure is used for several purposes depending on the level in the structure.
- Facility level is where to structure products and do cost calculations.
- Warehouse level is where to do material planning.
- Stock zones are used for grouping purposes and picking management.
- Location is where different items are stored.

The following tables are updated:

- Facilities are stored in the (CFACIL) table.
- Warehouses are stored in the (MITWHL) table.
- Stock zones are stored in the (MITARE) table.
- Locations are stored in the (MITPCE) table.

### Before you start

- A company must be created in 'Company. Open' (MNS095)
- A division must be created in 'Company. Connect Division' (MNS100)

### Follow these steps

#### 1 Create a Facility Shell

Start with the creation of a facility shell, since you cannot create a complete facility that can be maintained without connecting it to a main warehouse. Furthermore, you cannot create a main warehouse without connecting it to a facility. The shell is created in 'Facility. Open' (CRS008).

#### 2 Create Main Warehouse

The main warehouse is created in 'Warehouse. Open' (MMS005) by naming it, defining the warehouse type and connecting it to the facility shell created in the previous step. The main warehouse is usually the production warehouse.

Note that if you are setting the overall inventory structure for the first time, you must define warehouse types in 'Warehouse Types. Open' (MMS006) before you can create a main warehouse.

#### 3 Specify Facility Details and Connect Main Warehouse

You end the creation of facility and main warehouse by returning to 'Facility. Open' (CRS008). You enter details about the facility and connect the main warehouse on the same panel.

#### 4 Create Warehouses and Connect to Facility

If your facility contains several warehouses it is possible to connect more than one warehouse to the facility in 'Warehouse. Open' (MMS005).

#### 5 Create Stock Zones and Connect to Warehouse

Start 'Stock Zone. Open' (MMS040) and create one or several stock zones. This enable you to group one warehouse into more physical areas, like indoor and outdoor, inspection area, picking area, docking area, storage area etc.

#### 6 Create Location and Connect to Stock Zone

For further specification of the stock zone you create one or several locations and connect them to a stock zone in 'Stock Location. Open' (MMS010). A location is usually a shelf in a warehouse.

Note that if you are setting the overall inventory structure for the first time, you must define location types in 'Stock Location Types. Open' (MMS035) before you can create a location.

## Facility

Facility is used in many work order programs in M3 Maintenance. In most cases, facility is synonymous with site.

Facility is a superior organizational level to department but lower than division.

Facilities can be used to set authorization in the time reporting component groups.

## Geographic Locations

Each shipment contains information on geographic locations, such as place of load and place(s) of unload. These are used to group the shipment. The different locations are as follows:

- [Route](#) on page 654 - one or more connected places of unload
- [Place of Load](#) on page 875 - usually a city or town.
- [Place of Unload](#) on page 875 - usually a city or town.

If you want several deliveries to be shipped together, a shipment must be created according to these conditions:

- from the same place of load,
- to the same place of unload and be included in one shipment without any routes, or
- to the place(s) of unload included in the route of the shipment. If no place(s) of unload have been defined, any place of unload can be included in the shipment.

## Inspection Lead Time For Purchasing

This document explains the settings for inspection lead time. Inspection lead time is the time normally required for goods receipt, quality inspection and put away. The inspection lead time is mainly used for purchased items.

The lead time calculation always uses the specified inspection lead time regardless of where that is included in the goods receiving flow.

### Outcome

The inspection lead time is set. Inspection lead-time is used as a lead time component to calculate the total lead time per item/warehouse connection.

Inspection lead time is specified via goods receiving method (GRLEA2/MPGRMT).

### Before you start

- Basic data for items and inventory must have been set.

- A goods receiving method must have been created in 'Goods Receiving Method. Open' (PPS345)
- A purchase order type must have been created in 'Purchase Order Type. Open' (PPS095)

#### Parameters to set

Program ID/Panel	Field	The field indicates ...
(PPS345/E)	Quality inspection lead time	Indicates the time normally required for goods receipt, quality inspection and put-away. The lead time calculation always uses the specified inspection lead time regardless of what is included in the goods receiving flow.
(MMS987)	Lead time. Mass Update	If you have changed the lead time you have to use this program to mass update all the affected items.

#### Follow these steps

- 1 Start 'Goods Receiving Method. Open' (PPS345). Enter the inspection time on the E panel.
- 2 If the inspection lead time is changed, you have to mass update the affected items. Start 'Lead Time. Mass Update' (MMS987). Fill in the To and From fields.
- 3 The inspection lead time is displayed on the (MMS002/E) panel.

## Lead Time in Manufacturing, Purchasing and Distribution

This concept document explains how to manage lead time in the material flow. This document describes purchasing, manufacturing and distribution lead time. Customer order lead time is not described.

#### Outcome

The item's lead time is defined.

The purchasing, manufacturing, distribution and customer orders can be managed with regard to necessary calendar time.

The following tables are updated:

- Administration lead time is specified per item/facility (M9LEA4/MITFAC)
- Transmission lead time is specified per supplier (IDPODA/CIDMAS)
- Supply lead time is specified per item (MBLEA1/MITBAL). For purchased items it is retrieved from via supplier file (IFLEA1/MITVEN)
- Transportation lead time is specified for purchased items via supplier's term of delivery and delivery method. For distributed items it is specified transportation timetable (ITTRDY/MITDRT).
- Inspection lead time is specified via goods receiving method (GRLEA2/MPGRMT)

## Before you start

Basic data for items and inventory are defined.

## Manufacturing lead-time

Manufacturing lead-time is the total calendar time required to manufacture an item, not including lower level purchasing lead-time.

For make-to-order products, it is the length of time from the release of an order, through the production process until shipment to the final customer.

For make-to-stock products, it is the length of time from the release of an order, through the production process, until receipt into a finished inventory. This includes order preparation time, queue time, setup time, run time, move time, inspection time, and put-away time.

## Purchasing lead time

Purchasing lead-time is the total calendar time required to obtain a purchased item. This includes order preparation and release time, supplier lead-time, transportation, receiving, inspection, and put-away time.

## Distribution lead time between two warehouses

Distribution lead-time can be defined as the sum of transport lead time and supply lead time for distribution between two warehouses.

## Lead times in M3

Since the planning level in M3 for material and production management is the Warehouse level or/and Facility level, that is where we find the lead time connected to the item. In 'Item. Connect Warehouse' (MMS002), on the E panel, the 'Lead-time' field is the sum of the lead time components.

### 1 Administration lead-time

The time for activities required before a planned order can be released. Administration lead time is set on the facility level in 'Item. Connect Facility' (MMS003), on the E panel.

### 2 Transmission lead-time

The time to correspond and communicate with the supplier. Transmission lead time is only active when communication with the supplier is by paper. The value of the transmission lead time is set in 'Supplier. Open' (CRS620), on the E panel.

### 3 Supply lead-time

For manufactured items, it is the time to manufacture depending on the capacities in our own, or the supplier's work centers and the workload. For purchased and distributed items, it is the general time, including all lead time components, or just the supplier lead time. This is user-defined. Supply lead time depends on how acquisition is performed. For a manufactured item, the lead time is calculated by the system according to the product structure and capacity in the work centers. It is displayed in 'Product. Open' (PDS001/E).

For a purchased item, the lead-time is set in 'Supplier. Connect Item' (PPS040), on the E panel. Supply lead time can also be set as a general supply lead time in (MMS002/E).

For distributed items between two warehouses, the supply lead time is set in 'Item. Connect Warehouse' (MMS002).

#### 4 Transportation lead-time

The time it takes to ship the goods from the supplier to us, or from another warehouse to us. Transportation lead time for purchasing is set in 'Supplier. Connect Transp Lead Times' (PPS010). For distribution, it is set in 'Distribution Relation. Open' (DPS001).

#### 5 Inspection lead-time

The time it takes to inspect the received purchased goods before putting it into final storage. For manufacturing inspection, see the Product Data Documentation. Inspection lead time is set in 'Goods Receiving Method. Open' (PPS345), on the E panel.

#### 6 The sum of the lead time

The sum of the lead time is displayed in 'Item. Connect Warehouse' (MMS002), on the E panel. The lead time components are also displayed here.

## Place of Load

Place of load is a [Geographic Locations](#) on page 872 used in transport planning. It is used to indicate the physical location of a warehouse. Deliveries can be coordinated from several warehouses.

A place of load is automatically assigned to a delivery, based on the warehouse making the delivery.

If a delivery is to be made between two warehouses, the place of load is retrieved from the warehouse making the delivery.

A shipment can also be coordinated from two legal units if their warehouses have the same place of load.

Place(s) of load are defined in 'Place. Open' (MMS008).

## Place of Unload

Place of unload is a [Geographic Locations](#) on page 872 used in transport planning. A place of unload can be connected to customer and delivery addresses. This place is then automatically assigned to deliveries. If a shipment is to be made between two warehouses, the place of load and place of unload are retrieved from each warehouse.

Places of load and unload are defined in 'Place. Open' (MMS008).

## Priority

The field defines the priority of a position, equipment or job. The priority will normally indicate its importance of the position, equipment or job to operations, production, safety etc.

The priority automatically defaults onto work order proposals and work orders from the plant structure. It therefore affects how crucial a job is considered to be. The priority will automatically default down the equipment structure from upper levels to lower levels.

## Supply Lead Time

This document explains the settings for supply lead-time. The management of the supply lead time depends on the acquisition code in (MMS002/E).

If the acquisition code is 1 = Manufactured item, the supply lead time is calculated by the system according to the product structure and the capacity in the work centers.

If the acquisition code is 2 = Purchased item, the supply lead time can be updated manually in (MMS002/E) or for the main supplier in (PPS040/E).

If the acquisition code is 3 = Distribution from another warehouse, the supply lead time is updated manually in (MMS002/E).

### Outcome

The supply lead time is set.

- Queue time, setup time, run time, move time, inspection time and put-away time are set for a manufactured item.
- For a purchased item, the supply lead time can either be a general lead time (include all lead time components) or just the supplier lead time.
- Used as a lead time component to calculate the total lead time per item/warehouse connection.

Supply lead time is specified per item (MBLEA1/MITBAL). For purchased items it is retrieved from via supplier file (IFLEA1/MITVEN)

### Before you start

- Basic data for items and inventory must have been set.
- Product structure 'Product Structure. Open' (PDS001) and work-center capacity 'Work Center. Open' (PDS010) must have been set.
- Suppliers must have been connected to items in 'Supplier. Connect Item' (PPS040).

### Parameters to set

Program ID/Panel	Field	The field indicates ...
(PDS001/E)	Supply lead time	<p>Acquisition code is 1 = Manufactured item (MMS002/E)</p> <p>The supply lead time for manufactured items is calculated by the system according to the product structure and the capacity in the work center.</p>
(MMS002/E)	Supply lead time	<p>Acquisition code is 2 = Purchased item, or 3 = Distributed between two warehouses.</p> <p>These acquisition codes (2 and 3) open up this field. The lead time can be filled in directly here.</p> <p>For acquisition code 2 it is also possible to calculate the supply lead time in (PPS040) as below.</p>
(PPS040/E)	Supply lead-time	<p>Acquisition code is 2 = Purchased item (MMS002/E)</p> <p>The supply lead time for purchased items is entered per supplier/item, either in working days (5) or ordinary calendar days (7). This is set in 'Settings - Purchasing' (CRS780/G) on parameter 33.</p>

### Follow these steps

#### Supply lead time for manufactured items

- 1 Start 'Product. Open' (PDS001), enter the E panel. The value in the 'Supply lead time' field is calculated considering the order quantity, the setup and run times and the queue times between the operations.
- 2 After the calculation is done the field is updated on the (MMS002/E) panel.

#### Supply lead time for purchased items

- 3 Start 'Item. Connect Warehouse' (MMS002), enter the E panel and fill in a general supply lead time for the item/warehouse combination or
- 4 Start 'Supplier. Connect Item' (PPS040) and fill in the 'Supply lead time' field for the main supplier.

#### Supply lead-time for items distributed between two warehouses

- 5 Start 'Item. Connect Warehouse' (MMS002), enter the E panel and fill in a supply lead-time for the supplying warehouse.

## Time Zone, Entry Date and Transaction Date when Creating Stock Transactions

This document describes how you set up time zones and how entry dates and transaction dates work.

An entry date can also be named as a registration date. A transaction date can also be named as a reporting date.

In some functions, where the user manually enters stock transactions, a defaulted transaction date and time are suggested. This date can be changed by the user.

The suggested transaction date and time are always the local date and time, depending on the time zone settings.

The entry date is the date the stock transaction was created in the system. This date is set automatically.

### Outcome

- A time zone is defined.  
The time zone created in 'Time Zone. Open' (DRS045) is connected to 'Place. Open' (MMS008). The place is connected to warehouses, places of loading, places of unloading, and more.
- A description is created of the entry date and transaction date and how these interact with the time zone.  
The registration date and time are part of the primary key for stock transactions, and should always be considered the "machine time." The registration date and time are created automatically and cannot be changed.

Registration time in stock transaction history file (MITTRA) includes:

- RGDT – Registration date
- RGTM – Registration time

Transaction time in (MITTRA) includes:

- TRDT – Transaction date
- TRTM – Transaction time

The transaction time is used mainly for accounting purposes. It can be changed in some functions.

### Before You Start

No prerequisites are needed.

### Entry Date and Entry Time

The entry date and entry time are part of the primary key for stock transactions, and should always be considered the "machine time" (in other words, the point of time when the stock transaction was created in the system). The registration point of time cannot be changed by users.

The entry date is not affected by the time zone settings in (DRS045).

### Transaction Time

The transaction time is used mainly for accounting purposes, and can in some routines be changed by users who manually enter stock transactions in the system. The transaction time is also used to calculate physical inventory differences.

**Note:** The transaction time is always proposed by the system. This proposed date is always expressed in local time for the warehouse in question. Local time is the time zone defined in (DRS045) and connected to the place in (MMS008) which is connected to the warehouse in (MMS005).

### Time Zone

The 'Number of hours from UTC' field in (DRS045) indicates the number of hours and minutes by which the current time zone deviates from UTC (Universal Time Coordinated). Note that UTC replaces Greenwich Mean Time (GMT). Time zones earlier than UTC must have a minus sign after the time.

Example:

Sydney	10:00
Tokyo	6:00
Stockholm	1:00
Washington DC	5:00-
Los Angeles	8:00-

### Time Zone '&SYS'

Time zone &SYS must be entered in (DRS045). &SYS is the time zone used internally in M3. When no time zone is entered for a location, local (&SYS) time is used. This means that no conversion of time is done.

The following section describes how to define the time zone &SYS.

### Workflow for Defining Time Zone

- 1 Start 'Time Zone. Open' (DRS045/B). Enter an ID for the time zone and the year of when the definition for the time zone is valid and the hemisphere.
- 2 On the E panel, enter the description and name.
- 3 The number of hours from UTC indicates the number of hours and minutes by which the current time zone deviates from UTC (Universal Time Coordinated). Note that UTC replaces Greenwich Mean Time (GMT).
- 4 The Daylight Saving Time indicates if this is used for the current time zone. If it does, you must enter the daylight savings time start date, the daylight savings time end date, and adjustments.

### Define Time Zone '&SYS\*

The 'Hours from UTC' field for time zone &SYS should be set to the time difference between the M3 BE server machine time and the UTC time. Then the correct time will be displayed, for example, on a printout that is connected to a user who is connected to a certain time zone.

Example 1

The M3 BE server is located in the U.S. time zone (U.S. Eastern Time). The 'Hours from UTC' field for U.S. Eastern time zone is 6-. Then you must set the 'Hours from UTC' field for time zone &SYS to 6-.

### Example 2

The M3 BE server is located in the Central European time zone (CET). The 'Hours from UTC' field for CET is 1. Then you must set 'Hours from UTC' field for time zone &SYS to 1.

## Warehouse

Warehouses are mainly used to distinguish between different geographic locations in a company.

Geographic locations, languages regulating printout of external documents, and various address information are all connected to a warehouse.

Warehouse subdivisions are stock zones and locations.