ERP-977 3PL Warehouse Interface - Reservation Interface - System Interface

Revision under Review

Status	Revision under Review
Owner	RUIZ SOMOZA-ext, Carolina
Stakeholders	VENKAT-ext, Rama PALMER, Francine
Jira Request ID	ERP-543 - Jira project doesn't exist or you don't have permission to view it.
Jira Development ID	ERP-977 - Jira project doesn't exist or you don't have permission to view it.

High- Level Specification

Implementing System	S/4 HANA
Invoked by/Invokes	Invoked by reservation posting event
Business Process Reference	06.10.01.01. Manage 3PL Warehouse Interfaces

Functional Overview

This Functional Specification describes the outbound Reservation interface between SAP S/4HANA and Third-Party Logistics providers (3PLs), implemented via SAP Integration Suite (CPI) using the standard OData service **API_RESERVATION_DOCUMENT**.

The purpose of this interface is to transmit reservation information created in SAP S/4HANA to the 3PL systems in order to provide visibility of planned or pre-allocated inventory movements. Reservations are used in SAP to reserve stock for specific processes or requirements before the corresponding physical movement is executed.

In scenarios where inventory is physically managed by a 3PL, the reservation information must be shared to allow the 3PL to prepare, plan, or restrict stock usage accordingly. This ensures alignment between SAP stock reservations and the inventory handling activities performed in the 3PL warehouse.

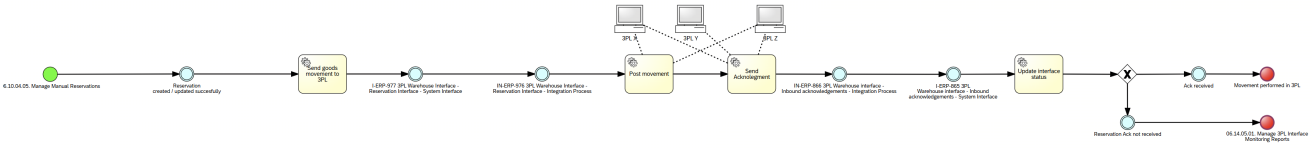
Only relevant reservations are transmitted. The scope of the interface is controlled through configuration and business rules, such as plant ensuring that only reservations that require action or visibility at the 3PL are sent.

For each relevant reservation created or updated in SAP S/4HANA, the reservation data is extracted and sent to CPI using the standard API_RESERVATION_DOCUMENT service. CPI validates, transforms, and routes the message to the assigned 3PL system

Scope and Objectives

This interface covers the transmission of Reservation documents created in S/4 HANA to the 3PLs (via CPI).

Process Flow Diagram



Step	Description	Comment
1	Reservation document is created or updated in S/4 HANA	
2	S/4 raises an internal event.	
3	System checks the 3PL assignment table	To determine if the interface is active and retrieve the 3PL assigned
4	Relevant event is published to SAP Event Mesh	If previous steps are successful
5	CPI consumes the event and retrieves full reservation doc information	CPI will also get the 3PL partner from the 3PL assignment table for routing purposes
6	S/4 updates Monitoring Table	Using System date and time
7	3PL consumes, post the document and send an Ack back	
8	S/4 updates Monitoring Table	with the Ack information received

Assumptions

N/A

Dependencies

blocked URLERP-865 - 3PL Warehouse interface - Inbound acknowledgements - System Interface FS IN PROGRESS For tracing the transmission in the monitoring table

blocked URLERP-845 - 3PL Configuration Application FS IN PROGRESS 3PL assignment and activation table

Security, Integrity and Controls

Outbound interface triggered by a standard SAP event. The process that triggers the interface will take care of access control.

Configuration Requirements

N/A

Special Requirements

N/A

Design Rationale

API Use

- APIs to be consumed:

API_RESERVATION_DOCUMENT - (OData service) Retrieve Reservation Document

Retrieve Items with Header using RKPF-RSNUM (Reservation number) and RESB table for items

Example

GET <host>/sap/opu/odata4/sap/api_reservation_document/srvd_a2x/sap/apireservationdocument/0001/ReservationDocument('{{Reservation}}')
/_ReservationDocumentItem

- Reservation documents will be relevant for transmission only for specific plants and plant/storage location combinations (defined by 3PL). This criteria may change between 3PLs so a custom table is needed to save these parameters and should be checked before publishing the event for consumption.

Parameter table structure: RESERV_3PL

Field	Data Type	Description	Mandatory	KEY
WERKS	T001W-WERKS	Plant	X	X
LGORT	T001L-LGORT	Storage Location		X
3PL_ID	CHAR 30	3PL assigned	X	

User Interface Requirements RESERV_3PL table should be included in the Configuration Dashboard ERP-845 - and should be visible by business users.

The LGORT field should be exposed as an optional input. When left blank, the entry is interpreted as applying to all storage locations for the given plant, and should be displayed as *"All storage locations"* to avoid ambiguity for business users.

The following standard events are triggered whenever there are changes in Reservation document as documented:

- Created
- changed
- Deleted
- Item created
- Item changed
- Item deleted

Since derived events and metadata extension is either not possible or not useful for the requirement, the following events will be consumed in S /4HANA through Business Event Consumption with the custom filter logic and a custom event will be published to Event Mesh with additional information.

The event triggering the interface should be included in the data sent to the 3PL.

The event triggering the interface should be included in the data sent to the 3PL. The event is included at header level. If the event is triggered by an item-level change, the event is also included at item level for the affected item.

Processing Logic

1) Relevance and activation checks

Every time a new event is raised from a Reservation document, the system evaluates whether the document is relevant for outbound transmission to a 3PL based on the configuration table RESERV_3PL.

The following two-step lookup is performed:

Step 1 — Specific lookup (plant + storage location):

The table RESERV_3PL is evaluated using:

- Plant (RESB-WERKS)
- Storage Location (RESB-LGORT)

If a matching entry is found, the reservation is considered relevant for outbound transmission and the 3PL is determined from the 3PL_ID field of the matching entry.

Step 2 — Fallback lookup (plant only):

If no entry is found in Step 1, the system performs a second lookup using:

- Plant (RESB-WERKS)
- Storage Location = blank

If a matching entry is found, the reservation is considered relevant for outbound transmission and the 3PL is determined from the 3PL_ID field of the matching entry.

If neither lookup returns a result, the reservation is considered not relevant for transmission and no further processing is performed.

2) Monitoring

If the reservation is identified as relevant for outbound transmission, an entry is logged in the monitoring table to trace the transmission to the 3PL. The monitoring table structure is defined in blocked URLERP-865

DOC_TYPE=RESERVATION

DOC_ID= RKPF-RSNUM

DATE_SENT = System date

TIME_SENT = System time

If an entry already exists for the same document, the record is updated with the current DATE_SENT and TIME_SENT to reflect the latest transmission.

Interface Alert & Monitoring

Monitoring will be handled by blocked URLERP-865 - 3PL Warehouse interface - Inbound acknowledgements - System Interface FS IN PROGRESS and blocked URLERP-844 - 3PL Warehouse Interface - Monitoring dashboard FS IN PROGRESS

Language Requirements

Document texts will be in the language of the source document.

User Interface Requirements

N/A

Sequencing

N/A

Volumetrics

Around 5 docs per day for all 3PLS

Performance Consideration

N/A

Error Handling

Error handling is managed through SAP Application Interface Framework (AIF) and SAP Integration Suite (CPI) to ensure reliable transmission of reservation data to the 3PL.

If an error occurs during data extraction or transmission to CPI or the 3PL, the interface execution is marked as failed and the error is visible in AIF and /or CPI monitoring. The interface must support retriggering.

Configuration or relevance errors result in the reservation being treated as not relevant for transmission and no message being sent.

Retransmission requirement (dependency):
Where the 3PL rejects a message due to functional reasons on the 3PL side (e.g. missing/invalid master data), a controlled mechanism must exist to retransmit the document after correction. *The chosen approach must be confirmed with the technical team.*

Testing

How to Test

Test Conditions and Expected Results

ID	Condition	Expected Results
1	Create a Reservation document for a plant and storage location configured in RESERV_3PL	Event is published for transmission. CPI extracts the reservation data via API_RESERVATION_DOCUMENT and sends it to the 3PL determined from 3PL_ID. Monitoring entry is created with DOC_TYPE = RESERVATION and DOC_ID = RSNUM.
2	Create a Reservation document for a plant with no entry in RESERV_3PL	Event is not published and no message is sent.

3	Update a relevant Reservation document (e.g., quantity, date or item changes) for a plant and storage location configured in RESERV_3PL	Update event is published and the change is sent to the 3PL via CPI. Monitoring entry is updated with latest DATE_SENT and TIME_SENT.
4	Update a Reservation document for a plant with no entry in RESERV_3PL	Event is not published and no message is sent.
5	Create a Reservation document for a plant with a specific storage location entry in RESERV_3PL (LGORT populated)	Specific entry takes precedence over plant-level fallback entry. Event published using 3PL_ID from the specific entry.

Test Considerations/Dependencies

Other Information

Development Details

Package

Package Name	Parent Package

Other Development Objects

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

Appendix

See also

File	Modified

No files shared here yet.

Change log

Version	Published	Changed By	Comment
CURRENT (v. 11)	**Apr 29, 2026 09:23**	**RUIZ SOMOZA-ext, Carolina**	
v. 10	Apr 15, 2026 13:40	**RUIZ SOMOZA-ext, Carolina**	
v. 9	Apr 15, 2026 13:03	**RUIZ SOMOZA-ext, Carolina**	
v. 8	Jan 12, 2026 10:39	**WEINERT-ext, Patrick**	
v. 7	Jan 12, 2026 10:20	**RUIZ SOMOZA-ext, Carolina**	
v. 6	Jan 09, 2026 14:58	**RUIZ SOMOZA-ext, Carolina**	
v. 5	Jan 09, 2026 14:49	**RUIZ SOMOZA-ext, Carolina**	
v. 4	Dec 17, 2025 16:11	**RUIZ SOMOZA-ext, Carolina**	

v. 3	Dec 09, 2025 11:20	**RUIZ SOMOZA-ext, Carolina**
v. 2	Dec 04, 2025 11:00	**RUIZ SOMOZA-ext, Carolina**

Go to Page History

Workflow history

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

Apr 29, 2026	Actor	Type	Activity	Version
Revision under Review	RUIZ SOMOZA-ext, Carolina	Edit	updated the page at 9:23 am	
Apr 15, 2026				
	RUIZ SOMOZA-ext, Carolina	State	changed state to Revision under Review at 1:40 pm	v10
Revision in progress	RUIZ SOMOZA-ext, Carolina	Edit	updated the page at 1:40 pm	
		State	changed state to Revision in progress at 1:03 pm	v9
Approved	RUIZ SOMOZA-ext, Carolina	Edit	updated the page at 1:03 pm	
Feb 24, 2026				
	VENKAT-ext, Rama	State	changed state to Approved at 8:51 am	v8