

# SAP S/4HANA

# Field Logistics Product Overview

SAP Oil, Gas & Energy Product Management February, 2023

**PUBLIC** 



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# **Field Logistics**

- Overview
  - Solution capabilities
  - Best Practice scope items
  - Scenarios and supply processes
- Forward processes
  - Demand initiation & supply processing
  - Non-stock and rentals
  - Receipt at base
- Outbound process from base
  - Packing containers
  - Managing voyages
- Receipt at remote
- Returns processes
  - Initiate Returns
  - Initiate Transfer
  - Receipt back at base
- Other features
- Product Roadmap





# SAP S/4HANA Upstream Oil&Gas – Field Logistics (FL)

**Solution Capabilities Maintenance and Procurement Integration** Field Logistics Orchestration Supply process derivation and process control Rentals processing Integration with Fieldglass for Rentals Finance & Cross-plant visibility for maintenance\* Physical Tracking\* **Asset** Management Tracking of returns for repair\* S/4HANA FI. EAM. Inbound tracking scenarios\* Logistics JVA GTT, LBN integration \* Simplified Receiving **Network & Procurement Tracking** Common browser UI for quick receiving S/4HANA, Ariba, Stock, non-stock, rentals S/4HANA TM, LBN, Fieldglass GTT **Mobility FL Analytics** QR code scanning, Label printing **FL** spread Overview page for receipts and returns **Analytics** Extended Analytics and Machine S/4HANA learning scenarios, SCP\* **Warehouse & Yard Operations** Embedded **Inventory &** Cross-plant visibility\* Warehouse integration, cross-docking and analytics, SCP Warehousing holding S/4HANA MM-Kittina\* IM, LE, Cloud Multiple bases scenarios\* WM **Returns** Returns S/4HANA **Outbound Logistics** Processing returns from remote to base & further **Transportation** Procurement, LE, Return of stock, non-stock, rentals Container master data Advanced Returns S/4HANA TM Return to vendor, for repair/recertification, scrap/sell, Packing into container request inspection, temporary storage Voyage Management Advanced Returns integration\* TM integration\*

<sup>\*</sup> Planned solution scope, subject to change by SAP SE or its affiliated companies at any time for any reason without notice

# Why Field Logistics?

## Leveraging SAP technology with a focus on automation, visibility, and user experience

# 1. Business process automation and orchestration



# Out-of-the-box integration with core SAP modules:

- MM-IM, Procurement, EAM, LE, EWM, QM, Finance, etc.
- Always in line with latest innovations in other related SAP standard products
- Straightforward regular upgrade path

# Increased operational efficiency due to highly automated processes:

- ~30% of documents created automatically
- Manual steps by user reduced by up to ~40%

# 2. Better end user experience



#### Persona based applications

- Apps built based on end user study and continuous feedback
- Intuitive end user experience: users only see what is relevant to them

#### Use on any device

- Field Logistics Fiori apps can also be used on mobile or tablet devices, not only desktop
- Quick actions from any device: scan QR code, print label

# 3. Tracking of any type of equipment



# Transparent tracking of any type of logistics items

- Logistics of stock, non-stock, rental equipment with Field Logistics apps
- Easy to identify and track equipment by scanning a QR code or printing a label
- Visibility of receipts and returns

# 4. Making use of latest SAP technology



#### **Machine Learning**

- ML-OCR to identify container ID for packing
- Continuous focus on innovation: image recognition, ML and other intelligent scenarios are part of the Field Logistics roadmap

#### **Extensibilities**

 Out-of-the-box APIs for customer-specific enhancements

# Field Logistics Processes Overview: Forwards & Returns Scenarios



# **Supply Processes**

SP13

SP14

# Own materials (stock)

- Stock located at remote & base SP11
- Stock located at base only SP12
- Stock located at remote only
- Direct Purchase (stock)

# **Own materials (non-stock)**

Direct purchase (non-stock)

#### **Services**

 Supplier items logistics (rental & third party)

### SERV

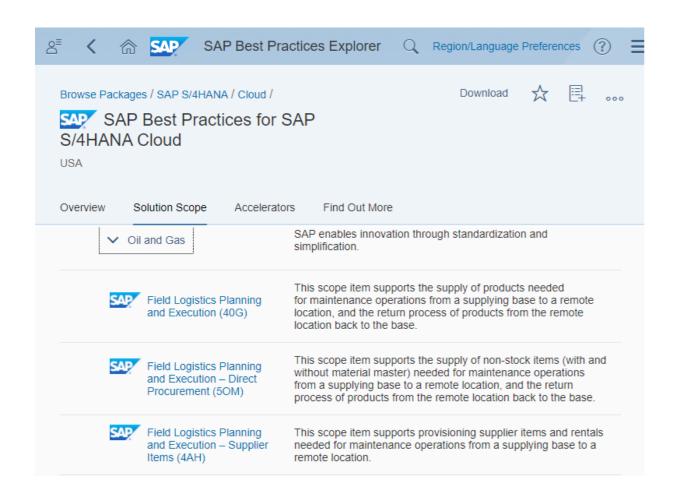
SP15

# **Returns Scenarios**

- To base inventory
- To vendor
- Request inspection
- Repair / Recertification
- Scrap / Sell
- Temporary storage
- Internal repair\*

# S/4HANA Cloud Best Practice Functionality and Integration in the

# **SAP Best Practices Explorer**



Field Logistics Scope Items:

<u>40G</u> Field Logistics Planning and Execution – Own items

<u>4AH</u> Field Logistics Planning and Execution – Supplier items

<u>50M</u> Field Logistics Planning and Execution –Direct Procurement

6BA - Field Logistics Planning and Execution –Containers and Voyages

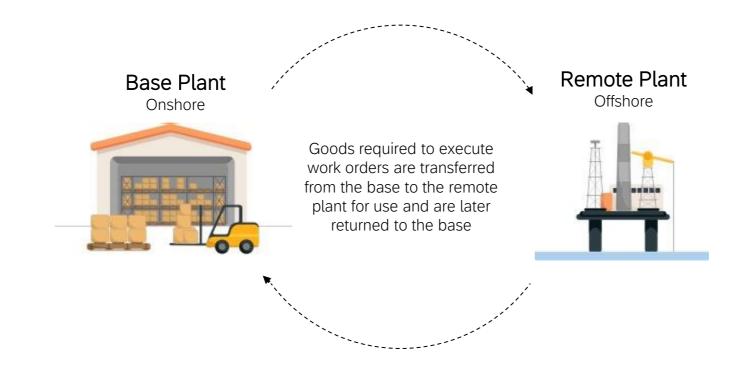
# SAP S/4HANA in Upstream Oil & Gas

**Field Logistics Overview** 



# Field Logistics

Oil and Gas Industry



~ 10 Apps ~ 6 Personas

~ 2020

# **Demand Initiation & Supply Planning**

**Create Project Demand** 





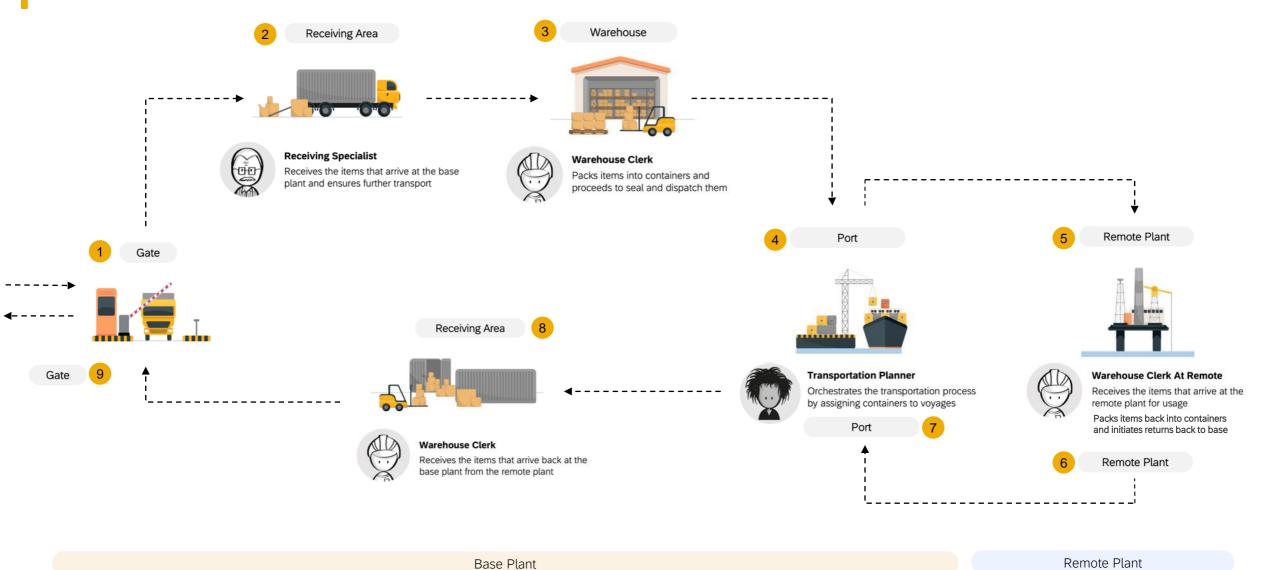
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creates a Purchase Order. Manage Purchase Order

Based on stock availability, the materials

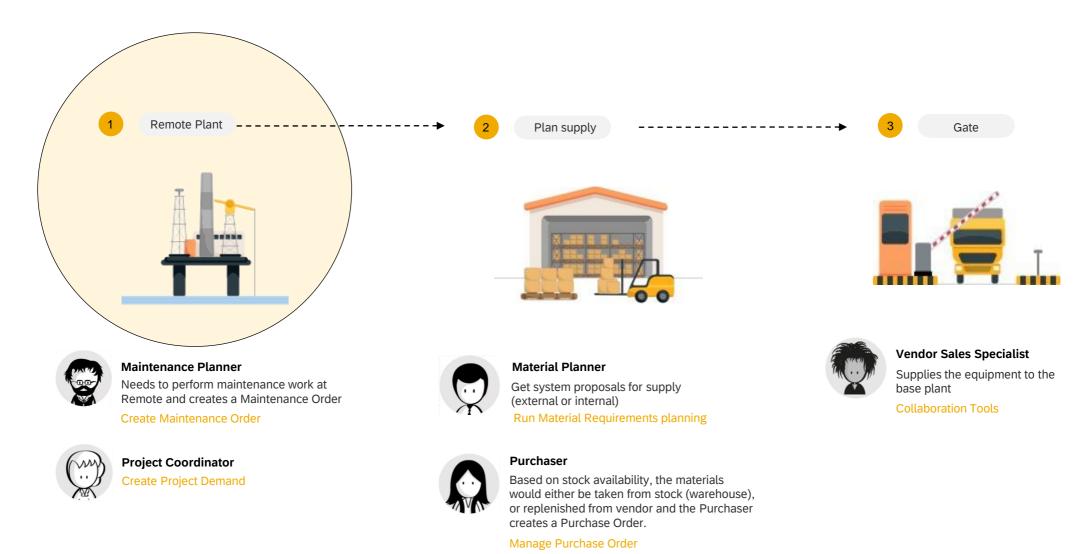
would either be taken from stock (warehouse), or replenished from vendor and the Purchaser

# Overview Execution of Logistics 👴



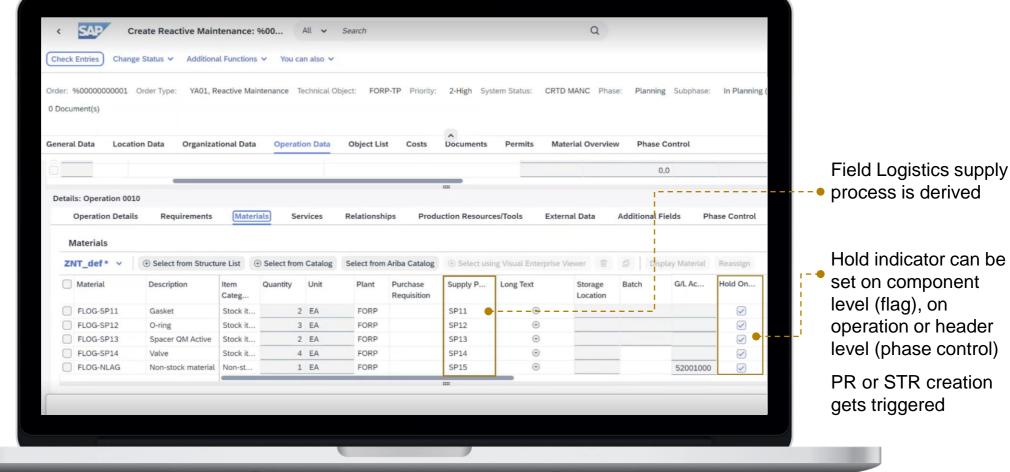
# **Demand Initiation & Supply Planning**





# Create **Maintenance Order**

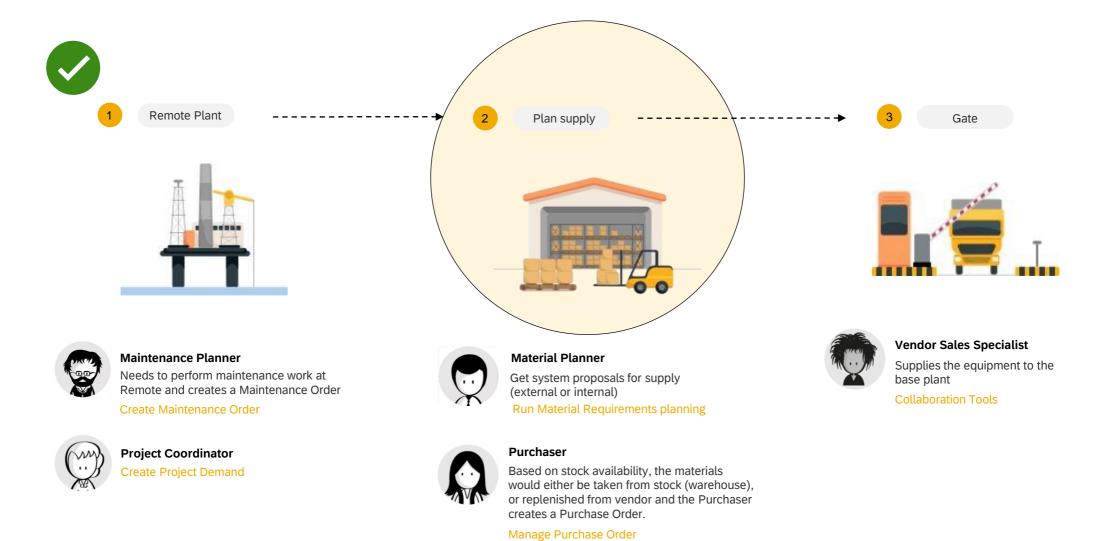
Create Maintenance Order app



**Maintenance Planner** level (phase control) Creates Maintenance Order with Material and Services Components

# **Demand Initiation & Supply Planning**





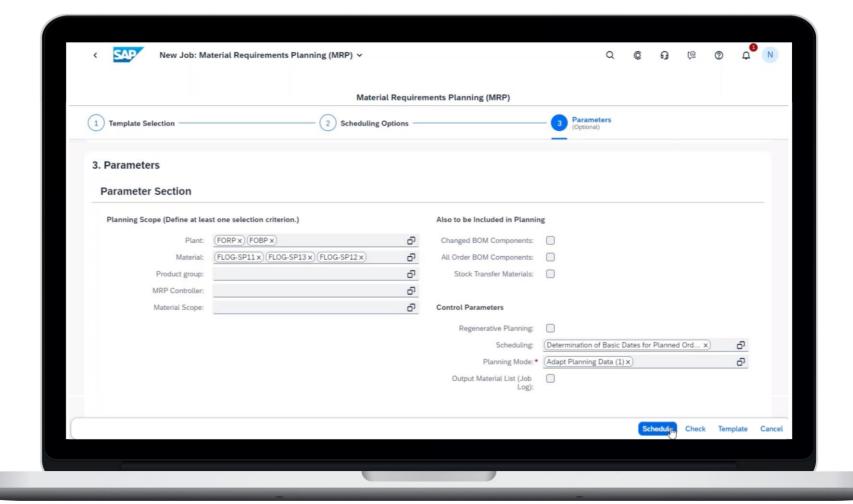
# Run MRP at base & remote plants

Schedule MRP run app



#### **Material Planner**

Create and schedule a job for executing your MRP runs in order to automate the planning process



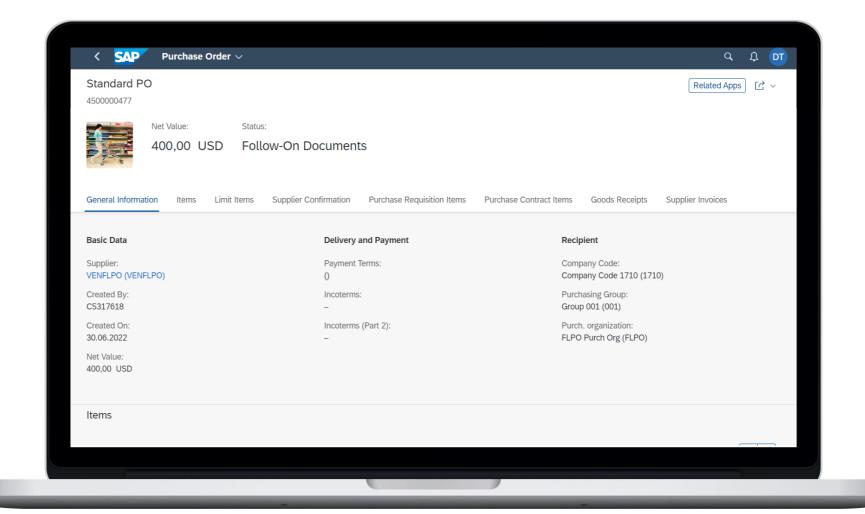
# **Create Purchase Order**

Manage Purchase Orders app Schedule Purchasing Jobs app



#### **Purchaser**

Creates Purchase Order with Material and Services Components



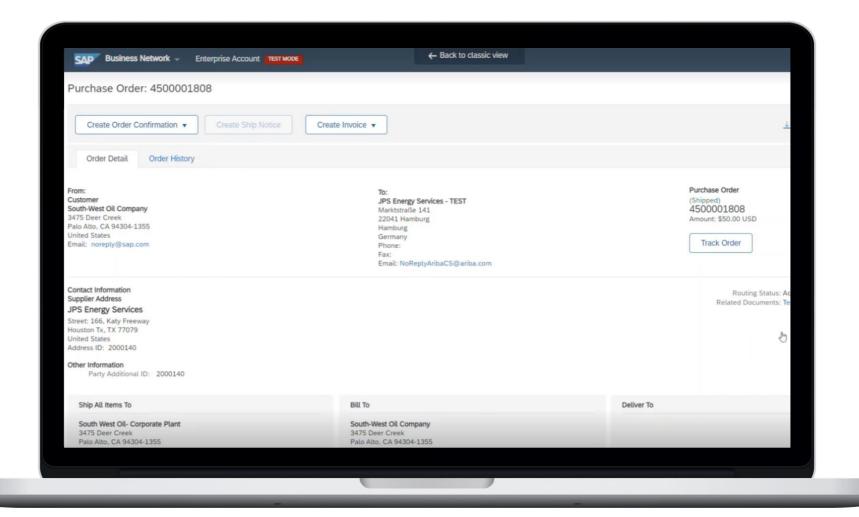
# **Confirm Order and Send Materials**

SAP Business Network



### **Supplier**

Confirm purchase order, submit advanced shipping notice, send materials



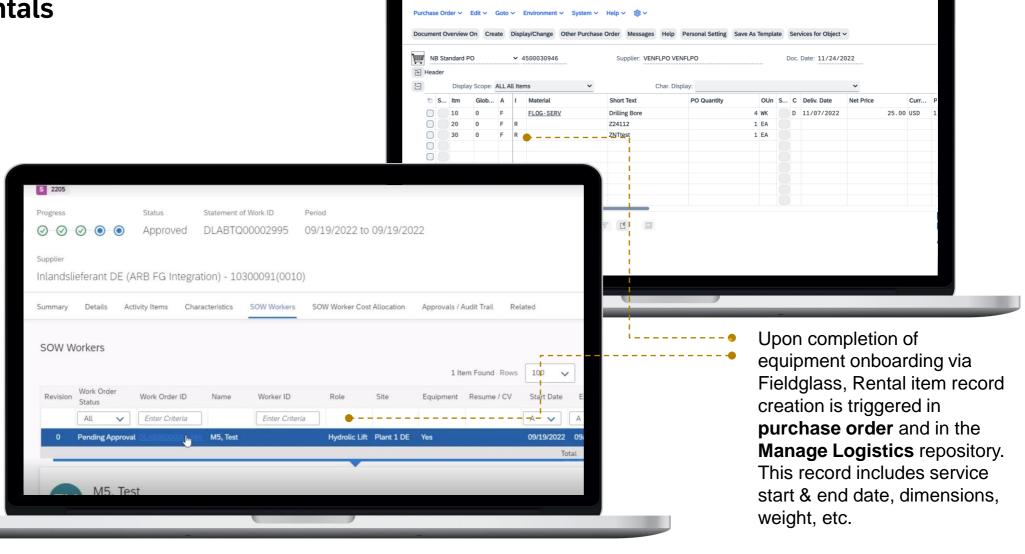
# **Onboard Equipment** and Send Rentals

SAP Business Network SAP Fieldglass



#### Supplier

Confirm purchase order, onboard rental equipment, send rental equipment



Standard PO 4500030946 Creat...

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# **Demand Initiation & Supply Planning**



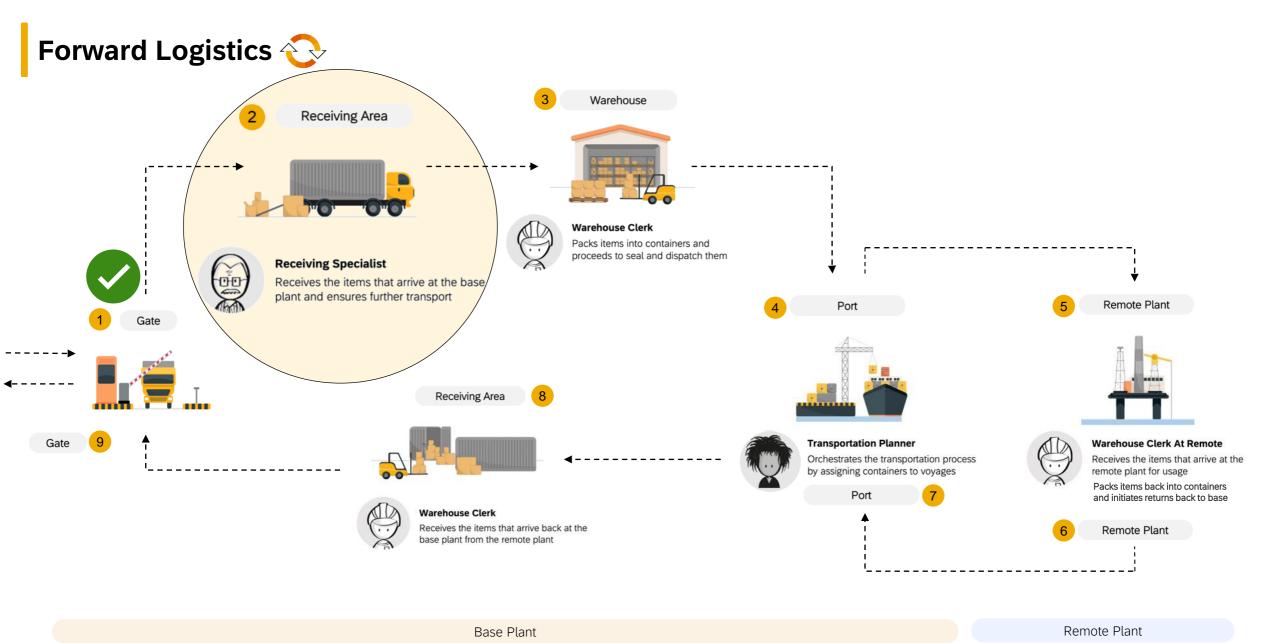


**Project Coordinator Create Project Demand** 



Based on stock availability, the materials would either be taken from stock (warehouse), or replenished from vendor and the Purchaser creates a Purchase Order.

Manage Purchase Order





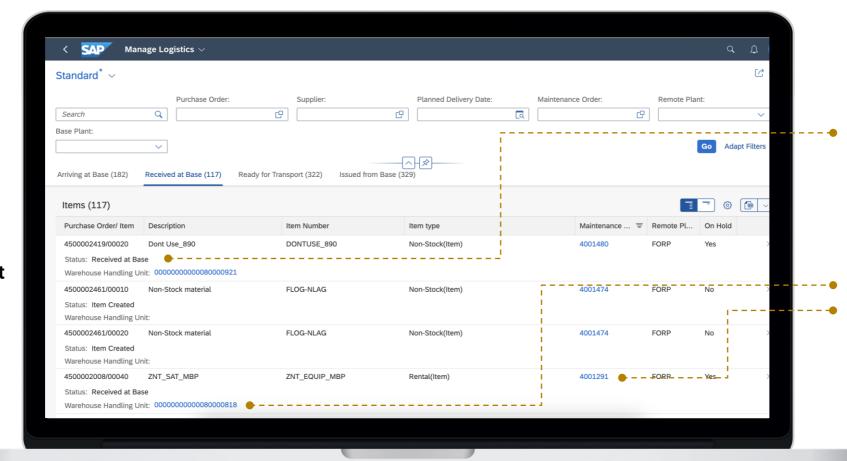
# **Track Non-Stock** and Rental items

Manage Logistics Supplier Items app



#### **Receiving Specialist**

Tracks Rentals and Non-Stock items in the repository, including documents created and milestone events



Visibility of nonstock and rental items

Tracking of item statuses (milestone events), as well as documents created throughout logistics process

Navigation to related apps for execution of subsequent steps, e.g. warehouse task, maintenance order, outbound delivery, etc.

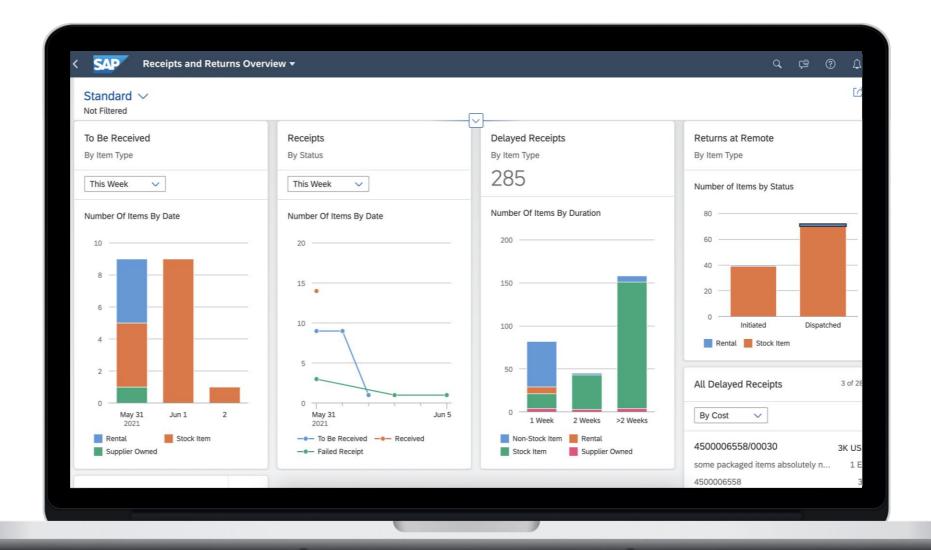
# Received at Base Plant

Receipts and Returns Overview app



## **Receiving Specialist**

Analyzes upcoming load of receipts and returns in an aggregated dashboard



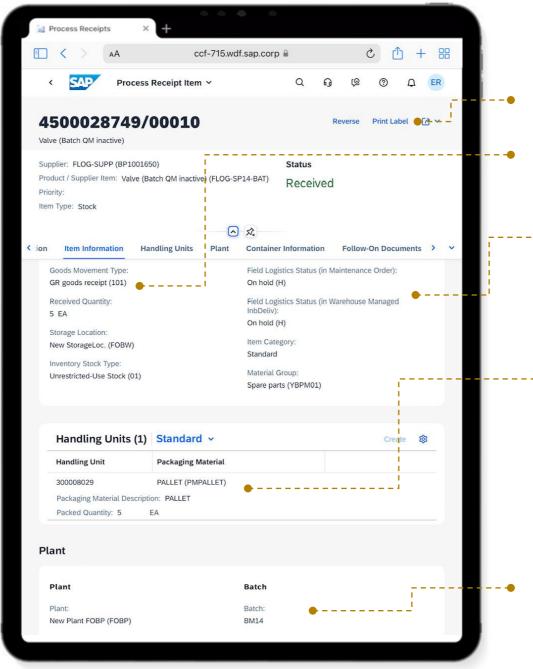
# Received at Base Plant

Process Receipts app



#### **Receiving Specialist**

Receives the items that arrive at the base plant and ensures further transport



Receiving of all field logistics relevant materials, equipment from a single **mobile-enabled app** 

**Label printing** with QR code available from the app

User can confirm receipt of any items (stock, nonstock, rental), which triggers **goods receipt** and creation of documents and links to subsequent process steps, e.g.:

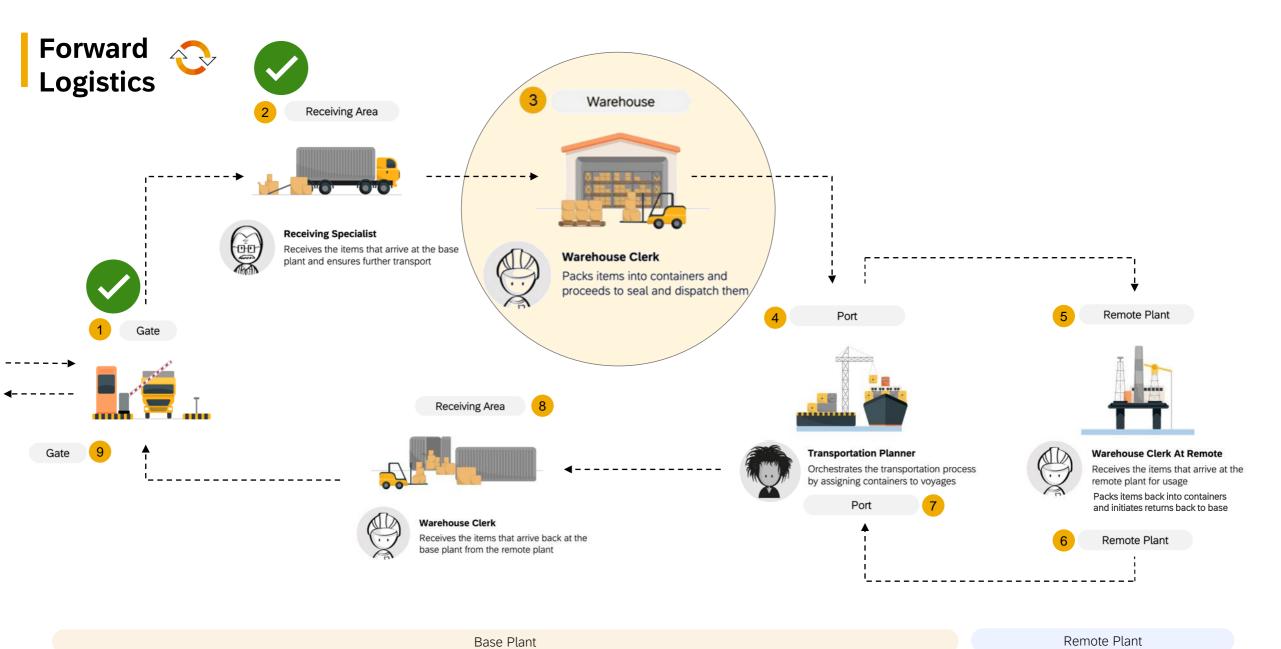
- Hold status defined by hold indicator setting in the Maintenance Order
- Quality inspection triggered for QMmanaged materials
- Stock transfer is created
- Outbound delivery is created
- Warehouse task gets triggered for the handling units that were received

Applicable **supply process** is triggered for the received item

Supply chain information: view list of predecessor and follow-on documents

Handling of **batches** and **valuation types**, upload of attachments during and after receipt

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# Pack Items into Container



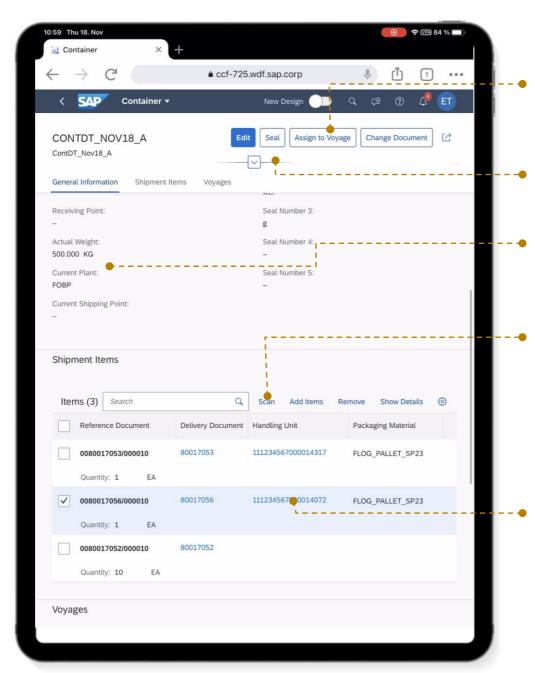
# Pack items into Container

Pack Containers app



#### **Warehouse Clerk**

Packs items into containers and proceeds to seal and dispatch them



Container can be assigned to a voyage

Container can be **sealed**, **goods issued** and **dispatched** from the Pack Containers app

 Mass action for all items packed in the container

The system checks for containers that match assignment criteria based on the **physical properties**: volume, weight, destination, etc.

Users can select items (deliveries or handling units) that need to be packed into a container

 Assignment to container can be done via QR code scanning

Container certificates and expiry dates are captured and considered

**Navigation** to related apps for more details, e.g. handling unit, outbound delivery, etc.

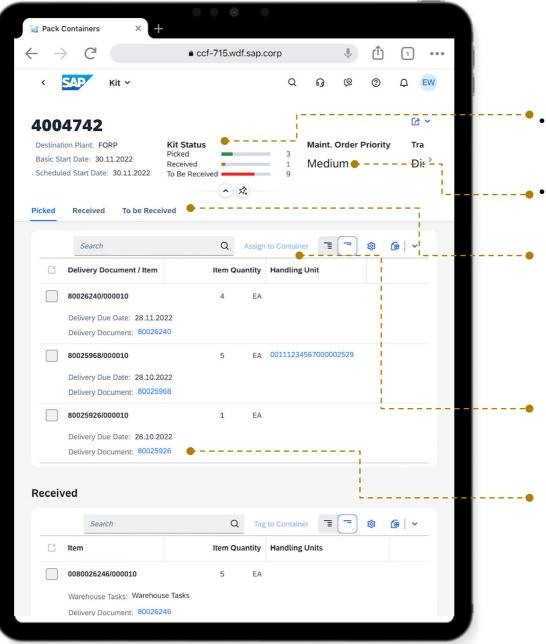
# Kitting at base warehouse

Pack Containers app



#### **Warehouse Clerk**

Ensures Kit items are received, picked and prepared for transportation to remote prior to maintenance start



**Visibility of kits**, which are defined as a logical grouping based on a maintenance order header or operation

- Track **kit status** from creation of maintenance order until receipt of the items belonging to the kit at remote
- Prioritize based on maintenance order priority and start date

Ensure the kit is complete on time

View all components that belong to the same kit divided into 3 categories:

- To be received
- Received
- Picked

Pack kit items into containers, mass goods issue and dispatch to remote plant on time and in alignment with maintenance order start date

**Navigation** to related apps for more details, e.g. handling unit, outbound delivery, etc.

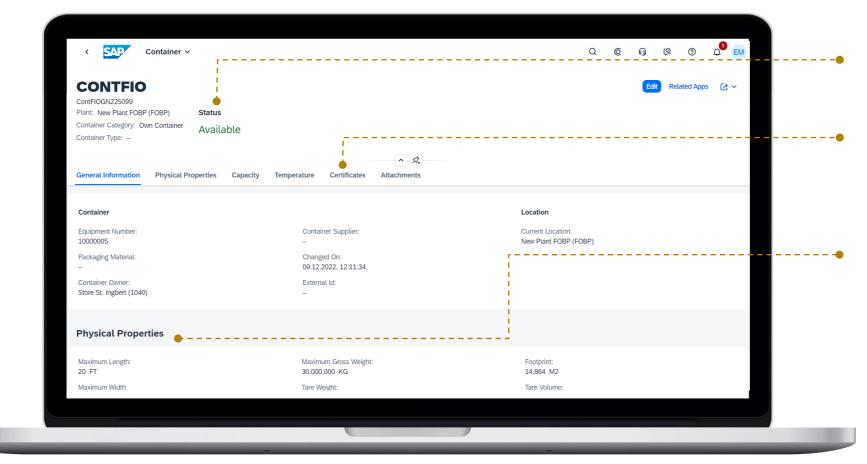
# **Create Container**

Manage Container Master Data app



#### **Master Data IOG**

Create Container Master Data



#### **Container status**

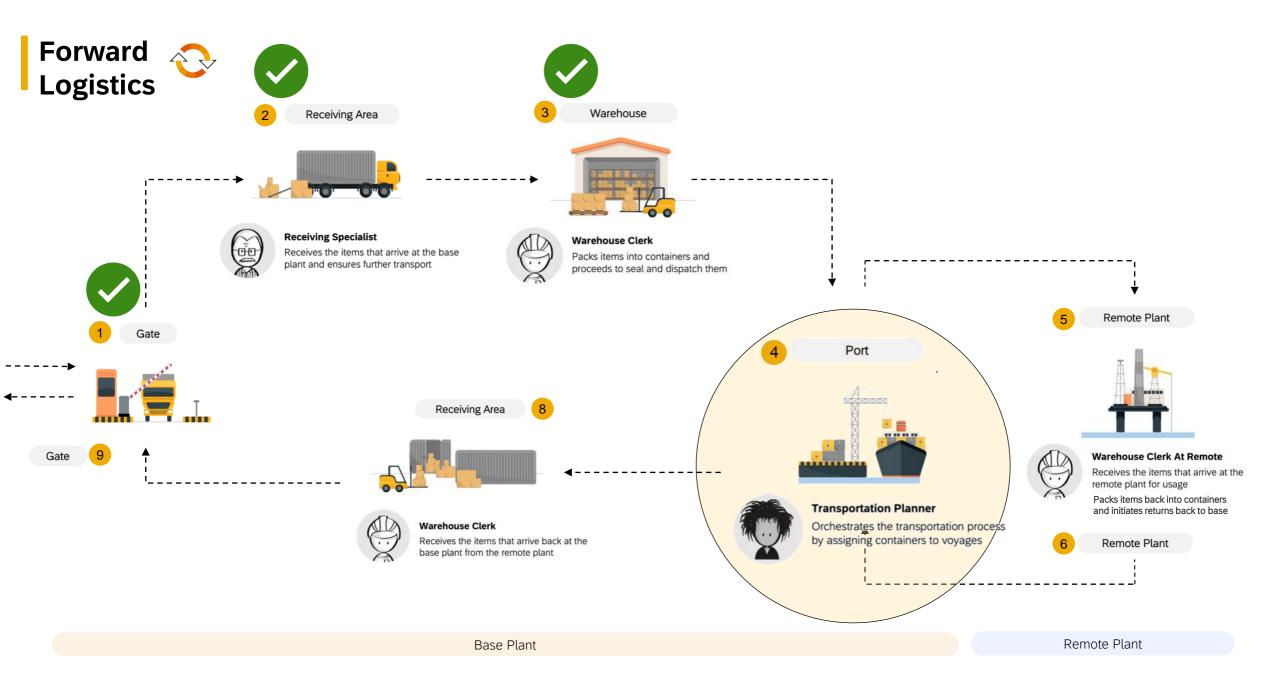
based on container availability at a specific location and certification

Maintain certificate data and validity – container with expired certification prevented from being used

# Physical properties that are considered during packing

#### Container type templates with predefined data

Migration object for container data



# Voyage Management



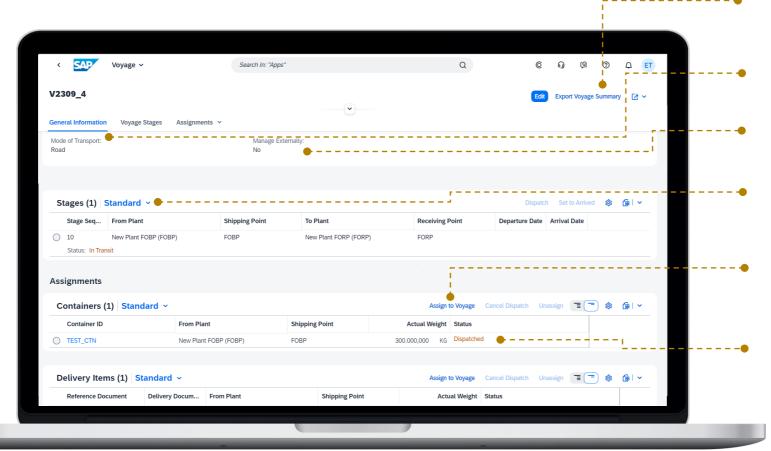
# Managing Voyages

Manage Field Logistics Voyages app



# Transportation Planner

Orchestrates the transportation process, dispatches voyages along with containers and shipments assigned to them



#### **Create Voyages**

**Voyage summary** can be exported in Excel and PDF format

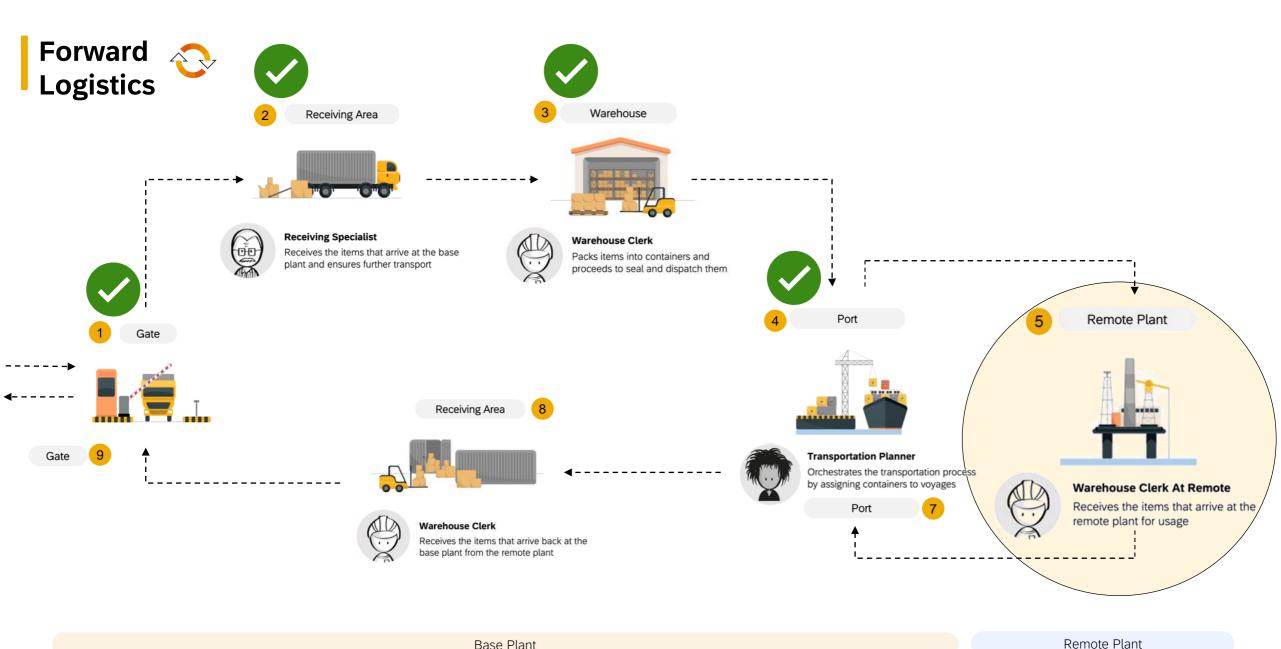
**Modes of transport**: road, sea, air, rail

APIs supporting external system integration

**Voyage stages** can be maintained, multiple stages assignment supported

**Assignment** of containers, delivery items and handling units to a voyage

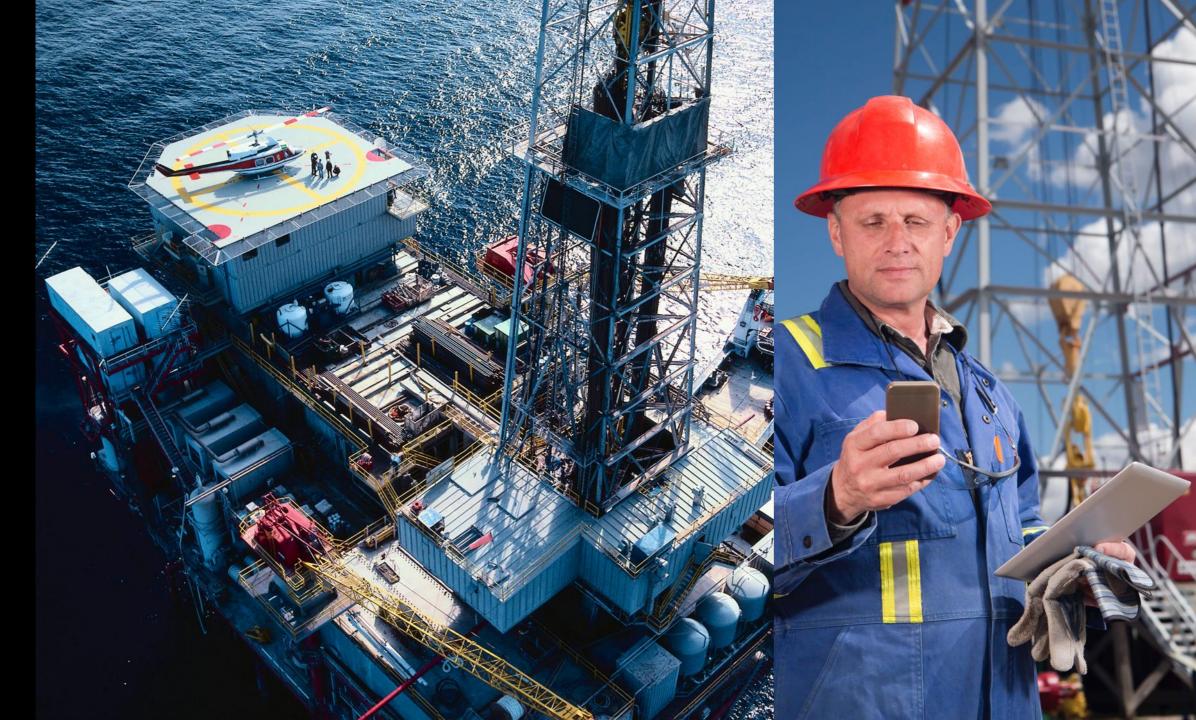
Voyage *Dispatch* action triggers dispatch of containers, deliveries, and HUs assigned to it



Base Plant Remote Plant

# Voyage dispatch to Remote

# Receipt at Remote



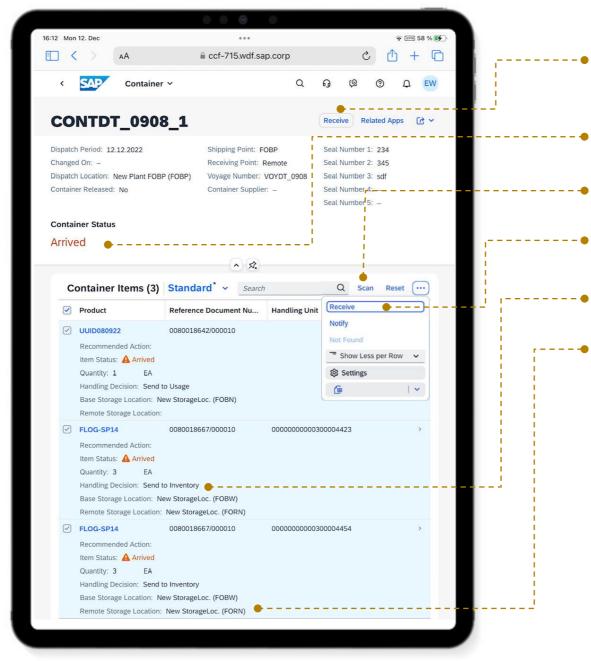
# Received at Remote Plant

Process Cross Plant Receipts app



#### Warehouse Clerk

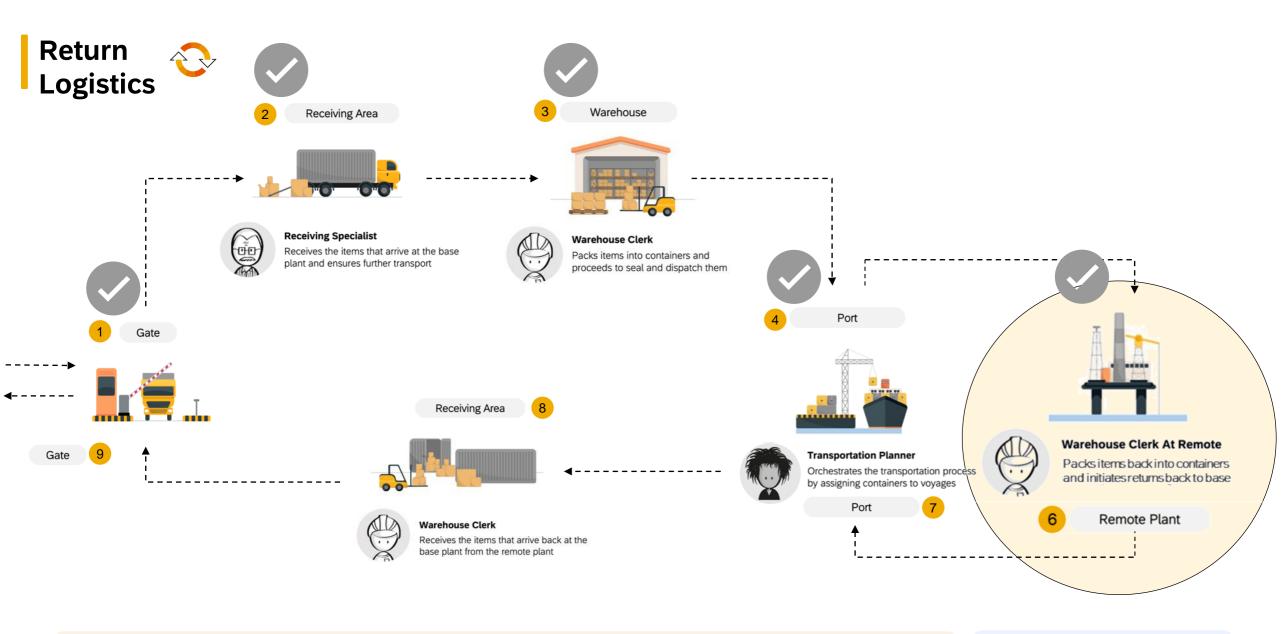
Receives the items that arrive at the remote plant for usage



#### Receiving container at remote

- By clicking Receive, mass-receive all items packed into the container
- Container **status** reflects availability of the container for further use
- Use the **scan** functionality for QR-code scanning
- Receipt of items individually supported, as well as mass-receipt
- **Handling Decision** pre-filled based on SSCUI configuration
- Storage location at remote prefilled based on inbound documentation





Base Plant Remote Plant

## Initiate Returns



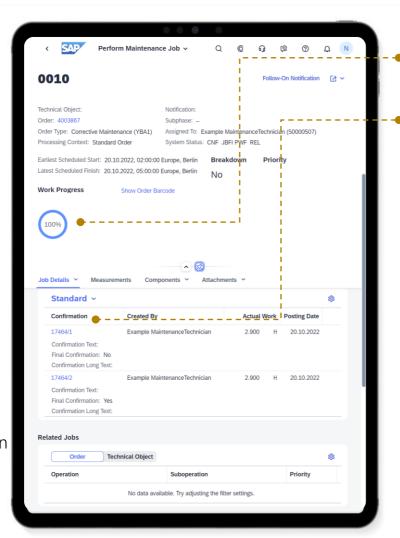
## **Returns from Remote Plant**

Perform Maintenance Job app Initiate Returns by Maintenance Order app



## Maintenance Technician

Confirms job execution for the maintenance order/operation. Indicates returnable components.



Work has been completed

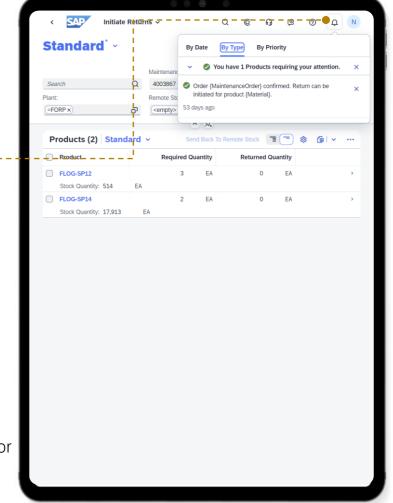
**Confirmations** recorded

**Notification** to the warehouse clerk triggered



## **Warehouse Clerk**

Receives a notification that job is done and return can be initiated for relevant components. Navigates to the app to trigger returns.



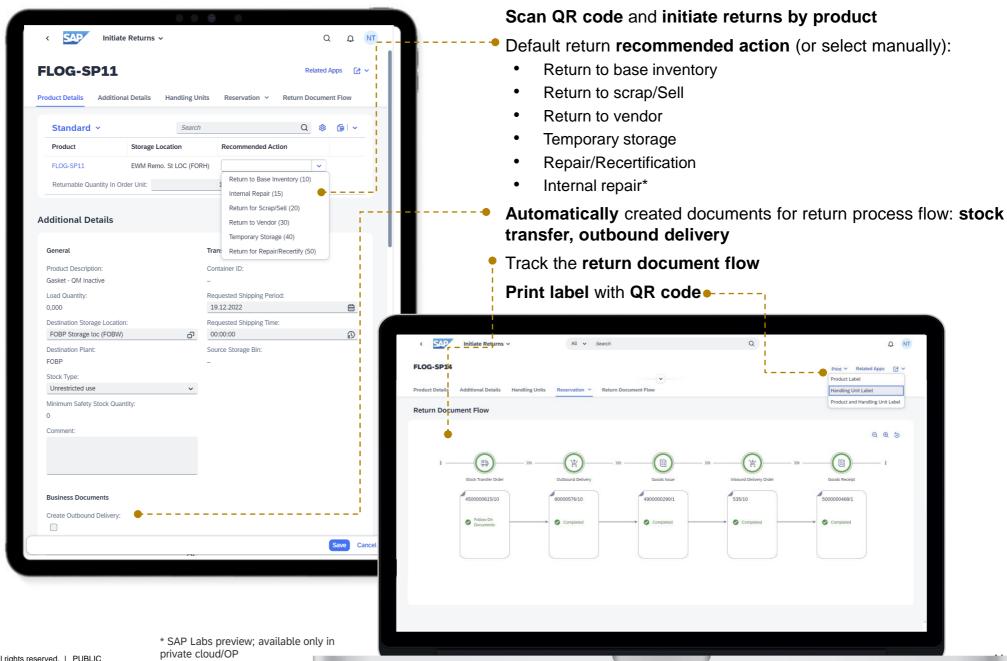
## Returns from Remote Plant

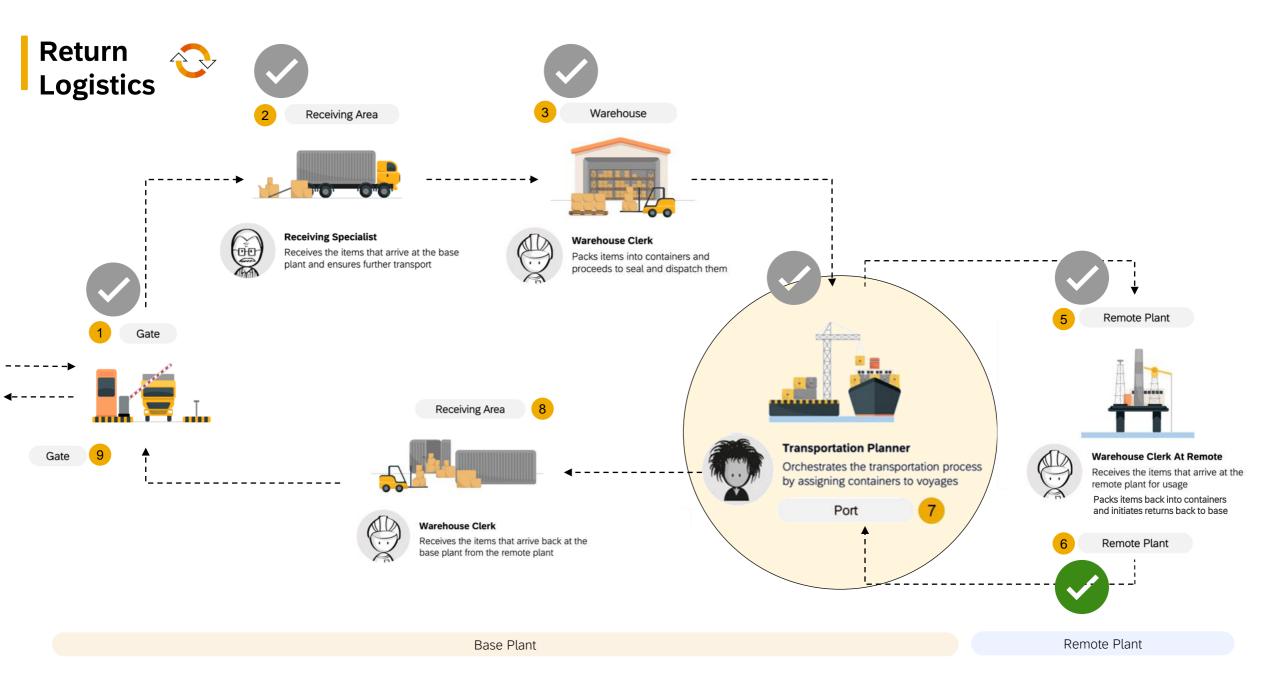
Initiate Returns by Product app

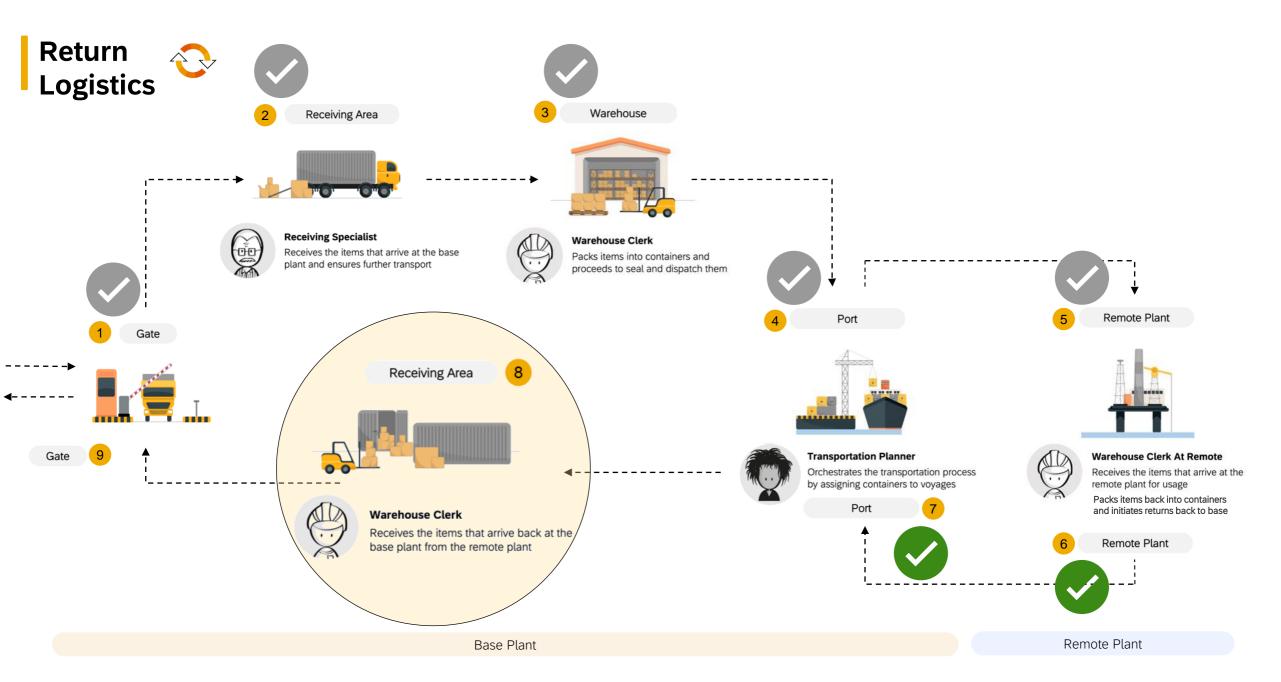


## Warehouse Clerk at Remote

Initiate returns and dispatch







# **Receive Returns**



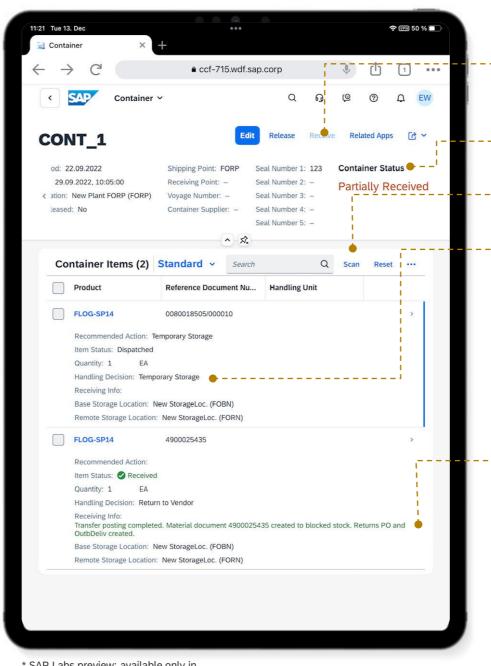
## Returned Back To Base Plant

Process Cross Plant Receipts app



## Warehouse Clerk

Receives the items that arrive back at the base plant from the remote plant



## Receiving container back at base

 By clicking Receive, mass-receive all items packed into the container

Container **status** reflects availability of the container for further use

Use the **scan** functionality for QR-code scanning

Handling decision pre-filled with return recommended action (can be amended when receiving):

- Return to base inventory
- Return to scrap/sell
- Return to vendor
- Temporary storage
- Repair/Recertification
- Internal repair \*

## Automatic creation of follow-on documents, e.g.:

- Material document
- Warehouse task
- Return purchase order
- Return outbound delivery

**Receiving & post-processing** info as reference and guidance for next steps

\* SAP Labs preview; available only in private cloud/OP

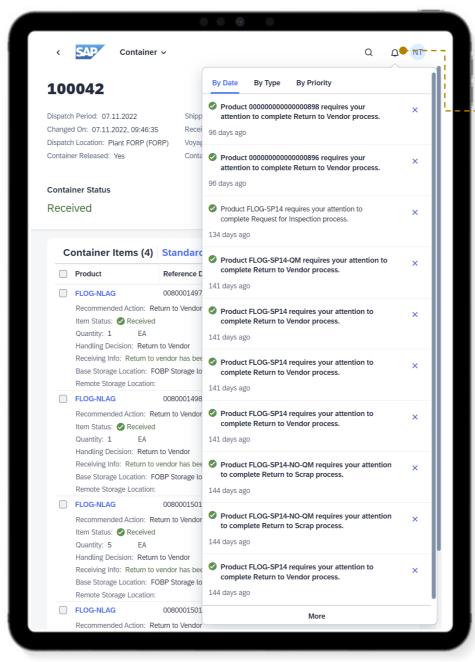
## Returned Back to Base Plant

Process Cross Plant Receipts app



## Warehouse Clerk

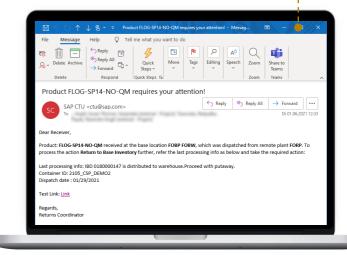
Triggers notification to internal stakeholders for post-processing



Trigger system **notification**and **e-mail** to stakeholders
responsible for post-processing (e.g.
Maintenance, Procurement) based on handling decision and item type

Notifications based on the **Teams and Responsibilities** feature of SAP S/4HANA

**Navigate** to the processed item(s) in the container from the notification



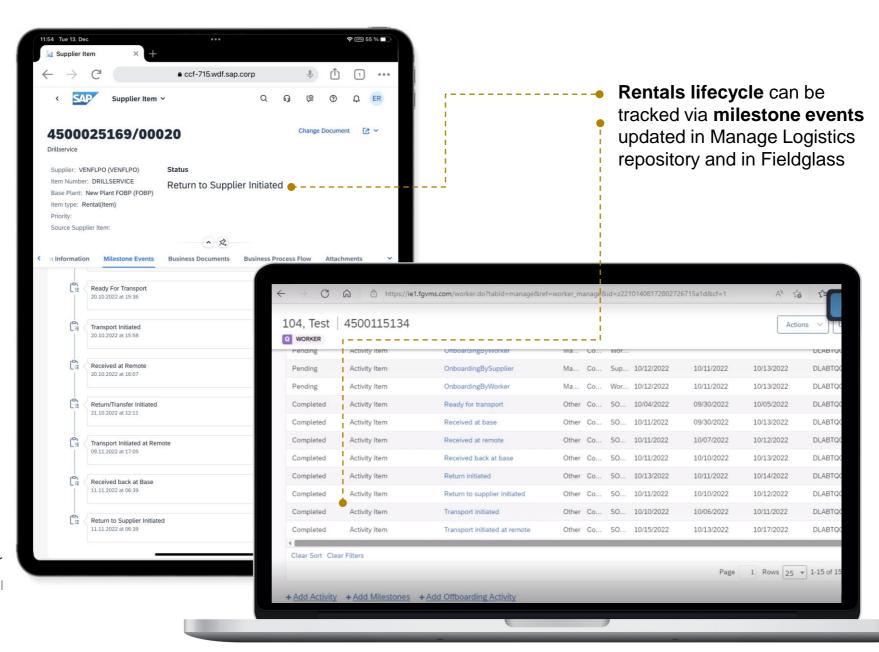
## Rental Return to Vendor

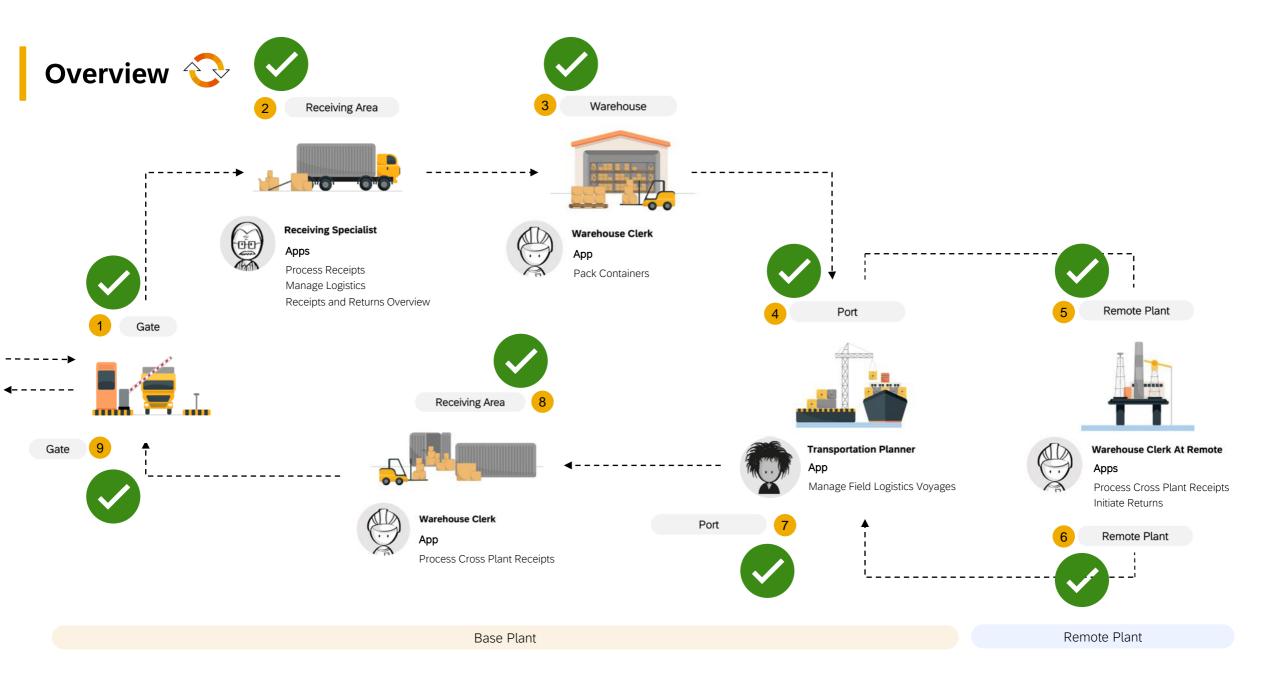
Manage Logistics - Supplier Items app SAP Fieldglass



## **Rentals Coordinator**

Receives the items that ar back at the base plant from remote plant

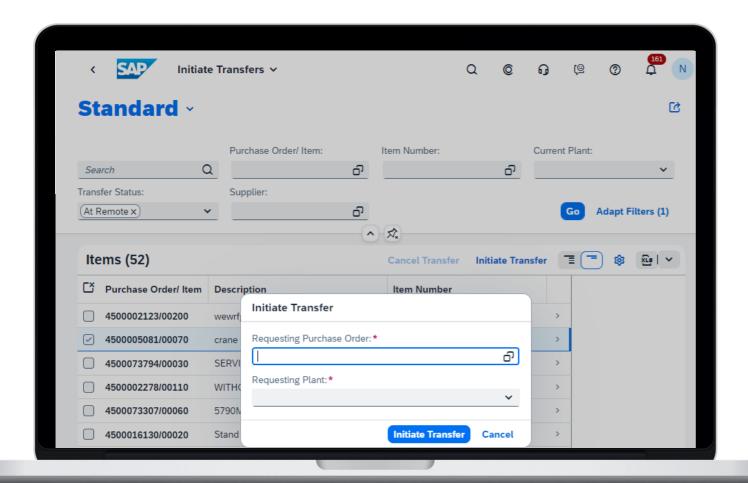




## SAP S/4HANA in Upstream Oil & Gas Additional Field Logistics Functionalities



## Initiate Transfers for Rentals and 3<sup>rd</sup> party items



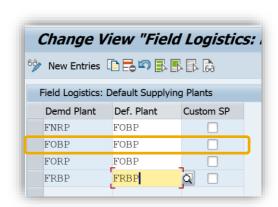
Enables a process for direct rig to rig transfer, without wasting time and effort to return to base and send out again

- Find rental and 3<sup>rd</sup> party items currently in use at remote, initiate transfer of required items (whose use will soon finish) directly to another remote location
- Trigger the execution of logistics transfer operations based on identified need/issue in the supply chain

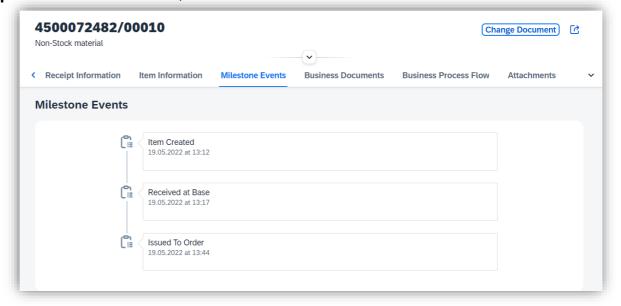
The logistics process for this transfer is handled with the integration to other existing Field Logistics apps

## Single plant scenario

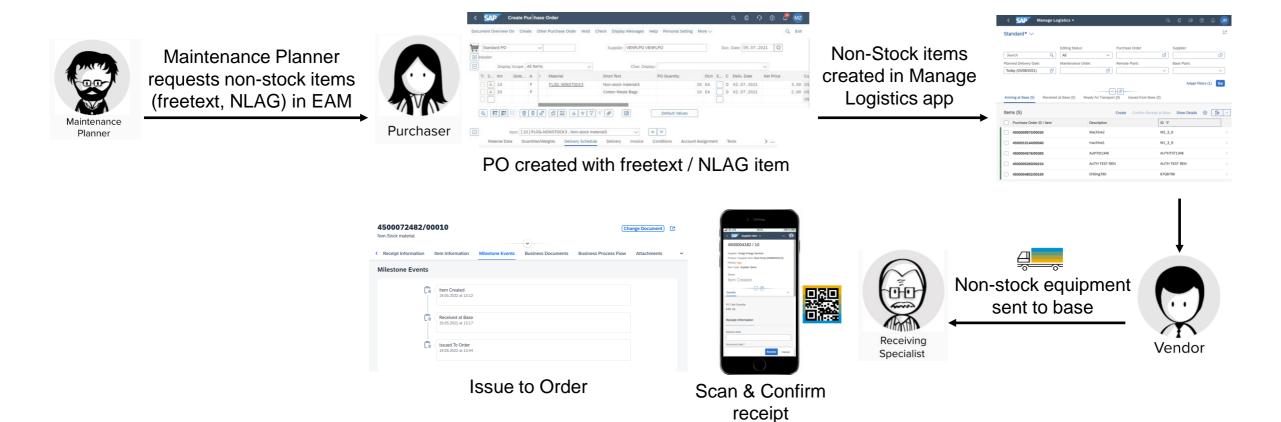
- 1. Plant is set to be demand + default supplying plant
- 2. For stock, only variations are SP11, SP14
  - Specific supply process version to be set → V4
  - No documents for outbound process created (STO, OBD)



- 3. For non-stock and rentals, all variations are possible: SP15, SERV
  - Issue to order new milestone
  - Can be issued immediately at receipt, or later



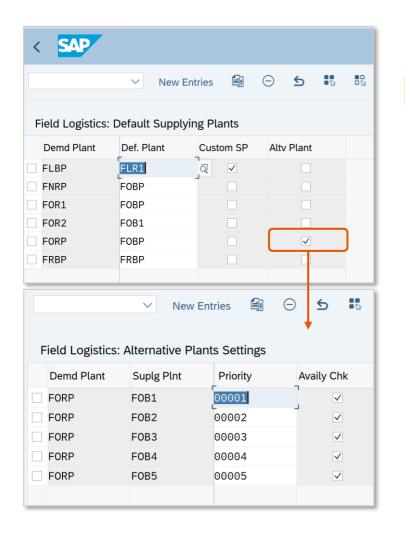
## Single plant scenario: Issue to Order for Non-Stock Items (SP15)

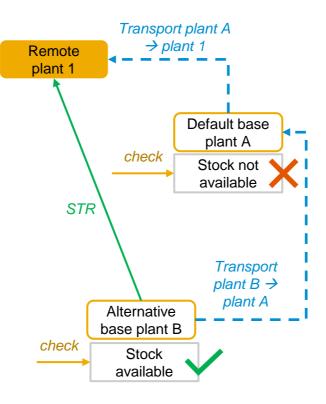




## Multiple base plants

## **Enable search for available stock in alternative supply bases**



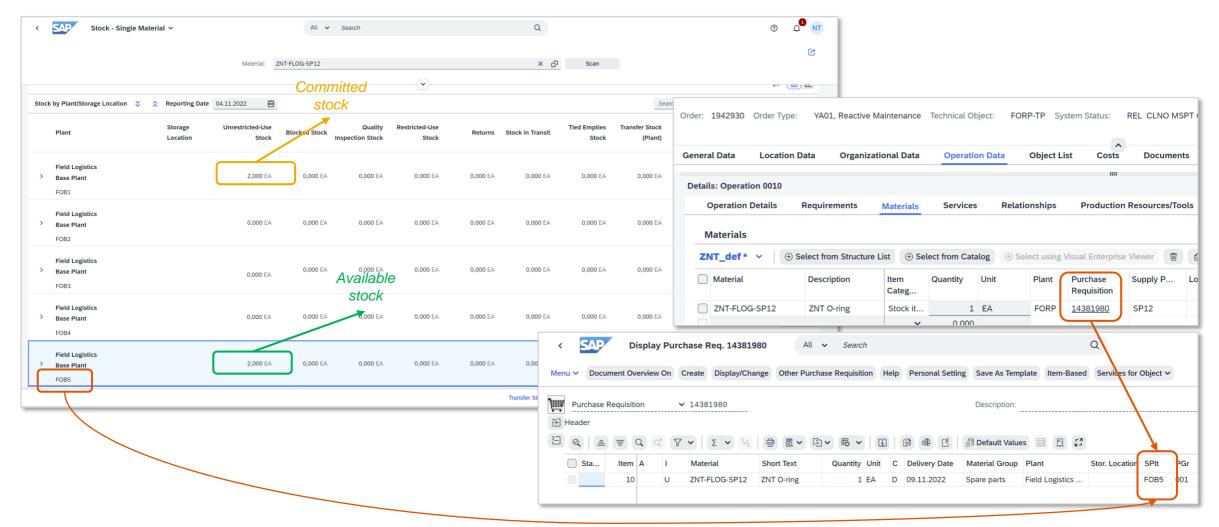


- List of alternative supply plants with search priority
- If there is no available stock at the default supply base, the alternatives will be checked one by one
- The core ATP check is triggered for the search
- A stock transfer requisition will be created from the remote plant to the alternative base which has the available stock
- With voyages, a transfer from the alternative to the default supply base and further to the remote plant is enabled



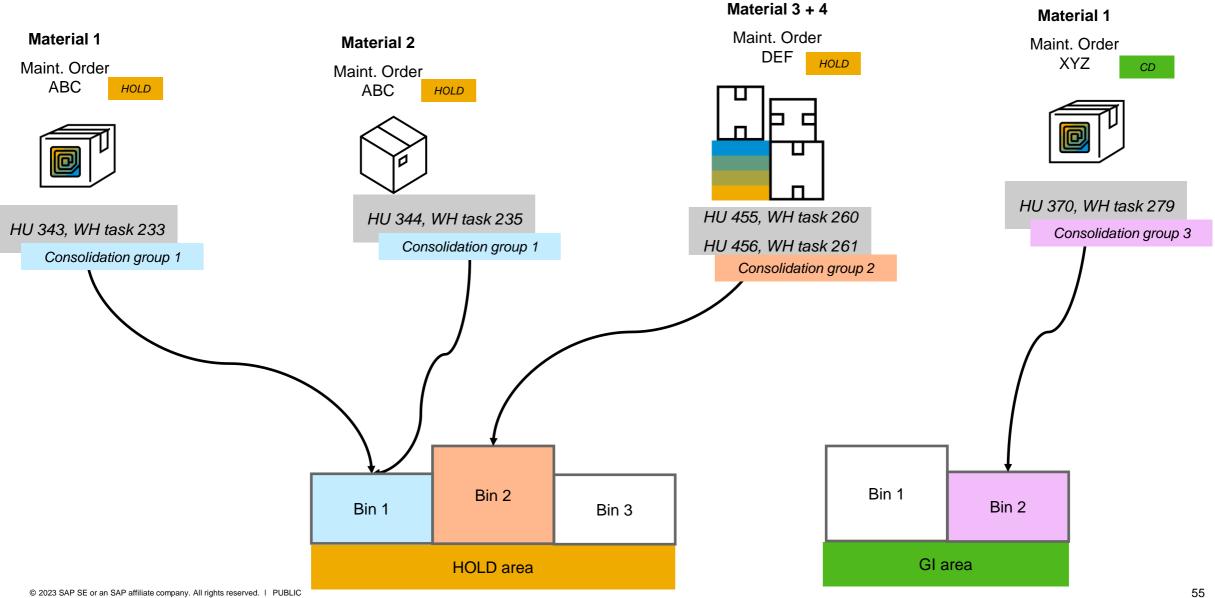
## Multiple base plants

## Find available stock in alternative supply bases





## **Consolidation groups in FL-EWM**

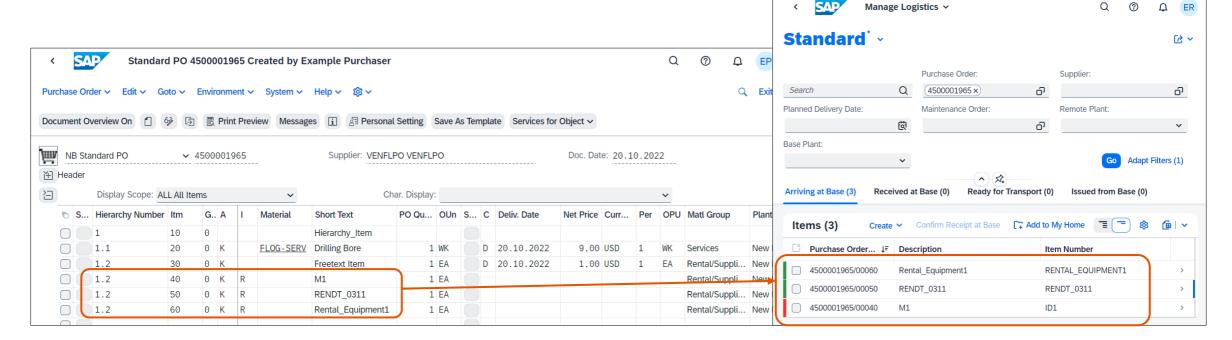


## Services Hierarchy integration with FL



- Starting CE2302, Field Logistics apps will support integration with Services Hierarchy (4R2 scope item):
  - Rental and Supplier items creation can be triggered from the Purchase Order and then the entry will be updated in FL Manage Logistics repository
- Rental and Supplier items creation can also be triggered from FL Manage Logistics repository and then be updated
  in the Purchase Order

 End-to-end Logistics process for Rentals Hierarchy scenario will be handled in the same way as for Lean Service scenario



## Thank you.

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