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Postgraduate Studies

ERP systems - SAP S/4HANA track

## Postgraduate thesis

*Advanced Return Management - configuration and analysis of  
functionality*

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Cracow, 2025



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# **1. INTRODUCTION**

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## **1.1 SCOPE AND OBJECTIVE OF THE THESIS**

The objective of this thesis is to examine the configuration and functionality of Advanced Return Management (ARM) within the SAP S/4HANA environment, with a particular focus on its practical implementation and associated business benefits. This study aims to provide a thorough overview of how ARM enhances the standard return process and facilitates more efficient handling of various types of returns.

The scope of the research includes an in-depth comparison between standard return processes and ARM functionality across different return types, including customer returns, supplier returns, and stock transfer returns. The thesis outlines the configuration process in SAP, highlighting the key system components essential to ARM implementation.

By analyzing real-world case studies and system demonstrations, this work aims to deliver both theoretical insights and practical guidance regarding the use of ARM in SAP. The goal is to illustrate the implementation process and assess the extent to which this solution contributes to greater operational efficiency.

## **1.2 OVERVIEW OF RETURN PROCESS IN SAP**

In SAP, return processes play a critical role in logistics and supply chain management by enabling organizations to manage the return of goods efficiently and accurately. Returns may be initiated for a variety of reasons, including but not limited to damaged goods, incorrect deliveries, excess quantities, product defects, or customer dissatisfaction.

SAP offers support for a variety of return processes, including:

- Customer returns - handling the return of goods from customers after delivery.
- Supplier returns- managing the return of goods to vendors after a purchase.
- Stock transfer returns- internal returns between different plants or storage locations.

Each of these processes follows a series of steps, including the creation of documents (such as return orders, delivery notes, and credit memos), goods movement, and posting of accounting entries. In the standard setup, these processes are managed separately within their respective modules, often requiring additional manual steps or custom developments to align them with complex business requirements. While the standard return functionalities in SAP are robust, they can be fragmented, inflexible, and lack full integration between departments. Advanced Return Management (ARM) streamlines and standardizes the returns process, offering greater control, transparency, and enhances return processing capabilities across different return scenarios in a unified and configurable framework.

### **1.3 STANDARD RETURN PROCESS VS. ADVANCED RETURN MANAGEMENT (ARM)**

In the standard SAP configuration, return processes are managed independently within designated modules. For instance, the Sales and Distribution (SD) module oversees customer returns, while the Materials Management (MM) module manages supplier returns. These processes generally consist of multiple steps and document flows, including return sales orders, outbound deliveries, goods receipt postings, and credit or debit memos. Each process must be manually tracked, and any deviation from the standard flow often requires custom development or manual intervention.

While the standard return process in SAP is functional, it has several limitations:

- Lack of integration between different types of returns.
- Minimal support for return logistics such as inspection or quality checks.
- No centralized overview of return-related activities.
- Limited process flexibility and reuse of return reasons or scenarios.

The Advanced Return Management (ARM) framework was developed to address these challenges by providing a unified and highly configurable system for managing returns across all relevant business areas. ARM facilitates the management of customer returns, supplier returns, and stock transfer returns within a unified return order process, thereby enabling the comprehensive oversight of all pertinent activities from a centralized document, designated as the Advanced Return Order (ARO).

Key improvements offered by ARM include:

- Centralized return processing across SD, MM, and internal logistics.
- Enhanced process visibility with tracking of inspection, approval, and logistics steps.
- Support for flexible follow-up activities (e.g., replacement, refund, scrapping).
- Better integration with quality management and warehouse processes.
- Reduced number of documents and simplified process handling.

By standardizing return processes and making them more transparent and configurable, ARM significantly improves operational efficiency, data accuracy, and customer satisfaction.

Table 1. Differences between standard return process and ARM

Feature	Standard Return Process	Advanced Return Management (ARM)
Process Scope	Separated by module (SD/MM)	Unified, cross-module
Document Flow	Requires manual handling	Automated follow-up document generation
Integration	Limited	Strong integration (QM, WM, SD, MM)
Flexibility	Low	High – configurable follow-up actions
Return Tracking	Manual or partial	Centralized and automated
Quality Inspection Support	Minimal	Integrated inspection handling

Source: Own elaboration based on [5]

## **1.4 KEY BENEFITS OF IMPLEMENTING ADVANCED CUSTOMER RETURN**

The implementation of Advanced Return Management (ARM) within the SAP framework brings significant improvements to the way organizations handle return processes. By consolidating and enhancing the management of returns across a range of business scenarios, ARM achieves both operational efficiencies and strategic advantages.

The key benefits include:

1. **Centralized Return Handling** - ARM enables the management of customer, supplier, and stock transfer returns through a single process framework. This centralization reduces system complexity and streamlines coordination between departments.
2. **Improved Process Visibility and Control** - With the use of the Advanced Return Order (ARO), all return-related steps from initial request to follow-up action are visible in one document. This allows users to track the return process more effectively and reduces the risk of delays or lost documentation.
3. **Flexible Follow-Up Activities** - ARM enables predefined and configurable follow-up actions such as replacement, refund, repair, or scrapping. This flexibility supports various business needs and improves customer satisfaction by enabling faster and more accurate responses.
4. **Integration with Quality Management and Logistics** - ARM integrates seamlessly with SAP modules such as Quality Management (QM), Warehouse Management (WM), and Sales and Distribution (SD). This ensures that returned goods can be inspected, stored, or disposed of according to defined rules and quality standards.
5. **Reduced Manual Effort and Error Risk** - By reducing the number of transactions and documents required to process returns, ARM lowers the chance of human error and improves data accuracy. Automation of tasks such as approvals, inspections, and posting improves efficiency and consistency.
6. **Enhanced Customer Experience** - Faster processing of returns, transparent communication, and flexible handling of complaints or damaged goods contribute to a better overall customer experience and stronger business relationships.
7. **Cost Optimization** - Efficient return processing reduces administrative overhead, avoids unnecessary inventory movements, and helps recover value from returned goods through reuse, resale, or proper disposal.

## **1.5 STRUCTURE OF THE THESIS**

The practical section focuses on the configuration of Advanced Returns Management (ARM) in SAP S/4HANA, with separate discussions for customer returns, supplier returns and stock transfer returns. A thorough description of each aspect of the configuration is provided, with particular attention paid to both the technical setup and the underlying business logic.

The final section of the thesis comprises an analysis and evaluation of the implemented solution. The thesis goes on to discuss the strengths and limitations of the ARM functionality within the SAP environment, and to reflect on its applicability in real business scenarios. The work concludes with a summary of the key findings and suggestions for further research or potential system enhancements.



## 2. ADVANCED RETURN MANAGEMENT

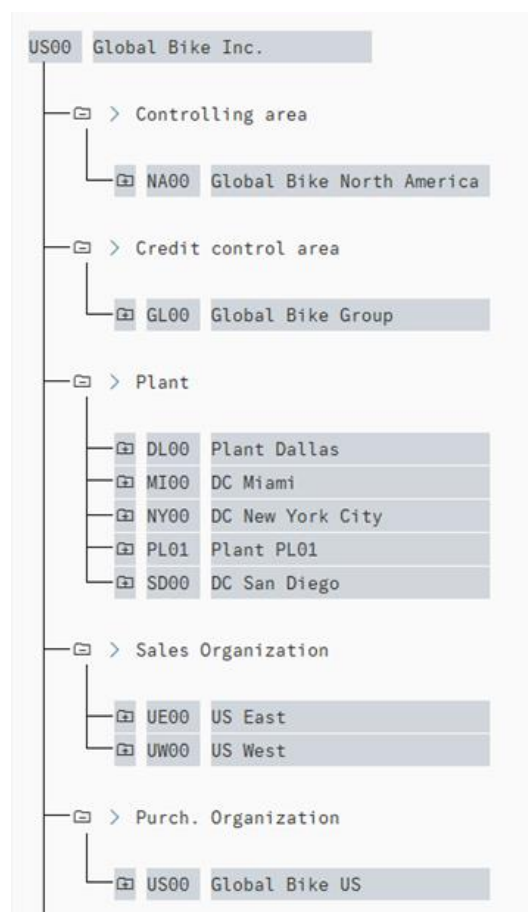
### 2.1 FOUNDATIONAL DATA IN SAP ENVIRONMENT

#### 2.1.1 Organisational structure

In accordance with the objectives delineated in this dissertation, the following pre-existing organisational structure in SAP was utilised. In the context of the US00 company code, the following organisational elements were selected:

- **DL00** (Plant)
- **MI00** (Plant)
- **UE00** (Sales Organisation)
- **NA00** (Controlling Area)
- **US00** (Purchasing Organization)

Figure 1. Screenshot of organizational structure in SAP (transaction EC01)



Source: Own elaboration

Each of these elements plays a crucial role in defining the business structure within SAP. The company code represents the legal entity for financial transactions, while plants (such as DL00 and MI00) define locations where materials are produced, stored, or distributed. Conversely, the sales organisation (UE00) is responsible for the management of sales activities, customer relationships, and order processing. The function of the controlling area (NA00) is to serve as a central unit for the management of accounting and the tracking of costs. The purchasing organisation (US00) is responsible for the management of procurement activities, including the selection of vendors and the creation of purchase orders. Organisational elements collectively structure business processes in SAP, thereby linking financial, material, and sales data. This linkage is conducive to improved decision-making, reporting, and operational efficiency.

### **2.1.2 Business partner**

The roles of Business Process Owners are defined in accordance with business processes within SAP. Each Business Partner (BP) is associated with specific roles, and the relevant attributes are assigned to these roles. It is imperative to acknowledge that Business Partners in SAP are invariably established in conjunction with BP roles.

In the context of return processes, Business Partners play a pivotal role, as they help define the relationship between the company and its suppliers or customers. For return processes to function correctly, it is essential to configure two distinct roles:

- Vendor Role (FLVN0)
- Customer Role (FLCU01)

An important configuration setting for returns to suppliers is the Return Supplier checkbox. This setting is critical for properly mapping the Customer to the Purchasing Organisation. The checkbox is located in the Purchasing section and is associated with the FLVN01 role. Prior to the activation of the Return Supplier checkbox, it is necessary to assign the designated Sales Area to the Purchasing Organisation. This process ensures the accurate mapping of the customer in the system.

Fig 2. Screenshot of sections in the Vendor BP role

The screenshot shows the top navigation bar of the SAP system. The 'Purchasing' tab is highlighted with a blue box, and a blue arrow points to it. Below the navigation bar, the 'Business Partner' field is set to '1003082' and the 'Supply' field is set to 'Supply 245 / Denver CO 94089'. The '\* Change in BP role' dropdown is set to 'FLVN01 Vendor (Maintained)'.

Source: Own elaboration

Within the Purchasing Data section, under Additional Purchasing Data, in which the checkbox that must be selected to enable return processes with the supplier can be found.

Fig 3. Screenshot of Purchasing Data section

The screenshot shows the 'Purchasing Data' section of the SAP system. The 'Purchasing Data' tab is highlighted with a blue box. Below it, the 'Additional Purchasing Data' sub-tab is also highlighted with a blue box. A blue arrow points to the 'Returns supplier' checkbox, which is checked. The 'Returns supplier' field is set to 'Supply 245'. Other fields in the 'Additional Purchasing Data' section include 'Settlement Management', 'Delete flag for Purch Org', 'Schema Group Supplier', 'Automatic Purchase Order', 'Pricing Date Control', 'Sort criterion materials', 'Purchasing block', 'Purchase block POrg level', 'Confirmation Control', 'Eval. Receipt Settlement', 'Planning calendar', and 'Planning cycle'.

Source: Own elaboration

### 2.1.3 Material

In the SAP system, a material is defined as a specific category of master data, the purpose of which is to store essential information regarding physical items or services that are utilised within the enterprise. This data delineates the characteristics of the material and determines how it is handled in various business processes, such as procurement, inventory management, and production. Depending on the material's intended use, it is necessary to maintain specific views, such as Basic Data, Sales, Purchasing, Accounting, and Plant-specific views. These relate to particular functional areas in the system. In order to create a material, it is necessary to navigate through the SAP Easy Access Menu using the following path:

Logistics -> Materials Management -> Material Master -> Material -> Create (General) -> Immediately

In the case study, material master data was maintained for two plants: MI00 and DL00. To streamline the process, the material data initially created for the MI00 plant was copied and extended to the DL00 plant. This can be done during material creation using transaction MM01, by selecting the relevant reference plant (MI00) and specifying the new plant (DL00) in the organizational levels screen.

Fig 4. Screenshot of material creation in the transaction MM01

The screenshot displays the SAP MM01 transaction interface. At the top, there are tabs for 'Select View(s)', 'Org. Levels', 'Data', and 'More'. Below these, the 'Material' field is populated with 'CHLK1311'. The 'Industry Sector' is set to 'M Mechanical engineering', and the 'Material Type' is 'ROH Raw materials'. A 'Change Number' field is empty. A blue arrow points to the 'Copy from...' field, which also contains 'CHLK1311'. A magnifying glass icon is visible next to the 'Copy from...' field.

Source: Own elaboration

## 2.2 STANDARD CONFIGURATION OF ARM

This chapter provides a detailed discussion of the Standard Configuration for Advanced Return Management (ARM), focusing on the configuration steps in SAP, specifically within the SPRO path:

SPRO → IMG → Logistics General → Advanced Return Management → General Settings

### 1. Activate and Rename Follow-Up Activities

One of the key configuration steps in Advanced Return Management is setting up Follow-Up Activities. This configuration can be accessed via the following path:

SPRO → IMG → Logistics General → Advanced Return Management → General Settings  
→ Activate and Rename Follow-Up Activities

In this section, the Follow-Up Code can be activated or deactivated, depending on business requirements. Furthermore, it facilitates the renaming of the Follow-Up Code to align with the business's specific terminology. The term "Follow-Up Activity" is employed to denote a process that ensues subsequent to the inspection of returned materials or the creation of the initial returns document. This activity is pivotal in ensuring that the appropriate actions are taken in accordance with the outcome of the return process. This configuration is essential for customizing the return process to align with business processes, ensuring that return scenarios are handled effectively and in compliance with the company's policies.

Fig 5. Screenshot of Activate and Rename Follow-Up Activities

Activate and Rename Follow-Up Activities			
Act.	Activity Description	Active	Activity Description
<input type="checkbox"/> 0001	Receive into Plant	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0002	Immediately Move to Free Available Stock	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0003	Immediately Move to Scrap	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0004	Ship to Other Plant	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0005	Ship to Vendor	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0006	Ship to Vendor via Other Plant	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0007	Direct Shipment to Vendor	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0008	Inspection at Customer Site	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0009	Delivery into Plant - Materials Still Unknown	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0011	Transfer to Free Available Stock	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0012	Transfer to Scrap	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0013	Material Remains at Customer Site	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0014	Immediately Move to Specified Stock	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0015	Transfer to Specified Stock	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0016	In-House Repair	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0017	External Repair	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0018	Transfer to Scrap for Customer	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0021	Send Back to Customer	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0022	Send Back to Last Plant	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0023	Goods Receipt Quantity Correction	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0026	In-House Repair (Service)	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0027	Continue In-House Repair (Service)	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0031	No Further Activities	<input checked="" type="checkbox"/>	
<input type="checkbox"/> 0035	Ship to Supplier with Automatic GI	<input checked="" type="checkbox"/>	

Source: Own elaboration

## 2. Define Number Ranges for Advanced Returns Process IDs

This configuration step can be accessed via the following SPRO path:

SPRO -> IMG -> Logistic General-> Advance Return Management-> General Settings->  
Define Number Ranges for Advanced Returns Process IDs

When an Advanced Return Order is created, each order is assigned a unique MSR\_ID (Process ID No.), which is stored in the VBAK-MSR\_ID field. The number range for the MSR\_ID is assigned to each order. It is important to note that the MSR\_ID field plays a crucial role in each transaction within the Advanced Return Management process.

Fig 6. Screenshot of Number Ranges for Advanced Returns Process IDs

Number Range No.	From No.	To Number	NR Status	External
01	2000000000	2999999999	2000000005	<input type="checkbox"/>

Source: Own elaboration

The set of MSR\_ID fields can be accessed via the SE16N transaction, using the table name MSR\_D\_ITEM (Fig 8). This table is essential for tracking and processing returned materials throughout the returns lifecycle. The system in question has the capacity to integrate with the SAP Logistics Execution (LE), Materials Management (MM), and Sales and Distribution (SD) modules. This integration enables detailed reporting, monitoring, and execution of complex returns scenarios. The system is designed to store item-level data for returns processes, including customer returns, supplier returns, and logistical follow-up activities. Each row in the table corresponds to a particular item within a return purchase or sales order and includes detailed tracking of the return's lifecycle—from receipt to inspection, decision, and follow-up actions.

Fig 7. Screenshot of SE16N transaction

Table: MSR\_D\_ITEM

Advanced Returns Management - Tracking Item Data

Text table: ☐ No texts

Layout:

Maximum no. of hits: 500

☒ Maintain entries

Get Field:

Selection Criteria

Field name	O...	Fr.Value	To value	More	Output	Technical name
Client						MANDT
Process ID No.					<input checked="" type="checkbox"/>	MSR_ID
Item in Process					<input checked="" type="checkbox"/>	ITEM
Completed					<input checked="" type="checkbox"/>	ITEM_COMPLETE
Material					<input checked="" type="checkbox"/>	MATNR
Doc. Type					<input checked="" type="checkbox"/>	REF_DOC_TYPE
Document Number					<input checked="" type="checkbox"/>	REF_DOC_NR
Document Item					<input checked="" type="checkbox"/>	REF_DOC_ITEM
Customer RMA					<input type="checkbox"/>	RMA_CUSTOMER
Cust. Insp.Code					<input type="checkbox"/>	CUST_INSP_CODE
Next Follow-Up					<input type="checkbox"/>	NFU_CODE
CRM Logical System					<input type="checkbox"/>	CRM_LOGSYS

Source: Own elaboration

Fig 8. Screenshot of MSR\_D\_ITEM table in SE16N transaction

Search in Table: **MSR\_D\_ITEM** Advanced Returns Management - Tracking Item Data

Number of Hits: **6**

Runtime: **0** Maximum No. of Hits **500**

Insert Column:

<input type="checkbox"/>	Process ID No.	It...	Comple...	Material	Doc. Ty...	Docum...	It...	CRM GU...	CRM ...	CRM ObjT...	CMR RejR...	Rej.Reas...	Deliv...	It...	O
<input type="checkbox"/>	2000000000	10		CHLK1200											
<input type="checkbox"/>	2000000001	10	X	CHLK1200											
<input type="checkbox"/>	2000000002	10	X	CHLK1200											
<input type="checkbox"/>	2000000003	10		CHLK1200											
<input type="checkbox"/>	2000000004	10	X	CHLK1200											
<input type="checkbox"/>	2000000005	10	X	CHLK1200											

Source: Own elaboration

### 3. Specify Follow-Up Document Types for Customer Returns

SPRO -> IMG -> Logistic General-> Advance Return Management-> General Settings-> Automatic Creation of Follow-Up Documents-> Mapping Document Types and Return Reasons-> Specify Follow-Up Document Types for Customer Returns

In this IMG activity, the participant defines the purchase order types that the system uses to automatically generate follow-up documents within Advanced Return Management (ARM). These documents may include returns purchase orders or stock transport orders, and they are mapped to the relevant returns sales document types. Additionally, you can specify the types of sales documents that will be used for free-of-charge subsequent deliveries and credit memo requests, which are crucial for handling customer refunds.

Fig 9. Screenshot of Follow-Up Document Types for Customer Returns

Follow-Up Document Types for Customer Returns						
	Ret. Order	DcType RTS	Store Ret.	ccStoreRet	DcType SDF	DcType CMR
<input type="checkbox"/>	CBAR	NB2				GA2
<input type="checkbox"/>	RE2	NB2	UB2	NB2C		GA2

Source: Own elaboration



Standard settings:

In the standard, the following order types for subsequent documents are assigned to returns order type RE2 and CBAR:

- Purchase order type *NB2* for a returns to supplier
- Purchase order type *UB2* for an intracompany store return
- Purchase order type *NB2C* for a cross-company-code store return
- Sales document type *GA2* for a credit memo request

These predefined settings ensure the seamless creation of follow-up documents during the returns process, supporting the effective management of customer returns.

#### 4. Specify Follow-Up Document Types for Store Returns

SPRO -> IMG -> Logistic General-> Advance Return Management-> General Settings-> Automatic Creation of Follow-Up Documents-> Mapping Document Types and Return Reasons-> Specify Follow-Up Document Types for Store Returns

The objective of this IMG activity is to define the purchase order types that the system should use to automatically generate logistical follow-up documents during store returns as part of the Advanced Returns Management (ARM) process. The creation of these follow-up documents is contingent upon the return activity that is selected during the material inspection phase in the warehouse. In accordance with the findings of the inspection and the selected activity, the system has the capacity to automatically generate:

- A returns purchase order for sending goods back to the supplier
- A stock transport order for moving goods to another plant within the same or a different company code
- A scrapping document if the goods are to be disposed of
- A putaway document if the material is approved and returned to unrestricted stock

Fig 10. Screenshot of Follow-Up Document Types for Store Returns

Follow-Up Document Types for Store Returns						
	Store Ret.	DcType RTS	Store Ret.	ccStoreRet	STO	cc STO
<input type="checkbox"/>	NB2C	NB2	UB2	NB2C	UB	NB
<input type="checkbox"/>	UB2	NB2	UB2	NB2C	UB	NB

Source: Own elaboration

Each of these document types must be preconfigured and mapped according to specific return reasons and activities to ensure accurate and efficient follow-up handling in the warehouse. This configuration is pivotal for facilitating the system's capacity to automate logistics responses, with these responses being informed by the physical condition and business decisions that are made during the inspection stage of the return process.

## 2.3 SUPPLIER RETURN

The generation of a returns purchase order is initiated by a company when there is a necessity to return goods to an external vendor. The circumstances that necessitate this action may include defects, over-delivery, or the utilisation of incorrect materials. In such cases, the Advanced Returns Management (ARM) functionality of the SAP system offers enhanced capabilities for the streamlined and transparent management of the return process from start to finish.

The following steps are typically involved in the process:

**1. Create a Returns Purchase Order**

The PO is created with reference to the original purchase order or independently and must use a returns document type for which ARM is enabled.

**2. Create Outbound Delivery**

An outbound delivery is generated to initiate the shipment of the returned goods back to the vendor. This includes picking, packing, and goods issue.

**3. Post Goods Issue**

The outbound delivery is posted, and the returned goods leave the company premises.

**4. Create Follow-Up Activity**

Based on the outcome of the return (e.g., vendor sends replacement goods, issues a credit memo), a follow-up activity is defined in the system.

**5. Monitor and Close Return**

The return process can be monitored using ARM-specific tools and reports, ensuring transparency and control over each step of the return.
















Fig 11. Supplier Return Flow



Source: [8]

The following are the key configuration items needed to enable and customise the ARM feature for vendor returns.

Fig 12. Supplier Return SPRO Menu

▼	Advanced Returns Management
>	General Settings
>	Customer Returns
▼	Supplier Returns
 	Activate Advanced Returns Management for Purchase Order Types
 	Define Return Reasons for Supplier Returns
 	Define Rejection Reasons for Supplier Returns
 	Specify Settings for Replacement Materials from Supplier
 	Specify Default Billing Types for Intercompany Store Returns
 	Configure Refund Procedure for Intercompany Store Returns
 	Configure Default Values for Returns Refund Codes
	Settings for Store Returns with Out- and Inbound Deliveries

Source: Own elaboration

Activate Advanced Returns Management for Purchase Order Types

SPRO -> IMG -> Logistic General-> Advance Return Management-> Supplier Returns -> Activate Advanced Returns Management for Purchase Order Types

In this configuration, the Purchase Order type has been activated for ARM (NB2, UB2, NB2C).

Fig 13. Screenshot of Activate Advanced Returns and Enhanced Store Returns

Activate Advanced Returns and Enhanced Store Returns				
	Type	Cat	Enh.StRet.	Adv. Returns
<input type="checkbox"/>	DB	F Purchase order	▼	<input type="checkbox"/>
<input type="checkbox"/>	ENB	F Purchase order	▼	<input type="checkbox"/>
<input type="checkbox"/>	EUB	F Purchase order	▼	<input type="checkbox"/>
<input type="checkbox"/>	FO	F Purchase order	▼	<input type="checkbox"/>
<input type="checkbox"/>	NB	F Purchase order	▼	<input type="checkbox"/>
<input type="checkbox"/>	NB2	F Purchase order	▼	<input checked="" type="checkbox"/>
<input type="checkbox"/>	NB2C	F Purchase order	▼	<input checked="" type="checkbox"/>
<input type="checkbox"/>	NBAI	F Purchase order	▼	<input type="checkbox"/>
<input type="checkbox"/>	NBC7	F Purchase order	▼	<input checked="" type="checkbox"/>
<input type="checkbox"/>	NBIC	F Purchase order	▼	<input type="checkbox"/>
<input type="checkbox"/>	NBR8	F Purchase order	▼	<input checked="" type="checkbox"/>
<input type="checkbox"/>	NBXE	F Purchase order	▼	<input type="checkbox"/>
<input type="checkbox"/>	NBXI	F Purchase order	▼	<input type="checkbox"/>
<input type="checkbox"/>	UB	F Purchase order	▼	<input type="checkbox"/>
<input type="checkbox"/>	UB2	F Purchase order	▼	<input checked="" type="checkbox"/>

Source: Own elaboration

SPRO -> IMG -> Logistic General-> Advance Return Management-> Supplier Returns -> Define Return Reasons for Supplier Returns

In the context of returns, purchase orders (rPOs) necessitate a clear rationale for their generation. The rationale behind a customer's return can be specified automatically in a subsequent rPO or rSTO.

Fig 14. Screenshot of Return Reasons for Supplier Returns

	OrRsn	Description
<input type="checkbox"/>	001	Customer ordered too much
<input type="checkbox"/>	002	Customer bought wrong product
<input type="checkbox"/>	003	Product damaged
<input type="checkbox"/>	004	Product defective
<input type="checkbox"/>	005	Too much delivered
<input type="checkbox"/>	006	Wrong product delivered
<input type="checkbox"/>	007	Recall by Supplier

Source: Own elaboration

SPRO -> IMG -> Logistic General-> Advance Return Management-> Supplier Returns -> Specify Settings for Replacement Materials from Supplier

In this customising activity, the user is required to specify the purchase order types that the system uses to automatically create logistical follow-up documents in Advanced Returns Management. This provides the reader with the necessary documentation for the receipt of replacement materials from a supplier and for the subsequent definition of logistical follow-up activities. It is imperative that these purchase order types are assigned to the initial returns purchase order type for the return to supplier.

Fig 15. Screenshot of Settings for Replacement Materials from Supplier

Specify Settings for Replacement Materials from Supplier									
Ret POType	Doc. Type Descript.	ReplPOType	Doc. Type Descript.	DcType RTS	Doc. Type Descript.	Store Ret.	Doc. Type Descript.	CCStoreRet	Doc. Type Descript.
<input type="checkbox"/> NB2	Enh. Rets to Vendor	NB	Standard PO	NB2	Enh. Rets to Vendor	UB2	Enh. Rets STO IC	NB2C	Enh. Rets STO CC

Source: Own elaboration

### 2.3.1 Returns Purchase Order

The purchase order is initiated in transaction ME21N (Logistics → Materials Management → Purchasing → Purchase Order → Create → Vendor/Supplying Plant Known). It is crucial to select the correct document type: NB2. After entering the appropriate organizational structure, supplier, purchase order quantity, and net price, it is necessary to ensure that the Return Item checkbox is selected in the Item Overview section. Within the Returns tab of the Item Details section, it is imperative to verify that the Follow-Up Activity is correctly set to Ship to Vendor.

Fig 16. Screenshot of a purchase order created in transaction ME21N

The screenshot displays the SAP ME21N transaction interface for a Returns Purchase Order. At the top, the document type is set to 'NB2 Enh. Rets to Vendor' and the document number is '4500000058'. The supplier is '1003060 Mid-West-Supply' and the document date is '05/05/2025'. The 'Org. Data' tab is active, showing organizational details: Purch. Org. 'US00' (Global Bike US), Purch. Group 'N00' (North America), and Company Code 'US00' (Global Bike Inc.).

Below this, a table lists items. Item '10' is highlighted, with Plant 'DC Miami'. In the 'Returns Item' column, a checkbox is checked. The 'Item' field at the bottom shows '1 | 10 | CHLK1200 , Chain Lock 200'.

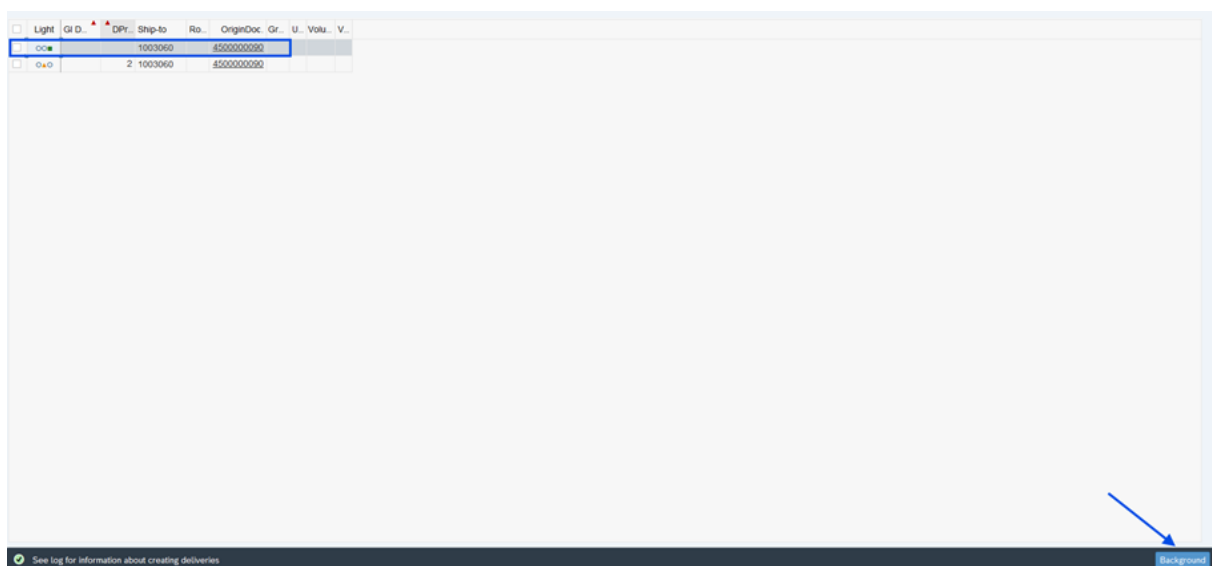
The 'Returns' tab is selected in the bottom section. It shows the 'Follow-Up Activity' set to '0005 Ship to Vendor', which is highlighted with a blue box. Other fields include 'Reference Document' (0), 'Rejection Reason', 'Next Plant', 'Supplier' (1003060 Mid-West-Supply), and a 'Supplier Rejection Reason' field. A 'Returns Overview' button is also visible.

Source: Own elaboration

### 2.3.2 Return Outbound Delivery

The process begins by accessing transaction VL10B (Logistics → Sales and Distribution → Sales → Shipping and Transportation → Outbound Delivery → Create → Collective Processing of Documents Due for Delivery → Purchase Orders). Once the relevant purchase order is selected, it is necessary to tick the checkbox next to the appropriate line (indicated by a yellow light) and execute the process in the background. If successful, the outbound delivery is generated, and the status indicator changes to green, confirming its creation.

Fig 17. Screenshot of checkboxes in transaction VL10B



Source: Own elaboration

### 2.3.3 Return Goods Issue

After entering the outbound delivery number in transaction VL02N, it is essential to provide the correct Actual Goods Issue (GI) Date in the Item Overview tab (see Fig. 18) and to ensure that the correct picked quantity is entered in the Picking tab (see Fig. 19). Finally, the process is completed by selecting the Post Goods Issue button.

Fig 18. Screenshot of Item Overview tab in transaction VL02N

Planned GI: 05/29/2025 00:00... EST

Actual GI Date: 05/30/2025 00:00 EST

**All Items**

Itm	Material	W	Bat
<input type="checkbox"/> 10	CHLK1200		

Source: Own elaboration

Fig 19. Screenshot of Picking tab in transaction VL02N

Pick Date/Time: 05/29/2025 00:00... EST

Warehouse No.:

OverlPickStatus: C Fully Picked

WM Activity Sts: No WM Trnsf Ord Reqd

Adv. SR Relevance: Not Relevant

Warehouse Execution: Not Relevant

**All Items**

Itm	Material	Plnt	SLoc	Req. Segment	Deliv. Qty	Un	Picked Qty	Sa...	Batch
<input type="checkbox"/> 10	CHLK1200	MI00	MI00		4	PC	4	PC	

Source: Own elaboration

### 2.3.4 Credit Memo

Within the SAP system, credit memos are utilised for the purpose of correcting vendor invoices. Following the posting of the invoice and credit memo differences in SAP, any outstanding items remaining in the invoice, credit memo and payment can be cleared. To initiate the process, transaction MIRO must be entered (Logistics → Materials Management → Purchasing → Purchase Order → Follow-On Functions → Logistics Invoice Verification). It is necessary to select the Transaction type: Credit Memo, enter the appropriate amount and currency, and—most importantly—ensure that the correct Purchase Order number is provided.



Fig 19. Screenshot of MIRO transaction

Source: Own elaboration

## 2.4 CUSTOMER RETURN

Customer returns refers to the process by which goods are returned to a company location by a customer. Within the framework of SAP's Advanced Returns Management (ARM), the management of customer returns is orchestrated through a comprehensive and automated system that caters to a multitude of return scenarios. The ARM system facilitates the processing of returns initiated by customers. The system enables companies to track the entire return process, from the initial return request to the final resolution.

The following steps are typically involved in the process:

### 1. Create Sales Order

The system creates a return order based on the customer's request, verifying customer and material information.

### 2. Create Outbound Delivery

An outbound delivery is generated to initiate the shipment of the returned goods.

### 3. Material Inspection

The returned items undergo inspection to assess their condition, quality, and usability. Inspection results are recorded in SAP.

### 4. Post Goods Issue

The outbound delivery is posted, and the returned goods leave the company premises.

## 5. Monitor and Close Return

The return process can be monitored using ARM-specific tools and reports, ensuring transparency and control over each step of the return.

Fig 20. Screenshot of Customer Return flow



Source: [8]

### 2.4.1 Sales Order

In transaction VA01 (*Logistics → Sales and Distribution → Sales → Order → Create*), it is essential to select the correct order type – RE2 (Advanced Returns). After entering the Sold-to Party and Ship-to Party, several additional data fields must be completed, including: Material Number, Order Quantity, Return Reason, Follow-Up Activity, Refund Type (which determines the type of refund the customer will receive for the returned material), Refund Control (which specifies how and when the refund is processed — either as a credit memo or a replacement, depending on the selected refund type), and Refund Code (which can be used in pricing to calculate the refund amount) (see Fig. 22).

In the Reason for Rejection tab, it is also necessary to specify the Order Reason.

It is important to note that the Net Price (found in the *All Items* section) is a mandatory field. Without it, the sales order cannot be created successfully and an error will occur.

Fig 21. Screenshot of transaction VA01

\* Order Type: **RE2**

**Organizational Data**

Sales Organization: **UE00** US East

Distribution Channel: **WH** Wholesale

Division: **00** Cross-Division

Sales Office:

Sales Group:

Source: Own elaboration

Fig 22. Screenshot of Returns tab in transaction VA01

Sold-to Party: **1003060** Company Mid-West-Supply, 335 W Industrial Lake Dr, Lincoln NE 68528, USA

Ship-to Party: **1003060** Company Mid-West-Supply, 335 W Industrial Lake Dr, Lincoln NE 68528, USA

Cust. Reference: Cust. Ref. Date:

**Returns** | Item Overview | Item detail | Ordering party | Procurement | Shipping | Reason for rejection

Batch:

Order quantity: **6** PC **Returns Details**

Return Reason: **R01 Defect**

Follow-Up Act: **0001 Receive into Plant** ☐ Material Received

Next Follow-Up:

Refund Type: **Credit Memo** ☐ Prelim. Refund Det.

Refund Control: **R By Credit Memo Request**

Refund Code: **100 100% Refund**

CMR Ref. Reason:

☐ Replacement Material from Supplier Requested

Inspection Code: ☐ Insp. at Customer

Comment:

Next Plant: ☐ Transshipment Plant

Supplier:

Supplier RMA: ☐ Supplier RMA Required

Repl. Material:

Repl. Quantity: **0,000** AvailQty: **0,000**

Supplying Plant:

Approval:

Customer RMA: **0060000001-000010**

**All Items**

Item	Material	Req. Segment	Plant	Batch	CnTy	Amount	Crcy	Net Price	Per	UoM	Net Value	Doc. ...
✓	10CHLK1200		MI00				0.00 USD	30.00		1PC	180.00_USD	

Source: Own elaboration

Fig.23 Screenshot of Reason to rejection tab in tranzaction VA01

Order Reason: 102 Damaged in transit

All Items

Item	Material	Reason for Rejection	Net Value	Item Description
10	CHLK1200	102 Damaged in transit	180.00	Chain Lock 200

Source: Own elaboration

## 2.4.2 Outbound Delivery and Goods Receipt

In transaction VL01N (*Logistics → Sales and Distribution → Sales → Order → Subsequent Functions → Outbound Delivery*), it is only necessary to provide the Delivery Quantity in the Picking tab. The goods receipt is posted by clicking the Goods Issue button.

Fig.24 Screenshot of Picking tab in tranzaction VL01N

Pick Date/Time: 05/10/2025 00:00:00 EST

Warehouse No.:

OvrllPickStatus: C Fully Picked

WM Activity Sts: No WM Trnsf Ord Reqd

Adv. SR Relevance: ☐

Warehouse Execution: ☐

All Items

Itm	Material	PInt	SLoc	Req. Segment	Deliv. Qty	Un	Picked Qty	Sa...
10	CHLK1200	MI00	MI00		6	PC	6	PC

Source: Own elaboration

### 2.4.3 Material Inspection

Inspection Using Transaction MSR\_INSPWH

*(Logistics → Materials Management → Purchasing → Environment → Advanced Returns Management → Enter Material Inspections in Warehouse)*

To begin the inspection, the return delivery is searched in order to bring up the inspection list. In the Inspection Result tab, the inspector marks the item as "OK" and can optionally add a comment if desired. A logistics follow-up action is also selected during the inspection.

At the end of the process, it is necessary to enter the Replacement Material Number (see Fig. 26).

Fig. 25 First screenshot of the Material Inspection transaction

Type: 1 Delivery 84000001

Header Item

Deliv Item	Insp. Item	Handling Unit	Toggle Split	Material
10	0001			CHLK1200

Delivery Item: 10 / Inspection

Basic Data

Material: CHLK1200 Chain Lock 200

Batch:

Return Reason: R01 Defect

Cust. InspectionCode:

Refund Type: Credit Memo Preliminary R

Inspection Result

Inspection Code: 0001 OK

Comment:

Inspection Date: 05/10/2025

Source: Own elaboration

Fig. 26 Second screenshot of the Material Inspection transaction

**Logistical Follow-Up**

Follow-Up Activity: 0031 No Further Activities

Supplier: [ ]

Supplier RMA Number: [ ] ☐ RMA Required

Next Plant: [ ] ☐ Tr. Plant

Target Plant: [ ]

Target Material: [ ]

Responsible: LEARN-032

Follow-Up Block: [ ]

Reason for Ordering: [ ]

☐ Replacement Material from Supplier Requested

Target Storage Loc.: [ ]

Released On: 05/10/2025

**Replacement**

☐ Release Subsequent Delivery Free of Charge

Replacement Material: CHLK1200

Replaced Quantity: 6 PC

Supplying Plant: MI00 DC Miami

Chain Lock 200

Replacement Quantity: 6 PC

Available Quantity: 0

**Refunding**

☒ Release Credit Memo Request

Refund Code: 100 100% Refund

Reason for Rejection: [ ]

CMR Quantity: 6 PC

☐ Refunding After Receipt of Credit Memo

Source: Own elaboration

## 2.4.4 Return Outbound Delivery and Credit Memo

The next step is to create return deliveries to suppliers and credit memos. These processes are the same as those described in Subchapters 2.3.2 and 2.3.4.

## 2.4.5 Final Review of Advanced Returns Management

The overview screen (Fig. 27) in transaction MSR\_TRC\_C (*Logistics → Sales and Distribution → Sales → Environment → Advanced Returns Management → Display Customer Returns Overview*) provides a comprehensive view of the returns process and the associated document numbers. Each line item has defined process steps based on previous return decisions. The progress of each step and upcoming events are clearly visible.

Fig. 27 Screenshot of transaction MSR\_TRC\_C

Header Selection Criteria

Returns Order: 60000001

Created On: [ ]

Created By: [ ]

Customer: [ ]

Returns Order Type: [ ]

Sales Organization: [ ]

Distribution Channel: [ ]

Division: [ ]

Sales Group: [ ]

Sales Office: [ ]

Returns Order: 0060000001

Item: 10

Returns Steps	Processing Status	Plant	Receiving Plant	Next Plants	Document Number	Item	Document Status	Approval Status	Return Reason
Customer return with shipment to plant	Active	MI00			60000001	10	Active	Not Relevant	R01
Returns Order	Active	MI00			84000001	10	Active	Not Relevant	
Goods Receipt	Active	MI00			4900038108	1	Active	Not Relevant	
Inspection	Active	MI00			010000000001	1	Active	Not Relevant	
Logistical Follow-Up	Active	MI00			010000000001	1	Active	Not Relevant	
Credit Memo Request	Active	MI00			60000002	10	Active	Not Relevant	
Credit Memo	Active	MI00			90000004	10	Active	Not Relevant	

Source: Own elaboration

## 2.5 STOCK TRANSFER RETURN

Store returns or transfers to other facilities are essential components of reverse logistics, facilitating the movement of inventory from a retail outlet to other locations such as distribution centers or manufacturing sites.

In general process of stock transfer return consists of:

1. **Return Stock Transport Order**

A return stock transfer order can be generated manually, either independently or with reference to an existing stock transfer order. It can also be automatically created as part of follow-up processes.

2. **Return Outbound Delivery**

An outbound delivery is generated for a return stock transfer order to facilitate the picking, packing, and shipping of the products at the supplying plant.

3. **Goods Issue**

A goods issue is created to process the picking of products.

4. **Automatic Inbound Delivery**

Using SAP's standard output (SPED), an inbound delivery is automatically generated at the receiving plant to process the products shipped from the supplying plant.

5. **Goods Receipt**

A goods receipt is created to process the stock allocation.

6. **Material Inspection**

A material inspection determines whether the stock should be moved to usable inventory or designated as scrap or rework. In this step the Follow-Up Activity is selected.

Fig. 28 Return Stock Transfer flow.



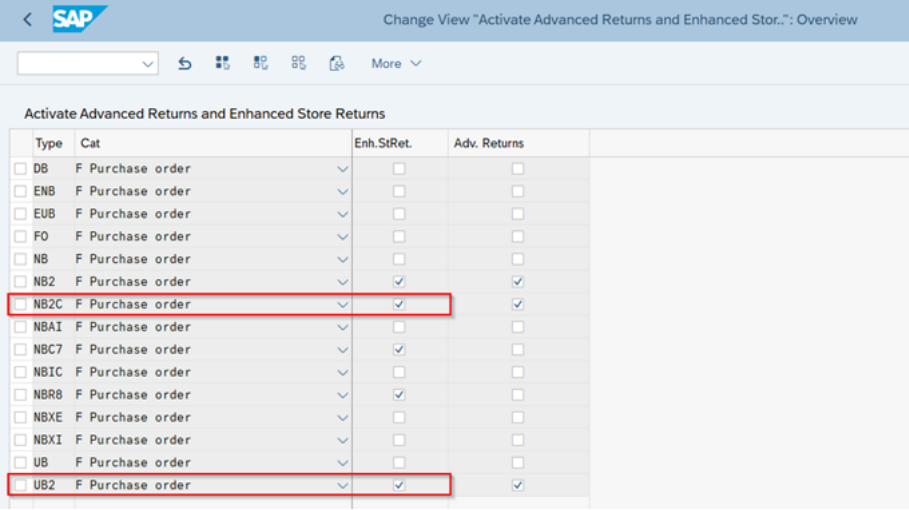
Source: [8]

The following are the key configuration items needed to enable and customize the ARM for return stock transfer orders.

1. Activate Advanced Returns Management for Purchase Order Types.  
Activation of ARM for Return Stock Transfer is done following the path:

SPRO → IMG → Materials Management → Purchasing → Purchase Order → Returns Order → Advances Returns Management → Activate Advanced Returns Management for Purchase Order Types.

Fig. 29 Activate Advanced Returns Management for Purchase Order Types.



Type	Cat	Enh. StRet.	Adv. Returns
<input type="checkbox"/> DB	F Purchase order	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> ENB	F Purchase order	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> EUB	F Purchase order	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> FO	F Purchase order	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> NB	F Purchase order	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> NB2	F Purchase order	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> NB2C	F Purchase order	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> NBAI	F Purchase order	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> NBC7	F Purchase order	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> NBIC	F Purchase order	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> NBR8	F Purchase order	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> NBXE	F Purchase order	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> NBXI	F Purchase order	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> UB	F Purchase order	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> UB2	F Purchase order	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Source: Own elaboration

2. Configure the usage of delivery types for store returns.

Configuration is available from:

SPRO → IMG → Materials Management → Purchasing → Purchase Order → Returns Order → Store Return / Return Plant to Plant.



Fig 30. Store Return / Return Plant to Plant.

Change View "Store returns": Overview

Store returns

Cat	Type	SPIt	Del. type	Description	Del.Ty.Ret
<input type="checkbox"/> F	ENB	0001			
<input type="checkbox"/> F	NB	0001			
<input type="checkbox"/> F	NB	DL00			
<input type="checkbox"/> F	NB	MI00			
<input type="checkbox"/> F	NB	PL01			
<input type="checkbox"/> F	NB2	0001	RL	Returns (Pur.Ord.)	RL
<input type="checkbox"/> F	NB2	MI00	RL	Returns (Pur.Ord.)	RL
<input type="checkbox"/> F	NB2C	0001	LR	Returns Delivery	LLR
<input type="checkbox"/> F	NB2C	DL00	LR	Returns Delivery	LLR
<input type="checkbox"/> F	NB2C	MI00	LR	Returns Delivery	LLR
<input type="checkbox"/> F	NBAI	0001			
<input type="checkbox"/> F	NBC7				NCR7
<input type="checkbox"/> F	NBIC	0001			
<input type="checkbox"/> F	NBR8				NLR8
<input type="checkbox"/> F	UB	DL00			
<input type="checkbox"/> F	UB	MI00			
<input type="checkbox"/> F	UB	PL01			
<input type="checkbox"/> F	UB2	0001	LR	Returns Delivery	LLR
<input type="checkbox"/> F	UB2	DL00	LR	Returns Delivery	LLR
<input type="checkbox"/> F	UB2	MI00	LR	Returns Delivery	LLR

Source: Own elaboration

### 3. Map Document Types from ERP System to EWM.

SPRO → IMG → SCM Extended Warehouse Management → Extended Warehouse Management → Interfaces → ERP Integration → Delivery Processing → Map Document Types from ERP System to EWM.

Fig 31. Map Document Types from ERP System to EWM.

Mapping Delivery Type - Document Type

Business System	DocTypeERP	Cd...	Doc. Type
	DTR		TWPR
	ECR	ARS	INB
	ECR	CLR	INB
	EL		INB
	EL	WPA	ZINB
	ELR	ARS	INB
	ELR	ILR	INB
	LF		OUTB
	LLR	ARS	OUTB
	LLR	CLR	OUTB
	LLR	ILR	OUTB
	LO		OUTB
	LR		INB
	LR2	ARD	INB
	NL		OUTB
	NLCC		OUTB
	NLR		INB
	RL		OUTB
	RLL		OUTB
	SRCL		INB
	SRNP		INB
	SRTC		OUTB
	SRTN		OUTB
	SRUP		INB

Source: Own elaboration

#### 4. Map Item Types from ERP to EWM.

SPRO → IMG → SCM Extended Warehouse Management → Extended Warehouse Management → Interfaces → ERP Integration → Delivery Processing → Map Item Types from ERP to EWM.

Fig 32. Map Item Types from ERP to EWM.

Business ...	DocTy...	ItmTpERP	Doc. ...	Diff.Attr.	CW Product	Item Type
<input type="checkbox"/>	ECR	ELCR	INB			IRTR
<input type="checkbox"/>	EL	ELN				IDLV
<input type="checkbox"/>	EL	ELN	A			IDTR
<input type="checkbox"/>	EL	ELN	D			IDTR
<input type="checkbox"/>	EL	ELN	ZINB			IDLV
<input type="checkbox"/>	EL	ELP				IPAC
<input type="checkbox"/>	EL	ELPX				IPAC
<input type="checkbox"/>	EL	ELTX				ITXT
<input type="checkbox"/>	ELR	ELLR	INB			IRTR
<input type="checkbox"/>	LF	DLN				OPAC
<input type="checkbox"/>	LF	DLTX				OTXT
<input type="checkbox"/>	LF	TAN				ODLV
<input type="checkbox"/>	LF	TATX				OTXT
<input type="checkbox"/>	LLR	NLLR	OUTB			ORET
<input type="checkbox"/>	LLR	NLLR	OUTB	CLR		ORET
<input type="checkbox"/>	LLR	NLLR	OUTB	ILR		ORET
<input type="checkbox"/>	LO	DLN				ODLV
<input type="checkbox"/>	LO	DLTX				OTXT
<input type="checkbox"/>	LO	TAN				ODLV
<input type="checkbox"/>	LR	REN				ICR
<input type="checkbox"/>	LR2	REN2	INB			ICR
<input type="checkbox"/>	NL	DLX				OPAC
<input type="checkbox"/>	NL	NLN				ODTR
<input type="checkbox"/>	NL	ULN				ODTR
<input type="checkbox"/>	NLCC	DLX				OPAC
<input type="checkbox"/>	NLCC	NLC				ODTR
<input type="checkbox"/>	NLCC	ULN				ODTR
<input type="checkbox"/>	NLR	NLRN				IRTR
<input type="checkbox"/>	RL	RLN				ORET
<input type="checkbox"/>	RL	RLN	OUTB			ORET

Source: Own elaboration

### 2.5.1 Return Stock Transfer Order

Return stock transfer orders can be initiated manually using the Create Purchase Order app, transaction ME21N or automatically through follow-up activities from material inspections in ARM.

Table 2. Return Stock Transfer document types.

Document Type of Return Stock Transfer	Document Type Description
NB2C	Enhanced Returns Stock Transfer Order Cross-Company
UB2	Enhanced Returns Stock Transfer Order Intercompany

Source: Own elaboration

Critical fields that need to be filled are:

Header:

- Purchasing Organization,
- Purchasing Group,
- Supplying Plant.

Item:

- Material,
- Plant,
- Confirmation control key,
- Quantity.
- 

Fig 33. Stock Transfer Order document.

The screenshot displays the SAP Stock Transfer Order (STO) document interface. The header section includes the document type 'UB2 Enh. Rets STO IC' and document number '4500000060'. The supplying plant is 'DL00 Plant Dallas' (highlighted with a red box). The document date is '05/10/2025'. The header also shows the purchasing organization 'U500' (highlighted with a red box), purchasing group 'N00' (highlighted with a red box), and company code 'U500'. The item section shows the material 'CHLK1200' (highlighted with a red box), short text 'Chain Lock 200', PO quantity '5' (highlighted with a red box), and plant 'DC Miami' (highlighted with a red box). The item also shows the confirmation control key '0004 Inbound Delivery' (highlighted with a red box). The item table shows the delivery date '05/10/2025', quantity '5', reference '0000000016', and other details.

S...	Item	A	Material	Short Text	PO Quantity	OU	C	Deliv. Date	Net Price	Curre...	Per	OPU	Matl Group	Plant
	10		CHLK1200	Chain Lock 200	5	C	D	05/10/2025					Utilities	DC Miami

CC	D	Delivery Date	Time	Quantity	Reference	Handover Date	Handover ...	Created on	Start Date	End Date	Inb. Deliv.	Suppl.Conf	Item	HL Item
LA	D	05/10/2025		5	0000000016		00:00:00	05/10/2025			84000000		10	0

Source: Own elaboration

This ensures that the stock transfer order includes the supplying plant listed as the vendor, along with product information, the receiving plant, and the stock type.

## 2.5.2 Return Outbound Delivery

A return outbound delivery is automatically generated according to the configuration of the return stock transfer order. It can be also created manually by transaction VL10B.

Fig 34. Return Outbound Delivery document.

Source: Own elaboration

For enhanced store returns, SAP delivers standard delivery types and item categories.

Table 3. Return outbound delivery type and item category.

Delivery Type	LLR	Advanced Returns Delivery
Item Category	NLLR	Advanced Stock Transfer Order

Source: Own elaboration

### 2.5.3 Goods Issue

The goods issue can be recorded from the outbound delivery after picking or manually using the MIGO transaction by entering the STO number.

Fig 35. Goods Issue document.

The screenshot displays the SAP S/4HANA 'Display Material Document' interface. At the top, the title bar reads 'Display Material Document 5000000095 - Learn-032 Learn-032'. Below this, a search bar and a 'Find' button are visible. The main header area contains several input fields: 'A04 Display' (dropdown), 'R02 Material Document' (dropdown), '5000000095' (text), '2025' (text), and icons for refresh, search, and print. The 'General' tab is selected, showing document details: 'Document Date: 05/10/2025', 'Delivery Note: 0080000016', 'Posting Date: 05/10/2025', 'Bill of Lading: ', and 'HeaderText: '. There is also a checkbox for '1 Individual Slip'. Below this is a table with columns: Line, Mat. Short Text, W, Qty in UnE, EUn, SLoc, Stock Segment, Batch, Valuation Type, M., and D. The first row shows '1', 'Chain Lock 200', '5', 'PC', 'Miscellaneous', and '161'. Below the table is a search bar. The 'Material' tab is selected at the bottom, showing 'Material: Chain Lock 200', 'Supplier Mat. No.: ', and 'Material Group: UTIL'. The 'CHLK1200' code is also visible.

Line	Mat. Short Text	W	Qty in UnE	EUn	SLoc	Stock Segment	Batch	Valuation Type	M.	D
1	Chain Lock 200		5	PC	Miscellaneous				161	-

Source: Own elaboration

The goods issue is recorded in the SAP S/4HANA system using movement type 161. Afterwards statuses of outbound delivery are updated C - “Completely processed” for Picking and Goods Issue.

Fig 36. Outbound Delivery statuses after successful Goods Issue posting.

SAP Adv.Returns Delivery 80000016 Display: Header Details

Ship-to Party: 1003085 Company DL00BP, 5240 N. O'Connor Blvd, Dallas TX 75039, USA

Processing Picking Loading Shipment International Trade Financial Processing Administration Partner

**Dates**

Picking: 05/10/2025 00:00 EST Billing Date: 05/10/2025 EST  
 Trans. Planning: 05/10/2025 00:00 EST Intco Bill Date:  
 Loading: 05/10/2025 00:00 EST  
 Planned GI: 05/10/2025 00:00 EST Actual GI Date: 05/10/2025 07:32 EST  
 Delivery Date: 05/10/2025 00:00 CST Scheduling

**Overall Status**

Document Status: ☒ Checked

Picking: ☒ Fully Picked TransPlng: ☐ Not Rel.Transp.Plan.  
 WM Activities: ☐ No WM Trnsf Ord Req'd Dec. Whse: ☐ Not Relevant  
 Confirmation: ☐ Not Sub. to Confirm. ☐ Change Management  
 Pack: ☐ Packing Not Required POD Status: ☐ Not Relevant  
 Goods Issue: ☒ Completed IntcoBill: ☐ Not Relevant  
 Bill Docs: ☐ Not Relev. for Billg Credit: ☐ Not Performed  
 Adv SR Rlv: ☐ Not Relevant  
 Whse. Exc.: ☐ Not Relevant

Source: Own elaboration

## 2.5.4 Automatic Inbound Delivery

Following the goods issue posting for a return outbound delivery, the system automatically generates an intercompany inbound delivery using the standard SAP output type SPED. Standard document types provided by SAP can be extended by user-created document types depending on the business scenario.

Table 4. Return inbound delivery types and item categories.

Delivery Type	ELR	IC Returns Delivery (Intercompany)
Item Category	ELLR	Item Category for Advanced Returns, Intraccompany Enhanced Store Returns
Delivery Type	ECR	CC Returns Delivery (Cross-Company)
Item Category	ELCR	Item Category for Advanced Returns, Cross-Company Enhanced Store Returns

Source: Own elaboration.

Fig 37. Return Inbound Delivery document.

S46(1)/304 IC Returns Delivery 84000000 Display: Overview

IC Returns Delivery 84000000 Display: Overview

Inbound deliv.: 84000000 Document Date: 05/10/2025

Supplier: 1003084 Company MI00BP, 10 Some street, Miami FL 89230, USA

Item Overview Shipment Unload Stock placement Status Overview Goods Movement Data

Delivery Date: 05/10/2025 00:00 CST Total Weight: 0.000

Actual GR date: 05/10/2025 07:34 CST No. of Packages: 0

All Items

Item	Material	Delivery Quanti...	SU	Detail...	Item Description	B. ItCa	P. W	Batch	S...	Orig. Delivery Qty	Reference Doc.	PreDoc...
<input type="checkbox"/> 10	CHLK1200	5		PC	Chain Lock 200	ELLR			5		4500000060	10

Source: Own elaboration.

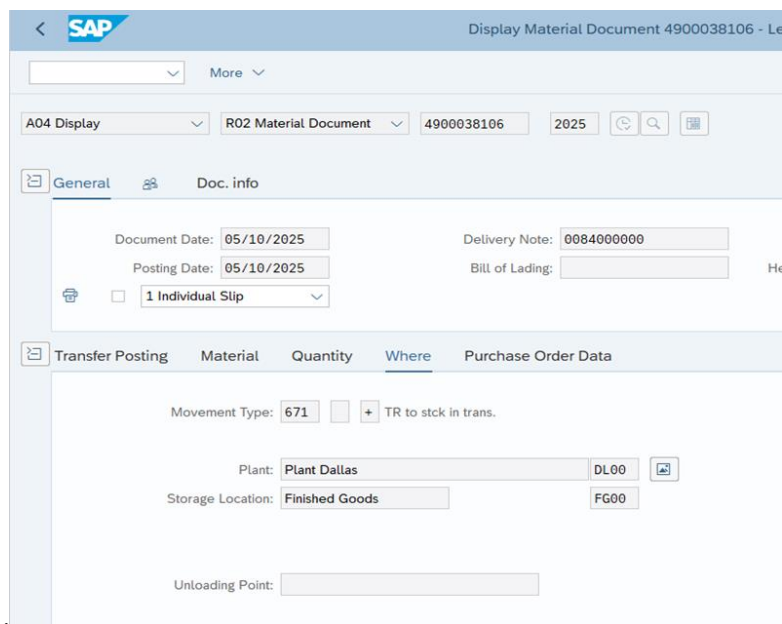
Return Stock Transfer Order document is used as a reference document for Return Inbound Delivery.

### 2.5.5 Goods Receipt

After stock placement, Goods Receipt can be created from Inbound Delivery or manually using the MIGO transaction, just like Goods Receipt. The difference is used movement type.



Fig 38. Goods Receipt document

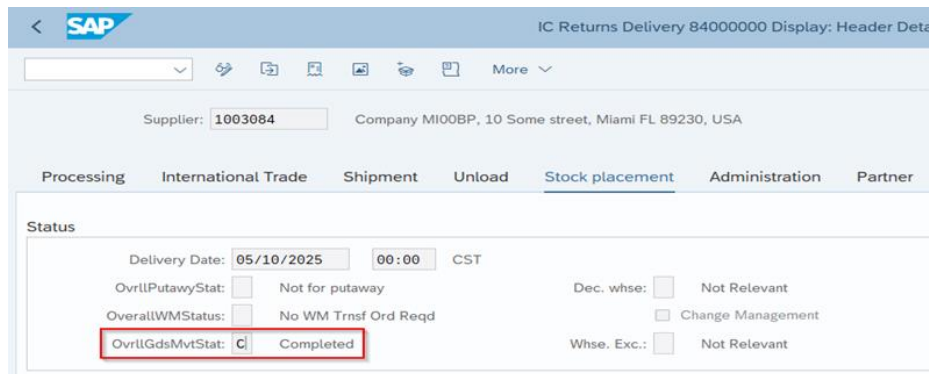


The screenshot shows the SAP 'Display Material Document' interface for document 4900038106. The header includes the SAP logo, document type 'A04 Display', material 'R02 Material Document', document number '4900038106', and year '2025'. The 'General' tab is active, showing 'Document Date: 05/10/2025', 'Posting Date: 05/10/2025', 'Delivery Note: 0084000000', and 'Bill of Lading'. A dropdown menu shows '1 Individual Slip'. The 'Transfer Posting' tab is also visible, showing 'Movement Type: 671' with a note 'TR to stock in trans.', 'Plant: Plant Dallas', 'Storage Location: Finished Goods', and 'Unloading Point'.

Source: Own elaboration

After Goods Receipt is posted Overall Goods Movement Status of Inbound Deliver is updated to C - Completely processed.

Fig 39. Inbound Delivery statuses after successful Goods Receipt posting.



The screenshot shows the SAP 'IC Returns Delivery 84000000 Display: Header Data' interface. The 'Supplier' is '1003084' and the 'Company' is 'MI00BP, 10 Some street, Miami FL 89230, USA'. The 'Stock placement' tab is active, showing 'Delivery Date: 05/10/2025' and '00:00 CST'. The 'Status' section includes 'OvrlPutawyStat: Not for putaway', 'OverallWMStatus: No WM Trnsf Ord Req', and 'OvrlGdsMvtStat: C Completed' (highlighted with a red box). Other status options include 'Dec. whse: Not Relevant', 'Change Management', and 'Whse. Exc.: Not Relevant'.

Source: Own elaboration.

## 2.5.6 Material Inspection

The final step in the return stock transfer order process involves conducting a material or quality inspection to transfer the stock to either usable inventory or to scrap/rework. It can be done using transaction MSR\_INSPWH.

Fig 40. Inspection document.

The screenshot displays the SAP Material Inspection interface for Delivery 84000000. The header section shows the delivery type as '1 Delivery' and the delivery number '84000000'. Below the header, a table lists the inspection items, with the first item being '10' (Insp. Item) for material 'CHLK1200' (Chain Lock 200). The 'Basic Data' section includes fields for Material (CHLK1200), Chain Lock 200, Batch, Handling Unit, Return Reason, Cust. InspectionCode, Refund Type (Credit Memo), and Customer Comment. The 'Inspection Result' section shows the Inspection Code as '0001 OK', Comment, Inspection Date (05/10/2025), Inspector (LEARN-032), and Inspected Quantity (5 PC). The 'Logistical Follow-Up' section shows the Follow-Up Activity as '0011 Transfer to Free Available Stock', Supplier, Supplier RMA Number, Next Plant, Target Plant, Target Material, Responsible (LEARN-032), Follow-Up Block, Reason for Ordering, Replacement Material from Supplier Requested, Target Storage Loc., and Released On (05/10/2025).

Deliv Item	Insp. Item	Handling Unit	Toggle Split	Material	Item Descr.
10	0001			CHLK1200	Chain Lock 200

Basic Data

Material: CHLK1200 Chain Lock 200

Batch: Handling Unit:

Return Reason: Cust. InspectionCode: Refund Type: Credit Memo Customer Comment:

Inspection Result

Inspection Code: 0001 OK

Comment: Inspection Date: 05/10/2025 Inspector: LEARN-032

Inspected Quantity: 5 PC

Inspected Qty. BUoM: 5 PC

Conversion: 1 PC <-> 1

Inspected Qty SUoM: 5 PC

Logistical Follow-Up

Follow-Up Activity: 0011 Transfer to Free Available Stock

Supplier: Supplier RMA Number: RMA Required: Replacement Material from Supplier Requested: Next Plant: Tr. Plant: Target Plant: Target Material: Responsible: LEARN-032

Follow-Up Block: Reason for Ordering: Target Storage Loc.: Released On: 05/10/2025

Source: Own elaboration.

In this case provided Inspection Code is 0001 OK and Follow-Up Activity is set to 0011 Transfer to Free Available Stock, which means the inspection was successful and the stock should be kept as usable/salable stock. According to the Inspection results the system will generate new documents based on the chosen Follow-Up Activity.

Fig 41. Process overview.

**SAP** Returns Overview for Returns STO 4500000060

Processing Status: ☒ Process Complete  
 Logistical Status:   
 Refunding Status:   
 Splits Exist:

Purchasing Document:   
 Supplier:   
 Supplying Plant:  Plant Dallas

Display Details

Purch Doc.	It.	Proc. St.	Comple.	L Follow...	Refunding	Doc Stat.	Spl.	Plant	Material	Quant.	U.	Activity Description	RefD.	Ref. It.	Refu.	RefundDe.	Req Seg.	Stk S.	Suppl.	Supplier Na.
4500000060	10	X			Complete	Not Relevant	Active	MI00	CHLK1200	5	P.	Ship to Other Plant								

Return to Plant: 4500000060  
 Item: 10

Returns Steps	Processing Status	Plant	Receiving Plant	Next Plants	Document Number	Item	Document Status	Approval Status	OrRea	Return Reason Description	C...
<input checked="" type="checkbox"/> Ship to other plant	<input checked="" type="checkbox"/>	MI00	DL00								
<input type="checkbox"/> Returns Stock Transport Order	<input checked="" type="checkbox"/>	MI00	DL00		4500000060	10	Active	Not Relevant			
<input type="checkbox"/> Outbound Delivery	<input checked="" type="checkbox"/>	MI00	DL00		80000016	10	Active	Not Relevant			
<input type="checkbox"/> Goods Issue	<input checked="" type="checkbox"/>	MI00	DL00		5000000095	1	Active	Not Relevant			
<input type="checkbox"/> Inbound Delivery	<input checked="" type="checkbox"/>	DL00			84000000	10	Active	Not Relevant			
<input type="checkbox"/> Goods Receipt	<input checked="" type="checkbox"/>	DL00			4900038106	1	Active	Not Relevant			
<input type="checkbox"/> Inspection	<input checked="" type="checkbox"/>	DL00			010000000000	1	Active	Not Relevant			
<input type="checkbox"/> Logistical Follow-Up	<input checked="" type="checkbox"/>	DL00			010000000000	1	Active	Not Relevant			
<input checked="" type="checkbox"/> Transfer to free available stock	<input checked="" type="checkbox"/>	DL00									
<input type="checkbox"/> Goods Movement to Unrestrict	<input checked="" type="checkbox"/>	DL00			4900038107	1	Active	Not Relevant			

Source: Own elaboration.

After all steps are finished the Processing Status of Return is set to “Process Complete” which means all necessary documents are created correctly regarding return process.

### 3. SUMMARY AND CONCLUSION

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In today's highly competitive and customer-focused environment, managing returns efficiently is essential for sustaining operational flexibility and meeting customer expectations. This thesis has examined the functionalities of Advanced Return Management (ARM) in SAP S/4HANA, highlighting its role in optimizing the complete return process.

By analyzing core elements such as return order categories, inspection procedures, and logistics execution, it is evident that ARM provides a consistent, transparent, and adaptable framework for return handling. Its automation capabilities such as output-based processing and the automatic creation of inbound and outbound deliveries help reduce manual workload, minimize errors, and shorten processing times.

To summarize, Advanced Return Management in SAP delivers a significant strategic benefit for companies seeking to streamline their reverse logistics. As the volume and complexity of returns continue to rise, leveraging ARM effectively will be crucial for enhancing sustainability, building customer trust, and achieving excellence in modern supply chain operations.

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