




# ERP-982 3PL Warehouse Interface - Inbound Delivery Interface - System Interface

<b>Status</b>	Approved
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<b>Jira Request ID</b>	<div style="border: 1px solid orange; padding: 5px;">  ERP-545 - Jira project doesn't exist or you don't have permission to view it.         </div>
<b>Jira Development ID</b>	<div style="border: 1px solid orange; padding: 5px;">  ERP-982 - Jira project doesn't exist or you don't have permission to view it.         </div>

## High- Level Specification

<b>Implementing System</b>	S/4HANA
<b>Invoked by/Invokes</b>	<div style="border: 1px solid orange; padding: 5px;">  ERP-983 - Jira project doesn't exist or you don't have permission to view it.         </div>
<b>Business Process Reference</b>	06.10.01.01. Manage 3PL Warehouse Interfaces

## Functional Overview

This Functional Specification describes the inbound delivery interface between SAP S/4HANA and Third-Party Logistics providers (3PLs), implemented via SAP Integration Suite (CPI) using the standard OData service API\_INBOUND\_DELIVERY\_SRV\_0002

The purpose of this interface is to transmit inbound delivery data from SAP S/4HANA to external 3PL systems to support inbound warehouse execution activities such as goods receipt preparation and unloading.

Only inbound deliveries that meet predefined business criteria are transmitted. The scope is controlled through configuration and business rules, such as plant, delivery type, and 3PL assignment, ensuring that only relevant inbound deliveries are sent to the appropriate 3PL

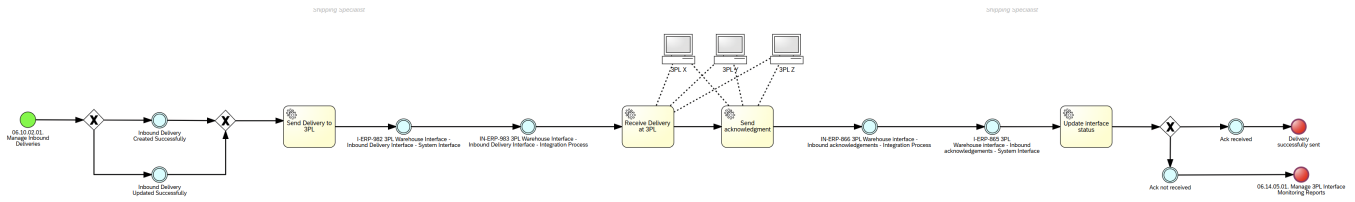
Inbound deliveries may be transmitted to the 3PL before they are ready for goods receipt execution. In such scenarios, the inbound delivery provides early visibility for planning purposes. Subsequent updates to the inbound delivery are transmitted to reflect changes in status or data, ensuring alignment between SAP and the 3PL.

For each relevant inbound delivery, SAP S/4HANA sends the delivery data to CPI, where it is validated, transformed, and routed to the assigned 3PL using the standard API\_INBOUND\_DELIVERY\_SRV\_0002 service.

## Scope and Objectives

The interface covers all Inbound deliveries created or updated in S/4HANA that are relevant for transmission to 3PL systems.

## Process Flow Diagram




1	Delivery created/updated in S/4HANA	
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	System checks the DELIVERIES_3PL table	To determine if the delivery type, shipping point and event is relevant for transmission
5	Relevant event is published to SAP Event Mesh	If previous steps are successful
6	CPI consumes the event and retrieves full delivery using API	CPI will also get the 3PL partner from the 3PL assignment table for routing purposes
7	S/4 updates Monitoring Table	Using System date and time
8	3PL consumes and executes warehouse processes.	

## Assumptions

N/A

## Dependencies

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

 ERP-984 - Jira project doesn't exist or you don't have permission to view it.

The table defined in this development should be

checked within this development

ERP-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

APIs to be consumed:

- [API\\_INBOUND\\_DELIVERY\\_SRV\\_0002](#)

Inbound deliveries will be relevant for transmission only for specific shipping points (the ones related to a 3PL), delivery types and at certain event.

This criteria may change between 3PLs so a custom table is needed to save this parameters and should be checked by Event Mesh before publishing the event for consumption. This table (DELIVERIES\_3PL) is described in the FS [ERP-984 3PL Warehouse Interface - Outbound Delivery Interface to Cloud Integration Suite](#) and will be part of [ERP-845 - 3PL Configuration Application](#) [FS](#).

## API Use

- [API\\_INBOUND\\_DELIVERY\\_SRV\\_0002](#) will be consumed if the criteria described in the Processing logic section is met

The following information should be retrieved for the document (*LIKP-VBELN*) using the following services:

Retrieve Single Inbound Delivery Including All Inbound Delivery Items

### Example

```
GET <host>/sap/opu/odata/sap/API_INBOUND_DELIVERY_SRV;v=2/A_InbDeliveryHeader(DeliveryDocument='180000247')?$expand=to_DeliveryDocumentItem HTTP/1.1
```

## Data Structure

### Fields from the standard API will be used.

Parent	Field	Description	Mandatory (Y/N)	Data Type

## Processing Logic

### 1) Relevance and activation checks

For each inbound delivery considered for transmission to a 3PL, the system evaluates whether the document is relevant based on configuration and business rules. The following checks are performed sequentially:

- Interface activation and 3PL assignment: Interface is activated: The system checks the 3PL assignment table defined in [ERP-845 - 3PL Configuration Application](#) [FS](#) using:
  - `ORG_TYPE = VSTEL`
  - `ORG_VALUE = LIKP-VSTEL`
  - `DOC_TYPE = DELIVERY`

If a matching entry exists and **INTERFACE\_ACT = 'X'**, the assigned 3PL is determined and processing continues.

If no active entry is found, the inbound delivery is considered **not relevant for transmission** and processing ends.

- Delivery rule validation and API selection: the custom table *DELIVERIES\_3PL* is validated using:
  - Shipping point (`LIKP-VSTEL`)
  - Delivery type (`LIKP-LFART`)
  - Event type

If a matching entry exists, the event is published for transmission and the API specified in the configuration entry is used to extract the inbound delivery data (via CPI).

If no entry is found, the delivery is not transmitted.

### 2) Monitoring and traceability

If the inbound delivery is identified as relevant for transmission, an entry is created or updated in the monitoring table to trace the transmission to the 3PL. The monitoring table structure is defined in [ERP-865 - 3PL Warehouse interface - Inbound acknowledgements - System Interface](#)

[FS IN PROGRESS](#) .

`DOC_TYPE=DELIVERY`

`DOC_ID= LIKP-VBELN`


`DATE_SENT = System date`

`TIME_SENT = System time`


If an entry already exists for the same DOC\_TYPE and DOC\_ID, it must be updated with the current DATE\_SENT and TIME\_SENT to reflect the latest transmission.

## Interface Alert & Monitoring

Monitoring will be handled by

 ERP-865 - Jira project doesn't exist or you don't have permission to view it.

and

 ERP-844 - Jira project doesn't exist or you don't have permission to view it.

## Language Requirements

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

## User Interface Requirements

N/A

## Sequencing

N/A

## Volumetrics

Around 10 docs / DAY

## 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 inbound delivery 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 delivery 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 inbound delivery after correction. *The chosen approach and responsibilities must be confirmed with the technical team.*

## Testing

### How to Test

## Test Conditions and Expected Results

ID	Condition	Expected Results
1	Create an inbound delivery for a relevant delivery type and with a matching configuration entry in DELIVERIES_3PL (Event = CREATE) and interface activated in ERP-845	Event is published for transmission. CPI consumes the event and extracts data using the API defined in the custom table entry. Monitoring entry is created/updated (DOC_TYPE/DOC_ID/DATE_SENT/TIME_SENT).
2	Update an existing relevant inbound delivery (Event = CHANGE) with matching DELIVERIES_3PL configuration	Update event is published and processed according to the configuration. Monitoring entry is updated with latest DATE_SENT/TIME_SENT.
3	Delete / cancel an inbound delivery (or execute the business scenario equivalent)	Deletion/cancellation notification event is published and consumed as designed; 3PL receives the update accordingly.
4	Create/update an inbound delivery that is not configured in DELIVERIES_3PL (no matching VSTEL + LFART + Event rule)	Event is not published (delivery not transmitted).
5	Create/update an inbound delivery for a non-relevant organizational criteria (e.g., shipping point not assigned / interface not activated in ERP-845)	Event is not published (delivery treated as not relevant).
6	Create inbound delivery relevant by rule, but set ERP-845 INTERFACE_ACT X for that org value	Event is not published due to inactive interface.
7	Transmission failure in CPI (simulate routing/mapping /endpoint error) for a relevant inbound delivery	Message shows failure in CPI/AIF monitoring. After correction, retrigger /reprocess results in successful transmission; monitoring timestamps updated.
8	3PL returns ACK for a successful inbound delivery transmission	Transmission marked as successful in monitoring/ACK table per ERP-865 design
9	3PL rejects / does not ACK	Error/pending status visible per monitoring design; retransmission after correction results in ACK and successful completion

## Test Considerations/Dependencies

The solution must be tested in conjunction with the developments listed in the *Dependencies* section. End-to-end validation will include the participation of the relevant 3PL partners to ensure the completeness of the inbound delivery transmission flow across S4 HANA, middleware, and target logistics platforms.

## 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
<b>CURRENT (v. 18)</b>	<b>Apr 22, 2026 09:52</b>	<b>RUIZ SOMOZA-ext, Carolina</b>	
v. 17	Apr 17, 2026 14:04	RUIZ SOMOZA-ext, Carolina	
v. 16	Apr 17, 2026 13:32	RUIZ SOMOZA-ext, Carolina	
v. 15	Mar 31, 2026 15:03	RUIZ SOMOZA-ext, Carolina	
v. 14	Mar 31, 2026 15:00	RUIZ SOMOZA-ext, Carolina	
v. 13	Mar 31, 2026 14:59	RUIZ SOMOZA-ext, Carolina	
v. 12	Jan 12, 2026 06:14	WEINERT-ext, Patrick	
v. 11	Jan 09, 2026 14:58	RUIZ SOMOZA-ext, Carolina	
v. 10	Jan 09, 2026 14:47	RUIZ SOMOZA-ext, Carolina	
v. 9	Jan 09, 2026 12:48	RUIZ SOMOZA-ext, Carolina	

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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.

From Mar 31, 2026 to Apr 22, 2026	Actor	Type	Activity	Version
Approved	 RUIZ SOMOZA-ext, Carolina	Edit	updated the page at 2:59 pm	
Jan 15, 2026				
	 VENKAT-ext, Rama	State	changed state to <b>Approved</b> at 10:13 am	v12
Lead Approval	 VENKAT-ext, Rama	State	gave <i>POD Lead Review</i> approval at 10:13 am	
Jan 12, 2026				
	WEINERT-ext, Patrick	Edit	updated the page at 6:14 am	
		State	changed expiry date to '19 Jan, 2026 05:17 am' at 5:17 am	
		State	changed state to <b>Lead Approval</b> at 5:17 am	v12
Tech Review	WEINERT-ext, Patrick	State	gave <i>Tech Review</i> approval at 5:17 am	