

Consignment and VMI

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Agenda



1. Consignment

- 1.1. Consignment stock processing in ERP
- 1.2. Consignment stock in APO

2. VMI

- 2.1. Vendor Managed Inventory versus Consignment Inventory
- 2.2. Using Vendor Managed Inventory with Consignment Inventory
- 2.3. VMI scenarios

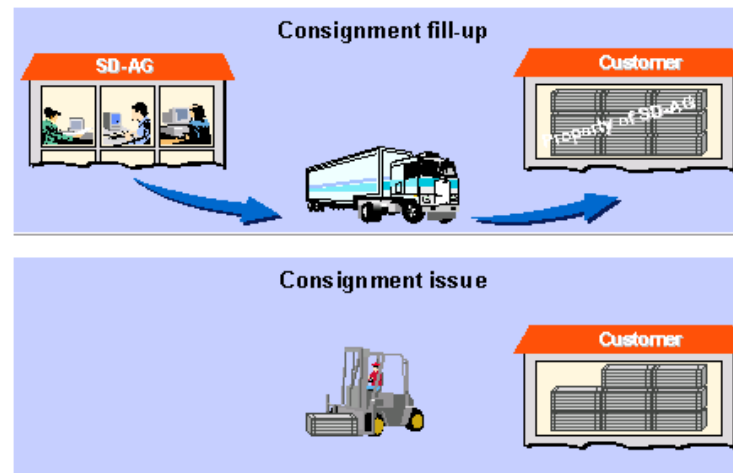
3. APO VMI enhancements

- 3.1. Parallel consigned and standard VMI scenario
- 3.2. VMI master data integration
- 3.3. Automatic ATP check of TLB shipments published to ERP
- 3.4. Transfer of in transit consignment special stock (with ERP EhP4)
- 3.5. Integration of consignment special stock in a third party logistic provider scenario

Customer Consignment - Characteristics



- The customer delegates responsibility for efficient stock management of a material to a supplier who has superior knowledge and experience.
- The supplier manages the stock of a specific material at the company's site. The supplier can be in charge of the replenishment task.
- The supplier owns the consignment material until the material is taken out of stock for use in production or consumption or the customer decides to post the material in his own stock.
- The customer pays the supplier after the material is taken out of the consignment stock.





- Consignment goods are stored at the customer location but owned by your company.
- The customer pays for these goods when they are removed from consignment stock.
- Billing is based on actual quantity taken.
- Consignment stock is part of your valuated stock in R/3. It is managed as special stocks in inventory management and assigned to specific customers.

There are four main transactions for consignment processing:

- Creating a consignment fill-up (posting to customer stock owned by company)
- Creating a consignment issue (consignment issue order)
- Creating a consignment pick-up (repost from customer stock to warehouse)
- Displaying a consignment return (customer returns to consignment stock)

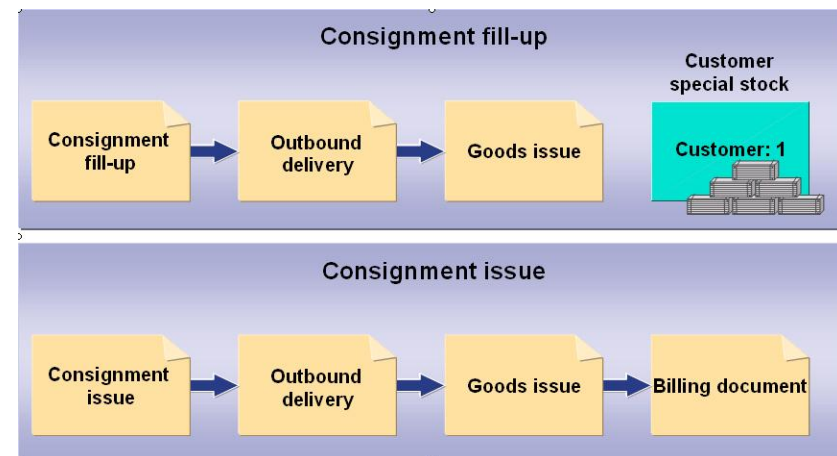


Consignment fill-up

- Consignment fill up is used to supplement the customer's consignment stock.
- Goods issue of the appropriate stock is posted from the unrestricted-use stock to consignment stock (special stock). The goods remain in the possession of the vendor.
- When you ship consignment stock to the customer, you record the transaction by creating a consignment fill-up order (order type *KB*).

Consignment issue

- Consignment issue enables the customer to take consignment goods from the special stock for his own use or to sell.
- Consignment issue involves removing the goods from the special stock and making it the property of the customer.
- When the customer removes consignment stock to use or sell, you record the transaction in the system by creating a consignment issue order (order type *KE*).



Consignment stock in APO



- In APO the consignment stock is managed as special stock with an own ATP category *CD* (Consignment Stock) and in a VMI scenario assigned to the customer location. Additional information about the owner is given in the *Stock* tab of the product view.
- This enables you to keep track of the consignment stock and use it within planning processes (e.g. SNP heuristic).

Product View: APO_VMI_MAT_1@QPT002, Planning Version 000

Product: APO_VMI_MAT_1@QPT002 | APO VMI Material 1
 Location: CUVMI_SOLDTO@QPT002 | VMI Sold-To
 Acct Assignment:
 DaysSupply [DI]: 97,61- ⚠ | ReceiptDS [DI]: 97,61- ⚠

Elements | Periods | Quantities | **Stock** | Pegging Overview | Product Master | ATP

Product/Location	S	Version	AcAssgtObj	Rec/Req...	Surp/short	Unit	Cat. Text	CatDscrptn	Stock Type	Owner
APVMI_MAT_1@QPT002 / APO VMI Materi									00	
CUTM_CUST01@QPT002 / Customer M									00	
CUVMI_SOLDTO@QPT002 / VMI Sold-To				31	31	SCM	ConsiStock	Valuated, unrestr.-use consignment stock	0B	PLPVM1@QPT002
PLPVM1@QPT002 / eCATT Plant				100	0	SCM	Stock	Valuated, unrestricted-use stock	0B	
PLPVM1@QPT002 / eCATT Plant				64	0	SCM	ConsiStock	Valuated, unrestr.-use consignment stock	0B	PLPVM1@QPT002
PLPVM1@QPT002 / eCATT Plant				0...	1.103.188	1.096.798,143	SCM	Stock	Valuated, unrestricted-use stock	0B

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Allows efficient management of the supply chain by managing customer inventory replenishment with automated collaboration

Features

- Embed customers' warehouses in the planning process
- Use sophisticated SAP Advanced Planning and Optimization (APO) planning capabilities
- Build efficient truck loads
- Create sales orders automatically in SAP ERP based on confirmed SAP APO stock transfer orders
- Display in-transit inventory
- Use standard IDocs to integrate customer data, e.g. inventories and daily stock movements from EDI

Key Benefits

- Increase visibility of real customer demand
- Improve usage of stock along the supply chain and better transport planning
- Reduction of stock-outs, rush orders and supply bottlenecks
- Improve cooperation with customers
- Improve delivery service level
- Lower safety stocks

Vendor Managed Inventory versus Consignment Inventory



Consignment inventory is about ownership of stocks

- The supplier owns the inventory placed at the customer's location.
- The customer carries out replenishment planning and communicates the requirements to the supplier.
- The customer may have little concern to minimize the supplier's inventory investment (no optimization of consignment inventory).

Vendor Managed Inventory (VMI) is about replenishment planning

- The supplier determines replenishment requirements for the customer and automatically creates the customer's purchase orders.

VMI can be used in combination with consignment inventory:

The supplier can simultaneously meet his customer's replenishment requirements and minimize his own inventory investment.

Both types are commonly Called Vendor Managed Inventory (VMI)

1

Supplier Planned Inventory

(sometimes also called standard VMI)

- ⑩ Inventory buffer '**financially owned**' by customer but '**planned**' by Supplier
- ⑩ With or without 3PL
- ⑩ Ownership transfers to customer when supplier replenishes the inventory buffer
- ⑩ Prevalent in the Consumer Product – Retailer relationship
- ⑩ **Supported by both SNC-RR and APO - some differences in capabilities**

2

Supplier Owned and Planned Inventory

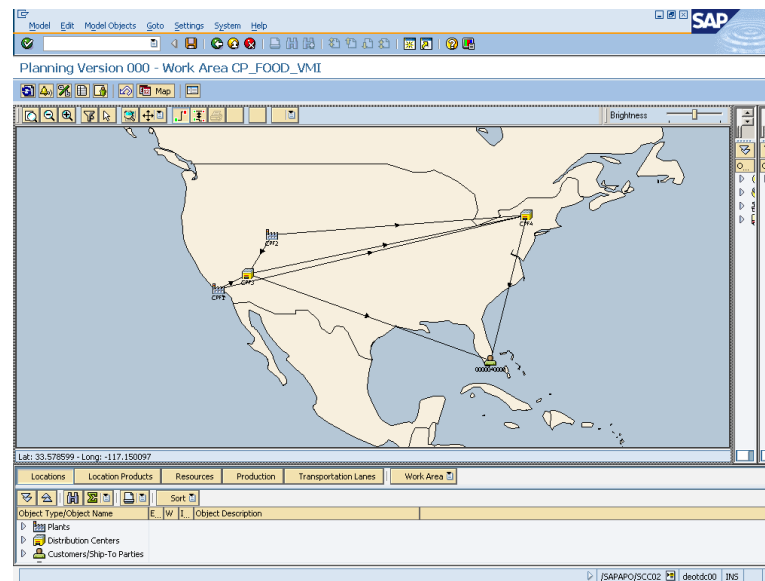
(sometimes also called Hub VMI or Consigned VMI)

- ⑩ **Dedicated** inventory buffer maintained by supplier for the customer **close to customer site**
- ⑩ Inventory buffer '**financially owned**' by Supplier and '**planned**' by Supplier
- ⑩ Financial ownership passes to customer when they pull from the VMI
- ⑩ Inventory can be located at customer site or a 3PL designated by customer
- ⑩ Customer sends consumption forecast. Supplier plan replenishments
- ⑩ **Prevalent in almost all supplier->customer relationships in HT** with the possible exception of Consumer Electronics-Retailer relationship.

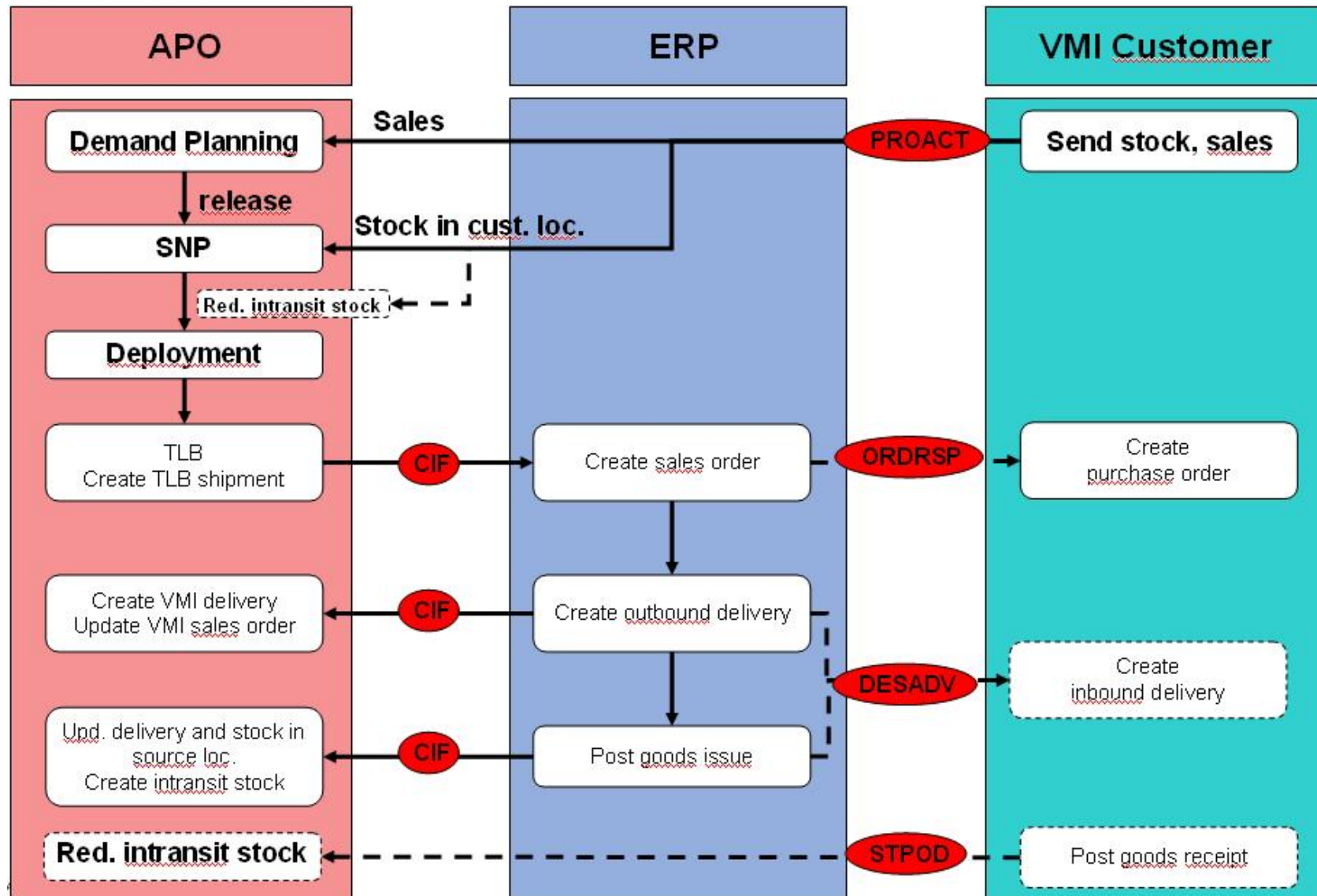
Using Vendor Managed Inventory with Consignment Inventory



- VMI and Consignment can be combined, for example if the VMI customer is afraid to lose control of his purchasing activities (creating purchase orders)
- VMI and consignment inventory working together
 - VMI planning in SAP APO ensures the most profitable overall replenishment plan for the entire supply chain
 - SAP ERP consignment inventory configuration handles the implications of maintaining customer consignment inventory and the financial settlement upon receipt of the appropriate “consumption signal” from the customer

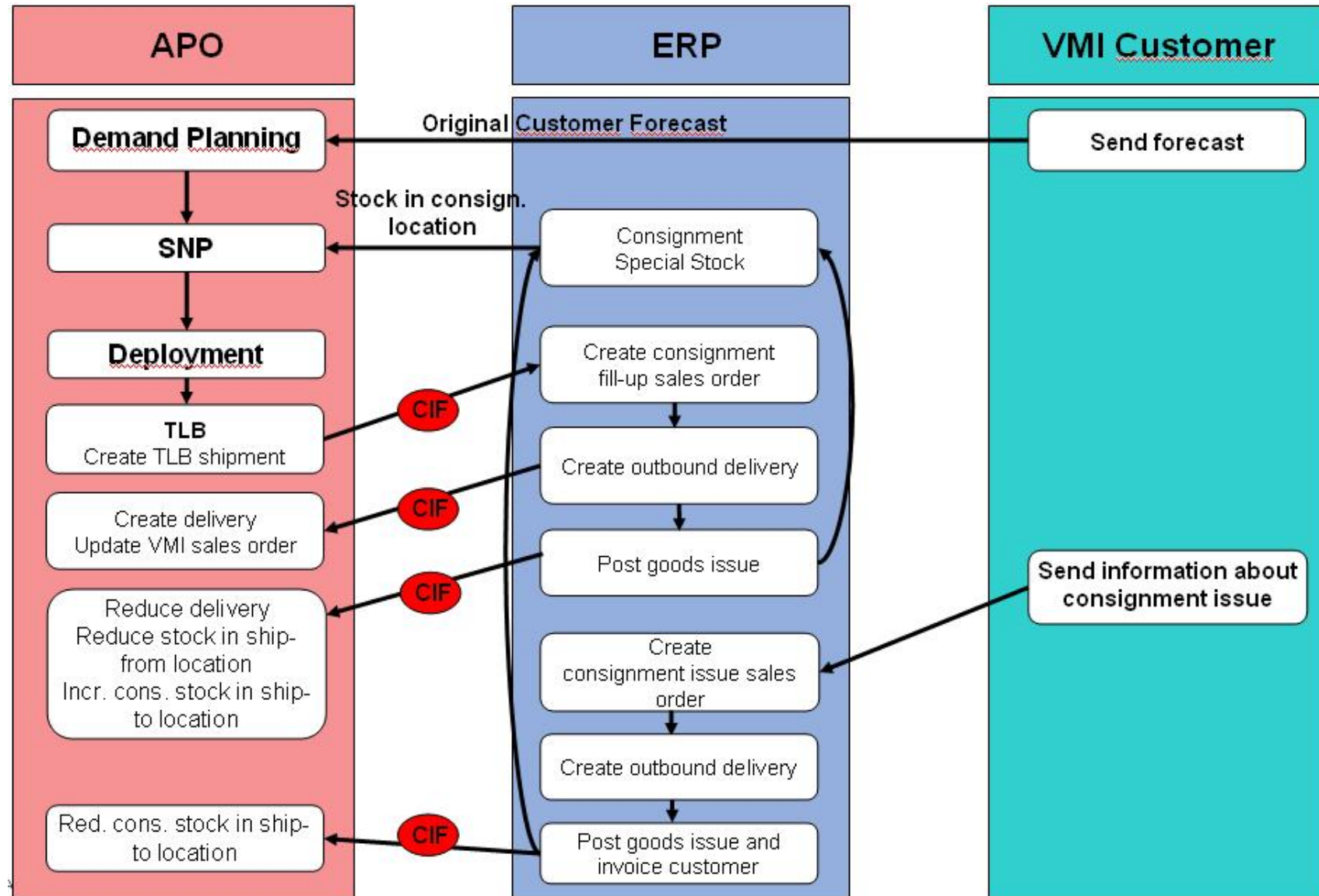


Standard APO VMI scenario



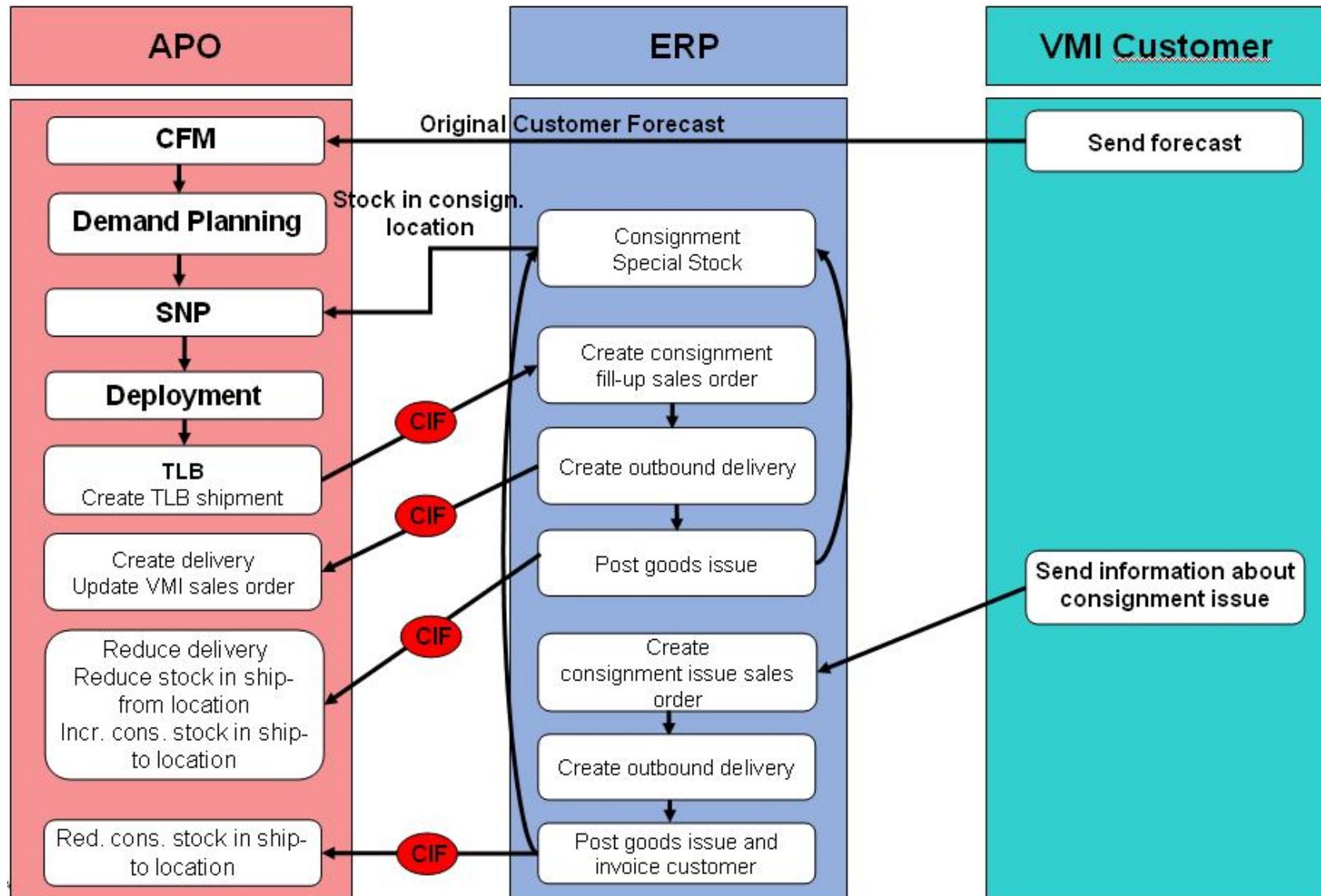
Consigned VMI scenario

(No in transit consignment special stock)



Consigned VMI scenario (with CFM)

(No in transit consignment special stock)



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Prerequisites for VMI enhancements (ERP EhP4)



- In order to be able to execute an integrated scenario with the listed enhancements it is necessary to turn on the business switch on ERP side.
- Please check transaction *SFW2* ⇒ Business Function *APO_VMI_CONS*

Business Function

The screenshot shows the 'Business Function Definition' table in SAP. The table has four columns: 'Business Function', 'Short Text', 'Type of Business Function', and 'Doc. exists'. The row for 'APO_VMI_CONS' is highlighted in yellow. The 'Doc. exists' column for this row contains an unchecked checkbox.

Business Function	Short Text	Type of Business Function	Doc. exists
APO_VMI_CONS	VMI Consignment	Enterprise Business Function	<input type="checkbox"/>

Parallel consigned and standard VMI scenario (1)



VMI agreements can have both consigned as well as non-consigned (standard) flavors.

- With SCM 7.0 APO VMI supports both a parallel consigned and standard VMI scenario for different products shipped to the same customer.
 - ⇒ A shipment split is executed before TLB shipments are published to ERP.
- Prerequisites to enable a parallel processing in APO:
 1. Consignment checkbox on the product specific transportation lane has to be set for the product in a consigned scenario.
This is used as an indicator to trigger the split in the TLB run.

Product Number	Product Short Description	Start date	End Date	Min. LS	Max. LS	Proc. Prio.	Dist. Prio.	Proc. Costs	Cost Func.	Subcontr.	Consignment
VMI_CONS_DEMO0@E4A000	TEST MATERIAL FOR VMI Consignment DEMO	01.04.2008	31.12.2008	0,000	0,000	0,00	0,00	0,00		<input type="checkbox"/>	<input type="checkbox"/>
VMI_CONS_DEMO1@E4A000	TEST MATERIAL FOR VMI Consignment DEMO1	01.04.2008	31.12.2008	0,000	0,000	0,00	0,00	0,00		<input type="checkbox"/>	<input checked="" type="checkbox"/>
VMI_CONS_MATERIAL@E4A000	TEST MATERIAL FOR VMI Consignment	01.03.2008	31.08.2008	0,000	0,000	0,00	0,00	0,00		<input type="checkbox"/>	<input checked="" type="checkbox"/>
VMI_CONS_MATERIAL2@E4A000	TEST MATERIAL FOR VMI Consignment 2.Edt.	01.03.2008	31.08.2008	0,000	0,000	0,00	0,00	0,00		<input type="checkbox"/>	<input type="checkbox"/>
VMI_TEST_CONS0@E4A000	TEST MATERIAL FOR VMI Consignment	01.04.2008	31.12.2008	0,000	0,000	0,00	0,00	0,00		<input type="checkbox"/>	<input checked="" type="checkbox"/>
VMI_TEST_CONS1@E4A000	TEST MATERIAL FOR VMI Consignment	01.04.2008	31.12.2008	0,000	0,000	0,00	0,00	0,00		<input type="checkbox"/>	<input checked="" type="checkbox"/>

2. Sales document type (e.g. OR) and additionally the consignment sales document type (e.g. KB) have to be maintained on ERP side to identify and do a right mapping to the relevant ERP sales order types.

Customer	Name	ATP Ind.	Cons.
J6_VMI_CUS	Jobbagy's VMI customer	<input checked="" type="checkbox"/>	KB
J6_VMI_CUS	Jobbagy's VMI customer	<input checked="" type="checkbox"/>	KB
J6_VMI_CUS	Jobbagy's VMI customer	<input checked="" type="checkbox"/>	KB
J6_VMI_CUS	Jobbagy's VMI customer	<input checked="" type="checkbox"/>	KB

IMG → Integration with other mySAP components → Advanced Planning and Optimization → Application Specific Settings and Enhancements → Settings and Enhancements of Sales Orders → Settings for Vendor Managed Inventory (VMI) → Define Customer/Plant Assignment and Configure ATP Check

Parallel consigned and standard VMI scenario (2)



- In a parallel consigned and standard VMI scenario it will be possible to display a consignment indicator for the TLB shipment in the TLB UI.
- The TLB UI is enhanced with a consignment indicator in order to support the VMI planner when creating the relevant shipments. The information is derived from the transportation lane setting.

TLB Interactive Planning

From PL0001@E4A000 To CUCUSTVMI@E4A000 Mns/Tms. 000

Selected Objects

Ty.	APO Source	Ty.	APO Destination Loc.
	PL0001@E4A000		CUCUSTVMI@E4A000

Selection profile

- BOSCHC
- ZSOLT_TEST

TLB Shipments

Order Number	Category Text	Consignment	Ship. Date	Ship. Time	Delivery Date	Dt
0000000291	TLB:VMI-SO		17.03.2008	08:00:00	17.03.2008	18
0000000292	TLB:VMI-SO	X	18.03.2008	08:00:00	18.03.2008	18
0000000293	TLB:VMI-SO	X	17.03.2008	08:00:00	17.03.2008	18
0000000294	TLB:VMI-SO		20.03.2008	08:00:00	20.03.2008	18
0000000295	TLB:VMI-SO	X	18.03.2008	08:00:00	18.03.2008	18
0000000296	TLB:VMI-SO		19.03.2008	08:00:00	19.03.2008	18
0000000302	TLB:VMI-SO		19.03.2008	08:00:00	19.03.2008	18
0000000303	TLB:VMI-SO	X	20.03.2008	08:00:00	20.03.2008	18
0000000308	TLB:VMI-SO		19.03.2008	16:19:04	20.03.2008	18
0000000309	TLB:VMI-SO		19.03.2008	16:20:58	20.03.2008	18
0000000310	TLB:VMI-SO		19.03.2008	16:24:47	20.03.2008	18
0000000311	TLB:VMI-SO		19.03.2008	16:31:42	20.03.2008	18
0000000313	TLB:VMI-SO		20.03.2008	09:27:50	25.03.2008	09
0000000314	TLB:VMI-SO		20.03.2008	10:05:47	25.03.2008	10
0000000315	TLB:VMI-SO		20.03.2008	10:10:24	25.03.2008	10
0000000316	TLB:VMI-SO	X	20.03.2008	10:28:41	25.03.2008	10

VMI master data integration



- With SCM 7.0 in APO VMI you are able to automatically create location products in the ship-to location (“customer location”).
- The customer material info record in ERP carries customer, material and customer material. This info record is used as reference to create the location products in APO.
- A new CIF integration model object for customer material has been created.
- After activating the CIF model the ship-to location product in APO will be created and the customer material number is populated.

Create Integration Model

Model Name: CUST_LOC
Logical System: A9PCLNT001
APO Application: MASTER

Material Dependent Objects

<input type="checkbox"/> Materials	<input type="checkbox"/> Plants
<input type="checkbox"/> MRP Area Matl	<input type="checkbox"/> MRP areas
<input checked="" type="checkbox"/> Customer Mat.	
<input type="checkbox"/> AMPL	
<input type="checkbox"/> Planning Matl	<input type="checkbox"/> Supply Area
<input type="checkbox"/> ATP Check	
<input type="checkbox"/> Extern. Plant	
<input type="checkbox"/> Contracts	<input type="checkbox"/> SchedAgreements
<input type="checkbox"/> Pur.Info Record	
<input type="checkbox"/> PPM	
<input type="checkbox"/> PDS (ERP)	<input type="checkbox"/> BOM
<input type="checkbox"/> Storage Loc.Stk	<input type="checkbox"/> Transit Stock
<input type="checkbox"/> Sales Ord Stock	<input type="checkbox"/> Project Stocks
<input type="checkbox"/> Cust. Spec. Stk	<input type="checkbox"/> Vend. Spec. Stk

General Selection Options for Materials

Material		to	
Plant		to	
Matl Type		to	
PlantSpec. Mtl Stat		to	
MRP Ctrlr		to	
MRP Type		to	
ABC Indicator		to	

Customer material

Customer		To	
Distr. Channel		To	
Sales Org.		To	

Automatic ATP check of TLB shipments published to ERP



- With SCM 7.0 APO VMI it is possible to perform an automatically triggered ATP check of the TLB shipment in ERP after the TLB shipment is published and before the relevant sales order gets saved in ERP.
- Prerequisite: Flag the ATP indicator on ERP side

IMG → Integration with other mySAP components → Advanced Planning and Optimization → Application Specific Settings and Enhancements → Settings and Enhancements of Sales Orders → Settings for Vendor Managed Inventory (VMI) → Define Customer/Plant Assignment and Configure ATP Check

Change View "VMI: Maintain Sales Area and Order Type": Overview

Customer	Name	ATP Ind.	Co...
JG_VMI_CUS	Jobbagy's VMI customer	<input checked="" type="checkbox"/>	KB
JG_VMI_CUS	Jobbagy's VMI customer	<input checked="" type="checkbox"/>	KB
JG_VMI_CUS	Jobbagy's VMI customer	<input checked="" type="checkbox"/>	KB
JG_VMI_CUS	Jobbagy's VMI customer	<input checked="" type="checkbox"/>	KB

Transfer of in transit consignment special stock (with ERP EhP4)



- With ERP < ERP 6.0 EhP4 consignment special stock is updated *immediately* when goods issue is executed for consignment fill-up sales orders.
- With ERP EhP4 an additional step is introduced which will enable to model in transit consignment special stock (while product is transported to customer consignment stock). This object will be transferred to APO. In APO this information is stored as stock object in order to be able to view it a separate key figure and integrate it in the VMI planning process.
- The new value is displayed in *Consignment Stock In Transit* key figure. It is included in the *9AVMI* standard planning book.

VMI	Unit	2008.04.07	2008.04.08	2008.04.09	2008.04.10	2008.04.11	2008.04.12	2008.04.13	2008.04.14
Total Demand	ST								
Distribution Receipt (Planned)	ST								
Distribution Receipt (Confirmed)	ST								
Distribution Receipt (TLB-Confirmed)	ST		5						
In Transit	ST								
Production (Planned)	ST								
Production (Confirmed)	ST								
Manufacture of Co-Products	ST								
Total Receipts	ST		5						
Consignment Stock In Transit	ST		13						
Stock on Hand	ST	48	48	48	48	48	48	48	48
Supply Shortage	ST								
Safety Stock	ST								

Order	Item No.	Sched. Ln. No.	Avail/ReqD	Avail/ReqT	Fix	Req/ReqQty	Origin. Qty	Total Qty	BUn	Category	Category Description	Product Number	De
80000168	000010	0000	2008.04.08	13:27:00		3	0	3	ST	EV	VMI Consignment in Transit	JG_VMI_MAT1@E4A000	PL
80000169	000010	0000	2008.04.08	13:27:00		10	0	10	ST	EV	VMI Consignment in Transit	JG_VMI_MAT1@E4A000	PL

Integration of consignment special stock in a third party logistic provider scenario



- If the special stock partner has been defined for carrying out consignment stock processing by means of a third party rather than the customer, you can use the partner function for special stock partner in ERP SD.
- In order to enable this scenario within APO VMI a new BAdI on the ERP side has been introduced (*VMI_SPECIAL_STOCK_PARTNER*).
In the BAdI the consignment stock will be mapped to the corresponding customer location and the result would be an update of the stock in the corresponding customer location in APO.
- If the situation occurs that the third party logistic provider (3PLP) is holding the same part number on behalf of multiple end customers there would be the need to create additional customer masters for the 3PLP.

The screenshot shows the SAP Enhancement Implementation (EI) display for the enhancement **EI_VMI_SPECIAL_STOCK_PARTNER**. The interface includes a toolbar with navigation and action icons, a status bar indicating the enhancement is **Active**, and a tabbed menu with **Enh. Implementation Elements** selected. The main area displays the BAdI implementation details for **VMI_SPECIAL_STOCK_PARTNER**, including a description: "Implementation: BADI for VMI - third party logistic provider". A tree view on the left shows the BAdI implementation structure, with **VMI_SPECIAL_STOCK** selected. The right pane contains checkboxes for **Default Implementation**, **Example Implementation**, and **"Active" not switchable through Custom.(IMG)**.



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