



ERP-799 Mobility-HU Storage Location Transfer

Status	Approved
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Stakeholders	PALMER, Francine RIZOS, Antonios VENKAT-ext, Rama
Jira Request ID	 ERP-393 - Jira project doesn't exist or you don't have permission to view it.
Jira Development ID	 ERP-799 - Jira project doesn't exist or you don't have permission to view it.

High- Level Specification

Parameter	Value
Application System	SAP S4/HANA SyWay
Business Process Reference	06.10 Manage Inventory and Logistics 06.11 Manage Warehouse and Logistics

Functional Overview

This mobile app will allow a handling unit to be moved to another storage location. Handling units will represent pallets, boxes or rolls etc. and a barcode label on the packaging will normally have the handling unit number in a 2D GS1 Data Matrix barcode format, but other barcode symbologies will also be supported.

Scope and Objectives

This app will support transfers of handling units:

- between IM handling unit managed storage locations
- from an IM handling unit managed storage location to an EWM storage location
- from an EWM storage location to an IM handling unit managed storage location

Process Flow Diagram

Not applicable. The HU Storage Location Transfer will be used in the LO and EWM processes where a handling units need to be moved to another storage location.

Assumptions

There will only be one EWM warehouse per plant.

Dependencies

The application will be executed on handheld scanner devices as determined by SyWay. Ultimately the transaction will need to be tested on these devices but in the meantime, testing can be done on smartphones.

For testing purposes, HU barcodes can be printed using online barcode tools.

The app can also be executed on a desktop, for tests not involving scanning.

Security, Integrity and Controls

The user must have material document create access for the selected plant. Check object M_MSEG_WMB for Activity 01 and the selected plant. If no access, show the message "No authorization for plant <9999>".

Configuration Requirements

None

Language Requirements

This app will be available in all SyWay languages.

Special Requirements

None

Design Rationale

Functional Requirements

Initial Screen

The first screen will prompt to enter the destination storage location and the to scan/enter the handling units to be transferred.

A valid storage location for the plant must be entered. This can be selected from a drop-down list, scanned or typed.

Handling units in the warehouse must be entered, by scanning or typing. The handling unit number may be an SSCC number or other number.

When scanning, an enter key will be added automatically to the scanned value. This allows rapid scanning of multiple handling units.

For scanning, the HU field needs to support 2D GS1 data matrix barcodes, code 128 barcodes and other agreed formats. Application identifier 00 will be present in the case of SSCC numbers. Otherwise the entire content of the scanned barcode is to be considered the HU number.

For manual input the user needs to press Enter to process the HU.

HU Storage Location Transfer

<

Destination Storage Location

HU

Each valid HU scanned will be added to a scanned list. The scanned list will show a counter of the number of HUs scanned.

The scanned list will show, the HU number, the packaging material, the material number, the batch number, the current storage location(for IM HUs) or the storage bin(For EWM HUs), the stock type, the cumulated quantity on the HU and the new storage location.

If the HU contains more than one material, the material description will show "<Mix>".

If the HU contains more than one batch, the batch number will show "<Mix>".

If the HU contains more than one stock type, the stock type will show "<Mix>".

Determine if HU is IM or EWM and calculate the cumulated content

See ERP-1003 for this shared logic.

Handling Unit Validation (IM)

Field	Table-Field name	Comments / Calculation / Field Manipulation / Input / Output / Validation rule / Value help

HU number	VEKP-EXIDV	The handling unit must exist otherwise display an error "Handling Unit <x> does not exist."
HU Plant	VEKP-WERKS	The HU must belong to the plant of the user otherwise display an error "Plant of HU is <x>".
HU Object Assignment	VEKP-VPOBJ	The HU must be unassigned (VEKP-VPOBJ = 12) otherwise display an error "HU has status <VEKP-BPOBJ> <VEKP-VPOBJKEY>"
HU System Status	Status Management	If the HU system status contains "INIV" display an error "HU is active for physical inventory".
HU Level	VEKP-UEVEL	If the HU scanned is not the highest-level handling unit (VEKP-UEVEL <> blank) display a message "HU will first be unpacked" The user will have two options "Unpack" or "Cancel"
HUM SLoc	VEKP-HU_LGORT	The HU must be in a HU managed storage location (VEKP-HU_LGORT = X) otherwise display an error "HU in non-HU Storage Location".
HU Storage Location	VEPO-LGORT	If the current storage location of the Handling Unit is the same as the destination storage location display an error "HU already in storage location <9999>"
HU number (Already Processed)	VEKP-EXIDV	If the HU entered has already been processed with a storage location transfer pending on the scanner, show an error "HU already processed for transfer to sloc xxxx".

Handling Unit Validation (EWM)

Field	Table-Field name	Comments / Calculation / Field Manipulation / Input / Output / Validation rule / Value help
HU EWM number	/SCWM /HUHDR-HUIDENT	The handling unit must exist otherwise display an error "Handling Unit <x> does not exist."
HU Warehouse	/SCWM /HUHDR-LGNUM	The HU must belong to the warehouse of the user otherwise display an error "Warehouse of HU is <9999>".
HU System Status	Status Management	If the HU system status does not include "PORT", display an error "HU is not in warehouse".
HU Object Assignment (PID)	/SCWM /HUREF-GUID_HU	The HU must be not have a reference to a document, otherwise display and error "HU is assigned to <Doc Category short description> <Document number of reference GUID>". For the reference document number, lookup /SCWM/HUREF-DOCID on table /SCDL/DB_REFDOC and use value /SCDL/DB_REFDOC-REFDOCNO. For document categories PDI, PDO and SPC select reference document category ERP on table /SCWM /HUREF-DOCID. For document category PMR, select the first record with reference document category RES.
HU Level	/SCWM /HUHDR-TOP	If the HU scanned is not the highest-level handling unit (/SCWM/HUHDR-TOP <> "X") display a message "HU will first be unpacked" The user will have two options "Unpack" or "Cancel"
HU EWM Warehouse	/SCWM /HUHDR-LGNUM	If the EWM Warehouse of the Handling Unit is the same as the EWM warehouse of destination storage location display an error "HU already in warehouse <99999>"
HU number (Already Processed)	/SCWM /HUHDR-HUIDENT	If the HU entered has already been processed with a storage location transfer pending on the scanner, show an error "HU already processed for transfer to sloc xxxx".

If a HU that is packed in another HU is processed (e.g. A box within a pallet) then it first needs to be unpacked. In this case display the message "HU will first be unpacked" and show two buttons "Unpack" and "Cancel". If the user chooses to cancel, then the transaction will no longer be processed. If the user presses unpack, then the selected HU will be first unpacked from the parent HU, using the unpack functionality described in ERP-794. After unpacking the HU is available for the storage location transfer.

Detail screen

For any HU scanned, the HU details can be displayed by selecting the HU in the list of HUs already scanned.

With this option the user will navigate to the HU display app ERP-788.

Processing data

A summary of the HUs already scanned will be listed on the HU entry screen. The most recently scanned HU will be shown at the top of the list. The list will also show the source and destination storage locations. A counter will show the number of HUs already scanned.

The user can branch to the HU details screen from the summary by clicking on an item.

Provide an option for the user to delete transactions captured. E.g. The user may elect to delete a record in the case that the transfer of a HU was processed by mistake.

The user will press a Save button to post the transactions in SAP.

IM HU transfer to IM HUM Sloc

- Post the goods movement(s) in SAP using the function module HU_CREATE_GOODSMVT_RFC.
- For the purposes of the Function Module the process code is 0006, single step transfer between storage locations.
- This posting will create a material document and the transfer of the handling unit(s) is complete.

IM HU transfer to EWM Sloc

Pick Step

- Post the goods movement(s) in SAP using the function module HU_CREATE_GOODSMVT_RFC.
- For the purposes of the Function Module the process code is 0011, Pick step of two step transfer between storage locations.
- This posting will create an outbound delivery, to issue the HU(s) from the source storage location.
- Update the pick quantity of the delivery and post the goods issue for the delivery (See ERP-769)

Putaway Step

- Post the goods movement(s) in SAP using the function module HU_CREATE_GOODSMVT_RFC.
- For the purposes of the Function Module the process code is 0012, Putaway step of two step transfer between storage locations.
- This posting will create an ERP inbound delivery and an EWM inbound delivery, to receive the HU(s) to the destination EWM source storage location.
- Create a Warehouse Task for the EWM Inbound Delivery (See ERP-707)
- Navigate to the confirm warehouse task process (ERP-838) for the created warehouse task.
- The transfer of the handling unit(s) is complete.

EWM HU transfer to IM HUM Sloc

- Post the goods movement(s) in SAP using the function module BAPI_GOODSMVT_CREATE.
- For the purposes of the Function Module the movement type is 311, single step transfer between storage locations. Enter the material(s), batches(s) and quantities based on the cumulated quantities on the HU(s) being transferred.
- This posting will create an ERP outbound delivery, which will receive the HUs to the destination IM storage location, and an EWM outbound delivery, to issue the HU to the destination EWM source storage location.
- If any HU being transferred is a lower level HU, first unpack the HU from the parent. (See ERP-794)
- Create a Warehouse Task for the EWM Outbound Delivery Order (See ERP-770)
- Confirm the Warehouse Task for the EWM Outbound Delivery Order (See ERP-770)
- The transfer of the handling unit(s) is complete.

If the posting is successful display the message returned from SAP. E.g. "Material document 4900001957 was created".

If the posting is not successful display the error message returned from SAP.

In all cases a log of the transaction will be posted to a custom table in SAP (See ERP-1003). This information can later be viewed in the Handheld Manager transaction on SAP.

Recommended UI Technology

This app will be developed using Neptune DXP Open Edition. The app will appear on the Neptune launchpad.

Application Screen

Wireframe or Mock-Up

See example screens in Functional Requirements section.

Screen Behavior

No special behavior required.

Screen Navigation

Standard navigation.

Data Integration

Field	Table-Field Name	Comments / Calculation / Field Manipulation / Input / Output / Validation rule / Value help

Custom Tables

None

Master data

None

Field	Description	Data Type/Length	Validation rule / Value help

Configuration table

None

Field	Description	Data Type/Length	Validation rule / Value help

Tooltips

None

Front-End

This app can be executed on a mobile device or in desktop mode.

Mobile Services

Not applicable.

Authentication & Authorization

The user must have material document create access for the selected plant. Check object M_MSEG_WMB for Activity 01 and the selected plant. If no access, show the message "No authorization for plant <9999>".

Accessibility

Not applicable.

Volumetrics

This solution will be used at approximately 100 plants. The total users is estimated to be around 800.

Error Handling

Errors to appear in a pop up window that needs to be acknowledged by the user.

Testing

How to Test

Test Conditions and Expected Results

ID	Condition	Expected Result
1	Transfer highest level HU in IM sloc to another IM sloc	HU transfer successful
2	Transfer lowest level HU in IM sloc to another IM sloc	User gets information message that HU will be first unpacked. HU transfer successful
3	Transfer highest level HU in IM sloc to an EWM sloc	HU transfer successful
4	Transfer lowest level HU in IM sloc to an EWM sloc	User gets information message that HU will be first unpacked. HU transfer successful
5	Transfer highest level HU in EWM sloc to IM sloc	HU transfer successful
6	Transfer lowest level HU in EWM sloc to an IM sloc	User gets information message that HU will be first unpacked. HU transfer successful
7	Scan/Enter HU that does not exist	Error issued
8	Attempt to transfer HU to sloc, when HU is already in this sloc	Error issued
9	Transfer HU in blocked stock to another IM sloc	HU transfer successful
10	Transfer HU in quality sloc to another IM sloc	HU transfer successful

Test Considerations/Dependencies

None

Other Information

None

Development Details

Package

Package Name	Parent Package

UI Implementation

UI Type	UI Name	Fiori Catalogue	Design Rationale Reference

API Implementation

API Type	API Name	Purpose / High Level Logic	API Product	Design Rationale Reference

Other Development Objects

Object Type	Object Name	Purpose/High Level Logic	Design Rationale Reference
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Appendix

See also

Change log

Version	Published	Changed By	Comment
CURRENT (v. 17)	Dec 17, 2025 12:32	BIRSE-ext, Gary	
v. 16	Dec 11, 2025 11:36	BIRSE-ext, Gary	
v. 15	Dec 09, 2025 14:13	BIRSE-ext, Gary	
v. 14	Dec 09, 2025 13:29	BIRSE-ext, Gary	
v. 13	Dec 09, 2025 12:29	BIRSE-ext, Gary	
v. 12	Dec 09, 2025 12:27	BIRSE-ext, Gary	
v. 11	Dec 09, 2025 12:26	BIRSE-ext, Gary	
v. 10	Dec 09, 2025 12:25	BIRSE-ext, Gary	
v. 9	Dec 08, 2025 15:25	BIRSE-ext, Gary	
v. 8	Nov 17, 2025 19:05	BIRSE-ext, Gary	

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Workflow history

This view shows the 5 most recent entries. The complete workflow log is available from the 'Document Activity' menu item.

Dec 18, 2025	Actor	Type	Activity	Version
Approved	 VENKAT-ext, Rama	State	changed state to Approved at 11:09 am	v17
Lead Approval	 VENKAT-ext, Rama	State	gave <i>POD Lead Review</i> approval at 11:09 am	
	BIRSE-ext, Gary	State	assigned approval <i>POD Lead Review</i> to  VENKAT-ext, Rama at 8:09 am	
	MAKKAY-ext, Kas	State	changed expiry date to '25 Dec, 2025 03:48 am' at 3:48 am	
		State	changed state to Lead Approval at 3:48 am	v17
Edited following Tech Review	MAKKAY-ext, Kas	State	gave <i>Minor change</i> approval at 3:48 am	