

SAP Supply Chain Management (SAP SCM)

Release Notes



Release 4.0



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1 SCM Supply Chain Management

1.1 SCM-APO Advanced Planning and Optimization

1.1.1 Product Interchangeability (New)

Use

This new function manages the replacement of one product by another. Two scenarios are supported in SAP SCM 4.0.

- o **Discontinuation/Supersession**

This is the replacement case. The product has evolved and has been improved technically or can be produced more efficiently. When one product replaces another one speaks of discontinuation. It is possible to include several products in a supersession chain. This consists of several discontinuation steps.

There are two possible relationship types: **forward** and **fully interchangeable**.

For the interchangeability type forward, products can only be substituted one-way, for example, product A can only be substituted by product B and not vice-versa.

In the case of fully interchangeable products, product C replaces product B, but product B can also replace product C.

- o **Form-Fit-Function Classes**

This is the case where there are several products that are fully interchangeable with each other at any time; they have the same form, fit and function. However planning is carried out for one product (the leading product) but any one of the products in the class can actually be used to fulfill a demand . If demand cannot be covered, only the leading product is procured or produced.

Product interchangeability applies to several APO applications.

In **master data maintenance** you maintain interchangeability groups. These are the basis for all interchangeability functions in the applications.

Demand Planning uses the following existing functions to model discontinuation

- Like modeling
- Phase in/out modeling
- Product split
- Realignment

Other applications make use of substitution orders to model product interchangeability. There are ATP categories for substitution demand/requirements and substitution receipts.

For information on how **Supply Network Planning** works in detail with interchangeable products, see Product Interchangeability in Supply Network Planning.

Capable-To-Match supports forward discontinuation. To take discontinuation into account in a

planning run you must make the relevant setting in the *Special Strategies* tab page of the planning profile.

Production Planning /Detailed Scheduling supports the discontinuation of products in the procurement planning process and in the processing of in-house production orders, which contain components with restricted time validity. In the transition phase after the discontinuation of a product, procurement planning uses up any existing surplus product stock (if this is permitted) and procures the successor product to cover any product requirements that are still open. In the execution phase of an in-house production order with interchangeable products, you have functions at your disposal that you can use to react to short-term date/time and quantity changes, and to update the order components based on the supersession chain. For more information see the release information for Product Interchangeability in PP/DS.

Global Available-To-Promise already can substitute one product for another, if the required product is not available. The system uses rules-based availability checks to do this. You can now decide if the system should use these rules or the interchangeability master data. Note that you cannot use both methods together. Interchangeability is relevant for ATP during the creation of sales documents, primarily sales orders, and in PP/DS during the conversion of an in-house production order.

ATP also accounts for FFF classes. If requirements exist for one member of the FFF class, during the ATP check the system first checks whether there are receipts for this product. If not, it also checks whether the other members of the FFF class can fulfill the requirements.

Effects on Customizing

Extensive Customizing activities are available for the master data maintenance of Product Interchangeability. It is possible to :

- o Change certain settings, for instance the number ranges or which types of interchangeability groups are active
- o Customize the consistency checks for interchangeability groups
- o Implement various BAdIs

See *SAP APO Implementation Guide -> Advanced Planning and Optimization -> Master Data -> Product Interchangeability*.

You must maintain the number ranges to be able to work with interchangeability groups.

1.1.2 Pegging-Relevant Quantity for Sales Orders (Changed)

Use

For a schedule line of a sales order there is a desired quantity and a confirmed quantity. If you have not performed an ATP check for the sales order, the confirmed quantity of a schedule line is 0. If you have performed an ATP check, and the ATP check either could not confirm items or could only partially

confirm them, the confirmed quantity is smaller than the desired quantity or is also 0.

Up until now, the confirmed quantity was relevant for pegging as standard in *Production Planning and Detailed Scheduling* (PP/DS); in other words, it was relevant for the net requirements calculation and for dynamic pegging. This led to the following discrepancies:

- o As standard, a procurement planning heuristic created no procurement proposals, or created procurement proposals with an insufficient total receipt quantity, for unconfirmed or partially confirmed sales orders. However, as only the confirmed quantity is relevant for dynamic pegging as well, the system did not display any undercoverage alerts for uncovered sales orders.
- o In order that a procurement planning heuristic creates sufficient procurement proposals, you had to set the *Use Desired Quantity* indicator in the settings for a procurement planning heuristic. As only the confirmed quantity was relevant for dynamic pegging, the system displayed surplus alerts for these procurement proposals.

Therefore, the standard functions did not automatically support processes for improving planning.

As of SAP APO 4.0, you can use the PP planning procedure to define for each location product whether the desired quantity or the confirmed quantity of a schedule line in the sales order is relevant for pegging; this setting is relevant for all planning applications in SAP APO. You define the pegging-relevant quantity for a location product as follows:

- o If you assign a location product a planning procedure in which the new indicator *Confirmed Qty Pegging-Relevant* is set, the **confirmed quantity** is relevant for pegging for this product
- o If you assign a location product a planning procedure in which this indicator is not set, the **desired quantity** is relevant for pegging

In SAP APO 4.0, the indicator is automatically set in the planning procedures that contain an action for covering dependent or stock transfer requirements. These planning procedures are relevant for the Capable-to-Promise process for which the confirmed quantity is important. The indicator is not set in the other planning procedures; that is, the desired quantity is relevant in this case. These planning procedures are relevant for products, for example, that you plan in the production planning run.

From a technical point of view, the change for SAP APO 4.0 involves defining the content of the field for the pegging-relevant quantity, `REAL_QUANTITY`, depending on the planning procedure that you have defined for a location product in the location product master. Up until now, this field always contained the confirmed quantity (less the quantity already delivered, if necessary). As of SAP APO 4.0, this field contains the confirmed quantity or the desired quantity for sales order schedule lines, depending on the planning procedure. All planning applications that use this field therefore automatically use either the confirmed quantity or the desired quantity.

Previous application-specific settings for the planning-relevant quantity do not apply or are changed as follows:

- o **Production Planning and Detailed Scheduling (PP/DS)**
 - Procurement planning heuristics
The *Use Desired Quantity* indicator in the procurement planning heuristics settings has been deleted in SAP APO 4.0.
 - Model mix planning
The *Use Desired Quantity* indicator in the procedure package has been deleted in SAP APO 4.0.
- o *Capable-to-Match (CTM)*

Up until now, you were able to define on the *Settings* tab page under *Sales Order Quantity* whether the confirmed quantity or the desired quantity was relevant for CTM planning. The corresponding fields have been deleted in SAP APO 4.0.

o **Supply Network Planning (SNP)**

Up until now, you defined in SNP for each category group whether the system should use the confirmed quantity, the desired quantity, or the original quantity. The system determined the confirmed quantity from the REAL_QUANTITY field (as in PP/DS). As of SAP APO 4.0, there are the following changes:

- The system no longer determines the confirmed quantity from the REAL_QUANTITY field, but directly from the field for the confirmed quantity in the sales order, CONF_QUANTITY.
- The quantity that the system reads from the REAL_QUANTITY field in SAP APO 4.0 is now also called the pegging-relevant quantity in SNP.

For more information, see the SNP release information Semantics in the Planning Area.

Collaborative management of scheduling agreement releases (CMDs)

The changes to the pegging-relevant quantity of sales order schedule lines do **not** affect scheduling agreement releases of sales scheduling agreements. In general, in the case of sales scheduling agreement releases, the desired quantity is relevant in planning. However, planning can also be executed on the basis of the confirmed quantity that has been confirmed during the planning process either automatically by the system, or manually by the user.

As a heuristic that is based on the algorithm /SAPAPO/HEU_PLAN_STANDARDLOTS for planning standard lots (such as the standard heuristic SAP_PP_002) always plans scheduling agreement releases on the basis of the desired quantity, a modified algorithm /SAPAPO/CMDs_PLAN_STANDARDLOTS is also available for planning as of SAP APO 4.0. A heuristic that plans on the basis of this algorithm (such as the standard heuristic SAP_CDS_F04) always uses the confirmed quantity for scheduling agreement releases.

Effects on Existing Data

In the upgrade to SAP APO 4.0, the planning procedures and the pegging-relevant quantity of sales order schedule lines are automatically converted. The system executes the XPRG /SAPAPO/XPRG_REAL_QUANTITY during the upgrade. After the upgrade, the REAL_QUANTITY field for a sales order schedule line for a location product contains either the desired quantity or the confirmed quantity, depending on which planning procedure has been entered in the location product master.

When upgrading releases earlier than SAP APO 3.1, the system converts the planning procedures to the following standard planning procedures in SAP APO 4.0:

Planning procedure before SAP APO 3.1 Planning procedure in SAP APO 4.0

Pegging-relevant quantity

Automatic planning immediately Cover dependent requirements immediately Confirmed quantity

--

Manual planning with check Manual with check Confirmed quantity

--

Automatic planning Planning in the planning run Desired quantity
In the planning run

--

Manual planning without availability check Manual without check

Desired quantity

After the upgrade, check whether you want to use the new settings for the pegging-relevant quantity in the planning procedure. If required, change the planning procedures as follows, or assign location products another planning procedure with another definition for the pegging-relevant quantity:

- o If you want to change the pegging-relevant quantity for a planning procedure, you use the function *Convert Pegging-Relevant Quantity of Sales Orders*. You call up the function using the transaction /SAPAPO/RRP_CONF_QTY. (The transaction is not included in the SAP APO menu.) This function performs the conversion in the planning procedure. You cannot change the setting of the pegging-relevant quantity directly in Customizing for the planning procedure.
- o If you want to assign a location product another planning procedure, in which the pegging-relevant quantity has a different definition, you have to use the function *Change Planning Procedure and Convert Sales Orders*. You call up this function using transaction /SAPAPO/RRP_SET_RRPT. (The transaction is not included in the SAP APO menu.) You cannot assign any other planning procedure to a location product in the location product master or in mass maintenance that has a different definition for the pegging-relevant quantity to the planning procedure currently entered.

The system executes the desired function and then converts the pegging-relevant quantity of the existing sales order schedule lines in accordance with the new setting.

1.1.3 SAP Advanced Planning and Optimization, Changes to the IMG Structure

Use

Deleted IMG nodes and IMG activities:

- o *Define Class System (CDP or Classical Characteristics)* from *Cross-Application Components*
You can still find this IMG activity by following this menu path: *Advanced Planning and Optimization -> Basis Settings*.
- o *Maintain Fonts* from *Supply Chain Cockpit (SCC)* and *Supply Chain Engineer (SCE)*
- o *Maintain Color Settings* from *Supply Chain Cockpit (SCC)* and *Supply Chain Engineer (SCE)*
- o *Link Context - Maintain Map* from *Supply Chain Cockpit (SCC)* and *Supply Chain Engineer (SCE)*
- o *Maintain Map Layers* from *Supply Chain Cockpit (SCC)* and *Supply Chain Engineer (SCE)*
- o The *Supply Chain Engineer (SCE)* node
- o IMG activities for *Procedures* from *Delivery Schedule Processing for Sales Scheduling Agreement*
Heuristics are now used instead of procedures.
- o *Maintain Transportation Matrix* from *Transportation Planning and Vehicle Scheduling*

(TP/VS) -> *Basic Settings*

- o *Define Freight Units* from *Transportation Planning and Vehicle Scheduling (TP/VS)* -> *Basic Settings*

To execute this removed activity, you can use the following new activity: *Basic Settings for Vehicle Scheduling*.

New IMG nodes and IMG activities for *Master Data*:

- o *Business Add-Ins (BAIs)* for the *Product Master* in *Product*
- o *Define Finiteness Levels for Resources* in *Resource* and also *Supply Chain Planning* -> *Production Planning and Detailed Scheduling (PP/DS)* -> *Global Settings*
- o *Business Add-Ins for Resources* in *Resource*
- o *Maintain Means of Transport* in *Transportation Lane*
- o *Set Usage of GIS Tool* in *Transportation Lane*
- o *Enhanced Dependency Editor* in *Integrated Product and Process Engineering (iPPE)* -> *General Settings*
- o *Activate Time-Dependent Process Parameter (TDPP)* in *iPPE* in *Integrated Product and Process Engineering (iPPE)* -> *General Settings*
- o IMG activities for *Product Interchangeability*
- o *Business Add-Ins for the Production Process Model* in *Production Process Model*
- o *Business Add-Ins for PP/DS Runtime Object*
- o *Business Add-Ins for the Planning Version Copy* in *Model and Version Management*

New IMG nodes and IMG activities for the *Supply Chain Planning* area:

- o *Business Information Warehouse* in *Demand Planning (DP)* -> *Basic Settings*
- o *Business Add-Ins* in *Demand Planning (DP)*
- o *Maintain Global SNP Settings* in *Supply Network Planning (SNP)* -> *Basic Settings*
- o *Set Use of Number Ranges for SNP* in *Supply Network Planning (SNP)* -> *Basic Settings*
- o *Maintain Number Ranges for Orders* in *Supply Network Planning (SNP)* -> *Basic Settings*
- o *Define SNP Deployment Optimizer Profiles* in *Supply Network Planning (SNP)* -> *Profiles*
- o *Define SNP Capacity Leveling Profiles* in *Supply Network Planning (SNP)* -> *Profiles*
- o *Vendor-Managed Inventory* in *Supply Network Planning (SNP)*
- o *Multilevel Supply & Demand Matching (SDM)*
- o *Define Finiteness Levels for Resources* in *Production Planning and Detailed Scheduling (PP/DS)* -> *Global Settings*
- o IMG Activities for the *MRP Planning Run* in *Production Planning and Detailed Scheduling (PP/DS)*
- o *Define Layout for Navigation Tree* in *Production Planning and Detailed Scheduling (PP/DS)*

- > *Order View* and also in the *Product Planning Table*
- o *Define Functions for the Toolbar in the Detailed Scheduling Planning in Production Planning and Detailed Scheduling (PP/DS) -> Detail Board Profile*
- o *Define Slotting Heuristic in Production Planning and Detailed Scheduling (PP/DS) -> Model Mix Planning*
- o *IMG activities for Multiple Output Planning in Production Planning and Detailed Scheduling (PP/DS)*
- o *IMG activities for Action Handler in Production in Production Planning and Detailed Scheduling (PP/DS)*
- o *Business Add-Ins (BAI) in Production Planning and Detailed Scheduling (PP/DS) -> Planned Order Management*
- o *Application Logs for PP/DS in Production Planning and Detailed Scheduling (PP/DS)*
- o *The Business Add-Ins (BAIs) for PP/DS include the following:*
 - *Business Add-Ins for the Product Planning Table*
 - *BAI: Interface for High-Level Configuration*
 - *BAI: Switch Off Access to Configuration Data*
 - *Additional BAIs for Production Planning and Detailed Scheduling*
- o *Business Add-Ins (BAIs) for External Procurement Relationship in Supply Chain Planning -> Collaborative Procurement*
- o *Business Add-Ins (BAIs) for the Procurement Scheduling Agreement in Supply Chain Planning -> Collaborative Procurement*
- o *Heuristics in Supply Chain Planning -> Delivery Schedule Processing for Sales Scheduling Agreement*

More new IMG nodes and IMG activities:

- o *Business Add-In for CIF Error Handling in Basis Settings -> Integration*
- o *Maintain Dynamic Alert Types for Demand Planning and SNP in Alert Monitor*
- o *Business Add-Ins (BAIs) for the Alert Monitor in Alert Monitor*
- o *Basic Settings for Vehicle Scheduling in Transportation Planning and Vehicle Scheduling (TP/VS) -> Basic Settings*
- o *Activate Heuristic Interface in Transportation Planning and Vehicle Scheduling (TP/VS) -> Interactive Planning*
- o *Define Cost Profile in Transportation Planning and Vehicle Scheduling (TP/VS) -> Optimizer*
- o *Define Additional Fields in the Optimization Profile in Transportation Planning and Vehicle Scheduling (TP/VS) -> Optimizer*
- o *Business Add-Ins (BAIs) for TP/VS in Transportation Planning and Vehicle Scheduling (TP/VS)*

- o *Define Check Level* in *Global Available-to-Promise (Global ATP)* -> *Tools*
- o *Maintenance and Service Planning (MSP)*

Renamed or restructured IMG nodes and IMG activities:

- o The IMG activities for *Capable-to-Match (CTM)* are now located in *Multilevel Supply & Demand Matching (SDM)*. In previous release versions, these activities were located within *Supply Network Planning (SNP)*.
- o The IMG activity *Make SNP Key Figures Available* is now located in *Capable-to-Match (CTM)*. In earlier release versions, this IMG activity was directly assigned to *Supply Network Planning (SNP)*.
- o *Business Add-Ins for Campaign Planning* are no longer located in the *Business Add-Ins (BAIs)* for *PP/DS* node but are now in *Supply Chain Planning -> Production Planning and Detailed Scheduling (PP/DS)-> Production Campaign Planning*.
- o The *Default Confirmation Profiles* and *Control Profiles* in *Supply Chain Planning -> Delivery Schedule Processing for Sales Scheduling Agreement* now have a dedicated component called *Default Profiles for Initial Data Transfer* in *Profiles*.
- o IMG Activity *Define Dimensions/Units* is now located in *Transportation Planning and Vehicle Scheduling (TP/VS) -> Basic Settings*.
- o IMG activities *Maintain Compatibility of Means of Transport/Transportation Group*, *Maintain Compatibility of Location/Mean of Transport*, and *Maintain Compatibility Between Transportation Groups* are now located in *Transportation Planning and Vehicle Scheduling (TP/VS) -> Basic Settings*.
- o IMG activity *Maintain Means of Transport* is now located in *Master Data -> Transportation Lane*.
- o The IMG activities for *Integrated Product and Process Engineering (iPPE)* are now also located in *Cross-Application Components*.

1.1.4 SCM-APO-CA APO Cross-Application Components

1.1.4.1 SCM-APO-CA-CDP Characteristics-Dependent Planning

1.1.4.1.1 Demand Generation from Blocks (New)

Use

As of SAP_APO 4.0, you can generate planned independent demands for products during planning with blocks. These products are derived from the available capacity of these blocks. For the affected time period, concrete sales or planned orders do not have to exist. It is enough if blocks have been created that were defined on resources. You can therefore generate demands based on block planning for a product or for the input components of a plan, and plan procurement.

Effects on Existing Data

For maintaining forecasting data, you can use an existing plan that corresponds with the requirements of the products to be planned.

See also

For more information, see the SAP Library under *SAP Advanced Planner and Optimizer -> Production Planning and Detailed Scheduling (PP/DS) -> Characteristics-Dependent Planning -> Plan With CDP Characteristics -> Block Planning*.

1.1.4.1.2 Batch Classification (Changed)

Use

In SAP APO, the new class type 230 for batches is available.

In the SAP R/3 System, you must classify the batches that you are to use in SAP APO with class type 023. All affected R/3 Systems must use class type 023 for batch classification.

Note: The *Characteristics-Dependent Planning* (CDP) and characteristics-based product availability check cannot process batch evaluations that contain multiple values or intervals.

Effects on Existing Data

Assign the batches to the integration model and execute an initial data transfer.

Effects on Data Transfer

Batches must be transferred explicitly from SAP R/3 to SAP APO. To do this, you must set the indicator *Transfer Batches of Material* in the integration model at the material. This indicator is available as of Plug-In 2003.1, SAP R/3 4.6. If you use SAP APO 4.0 and still need classified stocks of batch-managed material for your processes, you must include the materials, for which batches are to be transferred, in your existing integration model or in a new integration model.

In the batch master in SAP R/3, the indicator *Batch no Longer Active* with Release 4.7, Support Package 3, is introduced (for older releases, see OSS note 533068). If this indicator is set, the corresponding batch is not transferred to the SAP APO System. If postings for deactivated batches are executed, the indicator is reset and the batches are transferred into the SAP APO System again.

You can set the indicator *Batch no Longer Active* in the SAP R/3 System by using report RVBDEACT. We recommend you execute this report before the initial transfer at regular intervals. In the batch master transaction, the indicator is not visible. Changes to the indicator value are documented using the change document in the batch master (tab page *Changes*.)

Effects on System Administration

If the batches are defined uniquely at plant level (class type 022), you must convert the batch level before the transfer to SAP APO at material or client level (class type 023). To do this, select *Determine Batch Level and Activate State Management* in Batch Management Customizing.

If batch stocks for a material are transferred to SAP APO with CPD classification (class type 400), the assigned batch must also be included in the integration model and active.

1.1.4.1.3 Batch Selection on Sales Order for CDP (Changed)

Use

If you have maintained selection criteria for the batch selection, then you can transfer these from the SAP R/3 system to SAP APO and store them as characteristic requirements for *Characteristics-Dependent Planning* (CDP). In addition to single values, either an interval for numerical characteristics, or multiple values are also supported (See OSS note 526883).

If a sales order item has selection criteria for batch selection as well as configuration data, and if pegging with characteristics is used, the characteristics value assignments and the characteristic requirements may not contradict one another.

Effects on System Administration

You must at least have SAP R/3 Plug-In 2003.1 for releases as of 4.6B to transfer selection criteria for batch selection. In the integration model, you must have selected *Classes/Characteristics*, and have set the indicator *Transfer Batches of Material* for the batches of the material that are to be transferred. You must have set CDP as the class system under *Basic Settings* in Customizing for SAP APO.

1.1.4.1.4 Macro Report in Characteristics Propagation of CDP (New)

Use

As of SAP APO 4.0, you can define macros for characteristics propagation in *Characteristics-Dependent Planning* (CDP) in a separate report. You can call this macro report in several PPM plans. For each plan, however, you can only use one report.

If you have created a macro report, you can call the report in the characteristics propagation. Set the *Macros from Report* indicator and specify the name of the report.

1.1.4.1.5 Pegging with Characteristics in CDP (Changed)

Use

In SAP APO 4.0, the maintenance in characteristics propagation of *Characteristics-Dependent Planning* (CDP) is simplified.

If a demand does not have a characteristic requirement, but does have characteristic value assignments, the system uses characteristic value assignments for pegging. If characteristic value assignments already exist, you do not need to define characteristic requirements when defining characteristic propagation in the *production process model* (PPM) for the input components. This is only necessary if the characteristic value assignments vary from the characteristic requirements.

Effects on Existing Data

Existing orders keep the characteristic values from the configuration in characteristic requirements. The configured characteristics only use new orders now as characteristic value assignments.

1.1.4.1.6 BAdIs for Variant Configuration and CDP (New)

Use

In SAP APO 4.0, these are the new Business Add-Ins (BAdIs) for *Variant Configuration* and *Characteristics-Dependent Planning* (CDP):

- o For *Characteristics-Dependent Planning*(CDP), there is a new Business Add-In /SAPAPO/MC01_CLAF *Control Class Assignments for CDP*.
You can find this Business Add-In in Customizing for the product master under *Business Add-Ins (BAdIs) for the Product Master*.
- o For *Variant Configuration*, there is a new Business Add-In /SAPAPO/CUIB_HL *Interface for High-Level Configuration*.
- o The Business-Add-In /SAPAPO/CONFR *Switch Off Access to Configuration Data* was enhanced and can now also be used for *Characteristics-Dependent Planning* (CDP).

You can find the last two Business Add-Ins in Customizing for *Production Planning and Detailed Scheduling (PP/DS)* under *Business Add-Ins (BAdIs) for PP/DS*.

1.1.4.2 SCM-APO-CA-COP Collaborative Planning

1.1.4.2.1 Page-Up/Page Down in Collaborative Supply and Demand Planning (Enhanced)

Use

It is now possible to move up and down a page, line or to the top/bottom of the planning book in the Internet browser.

To enable this function you must set the user parameter **/sapapo/clp_drilldown** to the number of lines that should appear on one page.

Note

As of Release SCM 4.0 Frequently Asked Questions (FAQs) are available from the Internet Browser.

1.1.4.3 SCM-APO-CA-VC Variant Configuration

1.1.4.3.1 BAdIs for Variant Configuration and CDP (New)

Use

In SAP APO 4.0, these are the new Business Add-Ins (BAdIs) for *Variant Configuration* and *Characteristics-Dependent Planning* (CDP):

- o For *Characteristics-Dependent Planning*(CDP), there is a new Business Add-In /SAPAPO/MC01_CLAF *Control Class Assignments for CDP*.
You can find this Business Add-In in Customizing for the product master under *Business Add-Ins (BAdIs) for the Product Master*.
- o For *Variant Configuration*, there is a new Business Add-In /SAPAPO/CUIB_HL *Interface for High-Level Configuration*.
- o The Business-Add-In /SAPAPO/CONFR *Switch Off Access to Configuration Data* was enhanced and can now also be used for *Characteristics-Dependent Planning* (CDP).

You can find the last two Business Add-Ins in Customizing for *Production Planning and Detailed Scheduling (PP/DS)* under *Business Add-Ins (BAdIs) for PP/DS*.

1.1.5 SCM-APO-MD Master Data

1.1.5.1 Improvements in the Maintenance of the Setup Matrix (Enhanced)

Use

In SAP APO 4.0, you can process the setup transitions as follows:

- o Filter setup transitions according to field contents
- o Change the field contents of several setup transitions simultaneously
- o Add values to or subtract values from the field values

Changes to the setup matrix values are written in the planning log.

1.1.5.2 SCM-APO-MD-VM Version Management

1.1.5.2.1 Creation and Deletion of Safety Stock in SAP liveCache (New)

Use

Up to now, the safety stock for a location product was only a virtual requirement; in other words, a requirement that does not exist in SAP liveCache and which is only taken into consideration by the net

requirements calculation and not by dynamic pegging in *Production Planning and Detailed Scheduling* (PP/DS). The system cannot therefore link receipts, which are created in procurement planning in PP/DS to cover safety stock, with the virtual requirement. This affects all functions that evaluate dynamic pegging relationships; for example, the system creates "incorrect" surplus alerts because of non-existent pegging relationships for receipts that have been created to cover the safety stock, or the system cannot take the requirements dates/times of the safety stock requirements into consideration when optimizing the delay costs.

As of SAP APO 4.0, the standard heuristic SAP_PP_018 *Create Safety Stock in SAP liveCache* (algorithm /SAPAPO/HEU_PLAN_SAFETY_STOCK) is available for make-to-stock production scenarios. You can use this standard heuristic to create, adjust, and delete static safety stock requirements in SAP liveCache. In the standard system, the static safety stock requirement is represented by an order that consists of a requirements element with the category SR. Depending on the planning version, the system takes the safety stock requirements in SAP liveCache into consideration in the net requirements calculation and in dynamic pegging, if you have selected the new option *Consider Safety Stock Requirements in SAP liveCache* in the field *PP/DS: Take Safety Stock into Account* in the planning version.

Using the BAdI /SAPAPO/RRP_SFTY_STK (UPDATE_IO_NODES method), you can extend the heuristic for non-make-to-stock scenarios and for the implementation of safety stock methods.

Capable-to-Match (CTM) and *Global ATP* can take the safety stock requirements in SAP liveCache into consideration. These safety stock requirements are not relevant for safety stock planning in *Supply Network Planning* (SNP).

Effects on Customizing

If you want to plan using safety stock requirements in SAP liveCache, you check the settings in the SAP standard heuristic SAP_PP_018 in Customizing for *Production Planning and Detailed Scheduling* under Maintain Heuristics. If you want to use your own settings, you create your own heuristic with the desired heuristic settings by copying the heuristic SAP_PP_018, for example, and changing the settings.

See also

- o Release information for Safety Stock in Global Available-to-Promise (new)
- o System documentation for the heuristic SAP_PP_018

To call up the system documentation for a heuristic, go to Customizing for *Production Planning and Detailed Scheduling* and under Maintain Heuristics, click on the information symbol at the end of the row for this heuristic.

1.1.5.3 SCM-APO-MD-LO Location

1.1.5.3.1 Receiving Calendar for Locations (New)

Use

Until now, the shipping calendar of the location was used for scheduling receiving and shipping activities in *Transportation and Shipment Scheduling* and in *Capable-to-Match planning*.

As of SAP APO 4.0, you can define a *receiving calendar* in the master data at the location. The system

now uses this *receiving calendar* of the destination location for calculating the delivery date and the unloading date. The system now uses the *shipping calendar* of the start location exclusively for calculating the following dates:

- o Material availability date
- o MRP date
- o Loading date
- o Goods issue date

The receiving calendar is also displayed in the result and log display. The calendar that is relevant for each activity is shown in the graphical display for the dates and working times.

Effects on Existing Data

During the upgrade to SAP APO 4.0, an *Executable Program After Upgrade* (XPRA) also enters the shipping calendars of all locations as the receiving calendar. This ensures that the same calendar is used for scheduling receiving activities as before the upgrade.

Effects on System Administration

If you use the customer exit /SAPAPO/SAPLVCRM_002, you may have to adjust the implementation.

See also

Release information GR and GI Processing Times for External Procurement in CTM

1.1.5.3.2 Integration of MRP Areas (Enhanced)

Use

In SAP R/3, storage locations and storage location MRP areas enable detailed procurement planning for individual areas in a plant, for example, for a spare parts store or for a production line. The division of a plant into storage location MRP areas is relatively flexible here, and can be changed with little effort if restructuring necessitates this.

It is already possible to integrate storage location MRP areas with SAP APO: During the transfer to SAP APO, an SAP R/3 plant becomes a location of the type *production plant* or *distribution center*, and a storage location MRP area becomes a location of the type *storage location MRP area*. However, until now there have been various restrictions on the integration of storage location MRP areas and the scope of function of SAP APO. This meant that planning with storage location MRP areas was only possible with restrictions in *Supply Network Planning* (SNP), in *Capable-to-Match* (CTM), and in *Production Planning and Detailed Scheduling* (PP/DS), while it was not at all possible in safety stock planning in SNP. The constraints included the following:

- o You could only transfer storage location MRP areas with one storage location from SAP R/3 to SAP APO.
- o You could only transfer sources of supply for external procurement and in-house production in SAP R/3 to the plant location in SAP APO, and not to the storage location MRP areas. For that reason, in SAP APO, you had to manually create the sources of supply for planning in the storage location MRP areas, if necessary.

- o In SAP APO, you always had to map the internal plant procurement of components for a planned order from the plant location or from another storage location MRP area using stock transfers, and you had to manually create the relevant transportation lanes in SAP APO. This is in contrast to the scope of function in SAP R/3, where, in in-house production, a component can be withdrawn directly from any storage location in the plant; in other words, without stock transfer.
- o You could not transfer a planned independent requirement, which was assigned to a storage location MRP area in SAP R/3, to SAP APO.

In order to support continuous supply chain planning within a plant on the basis of storage location MRP areas and SAP R/3 master data, the integration of storage location MRP areas and the scope of function in SAP APO have been extended for SAP APO 4.0. The prerequisite for the connected SAP R/3 system is a higher release than SAP R/3 4.5B and the Plug-In 2003.1.

Planning with storage location MRP areas is now possible in SNP, CTM, and PP/DS, without the previous constraints, as described below (although deployment still does not support planning with storage location MRP areas):

- o **Integration of storage location MRP areas with several storage locations**

You can transfer storage location MRP areas with several storage locations to SAP APO. However, SAP APO does not support processes where storage locations have "equal weighting": The receipt storage location of the storage location MRP area from SAP R/3 is automatically the leading storage location in SAP APO. The system uses the leading storage location as follows:

 - The system assigns the requirements and receipts, which a planning application in SAP APO creates in the storage location MRP area, to the leading storage location as standard.
 - If the rules-based ATP check in the sales order determines a storage location MRP area, the system enters the leading storage location in the sales order, in addition to the storage location MRP area. It is not possible to perform a check on the two levels of storage location MRP area and storage location in the sales order.

In SAP APO, for stock transfers to or from a storage location MRP area, you can specify a storage location other than the leading storage location in the storage location MRP area as the *issuing storage location* or as the *receiving storage location*. The system automatically assigns the requirement or receipt of a stock transfer to the issuing or receiving storage location.

In SAP APO, the storage locations of a storage location MRP area are on the *Storage Locations* tab page. You cannot change the storage location assignment for a storage location MRP area transferred from SAP R/3.
- o **Distribution of the sources of supply in SAP APO**

The sources of supply for external procurement and in-house production in SAP R/3 are automatically distributed to the plant location and the storage location MRP areas for which they are relevant in the transfer to SAP APO. The assignment is based on storage location information in the external procurement sources of supply and in the production versions in SAP R/3. SNP, CTM, and PP/DS have unrestricted access to the sources of supply in storage location MRP areas within source determination. (You have to generate SNP PPMs from PP/DS PPMs as usual.)
- o **Stock transfer between storage location MRP areas**

Up until now, you represented the stock transfer between a plant and an MRP area in the plant in SAP R/3 using a relevant special procurement type, which you entered in the material master for a material in the storage location MRP area. As of SAP APO 4.0, when the material master is transferred, a transportation lane is automatically created in SAP APO between the plant and the storage location MRP area. You only have to manually create transportation lanes in SAP APO if

you want to represent a stock transfer between two storage location MRP areas in a plant.

As a stock transfer between two storage locations can only be represented using a stock transfer reservation in the standard SAP R/3 system, PP/DS created a stock transfer reservation for a stock transfer that involved at least one storage location MRP area. This has the receipt category BD and the requirement category BC in the standard system.

CTM and SNP, on the other hand, created (until now) a stock transport requisition or an SNP stock transfer, which was transferred to SAP R/3 as a stock transfer reservation. As of SAP APO 4.0, SNP and CTM also create stock transfer reservations. SNP stores the requirement and the receipt for a stock transfer reservation - as in a normal SNP stock transfer - in the key figures *distribution demand (planned)* or *distribution receipt (planned)*. In addition, as of SAP APO 4.0, the new key figures *distribution demand (MRP area)* and *distribution receipt (MRP area)* are available, but only for displaying stock transfer reservations. In order that the system can create a stock transfer reservation for a stock transfer to or from a storage location MRP area, these key figures have to be in the planning area and in the planning book. The key figures are contained in the standard planning areas and books. If necessary, you have to include the key figures in your own planning areas and books. As the standard data view SNP94(1) does not contain the key figures, you have to include the key figures in the data view, if required.

You cannot use stock transfer reservations to represent the following processes:

- Explicit processing of shipments with shipping papers, Dangerous Goods Movements, and so on
- Deployment

For these processes you require stock transport requisitions and SAP R/3 Enterprise Core Release 4.70 with SAP R/3 Enterprise Extension Set 2.0. Contact SAP for more information.

o **Component withdrawal within a plant without stock transfer**

SAP APO supports component withdrawal in another location in the plant for an in-house production order. In this kind of scenario, the dependent requirement for a component is in a different location in the plant to the receipt. Stock transfer of the component does not apply. Data for the source of supply used is decisive for the location determination:

- For a PP/DS PPM or a PP/DS runtime object, the system determines the withdrawal location for the component from the storage location of the component in the plan. When the sources of supply are transferred to SAP APO, the system automatically determines the storage location. To do so, the system uses SAP R/3 master data and Customizing for storage location determination in SAP R/3. In SAP APO, you can enter a(nother) storage location in a PPM for a component at any time.
- When an iPPE access object is transferred from a DI system, the system determines the withdrawal location for a component and enters this withdrawal location in the iPPE access object.

o **Transfer of planned independent requirements**

You can transfer a planned independent requirement, which is assigned to a storage location MRP area in SAP R/3, to the corresponding storage location MRP area in SAP APO.

o **Terminology**

- As of SAP APO 4.0, the term *production planning area* has been replaced by the term *MRP area* on the interface and in the documentation.
- The location type *MRP area* has been renamed as *storage location MRP area* to distinguish it from the subcontractor MRP area in SAP R/3.

A supply chain model that is based on the storage location MRP areas in SAP R/3 is flexible: You can adjust it quite easily at any time to the changed internal plant processes or changed organizational structures by changing the assignment of storage locations to MRP areas in SAP R/3. With little effort, you can adjust the master data and movement data in SAP APO accordingly (you can execute the restructuring manually or using an SAP report). By using MRP areas in SAP R/3 (or in another OLTP system), you can therefore separate the modeling of the supply chain in the plant from the relatively inflexible plant definitions and the plant-specific master data (material master, bill of material, and routing).

Not only can you create storage location MRP areas in SAP APO through the transfer from SAP R/3, you can also create them manually in SAP APO. This is relevant if you do not have a connected SAP R/3 system.

Effects on System Administration

If you have planned up until now in SAP R/3 and in SAP APO using storage location MRP areas, you may want to change the MRP area structure in SAP R/3 as part of the upgrade to SAP APO 4.0. (Until now, only storage location MRP areas with one storage location were supported in SAP APO.) You should use the procedure described in the documentation here. For integration with an SAP R/3 system with release 4.6B or higher, SAP supports restructuring with the SAP R/3 report RMRPAEVAL. For more information, see the SAP note 593463.

See also

Supply Chain Planning Within a Plant in the SAP APO documentation

1.1.5.4 SCM-APO-MD-PR Product

1.1.5.4.1 Availability of Stock in SAP APO (New)

Use

Up to now, it was predefined within SAP APO which stock types were regarded as available as standard in dynamic pegging and the net requirements calculation in *Production Planning and Detailed Scheduling*, and in *Capable-to-Match planning*.

As of SAP APO 4.0, you can configure the availability for selected stock types. You can make these settings in the location product master on the *Demand* tab page under *Available Stocks*, and in the mass maintenance for location products. The following table provides an overview of which stock types are regarded as available as standard, and the stock types for which you can configure the availability in the location product master:

<u>Stock type</u>	<u>Standard</u>	<u>Configurable?</u>
Unrestricted-use stock	available	no
Stock in quality inspection	available	yes
Stock in transfer between sublocations	available	yes
Stock in transfer between locations	not available	yes
Stock in transit	not available	no

Restricted-use stock not available yes
Blocked stock not available yes

Note:

- o In SAP APO 4.0, the transfer of stock in transfer from SAP R/3 to SAP APO and the representation of stock in transfer in SAP APO has been changed. For more information, see the release information for Transfer and Representation of Stock in Transfer.
- o With the exception of stock in transfer, the descriptions of the stock types in SAP APO correspond to the stock type descriptions in SAP R/3. The links refer to the SAP R/3 definitions of the stock types.

Effects on System Administration

If you have implemented customer exits for modification of the stock availability (for example, in SAP APO, the customer exit APOCF011), check if you still need these.

1.1.5.4.2 Deactivate Dynamic Pegging (New)

Use

Up to now, dynamic pegging was active as standard. As of SAP APO 4.0, you can deactivate dynamic pegging in the location product master, on the *Demand* tab page under *Pegging* by setting the *Deactivate Dynamic Pegging* indicator.

Note that deactivating dynamic pegging has consequences for all applications that use dynamic pegging and evaluate dynamic pegging relationships. In addition to Detailed Scheduling, PP/DS optimization, and specific PP/DS heuristics, the alerts display is also affected: Without dynamic pegging, the system creates quantity alerts for all requirements and receipt elements; in other words, all receipts represent scrap and all requirements are regarded as being insufficiently covered. The system cannot create any date/time alerts. The affected applications cannot execute dynamic pegging again or evaluate the dynamic pegging relationships accordingly until you reactivate dynamic pegging.

Effects on Existing Data

Dynamic pegging is active in the standard system.

See also

Documentation for *Production Planning and Detailed Scheduling* under *Deactivate Dynamic Pegging*

1.1.5.4.3 Product Interchangeability in PP/DS (New)

Use

The continued development of products or changes to production processes can make it necessary to discontinue a product and substitute it with a successor product. *Production Planning and Detailed Scheduling* (PP/DS) supports the discontinuation of products in the procurement planning process and in

the processing of in-house production orders that contain components with limited time validity. In the transition phase after the discontinuation date of a product, procurement planning uses up any existing surplus product stock - if permitted - and procures the successor product to cover open product requirements. In the execution phase of an in-house production order with interchangeable components, you have functions at your disposal with which you can react to short-term date/time and quantity changes, and update the order components based on the supersession chain.

PP/DS supports planning with product interchangeability in the following in-house production scenarios:

- o **Shop Floor Production or Repetitive Manufacturing Based on PPMs or PP/DS Runtime Objects with Order Processing in SAP R/3**
Prerequisite for manufacturing order processing with SAP R/3 is a standard release SAP R/3 4.0B or higher.
- o **Repetitive Manufacturing Based on iPPE with Backflush in SAP APO**
Prerequisite is an SAP R/3 DI system with release 4.6B or higher.

PP/DS always plans here based on product interchangeability master data from SAP APO. The usage of product interchangeability master data is integrated in the following PP/DS applications:

- o **MRP Planning Run and Planning with the Product Heuristic**
To avoid an unnecessarily large amount of surplus stock resulting for a discontinued product, or to avoid requirements not being covered, the MRP planning run or the product heuristic always automatically plans all products in a supersession chain. The system forwards uncovered requirements and any surplus stock of a discontinued product to the successor product and takes account of the requirements and stock when planning the successor product. To forward a requirement or stock, the system creates a product substitution order. The product substitution is not mapped in the in-house production order in the planning phase. The in-house production order contains the components that the system determined on order creation by exploding the in-house production source of supply.
- o **Setting the Conversion Indicator and ATP Check for In-House Production Orders in PP/DS**
To take account of the limited time validity of the order components at the start of the execution phase at the latest, and to adopt substitute components in the order, if necessary, you have to set the conversion indicator for the order in PP/DS - dependent on a scenario - or perform a suitably configured ATP check. The system then updates the order components according to the supersession chain data.

Planning with product interchangeability in PP/DS is not possible:

- o For manufacturer part number management
- o For configurable products
- o For products with continuous requirements
- o In the Capable-to-Promise scenario

Planning with **shelf life data** is only possible with specific restrictions.

See also

- o Release information for Product Interchangeability in SAP APO
- o Release information for ATP Check for Planned Orders in Repetitive Manufacturing
- o Documentation for planning with product interchangeability in PP/DS

1.1.5.4.4 Remaining lot-for-lot order quantity (New)

Use

As of SAP APO 4.0, you can plan using the remaining lot-for-lot order quantity in *Production Planning and Detailed Scheduling* (PP/DS). Using this quantity, a procurement planning heuristic creates the last receipt in a specific period, not according to the lot-sizing procedure defined, but using a reduced receipt quantity, so that the available quantity at the end of the period is 0. In the case of a product that is not part of a supersession chain, the period is the PP/DS horizon. For a product that belongs to a supersession chain, the period is the validity period of the product; however, the remaining lot-for-lot order quantity is only used here if the validity period ends within the PP/DS horizon. By planning with the remaining lot-for-lot order quantity, you can, for example, prevent planning from creating too large a receipt for a product that is to be discontinued, and thus causing excess stock, which would possibly represent scrap.

If you want to plan using the remaining lot-for-lot order quantity, you set the *Last Lot Exact* indicator on the *Lot Size* tab page in the location product master. Note:

- o Heuristics, which execute procurement planning according to a reorder point method, do not take the remaining lot-for-lot order quantity into consideration
- o The remaining lot-for-lot order quantity is only relevant for PP/DS, and not for *Supply Network Planning* and *Capable-to-Match*

1.1.5.4.5 Adjustment of the PP/DS Horizon (New)

Use

If you enter no value or the duration 0 for the PP/DS horizon, the system automatically uses the SNP production horizon as the PP/DS horizon during planning. The PP/DS horizon is therefore just as long as the SNP production horizon and the SNP and PP/DS planning periods thus follow on from each other without any gaps and without overlapping.

Therefore, do not enter a value or enter the duration zero for the PP/DS horizon:

- o **If there should not be a gap between the PP/DS horizon and the SNP planning period**
A gap between the end of the PP/DS horizon and the start of the SNP planning period is a time segment that is neither planned by PP/DS nor SNP. This can lead to inconsistencies.
- o **If the PP/DS horizon and the SNP planning period must not overlap**
Planning periods without any overlaps are relevant for decoupling SNP planning and PP/DS planning and for the integration of planned orders that you transfer from SAP R/3 to SAP APO. If you specify the SNP production horizon in days, you can avoid overlaps by specifying the same number of days for the PP/DS horizon. If you specify the SNP production horizon in calendar weeks or calendar months, and want planning periods that do not overlap, you should not enter a value for the PP/DS horizon. If you specify the SNP production horizon in calendar days or calendar weeks, the SNP production horizon does not have any fixed duration. It always reaches to the end of the current period defined by the calendar weeks or the calendar months. The duration of the SNP production horizon therefore automatically gets shorter during a period. If, for example, you specify

a calendar week for the SNP production horizon, the SNP production horizon reaches seven days into the future at the start of a calendar week. If you have specified a PP/DS production horizon of seven calendar days, the SNP planning horizon and the PP/DS horizon do not overlap at the start of the calendar week. After three days have elapsed, the SNP production horizon only reaches four days into the future, but the PP/DS horizon still reaches seven days into the future. Therefore, the SNP planning period and the PP/DS horizon overlap.

See also

Integration of Planned Orders

Period Category for the SNP Production Horizon

1.1.5.4.6 Planning Group for the Production Planning Run (New)

Use

As of SAP APO 4.0, the *planning group* is available as a new grouping and selection criteria for products, which you can use to execute the production planning run specifically for particular groups of products. Planning groups are relevant to all heuristics that execute planning or service tasks for products, such as procurement planning heuristics or MRP heuristics. By dividing up your products into planning groups, and matching the sequence of heuristic runs in the production planning run to the various planning groups, you can more easily solve planning tasks such as the creation of a finite production plan or master production scheduling.

To group products in a planning group, you enter the name of the planning group in the location product master on the *PP/DS* tab page. You can select the products according to planning group in the product selection for a processing step of the production planning run. The planning group is also available in the propagation range as a selection criterion; that is, you can restrict the products that the system may plan in the production planning run to the planning groups.

Effects on Customizing

You define the names of planning groups in Customizing for *Production Planning and Detailed Scheduling (PP/DS)* under *MRP Planning Run -> Maintain Planning Groups*.

1.1.5.4.7 Transfer and Representation of Stock in Transfer (Changed)

Use

SAP R/3 distinguishes between the following types of stock in transfer:

- o *Stock in transfer between plants*
Until now, this stock type was represented in the standard SAP APO system by the same order category as stock in transit. In dynamic pegging and in the net requirements calculation in *Production Planning and Detailed Scheduling (PP/DS)* and in *Capable-To-Match (CTM)*, the stock in transit and thus also the stock in transfer between plants were regarded as unavailable. (In Customizing for material requirements planning in SAP R/3, you can define if you want the cross-plant stock in transfer to be available for material requirements planning in SAP R/3.)

- o **Stock in transfer between storage locations in a plant**
Until now, this stock type was represented in the standard SAP APO system by the same order category as unrestricted-use stock, and was therefore always regarded as available for the net requirements calculation and dynamic pegging. (In SAP R/3, internal plant stock in transfer is also always available.)

Until now, therefore, stock in transfer belonged to stock in transit and to unrestricted-use stock. SAP APO 4.0 distinguishes between the various types of stock in transfer: The stock in transfer between plants is transferred to SAP APO as **stock in transfer between locations** as of SAP APO 4.0. Stock in transfer between storage locations in a plant is transferred as **stock in transfer between sublocations**. (This corresponds to the mapping *Plant* -> *Location* and *Storage Location* -> *Sublocation*.) This is possible because of the enhancements in SAP APO described below.

New order categories in SAP APO

Until now, stock in transfer in SAP APO was represented by the order category GC_OM_STOCK_IN_TRANSIT (stock in transit) or the order category GC_OM_STOCK_UNRESTRICTED (unrestricted-use stock). The following new order categories are now available:

- o **Stock in transfer between sublocations**
Order category: GC_OM_STOCK_TRANSF_SUBLOC
- o **Stock in transfer between locations**
Order category: GC_OM_STOCK_TRANSF_LOC

The new order categories in SAP APO allow a distinction to be made between the stock in transfer in PP/DS and CTM; that is, they represent independent stock elements for dynamic pegging and the net requirements calculation. The new order categories allow the availability of the stock in transfer types to be defined independently of each other for pegging and for the net requirements calculation.

ATP categories in SAP APO

Supply Network Planning (SNP) and *Global Available-to-Promise* (Global ATP) do not control stock availability on the basis of the order category but based on the ATP category. In order that a distinction can be made between the various SAP R/3 stock in transfer types in SAP APO using the ATP category, the new ATP category CS has been implemented in SAP APO 4.0 for stock in transit. The previous categories in SAP APO are still valid without change for stock in transfer. The following list gives you an overview:

- o **Stock in transit**
Category until now: CA, Stock/tsfr
Category as of SAP APO 4.0: **CS, StkInTrnst**
- o **Stock in transfer between locations**
Category until now and in SAP APO 4.0: CA, Stock/tsfr
This category used to also include the stock in transit, but as of SAP APO 4.0 it only contains the stock in transfer between locations.
- o **Stock in transfer between sublocations**
Category until now and in SAP APO 4.0: CN, TsStkSb

Enhancement of the SAP APO Core Interface

As before, stock in transit and stock in transfer are transferred together from SAP R/3 to SAP APO if an active integration model exists for stock in transit. Prerequisite for the changed representation of stock in

transfer in SAP APO is SAP R/3 Plug-In 2003.1.

Effects on Existing Data

Check if the new standard settings fulfill your requirements and make changes if necessary.

- o **PP/DS and CTM**
In the standard system, it is defined in the location product master on the *Demand* tab page under *Available Stocks* that *Stock in Transfer Between Locations* is not available and that *Stock in Transfer Between Sublocations* is. Change the settings in the location product master if necessary.
- o **SNP and Global ATP**
SNP and Global ATP do not automatically take the new category for stock in transit (CS, StkInTrnst) into consideration. You have to extend the category group for stock or the scope of check accordingly, if required.
- o **Customer exits**
Check your customer exits for processing stock.

See also

Release Information on the Availability of Stock

1.1.5.4.8 Extended Production Horizon (New)

Use

Previously, you could specify a period of time in the location product master for *Supply Network Planning (SNP)* and *Capable-to-Match (CTM)* during which SNP and CTM do not plan production or create planned orders. It separates the medium-term SNP and CTM planning from the short-term *Production Planning and Detailed Scheduling (PP/DS)*.

As of SAP APO 4.0, you can now also specify an extended SNP production horizon. In contrast to the SNP production horizon, you can manually create planned orders within this extended horizon in interactive Supply Network Planning.

1.1.5.5 SCM-APO-MD-RE Resource

1.1.5.5.1 New Functions for Resources

Use

The following new functions for the management of master data for resources are available in SAP APO 4.0 with SAP R/3 Plug-In 2003.1 and SAP R/3 4.0B (or higher).

- o **Management of Header Data for Resources in SAP R/3**
You can also specify the header data of resources destined for SAP APO at the capacity in SAP R/3 and transfer it to SAP APO via the *SAP APO Core Interface (CIF)*. Other data on available

capacity from SAP R/3, such as intervals and shifts, is not transferred directly.

- o **External Capacity**
If you want to manage all data in SAP R/3, you can use the external capacity. SAP APO then determines available capacity directly from the data in SAP R/3. In the CIF IMG you can elect either to use the external capacity for all transferred resources or specify it for each resource individually.
- o **Choice of Resource Type Prior to Transfer**
Prior to the first transfer of capacities from SAP R/3 to SAP APO, you can specify in the CIF implementation guide (CIF IMG) or in the master data for the relevant capacity in SAP R/3 which resource type is to be assigned to the resources created in SAP APO. Previously, only single or multiple activity resources were generated in the standard system. The resource type cannot be changed in SAP APO.
- o **Change Transfer for Header Data of Resources**
You can use the change transfer facility for the header data of the resource. In the CIF IMG, you specify whether changes in a capacity are to be adopted merely in the planning-version-independent resource, additionally in planning version 000, or additionally in all planning versions of model 000.
- o **Changes in the Capacity Profile**
Hitherto, if you changed the available capacity of a resource in the capacity profile the capacity profile was stored for the entire generation timeframe of the resource. Changes in capacity (e.g. in the definitions) thus had no effect on available capacity if a capacity profile existed.
As of SAP APO 4.0, the system stores only the changed data in the capacity profile. This means that the capacity defined at the resource applies for the times at which no variances are defined in the capacity profile.

Effects on Existing Data

Previously, you could use customer exit APOBP002 to cause resources to be created as mixed resources during transfer via SAP APO CIF, or change the header data of the resource (e.g. the resource name). As of SAP APO 4.0, you can no longer use this customer exit for transfers via SAP APO CIF. You now create the resource type in the CIF IMG, as described above. *Business add-in* /SAPAPO/CRESCIF is now available for changes to the header data or the transfer of additional data. You will find this in the SAP APO implementation guide under *Master Dat -> Resources -> Business Add-Ins (BAIs) for Resources -> Change or Enhance Resource Data Transferred via SAP APO CIF*.

1.1.5.5.2 Update of the Available Capacity of Resources (New)

Use

The available capacity of a resource in SAP liveCache has, until now, always only been updated or recalculated by the system if data relevant for SAP liveCache was changed or the resource was saved as active in SAP liveCache.

In SAP APO 4.0, the report /SAPAPO/CRES_CAPACITY_LENGTHEN is available. This report can be used to delete the available capacity in the past that is no longer relevant for planning and to extend the available capacity into the future, without the resource having to be saved again. This report can be scheduled as a periodic job.

1.1.5.5.3 Finiteness Level of Resources (New)

Use

If you want to schedule a resource either finitely or infinitely in different applications, you can control this as of SAP APO 4.0 using the finiteness level at the resource and in the settings for each application.

You assign a fixed finiteness level to the resource in the master data. In the settings for the application, you define the maximum finiteness level up to which resources can be scheduled finitely.

Effects on Existing Data

Existing resources, for which the *finite scheduling* indicator is set in the master data, are assigned the finiteness level **0** as standard; that is, the resource is scheduled finitely in all applications.

In the SAP standard strategy profile SAP001 for the DS planning board and in the SAP standard optimization profiles, the maximum value **9999** is defined as the finiteness level, which means that all resources for which the *finite scheduling* indicator is set are scheduled finitely.

In all other existing strategy profiles and optimization profiles, the value is initial at first.

If you assign a finiteness level (**> 0**) to an existing resource that is flagged as finite, you also have to adjust the finiteness level in the settings (heuristic settings, strategy profiles, or optimization profiles) of the applications that scheduled this resource finitely until now, if you want these applications to continue scheduling the resource finitely.

Effects on Customizing

You define finiteness levels in Customizing under *Advanced Planning and Optimization -> Master Data -> Resource -> Define Finiteness Levels for Resources*.

1.1.5.5.4 Status Indicator for Available Resource Capacity (New)

Use

Before now in the optimization-based planning method of *Supply Network Planning (SNP)*, you could define only two available capacity variants of a resource: A normal available capacity and a maximum available capacity. The SNP optimizer calculated costs (that you could define for a capacity variant) for using the maximum capacity.

As of SAP APO 4.0, you can define multiple capacity variants for a resource and use a status indicator to label them as minimum, normal, and maximum available capacity. You can define costs for falling below the minimum or for using the normal or maximum capacity in the quantity and rate definition or the capacity profile of the resource. The SNP optimizer takes these costs into account during planning. However, the minimum capacity and costs that you defined for a capacity variant with a *Normal Capacity* status are only taken into account for production resources by the SNP optimizer.

You define the status indicator globally for all resources to which the capacity variant is assigned. To do this, go to the initial screen of the resource and choose *Current Settings -> Capacity Variants*. The default value is maximum capacity (empty field). This ensures compatibility with earlier releases. If you have given the same status for multiple capacity variants, the system uses the variant with the lowest

number.

New key figure for minimum available capacity in interactive planning

In addition to the existing key figures for normal and maximum available capacity, the capacity view in interactive Supply Network Planning now also contains a minimum available capacity key figure.

See also

SNP documentation: *Master Data Setup for the Optimizer*.

1.1.5.6 SCM-APO-MD-PPM Production Process Model

1.1.5.6.1 Integration of MRP Areas (Enhanced)

Use

In SAP R/3, storage locations and storage location MRP areas enable detailed procurement planning for individual areas in a plant, for example, for a spare parts store or for a production line. The division of a plant into storage location MRP areas is relatively flexible here, and can be changed with little effort if restructuring necessitates this.

It is already possible to integrate storage location MRP areas with SAP APO: During the transfer to SAP APO, an SAP R/3 plant becomes a location of the type *production plant* or *distribution center*, and a storage location MRP area becomes a location of the type *storage location MRP area*. However, until now there have been various restrictions on the integration of storage location MRP areas and the scope of function of SAP APO. This meant that planning with storage location MRP areas was only possible with restrictions in *Supply Network Planning* (SNP), in *Capable-to-Match* (CTM), and in *Production Planning and Detailed Scheduling* (PP/DS), while it was not at all possible in safety stock planning in SNP. The constraints included the following:

- o You could only transfer storage location MRP areas with one storage location from SAP R/3 to SAP APO.
- o You could only transfer sources of supply for external procurement and in-house production in SAP R/3 to the plant location in SAP APO, and not to the storage location MRP areas. For that reason, in SAP APO, you had to manually create the sources of supply for planning in the storage location MRP areas, if necessary.
- o In SAP APO, you always had to map the internal plant procurement of components for a planned order from the plant location or from another storage location MRP area using stock transfers, and you had to manually create the relevant transportation lanes in SAP APO. This is in contrast to the scope of function in SAP R/3, where, in in-house production, a component can be withdrawn directly from any storage location in the plant; in other words, without stock transfer.
- o You could not transfer a planned independent requirement, which was assigned to a storage location MRP area in SAP R/3, to SAP APO.

In order to support continuous supply chain planning within a plant on the basis of storage location MRP areas and SAP R/3 master data, the integration of storage location MRP areas and the scope of function in SAP APO have been extended for SAP APO 4.0. The prerequisite for the connected SAP R/3 system is a

higher release than SAP R/3 4.5B and the Plug-In 2003.1.

Planning with storage location MRP areas is now possible in SNP, CTM, and PP/DS, without the previous constraints, as described below (although deployment still does not support planning with storage location MRP areas):

o **Integration of storage location MRP areas with several storage locations**

You can transfer storage location MRP areas with several storage locations to SAP APO. However, SAP APO does not support processes where storage locations have "equal weighting": The receipt storage location of the storage location MRP area from SAP R/3 is automatically the leading storage location in SAP APO. The system uses the leading storage location as follows:

- The system assigns the requirements and receipts, which a planning application in SAP APO creates in the storage location MRP area, to the leading storage location as standard.
- If the rules-based ATP check in the sales order determines a storage location MRP area, the system enters the leading storage location in the sales order, in addition to the storage location MRP area. It is not possible to perform a check on the two levels of storage location MRP area and storage location in the sales order.

In SAP APO, for stock transfers to or from a storage location MRP area, you can specify a storage location other than the leading storage location in the storage location MRP area as the *issuing storage location* or as the *receiving storage location*. The system automatically assigns the requirement or receipt of a stock transfer to the issuing or receiving storage location.

In SAP APO, the storage locations of a storage location MRP area are on the *Storage Locations* tab page. You cannot change the storage location assignment for a storage location MRP area transferred from SAP R/3.

o **Distribution of the sources of supply in SAP APO**

The sources of supply for external procurement and in-house production in SAP R/3 are automatically distributed to the plant location and the storage location MRP areas for which they are relevant in the transfer to SAP APO. The assignment is based on storage location information in the external procurement sources of supply and in the production versions in SAP R/3. SNP, CTM, and PP/DS have unrestricted access to the sources of supply in storage location MRP areas within source determination. (You have to generate SNP PPMs from PP/DS PPMs as usual.)

o **Stock transfer between storage location MRP areas**

Up until now, you represented the stock transfer between a plant and an MRP area in the plant in SAP R/3 using a relevant special procurement type, which you entered in the material master for a material in the storage location MRP area. As of SAP APO 4.0, when the material master is transferred, a transportation lane is automatically created in SAP APO between the plant and the storage location MRP area. You only have to manually create transportation lanes in SAP APO if you want to represent a stock transfer between two storage location MRP areas in a plant.

As a stock transfer between two storage locations can only be represented using a stock transfer reservation in the standard SAP R/3 system, PP/DS created a stock transfer reservation for a stock transfer that involved at least one storage location MRP area. This has the receipt category BD and the requirement category BC in the standard system.

CTM and SNP, on the other hand, created (until now) a stock transport requisition or an SNP stock transfer, which was transferred to SAP R/3 as a stock transfer reservation. As of SAP APO 4.0, SNP and CTM also create stock transfer reservations. SNP stores the requirement and the receipt for a stock transfer reservation - as in a normal SNP stock transfer - in the key figures *distribution demand (planned)* or *distribution receipt (planned)*. In addition, as of SAP APO 4.0, the new key figures *distribution demand (MRP area)* and *distribution receipt (MRP area)* are available, but only for displaying stock transfer reservations. In order that the system can create a stock

transfer reservation for a stock transfer to or from a storage location MRP area, these key figures have to be in the planning area and in the planning book. The key figures are contained in the standard planning areas and books. If necessary, you have to include the key figures in your own planning areas and books. As the standard data view SNP94(1) does not contain the key figures, you have to include the key figures in the data view, if required.

You cannot use stock transfer reservations to represent the following processes:

- Explicit processing of shipments with shipping papers, Dangerous Goods Movements, and so on
- Deployment

For these processes you require stock transport requisitions and SAP R/3 Enterprise Core Release 4.70 with SAP R/3 Enterprise Extension Set 2.0. Contact SAP for more information.

o **Component withdrawal within a plant without stock transfer**

SAP APO supports component withdrawal in another location in the plant for an in-house production order. In this kind of scenario, the dependent requirement for a component is in a different location in the plant to the receipt. Stock transfer of the component does not apply. Data for the source of supply used is decisive for the location determination:

- For a PP/DS PPM or a PP/DS runtime object, the system determines the withdrawal location for the component from the storage location of the component in the plan. When the sources of supply are transferred to SAP APO, the system automatically determines the storage location. To do so, the system uses SAP R/3 master data and Customizing for storage location determination in SAP R/3. In SAP APO, you can enter a(nother) storage location in a PPM for a component at any time.
- When an iPPE access object is transferred from a DI system, the system determines the withdrawal location for a component and enters this withdrawal location in the iPPE access object.

o **Transfer of planned independent requirements**

You can transfer a planned independent requirement, which is assigned to a storage location MRP area in SAP R/3, to the corresponding storage location MRP area in SAP APO.

o **Terminology**

- As of SAP APO 4.0, the term *production planning area* has been replaced by the term *MRP area* on the interface and in the documentation.
- The location type *MRP area* has been renamed as *storage location MRP area* to distinguish it from the subcontractor MRP area in SAP R/3.

A supply chain model that is based on the storage location MRP areas in SAP R/3 is flexible: You can adjust it quite easily at any time to the changed internal plant processes or changed organizational structures by changing the assignment of storage locations to MRP areas in SAP R/3. With little effort, you can adjust the master data and movement data in SAP APO accordingly (you can execute the restructuring manually or using an SAP report). By using MRP areas in SAP R/3 (or in another OLTP system), you can therefore separate the modeling of the supply chain in the plant from the relatively inflexible plant definitions and the plant-specific master data (material master, bill of material, and routing).

Not only can you create storage location MRP areas in SAP APO through the transfer from SAP R/3, you can also create them manually in SAP APO. This is relevant if you do not have a connected SAP R/3 system.

Effects on System Administration

If you have planned up until now in SAP R/3 and in SAP APO using storage location MRP areas, you may want to change the MRP area structure in SAP R/3 as part of the upgrade to SAP APO 4.0. (Until now, only storage location MRP areas with one storage location were supported in SAP APO.) You should use the procedure described in the documentation here. For integration with an SAP R/3 system with release 4.6B or higher, SAP supports restructuring with the SAP R/3 report RMRPAEVAL. For more information, see the SAP note 593463.

See also

Supply Chain Planning Within a Plant in the SAP APO documentation

1.1.5.6.2 Production in Another Location (New)

Use

As of SAP APO 4.0, *production in another location* is available in SAP APO as a new form of procurement for in-house production. You use *production in another location* if several locations (often warehouses or distribution centers) are responsible for planning a finished product, but this product is manufactured in another location (typically a production plant) that does not have any planning responsibility.

To model this scenario in SAP APO, you use an in-house production source of supply (PPM, R/3 runtime object, or iPPE access object) in SAP APO, in which the planning location and the production location are different, for the finished product that you want to procure using *production in another location*. In SAP APO 4.0, the *planning location* has been added to the maintenance of PPMs and iPPE access objects. SAP APO uses such an in-house production source of supply to create a planned order whose receipt is in the planning location and whose component requirements are in the production location. You execute procurement planning for the finished product in the planning location, and procurement planning for the components and capacity planning in the production location.

The benefits of *production in another location* are as follows:

- o There is no stocking level (the stocking level for the finished product in the production location), thus reducing total stock and lead times
- o The shipment of the finished product from the production location to the planning location is not modeled, thus reducing the administrative work involved

Note the following constraints:

- o Due to the simplified process, you cannot implement *production in another location* for stock transfer and transport-based scenarios such as subcontracting, *Deployment*, and *Transportation Planning and Vehicle Scheduling*. Stock transfer and transport processes play a key role here; you have to model them explicitly using the relevant master data (transportation lanes).
- o It is not possible to group together the requirements of the various planning locations and form lots for the production location.

The following planning applications support *production in another location*:

- o *Supply Network Planning*

- o *Capable-to-Match*
- o *Production Planning and Detailed Scheduling*

Production in another location is also supported continuously in an integrated scenario in which you implement SAP APO as a planning system, and SAP R/3 for master data management and order processing. *Production in another location* extends the SAP R/3 special form of procurement here, *production in another plant*, which is defined in SAP R/3 by a corresponding special procurement key for the finished product in the planning plant. When the SAP R/3 master data for *production in another plant* is transferred, PPMs or PP/DS runtime objects are automatically created in SAP APO for *production in another location*. When an in-house production order that is created in SAP APO is processed, the receipt for the finished product is in the planning location, and component withdrawal is in the production location.

1.1.5.6.3 Period Factor for PPMs and Transportation Lanes (Enhanced)

Use

Before now, you could specify the period factor for the SNP heuristic on the *Lot Size* tab page in the location product master data. You use this factor to define how the system is to calculate the availability date of a receipt element within a bucket. You could also still specify this factor in the corresponding *Bucket Offset* fields in the production process model (PPM) and transportation lane. These values overwrote the value defined in the product master.

However, the *Bucket Offset* fields were also used in the PPM and transportation lane to define a corresponding factor for the SNP optimizer. The calculation logic for this is clearly different from that of the SNP heuristic.

As of SAP APO 4.0, to clarify this difference in calculation logic by also separating the input fields, two new fields for specifying the period factor have been added to the PPM and transportation lane. This means that in the future the period factor for the SNP heuristic can be defined in the location product master and in the PPM or transportation lane in the *Period Factor* field and the value entered in the product master will continue to be overwritten by the other two values.

In the future, the fields for *Bucket Offset* in the PPM and transportation lane are only to be used for defining the bucket offset for the SNP optimizer.

See also

For more information on the Period Factor and Bucket Offset fields, see the F1 help documentation for these fields.

1.1.5.7 SCM-APO-MD-PPE Product and Process Engineering

1.1.5.7.1 Phantom Assembly in iPPE (New)

Use

Phantom assemblies are assemblies whose decomposition is documented in the system. However, phantom assemblies do not exist as actual, physical structures.

Phantom assemblies can be used more than once in a product structure without being documented in the system multiple times. Changes made to a phantom assembly are automatically made at other locations, thus not creating any extra work for the user. Errors resulting from the manual maintenance of data are also reduced.

- o Phantom assemblies do not create any dependent requirements because they do not have a physical structure. Only the components of the phantom assembly will create dependent requirements, and are included during backflush.
- o Items for the assembly and the components are generated in a planned order each time the phantom assembly is used.
- o You can maintain configurable and non-configurable phantom assemblies in the iPPE product structure. Configurable phantom assemblies are displayed by product variant structures, and non-configurable phantom assemblies by iPPE assemblies.
- o You can create multi-level phantom assemblies.
- o iPPE phantom assemblies are included in the following applications:
 - Material requirements planning in R/3
 - Configuration simulation in the iPPE Workbench
 - Planning matrix in SAP APO

1.1.5.7.2 Tabular Maintenance and Display of iPPE Product Structures

Use

Tabular maintenance for the efficient maintenance of structure data in the iPPE Workbench will be provided for users that are specialized in maintaining mass data.

For example, you can easily execute material changes or classify various structure nodes / variants with this function.

- o You can call up the tabular display and maintenance in the iPPE Workbench using the context menu or a function key. You can load objects from the navigation area or your favorites in the tabular display using drag & drop.
- o You can create all objects of the product structure in the tabular display and execute selected maintenance operations.
- o Because you can maintain a large amount of objects in the tabular display at one time, the system will lock objects that are currently being maintained for other users.
- o You can use the usual functions of the SAP List Viewer (ALV) Grid Control in the tabular maintenance. You can also sort the objects according to their hierarchy levels in iPPE.

1.1.5.7.3 Integration of MRP Areas (Enhanced)

Use

In SAP R/3, storage locations and storage location MRP areas enable detailed procurement planning for individual areas in a plant, for example, for a spare parts store or for a production line. The division of a plant into storage location MRP areas is relatively flexible here, and can be changed with little effort if restructuring necessitates this.

It is already possible to integrate storage location MRP areas with SAP APO: During the transfer to SAP APO, an SAP R/3 plant becomes a location of the type *production plant* or *distribution center*, and a storage location MRP area becomes a location of the type *storage location MRP area*. However, until now there have been various restrictions on the integration of storage location MRP areas and the scope of function of SAP APO. This meant that planning with storage location MRP areas was only possible with restrictions in *Supply Network Planning* (SNP), in *Capable-to-Match* (CTM), and in *Production Planning and Detailed Scheduling* (PP/DS), while it was not at all possible in safety stock planning in SNP. The constraints included the following:

- o You could only transfer storage location MRP areas with one storage location from SAP R/3 to SAP APO.
- o You could only transfer sources of supply for external procurement and in-house production in SAP R/3 to the plant location in SAP APO, and not to the storage location MRP areas. For that reason, in SAP APO, you had to manually create the sources of supply for planning in the storage location MRP areas, if necessary.
- o In SAP APO, you always had to map the internal plant procurement of components for a planned order from the plant location or from another storage location MRP area using stock transfers, and you had to manually create the relevant transportation lanes in SAP APO. This is in contrast to the scope of function in SAP R/3, where, in in-house production, a component can be withdrawn directly from any storage location in the plant; in other words, without stock transfer.
- o You could not transfer a planned independent requirement, which was assigned to a storage location MRP area in SAP R/3, to SAP APO.

In order to support continuous supply chain planning within a plant on the basis of storage location MRP areas and SAP R/3 master data, the integration of storage location MRP areas and the scope of function in SAP APO have been extended for SAP APO 4.0. The prerequisite for the connected SAP R/3 system is a higher release than SAP R/3 4.5B and the Plug-In 2003.1.

Planning with storage location MRP areas is now possible in SNP, CTM, and PP/DS, without the previous constraints, as described below (although deployment still does not support planning with storage location MRP areas):

- o **Integration of storage location MRP areas with several storage locations**
You can transfer storage location MRP areas with several storage locations to SAP APO. However, SAP APO does not support processes where storage locations have "equal weighting": The receipt storage location of the storage location MRP area from SAP R/3 is automatically the leading storage location in SAP APO. The system uses the leading storage location as follows:
 - The system assigns the requirements and receipts, which a planning application in SAP APO creates in the storage location MRP area, to the leading storage location as standard.
 - If the rules-based ATP check in the sales order determines a storage location MRP area, the

system enters the leading storage location in the sales order, in addition to the storage location MRP area. It is not possible to perform a check on the two levels of storage location MRP area and storage location in the sales order.

In SAP APO, for stock transfers to or from a storage location MRP area, you can specify a storage location other than the leading storage location in the storage location MRP area as the *issuing storage location* or as the *receiving storage location*. The system automatically assigns the requirement or receipt of a stock transfer to the issuing or receiving storage location.

In SAP APO, the storage locations of a storage location MRP area are on the *Storage Locations* tab page. You cannot change the storage location assignment for a storage location MRP area transferred from SAP R/3.

o **Distribution of the sources of supply in SAP APO**

The sources of supply for external procurement and in-house production in SAP R/3 are automatically distributed to the plant location and the storage location MRP areas for which they are relevant in the transfer to SAP APO. The assignment is based on storage location information in the external procurement sources of supply and in the production versions in SAP R/3. SNP, CTM, and PP/DS have unrestricted access to the sources of supply in storage location MRP areas within source determination. (You have to generate SNP PPMs from PP/DS PPMs as usual.)

o **Stock transfer between storage location MRP areas**

Up until now, you represented the stock transfer between a plant and an MRP area in the plant in SAP R/3 using a relevant special procurement type, which you entered in the material master for a material in the storage location MRP area. As of SAP APO 4.0, when the material master is transferred, a transportation lane is automatically created in SAP APO between the plant and the storage location MRP area. You only have to manually create transportation lanes in SAP APO if you want to represent a stock transfer between two storage location MRP areas in a plant.

As a stock transfer between two storage locations can only be represented using a stock transfer reservation in the standard SAP R/3 system, PP/DS created a stock transfer reservation for a stock transfer that involved at least one storage location MRP area. This has the receipt category BD and the requirement category BC in the standard system.

CTM and SNP, on the other hand, created (until now) a stock transport requisition or an SNP stock transfer, which was transferred to SAP R/3 as a stock transfer reservation. As of SAP APO 4.0, SNP and CTM also create stock transfer reservations. SNP stores the requirement and the receipt for a stock transfer reservation - as in a normal SNP stock transfer - in the key figures *distribution demand (planned)* or *distribution receipt (planned)*. In addition, as of SAP APO 4.0, the new key figures *distribution demand (MRP area)* and *distribution receipt (MRP area)* are available, but only for displaying stock transfer reservations. In order that the system can create a stock transfer reservation for a stock transfer to or from a storage location MRP area, these key figures have to be in the planning area and in the planning book. The key figures are contained in the standard planning areas and books. If necessary, you have to include the key figures in your own planning areas and books. As the standard data view SNP94(1) does not contain the key figures, you have to include the key figures in the data view, if required.

You cannot use stock transfer reservations to represent the following processes:

- Explicit processing of shipments with shipping papers, Dangerous Goods Movements, and so on
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For these processes you require stock transport requisitions and SAP R/3 Enterprise Core Release 4.70 with SAP R/3 Enterprise Extension Set 2.0. Contact SAP for more information.

o **Component withdrawal within a plant without stock transfer**

SAP APO supports component withdrawal in another location in the plant for an in-house production order. In this kind of scenario, the dependent requirement for a component is in a different location in the plant to the receipt. Stock transfer of the component does not apply. Data for the source of supply used is decisive for the location determination:

- For a PP/DS PPM or a PP/DS runtime object, the system determines the withdrawal location for the component from the storage location of the component in the plan. When the sources of supply are transferred to SAP APO, the system automatically determines the storage location. To do so, the system uses SAP R/3 master data and Customizing for storage location determination in SAP R/3. In SAP APO, you can enter a(nother) storage location in a PPM for a component at any time.
 - When an iPPE access object is transferred from a DI system, the system determines the withdrawal location for a component and enters this withdrawal location in the iPPE access object.
- o **Transfer of planned independent requirements**
You can transfer a planned independent requirement, which is assigned to a storage location MRP area in SAP R/3, to the corresponding storage location MRP area in SAP APO.
 - o **Terminology**
 - As of SAP APO 4.0, the term *production planning area* has been replaced by the term *MRP area* on the interface and in the documentation.
 - The location type *MRP area* has been renamed as *storage location MRP area* to distinguish it from the subcontractor MRP area in SAP R/3.

A supply chain model that is based on the storage location MRP areas in SAP R/3 is flexible: You can adjust it quite easily at any time to the changed internal plant processes or changed organizational structures by changing the assignment of storage locations to MRP areas in SAP R/3. With little effort, you can adjust the master data and movement data in SAP APO accordingly (you can execute the restructuring manually or using an SAP report). By using MRP areas in SAP R/3 (or in another OLTP system), you can therefore separate the modeling of the supply chain in the plant from the relatively inflexible plant definitions and the plant-specific master data (material master, bill of material, and routing).

Not only can you create storage location MRP areas in SAP APO through the transfer from SAP R/3, you can also create them manually in SAP APO. This is relevant if you do not have a connected SAP R/3 system.

Effects on System Administration

If you have planned up until now in SAP R/3 and in SAP APO using storage location MRP areas, you may want to change the MRP area structure in SAP R/3 as part of the upgrade to SAP APO 4.0. (Until now, only storage location MRP areas with one storage location were supported in SAP APO.) You should use the procedure described in the documentation here. For integration with an SAP R/3 system with release 4.6B or higher, SAP supports restructuring with the SAP R/3 report RMRPAEVAL. For more information, see the SAP note 593463.

See also

Supply Chain Planning Within a Plant in the SAP APO documentation

1.1.5.7.4 Production in Another Location (New)

Use

As of SAP APO 4.0, *production in another location* is available in SAP APO as a new form of procurement for in-house production. You use *production in another location* if several locations (often warehouses or distribution centers) are responsible for planning a finished product, but this product is manufactured in another location (typically a production plant) that does not have any planning responsibility.

To model this scenario in SAP APO, you use an in-house production source of supply (PPM, R/3 runtime object, or iPPE access object) in SAP APO, in which the planning location and the production location are different, for the finished product that you want to procure using *production in another location*. In SAP APO 4.0, the *planning location* has been added to the maintenance of PPMs and iPPE access objects. SAP APO uses such an in-house production source of supply to create a planned order whose receipt is in the planning location and whose component requirements are in the production location. You execute procurement planning for the finished product in the planning location, and procurement planning for the components and capacity planning in the production location.

The benefits of *production in another location* are as follows:

- o There is no stocking level (the stocking level for the finished product in the production location), thus reducing total stock and lead times
- o The shipment of the finished product from the production location to the planning location is not modeled, thus reducing the administrative work involved

Note the following constraints:

- o Due to the simplified process, you cannot implement *production in another location* for stock transfer and transport-based scenarios such as subcontracting, *Deployment*, and *Transportation Planning and Vehicle Scheduling*. Stock transfer and transport processes play a key role here; you have to model them explicitly using the relevant master data (transportation lanes).
- o It is not possible to group together the requirements of the various planning locations and form lots for the production location.

The following planning applications support *production in another location*:

- o *Supply Network Planning*
- o *Capable-to-Match*
- o *Production Planning and Detailed Scheduling*

Production in another location is also supported continuously in an integrated scenario in which you implement SAP APO as a planning system, and SAP R/3 for master data management and order processing. *Production in another location* extends the SAP R/3 special form of procurement here, *production in another plant*, which is defined in SAP R/3 by a corresponding special procurement key for the finished product in the planning plant. When the SAP R/3 master data for *production in another plant* is transferred, PPMs or PP/DS runtime objects are automatically created in SAP APO for *production in another location*. When an in-house production order that is created in SAP APO is processed, the receipt for the finished product is in the planning location, and component withdrawal is in the production location.

1.1.5.8 SCM-APO-MD-TL Transportation Lanes

1.1.5.8.1 Goods Receipt Processing Time in the Transportation Lane (New)

Use

In the SAP R/3 system, you can store a goods receipt processing time specific to an outline agreement in a contract or scheduling agreement. In the SAP APO system, the goods receipt processing time is used for scheduling external procurement orders.

Until now, the goods receipt processing time from outline agreements from the the SAP R/3 system was not adopted by the SAP APO system during the CIF transfer. Instead, the goods receipt processing time stored in the product master was used for scheduling the availability date and time of an external procurement order.

As of *SAP APO 4.0*, the goods receipt processing time stored in the R/3 contract or R/3 scheduling agreement is automatically copied to the transportation lane during the CIF transfer, which means that it is also available in the associated external procurement relationship. At the same time, the system sets the *Consider* indicator at the *Goods Receipt Time* field. This means that the system is to explicitly use the goods receipt processing time from the transportation lane during source of supply determination.

You can manually remove the *Consider* indicator at the transportation lane. If the *Consider* indicator is not set, the system takes into account the goods receipt processing time from the location product during source of supply determination.

1.1.5.8.2 Period Factor for PPMs and Transportation Lanes (Enhanced)

Use

Before now, you could specify the period factor for the SNP heuristic on the *Lot Size* tab page in the location product master data. You use this factor to define how the system is to calculate the availability date of a receipt element within a bucket. You could also still specify this factor in the corresponding *Bucket Offset* fields in the production process model (PPM) and transportation lane. These values overwrote the value defined in the product master.

However, the *Bucket Offset* fields were also used in the PPM and transportation lane to define a corresponding factor for the SNP optimizer. The calculation logic for this is clearly different from that of the SNP heuristic.

As of SAP APO 4.0, to clarify this difference in calculation logic by also separating the input fields, two new fields for specifying the period factor have been added to the PPM and transportation lane. This means that in the future the period factor for the SNP heuristic can be defined in the location product master and in the PPM or transportation lane in the *Period Factor* field and the value entered in the product master will continue to be overwritten by the other two values.

In the future, the fields for *Bucket Offset* in the PPM and transportation lane are only to be used for defining the bucket offset for the SNP optimizer.

See also

For more information on the Period Factor and Bucket Offset fields, see the F1 help documentation for these fields.

1.1.5.9 SCM-APO-MD-INC Product Interchangeability - Master Data

1.1.5.9.1 Product Interchangeability (New)

Use

This new function manages the replacement of one product by another. Two scenarios are supported in SAP SCM 4.0.

- o **Discontinuation/Supersession**

This is the replacement case. The product has evolved and has been improved technically or can be produced more efficiently. When one product replaces another one speaks of discontinuation. It is possible to include several products in a supersession chain. This consists of several discontinuation steps.

There are two possible relationship types: **forward** and **fully interchangeable**.

For the interchangeability type forward, products can only be substituted one-way, for example, product A can only be substituted by product B and not vice-versa.

In the case of fully interchangeable products, product C replaces product B, but product B can also replace product C.

- o **Form-Fit-Function Classes**

This is the case where there are several products that are fully interchangeable with each other at any time; they have the same form, fit and function. However planning is carried out for one product (the leading product) but any one of the products in the class can actually be used to fulfill a demand . If demand cannot be covered, only the leading product is procured or produced.

Product interchangeability applies to several APO applications.

In **master data maintenance** you maintain interchangeability groups. These are the basis for all interchangeability functions in the applications.

Demand Planning uses the following existing functions to model discontinuation

- Like modeling
- Phase in/out modeling
- Product split
- Realignment

Other applications make use of substitution orders to model product interchangeability. There are ATP categories for substitution demand/requirements and substitution receipts.

For information on how **Supply Network Planning** works in detail with interchangeable products, see Product Interchangeability in Supply Network Planning.

Capable-To-Match supports forward discontinuation. To take discontinuation into account in a planning run you must make the relevant setting in the *Special Strategies* tab page of the planning profile.

Production Planning /Detailed Scheduling supports the discontinuation of products in the procurement planning process and in the processing of in-house production orders, which contain components with restricted time validity. In the transition phase after the discontinuation of a product, procurement planning uses up any existing surplus product stock (if this is permitted) and procures the successor product to cover any product requirements that are still open. In the execution phase of an in-house production order with interchangeable products, you have functions at your disposal that you can use to react to short-term date/time and quantity changes, and to update the order components based on the supersession chain. For more information see the release information for Product Interchangeability in PP/DS.

Global Available-To-Promise already can substitute one product for another, if the required product is not available. The system uses rules-based availability checks to do this. You can now decide if the system should use these rules or the interchangeability master data. Note that you cannot use both methods together. Interchangeability is relevant for ATP during the creation of sales documents, primarily sales orders, and in PP/DS during the conversion of an in-house production order.

ATP also accounts for FFF classes. If requirements exist for one member of the FFF class, during the ATP check the system first checks whether there are receipts for this product. If not, it also checks whether the other members of the FFF class can fulfill the requirements.

Effects on Customizing

Extensive Customizing activities are available for the master data maintenance of Product Interchangeability. It is possible to :

- o Change certain settings, for instance the number ranges or which types of interchangeability groups are active
- o Customize the consistency checks for interchangeability groups
- o Implement various BAdIs

See *SAP APO Implementation Guide -> Advanced Planning and Optimization -> Master Data -> Product Interchangeability*.

You must maintain the number ranges to be able to work with interchangeability groups.

1.1.5.9.2 Product Interchangeability in PP/DS (New)

Use

The continued development of products or changes to production processes can make it necessary to discontinue a product and substitute it with a successor product. *Production Planning and Detailed*

Scheduling (PP/DS) supports the discontinuation of products in the procurement planning process and in the processing of in-house production orders that contain components with limited time validity. In the transition phase after the discontinuation date of a product, procurement planning uses up any existing surplus product stock - if permitted - and procures the successor product to cover open product requirements. In the execution phase of an in-house production order with interchangeable components, you have functions at your disposal with which you can react to short-term date/time and quantity changes, and update the order components based on the supersession chain.

PP/DS supports planning with product interchangeability in the following in-house production scenarios:

- o **Shop Floor Production or Repetitive Manufacturing Based on PPMs or PP/DS Runtime Objects with Order Processing in SAP R/3**
Prerequisite for manufacturing order processing with SAP R/3 is a standard release SAP R/3 4.0B or higher.
- o **Repetitive Manufacturing Based on iPPE with Backflush in SAP APO**
Prerequisite is an SAP R/3 DI system with release 4.6B or higher.

PP/DS always plans here based on product interchangeability master data from SAP APO. The usage of product interchangeability master data is integrated in the following PP/DS applications:

- o **MRP Planning Run and Planning with the Product Heuristic**
To avoid an unnecessarily large amount of surplus stock resulting for a discontinued product, or to avoid requirements not being covered, the MRP planning run or the product heuristic always automatically plans all products in a supersession chain. The system forwards uncovered requirements and any surplus stock of a discontinued product to the successor product and takes account of the requirements and stock when planning the successor product. To forward a requirement or stock, the system creates a product substitution order. The product substitution is not mapped in the in-house production order in the planning phase. The in-house production order contains the components that the system determined on order creation by exploding the in-house production source of supply.
- o **Setting the Conversion Indicator and ATP Check for In-House Production Orders in PP/DS**
To take account of the limited time validity of the order components at the start of the execution phase at the latest, and to adopt substitute components in the order, if necessary, you have to set the conversion indicator for the order in PP/DS - dependent on a scenario - or perform a suitably configured ATP check. The system then updates the order components according to the supersession chain data.

Planning with product interchangeability in PP/DS is not possible:

- o For manufacturer part number management
- o For configurable products
- o For products with continuous requirements
- o In the Capable-to-Promise scenario

Planning with **shelf life data** is only possible with specific restrictions.

See also

- o Release information for Product Interchangeability in SAP APO
- o Release information for ATP Check for Planned Orders in Repetitive Manufacturing

- o Documentation for planning with product interchangeability in PP/DS

1.1.5.10 SCM-APO-MD-RTO R/3 Runtime Object

1.1.5.10.1 R/3 Runtime Objects in SAP APO

Use

As of SAP APO 4.0, the PP/DS runtime object is available in SAP APO. You can use it in a similar way to the production process model (PPM) as a source of supply for in-house production. In contrast to the PPM, the PP/DS runtime object supports object dependencies and time-based change management.

The PP/DS runtime object is generated from the following data in SAP R/3 when the master data is transferred by means of SAP APO CIF:

- o Production version with routing and bill of material
- o Production version based on a master recipe (as of SAP R/3 4.6B)
- o Bill of material for phantom assemblies

For the initial data transfer of PP/DS runtime objects, you create an active integration model containing the production versions or bills of material. You can use the transactions CURTO_CREATE (production versions) and CURTO_CREATE_BOM (bills of material) to transfer changes to production versions and bills of material that are contained in an active integration model.

You can also use these transactions to test out the transfer of data, without saving it in SAP APO.

1.1.5.10.2 Integration of MRP Areas (Enhanced)

Use

In SAP R/3, storage locations and storage location MRP areas enable detailed procurement planning for individual areas in a plant, for example, for a spare parts store or for a production line. The division of a plant into storage location MRP areas is relatively flexible here, and can be changed with little effort if restructuring necessitates this.

It is already possible to integrate storage location MRP areas with SAP APO: During the transfer to SAP APO, an SAP R/3 plant becomes a location of the type *production plant* or *distribution center*, and a storage location MRP area becomes a location of the type *storage location MRP area*. However, until now there have been various restrictions on the integration of storage location MRP areas and the scope of function of SAP APO. This meant that planning with storage location MRP areas was only possible with restrictions in *Supply Network Planning* (SNP), in *Capable-to-Match* (CTM), and in *Production Planning and Detailed Scheduling* (PP/DS), while it was not at all possible in safety stock planning in SNP. The constraints included the following:

- o You could only transfer storage location MRP areas with one storage location from SAP R/3 to SAP APO.

- o You could only transfer sources of supply for external procurement and in-house production in SAP R/3 to the plant location in SAP APO, and not to the storage location MRP areas. For that reason, in SAP APO, you had to manually create the sources of supply for planning in the storage location MRP areas, if necessary.
- o In SAP APO, you always had to map the internal plant procurement of components for a planned order from the plant location or from another storage location MRP area using stock transfers, and you had to manually create the relevant transportation lanes in SAP APO. This is in contrast to the scope of function in SAP R/3, where, in in-house production, a component can be withdrawn directly from any storage location in the plant; in other words, without stock transfer.
- o You could not transfer a planned independent requirement, which was assigned to a storage location MRP area in SAP R/3, to SAP APO.

In order to support continuous supply chain planning within a plant on the basis of storage location MRP areas and SAP R/3 master data, the integration of storage location MRP areas and the scope of function in SAP APO have been extended for SAP APO 4.0. The prerequisite for the connected SAP R/3 system is a higher release than SAP R/3 4.5B and the Plug-In 2003.1.

Planning with storage location MRP areas is now possible in SNP, CTM, and PP/DS, without the previous constraints, as described below (although deployment still does not support planning with storage location MRP areas):

- o **Integration of storage location MRP areas with several storage locations**

You can transfer storage location MRP areas with several storage locations to SAP APO. However, SAP APO does not support processes where storage locations have "equal weighting": The receipt storage location of the storage location MRP area from SAP R/3 is automatically the leading storage location in SAP APO. The system uses the leading storage location as follows:

- The system assigns the requirements and receipts, which a planning application in SAP APO creates in the storage location MRP area, to the leading storage location as standard.
- If the rules-based ATP check in the sales order determines a storage location MRP area, the system enters the leading storage location in the sales order, in addition to the storage location MRP area. It is not possible to perform a check on the two levels of storage location MRP area and storage location in the sales order.

In SAP APO, for stock transfers to or from a storage location MRP area, you can specify a storage location other than the leading storage location in the storage location MRP area as the *issuing storage location* or as the *receiving storage location*. The system automatically assigns the requirement or receipt of a stock transfer to the issuing or receiving storage location.

In SAP APO, the storage locations of a storage location MRP area are on the *Storage Locations* tab page. You cannot change the storage location assignment for a storage location MRP area transferred from SAP R/3.

- o **Distribution of the sources of supply in SAP APO**

The sources of supply for external procurement and in-house production in SAP R/3 are automatically distributed to the plant location and the storage location MRP areas for which they are relevant in the transfer to SAP APO. The assignment is based on storage location information in the external procurement sources of supply and in the production versions in SAP R/3. SNP, CTM, and PP/DS have unrestricted access to the sources of supply in storage location MRP areas within source determination. (You have to generate SNP PPMs from PP/DS PPMs as usual.)

- o **Stock transfer between storage location MRP areas**

Up until now, you represented the stock transfer between a plant and an MRP area in the plant in

SAP R/3 using a relevant special procurement type, which you entered in the material master for a material in the storage location MRP area. As of SAP APO 4.0, when the material master is transferred, a transportation lane is automatically created in SAP APO between the plant and the storage location MRP area. You only have to manually create transportation lanes in SAP APO if you want to represent a stock transfer between two storage location MRP areas in a plant.

As a stock transfer between two storage locations can only be represented using a stock transfer reservation in the standard SAP R/3 system, PP/DS created a stock transfer reservation for a stock transfer that involved at least one storage location MRP area. This has the receipt category BD and the requirement category BC in the standard system.

CTM and SNP, on the other hand, created (until now) a stock transport requisition or an SNP stock transfer, which was transferred to SAP R/3 as a stock transfer reservation. As of SAP APO 4.0, SNP and CTM also create stock transfer reservations. SNP stores the requirement and the receipt for a stock transfer reservation - as in a normal SNP stock transfer - in the key figures *distribution demand (planned)* or *distribution receipt (planned)*. In addition, as of SAP APO 4.0, the new key figures *distribution demand (MRP area)* and *distribution receipt (MRP area)* are available, but only for displaying stock transfer reservations. In order that the system can create a stock transfer reservation for a stock transfer to or from a storage location MRP area, these key figures have to be in the planning area and in the planning book. The key figures are contained in the standard planning areas and books. If necessary, you have to include the key figures in your own planning areas and books. As the standard data view SNP94(1) does not contain the key figures, you have to include the key figures in the data view, if required.

You cannot use stock transfer reservations to represent the following processes:

- Explicit processing of shipments with shipping papers, Dangerous Goods Movements, and so on
- Deployment

For these processes you require stock transport requisitions and SAP R/3 Enterprise Core Release 4.70 with SAP R/3 Enterprise Extension Set 2.0. Contact SAP for more information.

o **Component withdrawal within a plant without stock transfer**

SAP APO supports component withdrawal in another location in the plant for an in-house production order. In this kind of scenario, the dependent requirement for a component is in a different location in the plant to the receipt. Stock transfer of the component does not apply. Data for the source of supply used is decisive for the location determination:

- For a PP/DS PPM or a PP/DS runtime object, the system determines the withdrawal location for the component from the storage location of the component in the plan. When the sources of supply are transferred to SAP APO, the system automatically determines the storage location. To do so, the system uses SAP R/3 master data and Customizing for storage location determination in SAP R/3. In SAP APO, you can enter a(nother) storage location in a PPM for a component at any time.
- When an iPPE access object is transferred from a DI system, the system determines the withdrawal location for a component and enters this withdrawal location in the iPPE access object.

o **Transfer of planned independent requirements**

You can transfer a planned independent requirement, which is assigned to a storage location MRP area in SAP R/3, to the corresponding storage location MRP area in SAP APO.

o **Terminology**

- As of SAP APO 4.0, the term *production planning area* has been replaced by the term *MRP*

area on the interface and in the documentation.

- The location type *MRP area* has been renamed as *storage location MRP area* to distinguish it from the subcontractor MRP area in SAP R/3.

A supply chain model that is based on the storage location MRP areas in SAP R/3 is flexible: You can adjust it quite easily at any time to the changed internal plant processes or changed organizational structures by changing the assignment of storage locations to MRP areas in SAP R/3. With little effort, you can adjust the master data and movement data in SAP APO accordingly (you can execute the restructuring manually or using an SAP report). By using MRP areas in SAP R/3 (or in another OLTP system), you can therefore separate the modeling of the supply chain in the plant from the relatively inflexible plant definitions and the plant-specific master data (material master, bill of material, and routing).

Not only can you create storage location MRP areas in SAP APO through the transfer from SAP R/3, you can also create them manually in SAP APO. This is relevant if you do not have a connected SAP R/3 system.

Effects on System Administration

If you have planned up until now in SAP R/3 and in SAP APO using storage location MRP areas, you may want to change the MRP area structure in SAP R/3 as part of the upgrade to SAP APO 4.0. (Until now, only storage location MRP areas with one storage location were supported in SAP APO.) You should use the procedure described in the documentation here. For integration with an SAP R/3 system with release 4.6B or higher, SAP supports restructuring with the SAP R/3 report RMRPAEVAL. For more information, see the SAP note 593463.

See also

Supply Chain Planning Within a Plant in the SAP APO documentation

1.1.5.10.3 Production in Another Location (New)

Use

As of SAP APO 4.0, *production in another location* is available in SAP APO as a new form of procurement for in-house production. You use *production in another location* if several locations (often warehouses or distribution centers) are responsible for planning a finished product, but this product is manufactured in another location (typically a production plant) that does not have any planning responsibility.

To model this scenario in SAP APO, you use an in-house production source of supply (PPM, R/3 runtime object, or iPPE access object) in SAP APO, in which the planning location and the production location are different, for the finished product that you want to procure using *production in another location*. In SAP APO 4.0, the *planning location* has been added to the maintenance of PPMs and iPPE access objects. SAP APO uses such an in-house production source of supply to create a planned order whose receipt is in the planning location and whose component requirements are in the production location. You execute procurement planning for the finished product in the planning location, and procurement planning for the components and capacity planning in the production location.

The benefits of *production in another location* are as follows:

- o There is no stocking level (the stocking level for the finished product in the production location), thus reducing total stock and lead times
- o The shipment of the finished product from the production location to the planning location is not modeled, thus reducing the administrative work involved

Note the following constraints:

- o Due to the simplified process, you cannot implement *production in another location* for stock transfer and transport-based scenarios such as subcontracting, *Deployment*, and *Transportation Planning and Vehicle Scheduling*. Stock transfer and transport processes play a key role here; you have to model them explicitly using the relevant master data (transportation lanes).
- o It is not possible to group together the requirements of the various planning locations and form lots for the production location.

The following planning applications support *production in another location*:

- o *Supply Network Planning*
- o *Capable-to-Match*
- o *Production Planning and Detailed Scheduling*

Production in another location is also supported continuously in an integrated scenario in which you implement SAP APO as a planning system, and SAP R/3 for master data management and order processing. *Production in another location* extends the SAP R/3 special form of procurement here, *production in another plant*, which is defined in SAP R/3 by a corresponding special procurement key for the finished product in the planning plant. When the SAP R/3 master data for *production in another plant* is transferred, PPMs or PP/DS runtime objects are automatically created in SAP APO for *production in another location*. When an in-house production order that is created in SAP APO is processed, the receipt for the finished product is in the planning location, and component withdrawal is in the production location.

1.1.5.11 SCM-APO-MD-MA MRP Area

1.1.5.11.1 Integration of MRP Areas (Enhanced)

Use

In SAP R/3, storage locations and storage location MRP areas enable detailed procurement planning for individual areas in a plant, for example, for a spare parts store or for a production line. The division of a plant into storage location MRP areas is relatively flexible here, and can be changed with little effort if restructuring necessitates this.

It is already possible to integrate storage location MRP areas with SAP APO: During the transfer to SAP APO, an SAP R/3 plant becomes a location of the type *production plant* or *distribution center*, and a storage location MRP area becomes a location of the type *storage location MRP area*. However, until now there have been various restrictions on the integration of storage location MRP areas and the scope of function of SAP APO. This meant that planning with storage location MRP areas was only possible with restrictions in *Supply Network Planning* (SNP), in *Capable-to-Match* (CTM), and in *Production Planning and Detailed Scheduling* (PP/DS), while it was not at all possible in safety stock planning in

SNP. The constraints included the following:

- o You could only transfer storage location MRP areas with one storage location from SAP R/3 to SAP APO.
- o You could only transfer sources of supply for external procurement and in-house production in SAP R/3 to the plant location in SAP APO, and not to the storage location MRP areas. For that reason, in SAP APO, you had to manually create the sources of supply for planning in the storage location MRP areas, if necessary.
- o In SAP APO, you always had to map the internal plant procurement of components for a planned order from the plant location or from another storage location MRP area using stock transfers, and you had to manually create the relevant transportation lanes in SAP APO. This is in contrast to the scope of function in SAP R/3, where, in in-house production, a component can be withdrawn directly from any storage location in the plant; in other words, without stock transfer.
- o You could not transfer a planned independent requirement, which was assigned to a storage location MRP area in SAP R/3, to SAP APO.

In order to support continuous supply chain planning within a plant on the basis of storage location MRP areas and SAP R/3 master data, the integration of storage location MRP areas and the scope of function in SAP APO have been extended for SAP APO 4.0. The prerequisite for the connected SAP R/3 system is a higher release than SAP R/3 4.5B and the Plug-In 2003.1.

Planning with storage location MRP areas is now possible in SNP, CTM, and PP/DS, without the previous constraints, as described below (although deployment still does not support planning with storage location MRP areas):

- o **Integration of storage location MRP areas with several storage locations**
You can transfer storage location MRP areas with several storage locations to SAP APO. However, SAP APO does not support processes where storage locations have "equal weighting": The receipt storage location of the storage location MRP area from SAP R/3 is automatically the leading storage location in SAP APO. The system uses the leading storage location as follows:
 - The system assigns the requirements and receipts, which a planning application in SAP APO creates in the storage location MRP area, to the leading storage location as standard.
 - If the rules-based ATP check in the sales order determines a storage location MRP area, the system enters the leading storage location in the sales order, in addition to the storage location MRP area. It is not possible to perform a check on the two levels of storage location MRP area and storage location in the sales order.

In SAP APO, for stock transfers to or from a storage location MRP area, you can specify a storage location other than the leading storage location in the storage location MRP area as the *issuing storage location* or as the *receiving storage location*. The system automatically assigns the requirement or receipt of a stock transfer to the issuing or receiving storage location.

In SAP APO, the storage locations of a storage location MRP area are on the *Storage Locations* tab page. You cannot change the storage location assignment for a storage location MRP area transferred from SAP R/3.
- o **Distribution of the sources of supply in SAP APO**
The sources of supply for external procurement and in-house production in SAP R/3 are automatically distributed to the plant location and the storage location MRP areas for which they are relevant in the transfer to SAP APO. The assignment is based on storage location information in the external procurement sources of supply and in the production versions in SAP R/3. SNP, CTM, and PP/DS have unrestricted access to the sources of supply in storage location MRP areas within source

determination. (You have to generate SNP PPMs from PP/DS PPMs as usual.)

o **Stock transfer between storage location MRP areas**

Up until now, you represented the stock transfer between a plant and an MRP area in the plant in SAP R/3 using a relevant special procurement type, which you entered in the material master for a material in the storage location MRP area. As of SAP APO 4.0, when the material master is transferred, a transportation lane is automatically created in SAP APO between the plant and the storage location MRP area. You only have to manually create transportation lanes in SAP APO if you want to represent a stock transfer between two storage location MRP areas in a plant.

As a stock transfer between two storage locations can only be represented using a stock transfer reservation in the standard SAP R/3 system, PP/DS created a stock transfer reservation for a stock transfer that involved at least one storage location MRP area. This has the receipt category BD and the requirement category BC in the standard system.

CTM and SNP, on the other hand, created (until now) a stock transport requisition or an SNP stock transfer, which was transferred to SAP R/3 as a stock transfer reservation. As of SAP APO 4.0, SNP and CTM also create stock transfer reservations. SNP stores the requirement and the receipt for a stock transfer reservation - as in a normal SNP stock transfer - in the key figures *distribution demand (planned)* or *distribution receipt (planned)*. In addition, as of SAP APO 4.0, the new key figures *distribution demand (MRP area)* and *distribution receipt (MRP area)* are available, but only for displaying stock transfer reservations. In order that the system can create a stock transfer reservation for a stock transfer to or from a storage location MRP area, these key figures have to be in the planning area and in the planning book. The key figures are contained in the standard planning areas and books. If necessary, you have to include the key figures in your own planning areas and books. As the standard data view SNP94(1) does not contain the key figures, you have to include the key figures in the data view, if required.

You cannot use stock transfer reservations to represent the following processes:

- Explicit processing of shipments with shipping papers, Dangerous Goods Movements, and so on
- Deployment

For these processes you require stock transport requisitions and SAP R/3 Enterprise Core Release 4.70 with SAP R/3 Enterprise Extension Set 2.0. Contact SAP for more information.

o **Component withdrawal within a plant without stock transfer**

SAP APO supports component withdrawal in another location in the plant for an in-house production order. In this kind of scenario, the dependent requirement for a component is in a different location in the plant to the receipt. Stock transfer of the component does not apply. Data for the source of supply used is decisive for the location determination:

- For a PP/DS PPM or a PP/DS runtime object, the system determines the withdrawal location for the component from the storage location of the component in the plan. When the sources of supply are transferred to SAP APO, the system automatically determines the storage location. To do so, the system uses SAP R/3 master data and Customizing for storage location determination in SAP R/3. In SAP APO, you can enter a(nother) storage location in a PPM for a component at any time.
- When an iPPE access object is transferred from a DI system, the system determines the withdrawal location for a component and enters this withdrawal location in the iPPE access object.

o **Transfer of planned independent requirements**

You can transfer a planned independent requirement, which is assigned to a storage location MRP

area in SAP R/3, to the corresponding storage location MRP area in SAP APO.

o **Terminology**

- As of SAP APO 4.0, the term *production planning area* has been replaced by the term *MRP area* on the interface and in the documentation.
- The location type *MRP area* has been renamed as *storage location MRP area* to distinguish it from the subcontractor MRP area in SAP R/3.

A supply chain model that is based on the storage location MRP areas in SAP R/3 is flexible: You can adjust it quite easily at any time to the changed internal plant processes or changed organizational structures by changing the assignment of storage locations to MRP areas in SAP R/3. With little effort, you can adjust the master data and movement data in SAP APO accordingly (you can execute the restructuring manually or using an SAP report). By using MRP areas in SAP R/3 (or in another OLTP system), you can therefore separate the modeling of the supply chain in the plant from the relatively inflexible plant definitions and the plant-specific master data (material master, bill of material, and routing).

Not only can you create storage location MRP areas in SAP APO through the transfer from SAP R/3, you can also create them manually in SAP APO. This is relevant if you do not have a connected SAP R/3 system.

Effects on System Administration

If you have planned up until now in SAP R/3 and in SAP APO using storage location MRP areas, you may want to change the MRP area structure in SAP R/3 as part of the upgrade to SAP APO 4.0. (Until now, only storage location MRP areas with one storage location were supported in SAP APO.) You should use the procedure described in the documentation here. For integration with an SAP R/3 system with release 4.6B or higher, SAP supports restructuring with the SAP R/3 report RMRPAEVAL. For more information, see the SAP note 593463.

See also

Supply Chain Planning Within a Plant in the SAP APO documentation

1.1.6 SCM-APO-VS Vehicle Scheduling

1.1.6.1 BAdIs for Transportation Planning/Vehicle Scheduling (New)

Use

As of SAP APO 4.0, you can use the following Business Add-Ins (BAdIs) in *Transportation Planning/Vehicle Scheduling (TP/VS)*:

- o Field Extension for Multilevel Planning
(/SAPAPO/VS_ADDFIELDS)
- o User Control for the Consolidation of Freight Units
(/SAPAPO/VS_CONS)
- o Fill the Split Rules
(/SAPAPO/VS_SPL_FILL)

- o SAP Connection for SCEM (Part 1)
(/SAPAPO/VS_CLP1)
- o SAP Connection for SCEM (Part 2)
(/SAPAPO/VS_CLP2)
- o SAP Connection for SCEM (Part 3)
(/SAPAPO/VS_CLP3)
- o Heuristics Interface
(/SAPAPO/VS_HEURISTIC)

The BADIs are available in the Implementation Guide (IMG) under *Advanced Planning and Optimization -> Transportation Planning/Vehicle Scheduling (TP/VS) -> Business Add-Ins (BADIs) for TP/VS*.

1.1.6.2 Changes to Delivery Dates in SAP R/3 from TP/VS (New)

Use

In the TP/VS planning process, the creation of shipments by the associated activities (loading, shipment, unloading) may mean that dates for deliveries that were already transferred to SAP R/3 (for example, material availability date, transportation planning date, shipping activities) no longer agree with the new dates calculated from the loading and unloading activities in TP/VS. However, since correct dates are an important prerequisite for the execution of transportation activities, an update of the delivery dates is required in SAP R/3.

Previously, dates could only be changed automatically for sales orders using backorder processing; dates for deliveries and inbound deliveries had to be changed manually in the execution system. As of SAP APO 4.0, you can also update the dates of deliveries and inbound deliveries automatically in SAP R/3 from TP/VS.

Effects on Customizing

To activate the change of delivery dates for deliveries and inbound deliveries in SAP R/3 from TP/VS, you have to activate change logic for deliveries in Customizing. To do this, use the Basic Settings for Vehicle Scheduling IMG activity.

See also

For more information, see the SAP Library under *Advanced Planning and Optimization -> Transportation Planning/Vehicle Scheduling -> Vehicle Scheduling -> Planning -> Changes to Delivery Dates in SAP R/3 from TP/VS*.

1.1.6.3 Cost Profile in TP/VS (Changed)

Use

The user interface of the cost profile was redesigned.

Effects on Customizing

As of SAP APO 4.0, you can also set cost profiles directly using Customizing. To do this, use the IMG activity Define Cost Profile.

See also

For more information, see the SAP Library under *Advanced Planning and Optimization -> Transportation Planning/Vehicle Scheduling -> Vehicle Scheduling -> Planning -> Optimization -> Cost Profile*.

1.1.6.4 Manual Maintenance of Multimodal Shipments in TP/VS (New)

Use

As of SAP APO 4.0, you can create multimodal (interlinked) shipments manually in multilevel planning. These are shipments for which one or more orders are transferred from one vehicle to another on the route from the start location to the destination location. You can take schedules into account for this. You can also use multilevel planning to process multimodal shipments that you have created using the optimizer.

The advantage of manual maintenance in multilevel planning as compared to the optimizer is that you do not have to maintain transshipment hierarchies. This enables you to avoid the restrictions of the optimizer, such as the maximum number of shipment transfers from vehicle to vehicle.

Multilevel planning contains an interface for customer-specific heuristics. Heuristics can support the planner by using algorithms to provide default values for the shipment structure (shipment stages and resource assignment) on the basis of the selected orders and resources. You can then manually process this shipment structure and use it as an initial solution for the optimizer.

Effects on Customizing

You have to activate the heuristic interface in Customizing to be able to choose heuristics in multilevel planning. To activate the interface, use the IMG activity Activate Heuristics Interface. To be able to maintain specific rules, you have to implement the business add-in BAdI: Heuristics Interface (/SAPAPO/VS_HEURISTIC).

See also

For more information, see the SAP Library under *Advanced Planning and Optimization -> Transportation Planning/Vehicle Scheduling -> Vehicle Scheduling -> Planning -> Interactive Planning -> Maintain Multimodal Shipments Manually*.

1.1.6.5 Maintain Transportation Matrix in TP/VS (Deleted)

Use

As of SAP APO 4.0, the *Maintain Transportation Matrix* function is no longer available.

1.1.6.6 Order Split Using Delivery Creation in TP/VS (New)

Use

Large sales orders might exceed the capacity of an individual vehicle. As of SAP APO 4.0, you can split sales orders that have order volumes greater than the largest available vehicle. To do this, you generate packets either manually or on the basis of split rules for the order items concerned. Deliveries are then created for these packets in SAP R/3. The volume of the individual deliveries does not exceed the vehicle capacity and the total volume of all deliveries corresponds to the original order volumes. You use the split rules to specify by which criteria the orders should be split. After the retransfer of deliveries to SAP APO, you can execute the transportation planning process for the deliveries.

Effects on Customizing

You can implement specific split rules by using a customer enhancement. For this, you have to implement the Business Add-In (BAI) Fill the Split Rules (/SAPAPO/VS_SPL_FILL).

See also

For more information, see the SAP Library under *Advanced Planning and Optimization -> Transportation Planning/Vehicle Scheduling -> Vehicle Scheduling -> Planning -> Order Split Using Delivery Creation*.

1.1.6.7 Processing of Returns from SAP R/3 in TP/VS (New)

Use

As of SAP APO 4.0, in the *Transportation Planning/Vehicle Scheduling (TP/VS)* component you can plan and optimize returns that you created in Sales and Distribution in SAP R/3 and their associated returns deliveries. This process is also useful for planning the return shipment of empties. In this case, the aim of planning and optimization in TP/VS is to transport returns to the issuing plant during the return journey of the shipment; that is, to plan deliveries and returns to one outbound shipment.

The planning of returns and returns deliveries corresponds to the planning of sales orders. The returns are treated as outbound deliveries, although they are actually inbound deliveries. However, the start and destination locations are to be interpreted as their opposites for returns. The delivery date for returns corresponds to the goods receipt in the plant. In contrast to sales order, delivery scheduling does not take place for resources in TP/VS.

Effects on Existing Data

System prerequisites:

- o SAP R/3 4.6B and higher.

Effects on Customizing

To transfer returns from SAP R/3 to SAP APO, you have to activate the transfer in SAP R/3 Customizing under *Integration with Other SAP Components -> Advanced Planning and Optimization -> Application-Specific Settings and Enhancements -> Settings and Enhancements for Sales Orders -> Set the Transfer of Returns to SAP APO*.

See also

For more information, see the SAP Library under *Advanced Planning and Optimization -> Transportation Planning/Vehicle Scheduling -> Vehicle Scheduling -> Planning -> Planning of Returns*.

1.1.6.8 Enhanced Selection for the Transfer in TP/VS (Enhanced)**Use**

As of SAP APO 4.0, you can use the optimization profile to restrict the selection of orders and planned shipments that are to be transferred to the OLTP system (for example, SAP R/3.). This is possible for the selection of individual orders and planned shipments, and also for mass processing.

It is particularly useful to select an optimization profile if there are several planners with their own optimization profiles.

1.1.6.9 Location-Dependent Display of the Time Zone in TP/VS (New)**Use**

As of SAP APO 4.0, it is possible to display location-dependent times in interactive planning. This means that dates and times are displayed on the basis of the time zone of the location concerned. For example, the arrival time of a shipment at the customer location can be displayed in the time zone of this location, even if the shipper location lies in a different time zone. This enables the planner to have an improved overview of the process and eases communication.

1.1.6.10 SCM-APO-VS-OPT Vehicle Scheduling Optimization**1.1.6.10.1 Extended Selection in the Optimization Profile in TP/VS (Enhanced)****Use**

The optimization profile has been redesigned. It now allows the flexible selection of objects in Vehicle Scheduling: Resources, products, quantity intervals, user-defined fields, time zones for the planning horizon, and so on.

The user interface was also optimized. In addition to improved selection options for resources and locations, there are now functions for copying optimization profiles. The optimization profile now has

direct access to transaction /SAPAPO/VS01 and vice versa.

Effects on System Administration

To display optimization profiles that you created in SAP APO 3.0 or SAP APO 3.1 in the new structure, you have to execute report /SAPAPO/VS_PROFILES_CONVERT.

Effects on Customizing

You have to define additional fields in Customizing so that you are able to select them in the optimization profile. For this, use the activity Define Additional Fields in the Optimization Profile.

See also

For more information, see the SAP Library under *Advanced Planning and Optimization -> Transportation Planning/Vehicle Scheduling -> Vehicle Scheduling -> Planning -> Optimization -> Optimization Profile*.

1.1.6.10.2 Start the VS Optimizer with Initial Solution in TP/VS (New)

Use

As of SAP APO 4.0, you can start the optimization run with an initial solution. The initial solution processes all shipments that were already planned and that were displayed in interactive planning and not yet fixed. Instead of deleting these shipments and replanning the associated orders, the planned shipments are sent to the optimizer again. This then evaluates and optimizes the solution by changing the shipments.

This function is useful for the manual planning of shipments, for example. After shipments have been created, you can evaluate your solution in the optimizer.

The user interface for the VS optimizer was also redesigned.

See also

For more information, see the SAP Library under *Advanced Planning and Optimization -> Transportation Planning/Vehicle Scheduling -> Vehicle Scheduling -> Planning -> Optimization*.

1.1.7 SCM-APO-TP Medium-Term Transportation Planning

1.1.7.1 BAdIs for Transportation Planning/Vehicle Scheduling (New)

Use

As of SAP APO 4.0, you can use the following Business Add-Ins (BAdIs) in *Transportation Planning/Vehicle Scheduling (TP/VS)*:

- o Field Extension for Multilevel Planning
(/SAPAPO/VS_ADDFIELDS)
- o User Control for the Consolidation of Freight Units
(/SAPAPO/VS_CONS)

- o Fill the Split Rules
(/SAPAPO/VS_SPL_FILL)
- o SAP Connection for SCEM (Part 1)
(/SAPAPO/VS_CLP1)
- o SAP Connection for SCEM (Part 2)
(/SAPAPO/VS_CLP2)
- o SAP Connection for SCEM (Part 3)
(/SAPAPO/VS_CLP3)
- o Heuristics Interface
(/SAPAPO/VS_HEURISTIC)

The BADIs are available in the Implementation Guide (IMG) under *Advanced Planning and Optimization -> Transportation Planning/Vehicle Scheduling (TP/VS) -> Business Add-Ins (BADIs) for TP/VS*.

1.1.8 SCM-APO-SNP Supply Network Planning (SNP)

1.1.8.1 Period Category for the SNP Production Horizon (Enhanced)

Use

You define the SNP production horizon or SNP stock transfer horizon in the product master (transaction /SAPAPO/MAT1). Previously, this was always defined in calendar days. As of SAP APO 4.0, you can specify whether the given SNP production horizon or the SNP stock transfer horizon is defined in calendar days, weeks (calculated from a Monday or Sunday), or months.

At the end of the current period of the period category that has been set, the SNP production horizon or SNP stock transfer horizon moves one period into the former SNP planning horizon.

We recommend that you choose a period category for the SNP production horizon or SNP stock transfer horizon that corresponds to the set frequency of your SNP planning. This avoids data inconsistencies (if SNP planned order integration is configured) caused by planned orders transferred from SAP R/3 in particular.

See also

Integration of Planned Orders

1.1.8.2 Integration of MRP Areas (Enhanced)

Use

In SAP R/3, storage locations and storage location MRP areas enable detailed procurement planning for individual areas in a plant, for example, for a spare parts store or for a production line. The division of a plant into storage location MRP areas is relatively flexible here, and can be changed with little effort if

restructuring necessitates this.

It is already possible to integrate storage location MRP areas with SAP APO: During the transfer to SAP APO, an SAP R/3 plant becomes a location of the type *production plant* or *distribution center*, and a storage location MRP area becomes a location of the type *storage location MRP area*. However, until now there have been various restrictions on the integration of storage location MRP areas and the scope of function of SAP APO. This meant that planning with storage location MRP areas was only possible with restrictions in *Supply Network Planning* (SNP), in *Capable-to-Match* (CTM), and in *Production Planning and Detailed Scheduling* (PP/DS), while it was not at all possible in safety stock planning in SNP. The constraints included the following:

- o You could only transfer storage location MRP areas with one storage location from SAP R/3 to SAP APO.
- o You could only transfer sources of supply for external procurement and in-house production in SAP R/3 to the plant location in SAP APO, and not to the storage location MRP areas. For that reason, in SAP APO, you had to manually create the sources of supply for planning in the storage location MRP areas, if necessary.
- o In SAP APO, you always had to map the internal plant procurement of components for a planned order from the plant location or from another storage location MRP area using stock transfers, and you had to manually create the relevant transportation lanes in SAP APO. This is in contrast to the scope of function in SAP R/3, where, in in-house production, a component can be withdrawn directly from any storage location in the plant; in other words, without stock transfer.
- o You could not transfer a planned independent requirement, which was assigned to a storage location MRP area in SAP R/3, to SAP APO.

In order to support continuous supply chain planning within a plant on the basis of storage location MRP areas and SAP R/3 master data, the integration of storage location MRP areas and the scope of function in SAP APO have been extended for SAP APO 4.0. The prerequisite for the connected SAP R/3 system is a higher release than SAP R/3 4.5B and the Plug-In 2003.1.

Planning with storage location MRP areas is now possible in SNP, CTM, and PP/DS, without the previous constraints, as described below (although deployment still does not support planning with storage location MRP areas):

- o **Integration of storage location MRP areas with several storage locations**
You can transfer storage location MRP areas with several storage locations to SAP APO. However, SAP APO does not support processes where storage locations have "equal weighting": The receipt storage location of the storage location MRP area from SAP R/3 is automatically the leading storage location in SAP APO. The system uses the leading storage location as follows:
 - The system assigns the requirements and receipts, which a planning application in SAP APO creates in the storage location MRP area, to the leading storage location as standard.
 - If the rules-based ATP check in the sales order determines a storage location MRP area, the system enters the leading storage location in the sales order, in addition to the storage location MRP area. It is not possible to perform a check on the two levels of storage location MRP area and storage location in the sales order.

In SAP APO, for stock transfers to or from a storage location MRP area, you can specify a storage location other than the leading storage location in the storage location MRP area as the *issuing storage location* or as the *receiving storage location*. The system automatically assigns the requirement or receipt of a stock transfer to the issuing or receiving storage location.

In SAP APO, the storage locations of a storage location MRP area are on the *Storage Locations*

tab page. You cannot change the storage location assignment for a storage location MRP area transferred from SAP R/3.

o **Distribution of the sources of supply in SAP APO**

The sources of supply for external procurement and in-house production in SAP R/3 are automatically distributed to the plant location and the storage location MRP areas for which they are relevant in the transfer to SAP APO. The assignment is based on storage location information in the external procurement sources of supply and in the production versions in SAP R/3. SNP, CTM, and PP/DS have unrestricted access to the sources of supply in storage location MRP areas within source determination. (You have to generate SNP PPMs from PP/DS PPMs as usual.)

o **Stock transfer between storage location MRP areas**

Up until now, you represented the stock transfer between a plant and an MRP area in the plant in SAP R/3 using a relevant special procurement type, which you entered in the material master for a material in the storage location MRP area. As of SAP APO 4.0, when the material master is transferred, a transportation lane is automatically created in SAP APO between the plant and the storage location MRP area. You only have to manually create transportation lanes in SAP APO if you want to represent a stock transfer between two storage location MRP areas in a plant.

As a stock transfer between two storage locations can only be represented using a stock transfer reservation in the standard SAP R/3 system, PP/DS created a stock transfer reservation for a stock transfer that involved at least one storage location MRP area. This has the receipt category BD and the requirement category BC in the standard system.

CTM and SNP, on the other hand, created (until now) a stock transport requisition or an SNP stock transfer, which was transferred to SAP R/3 as a stock transfer reservation. As of SAP APO 4.0, SNP and CTM also create stock transfer reservations. SNP stores the requirement and the receipt for a stock transfer reservation - as in a normal SNP stock transfer - in the key figures *distribution demand (planned)* or *distribution receipt (planned)*. In addition, as of SAP APO 4.0, the new key figures *distribution demand (MRP area)* and *distribution receipt (MRP area)* are available, but only for displaying stock transfer reservations. In order that the system can create a stock transfer reservation for a stock transfer to or from a storage location MRP area, these key figures have to be in the planning area and in the planning book. The key figures are contained in the standard planning areas and books. If necessary, you have to include the key figures in your own planning areas and books. As the standard data view SNP94(1) does not contain the key figures, you have to include the key figures in the data view, if required.

You cannot use stock transfer reservations to represent the following processes:

- Explicit processing of shipments with shipping papers, Dangerous Goods Movements, and so on
- Deployment

For these processes you require stock transport requisitions and SAP R/3 Enterprise Core Release 4.70 with SAP R/3 Enterprise Extension Set 2.0. Contact SAP for more information.

o **Component withdrawal within a plant without stock transfer**

SAP APO supports component withdrawal in another location in the plant for an in-house production order. In this kind of scenario, the dependent requirement for a component is in a different location in the plant to the receipt. Stock transfer of the component does not apply. Data for the source of supply used is decisive for the location determination:

- For a PP/DS PPM or a PP/DS runtime object, the system determines the withdrawal location for the component from the storage location of the component in the plan. When the sources of supply are transferred to SAP APO, the system automatically determines the storage location. To do so, the system uses SAP R/3 master data and Customizing for storage location

determination in SAP R/3. In SAP APO, you can enter a(nother) storage location in a PPM for a component at any time.

- When an iPPE access object is transferred from a DI system, the system determines the withdrawal location for a component and enters this withdrawal location in the iPPE access object.
- o **Transfer of planned independent requirements**
You can transfer a planned independent requirement, which is assigned to a storage location MRP area in SAP R/3, to the corresponding storage location MRP area in SAP APO.
- o **Terminology**
 - As of SAP APO 4.0, the term *production planning area* has been replaced by the term *MRP area* on the interface and in the documentation.
 - The location type *MRP area* has been renamed as *storage location MRP area* to distinguish it from the subcontractor MRP area in SAP R/3.

A supply chain model that is based on the storage location MRP areas in SAP R/3 is flexible: You can adjust it quite easily at any time to the changed internal plant processes or changed organizational structures by changing the assignment of storage locations to MRP areas in SAP R/3. With little effort, you can adjust the master data and movement data in SAP APO accordingly (you can execute the restructuring manually or using an SAP report). By using MRP areas in SAP R/3 (or in another OLTP system), you can therefore separate the modeling of the supply chain in the plant from the relatively inflexible plant definitions and the plant-specific master data (material master, bill of material, and routing).

Not only can you create storage location MRP areas in SAP APO through the transfer from SAP R/3, you can also create them manually in SAP APO. This is relevant if you do not have a connected SAP R/3 system.

Effects on System Administration

If you have planned up until now in SAP R/3 and in SAP APO using storage location MRP areas, you may want to change the MRP area structure in SAP R/3 as part of the upgrade to SAP APO 4.0. (Until now, only storage location MRP areas with one storage location were supported in SAP APO.) You should use the procedure described in the documentation here. For integration with an SAP R/3 system with release 4.6B or higher, SAP supports restructuring with the SAP R/3 report RMRPAEVAL. For more information, see the SAP note 593463.

See also

Supply Chain Planning Within a Plant in the SAP APO documentation

1.1.8.3 Adjustment of the PP/DS Horizon (New)

Use

If you enter no value or the duration 0 for the PP/DS horizon, the system automatically uses the SNP production horizon as the PP/DS horizon during planning. The PP/DS horizon is therefore just as long as the SNP production horizon and the SNP and PP/DS planning periods thus follow on from each other without any gaps and without overlapping.

Therefore, do not enter a value or enter the duration zero for the PP/DS horizon:

- o **If there should not be a gap between the PP/DS horizon and the SNP planning period**
A gap between the end of the PP/DS horizon and the start of the SNP planning period is a time segment that is neither planned by PP/DS nor SNP. This can lead to inconsistencies.
- o **If the PP/DS horizon and the SNP planning period must not overlap**
Planning periods without any overlaps are relevant for decoupling SNP planning and PP/DS planning and for the integration of planned orders that you transfer from SAP R/3 to SAP APO. If you specify the SNP production horizon in days, you can avoid overlaps by specifying the same number of days for the PP/DS horizon. If you specify the SNP production horizon in calendar weeks or calendar months, and want planning periods that do not overlap, you should not enter a value for the PP/DS horizon. If you specify the SNP production horizon in calendar days or calendar weeks, the SNP production horizon does not have any fixed duration. It always reaches to the end of the current period defined by the calendar weeks or the calendar months. The duration of the SNP production horizon therefore automatically gets shorter during a period. If, for example, you specify a calendar week for the SNP production horizon, the SNP production horizon reaches seven days into the future at the start of a calendar week. If you have specified a PP/DS production horizon of seven calendar days, the SNP planning horizon and the PP/DS horizon do not overlap at the start of the calendar week. After three days have elapsed, the SNP production horizon only reaches four days into the future, but the PP/DS horizon still reaches seven days into the future. Therefore, the SNP planning period and the PP/DS horizon overlap.

See also

Integration of Planned Orders

Period Category for the SNP Production Horizon

1.1.8.4 Production in Another Location (New)

Use

As of SAP APO 4.0, *production in another location* is available in SAP APO as a new form of procurement for in-house production. You use *production in another location* if several locations (often warehouses or distribution centers) are responsible for planning a finished product, but this product is manufactured in another location (typically a production plant) that does not have any planning responsibility.

To model this scenario in SAP APO, you use an in-house production source of supply (PPM, R/3 runtime object, or iPPE access object) in SAP APO, in which the planning location and the production location are different, for the finished product that you want to procure using *production in another location*. In SAP APO 4.0, the *planning location* has been added to the maintenance of PPMs and iPPE access objects. SAP APO uses such an in-house production source of supply to create a planned order whose receipt is in the planning location and whose component requirements are in the production location. You execute procurement planning for the finished product in the planning location, and procurement planning for the components and capacity planning in the production location.

The benefits of *production in another location* are as follows:

- o There is no stocking level (the stocking level for the finished product in the production location),

thus reducing total stock and lead times

- o The shipment of the finished product from the production location to the planning location is not modeled, thus reducing the administrative work involved

Note the following constraints:

- o Due to the simplified process, you cannot implement *production in another location* for stock transfer and transport-based scenarios such as subcontracting, *Deployment*, and *Transportation Planning and Vehicle Scheduling*. Stock transfer and transport processes play a key role here; you have to model them explicitly using the relevant master data (transportation lanes).
- o It is not possible to group together the requirements of the various planning locations and form lots for the production location.

The following planning applications support *production in another location*:

- o *Supply Network Planning*
- o *Capable-to-Match*
- o *Production Planning and Detailed Scheduling*

Production in another location is also supported continuously in an integrated scenario in which you implement SAP APO as a planning system, and SAP R/3 for master data management and order processing. *Production in another location* extends the SAP R/3 special form of procurement here, *production in another plant*, which is defined in SAP R/3 by a corresponding special procurement key for the finished product in the planning plant. When the SAP R/3 master data for *production in another plant* is transferred, PPMs or PP/DS runtime objects are automatically created in SAP APO for *production in another location*. When an in-house production order that is created in SAP APO is processed, the receipt for the finished product is in the planning location, and component withdrawal is in the production location.

1.1.8.5 Subcontracting: Third-Party Comp. Provision in SNP and PP/DS (Enhanced)

Use

As of *SAP APO 4.0*, you can plan subcontracting with third-party provision of materials or components in Supply Network Planning (SNP) and Production Planning and Detailed Scheduling (PP/DS). Subcontracting refers to the process whereby a product is manufactured by an external supplier. Third-party order processing can be used if you want an external supplier to provide the components for a product that is to be manufactured by a subcontractor, rather than providing the components yourself from your own plant.

For example, a company in the USA sells hand-held devices. However, the company itself does not manufacture the devices; it has a subcontractor in Asia for this. An external supplier who is also based in Asia supplies the components for the hand-held devices, such as the casing.

With the standard subcontracting procedure, the supplier from Asia would deliver the components to the plant in the USA and the USA plant would then send the components to the subcontractor in Asia. To avoid this unnecessarily indirect route, the supplier can send the components directly to the subcontractor.

You can now model this process in the SAP system using third party order processing.

Note the following when **modeling master data**:

For every subcontracting component that you want to send directly from supplier to subcontractor, you have to manually create a transportation lane from the supplier (start location) to the subcontractor (destination location) in the SAP APO system. You also assign the associated external procurement relationship to each transportation lane.

If a purchase requisition is created at the supplier's location, the SAP R/3 system automatically assigns to the purchase requisition the address of the subcontractor in Asia as the delivery address and not the address of the plant in the USA. The *Subcontracting vendor* indicator is set at the same time. The purchase order adopts the delivery address of the purchase requisition during conversion. During goods receipt for a purchase order of this kind, the components of the hand-held device are automatically posted to the stock with subcontractor.

Effects on Customizing

In order for SNP orders to be transferred to the SAP R/3 system, you have to make the relevant setting in Customizing. To do this, choose **SAP Advanced Planning and Optimization** -> *Supply Chain Planning* -> *Supply Network Planning* -> *Basic Settings* -> *Configure Transfer to OLTP Systems*.

Note the following:

If you set *No Transfer*, the orders are not transferred, even if you have made a different setting for SAP APO at the Supply Chain Planning interface.

See also

For more information, see the *SAP Library - SAP Advanced Planning and Optimization*, following this menu path: *APO - Cross-Application Topics* -> *Subcontracting*.

1.1.8.6 Transfer and Representation of Stock in Transfer (Changed)

Use

SAP R/3 distinguishes between the following types of stock in transfer:

- o *Stock in transfer between plants*
Until now, this stock type was represented in the standard SAP APO system by the same order category as stock in transit. In dynamic pegging and in the net requirements calculation in *Production Planning and Detailed Scheduling* (PP/DS) and in *Capable-To-Match* (CTM), the stock in transit and thus also the stock in transfer between plants were regarded as unavailable. (In Customizing for material requirements planning in SAP R/3, you can define if you want the cross-plant stock in transfer to be available for material requirements planning in SAP R/3.)
- o *Stock in transfer between storage locations in a plant*
Until now, this stock type was represented in the standard SAP APO system by the same order category as unrestricted-use stock, and was therefore always regarded as available for the net requirements calculation and dynamic pegging. (In SAP R/3, internal plant stock in transfer is also always available.)

Until now, therefore, stock in transfer belonged to stock in transit and to unrestricted-use stock. SAP APO 4.0 distinguishes between the various types of stock in transfer: The stock in transfer between plants is transferred to SAP APO as **stock in transfer between locations** as of SAP APO 4.0. Stock in transfer between storage locations in a plant is transferred as **stock in transfer between sublocations**. (This corresponds to the mapping *Plant* -> *Location* and *Storage Location* -> *Sublocation*.) This is possible because of the enhancements in SAP APO described below.

New order categories in SAP APO

Until now, stock in transfer in SAP APO was represented by the order category GC_OM_STOCK_IN_TRANSIT (stock in transit) or the order category GC_OM_STOCK_UNRESTRICTED (unrestricted-use stock). The following new order categories are now available:

- o **Stock in transfer between sublocations**
Order category: GC_OM_STOCK_TRANSF_SUBLOC
- o **Stock in transfer between locations**
Order category: GC_OM_STOCK_TRANSF_LOC

The new order categories in SAP APO allow a distinction to be made between the stock in transfer in PP/DS and CTM; that is, they represent independent stock elements for dynamic pegging and the net requirements calculation. The new order categories allow the availability of the stock in transfer types to be defined independently of each other for pegging and for the net requirements calculation.

ATP categories in SAP APO

Supply Network Planning (SNP) and *Global Available-to-Promise* (Global ATP) do not control stock availability on the basis of the order category but based on the ATP category. In order that a distinction can be made between the various SAP R/3 stock in transfer types in SAP APO using the ATP category, the new ATP category CS has been implemented in SAP APO 4.0 for stock in transit. The previous categories in SAP APO are still valid without change for stock in transfer. The following list gives you an overview:

- o **Stock in transit**
Category until now: CA, Stock/tsfr
Category as of SAP APO 4.0: **CS, StkInTrnst**
- o **Stock in transfer between locations**
Category until now and in SAP APO 4.0: CA, Stock/tsfr
This category used to also include the stock in transit, but as of SAP APO 4.0 it only contains the stock in transfer between locations.
- o **Stock in transfer between sublocations**
Category until now and in SAP APO 4.0: CN, TsStkSb

Enhancement of the SAP APO Core Interface

As before, stock in transit and stock in transfer are transferred together from SAP R/3 to SAP APO if an active integration model exists for stock in transit. Prerequisite for the changed representation of stock in transfer in SAP APO is SAP R/3 Plug-In 2003.1.

Effects on Existing Data

Check if the new standard settings fulfill your requirements and make changes if necessary.

- o **PP/DS and CTM**
In the standard system, it is defined in the location product master on the *Demand* tab page under *Available Stocks* that *Stock in Transfer Between Locations* is not available and that *Stock in Transfer Between Sublocations* is. Change the settings in the location product master if necessary.
- o **SNP and Global ATP**
SNP and Global ATP do not automatically take the new category for stock in transit (CS, StkInTrnst) into consideration. You have to extend the category group for stock or the scope of check accordingly, if required.
- o **Customer exits**
Check your customer exits for processing stock.

See also

Release Information on the Availability of Stock

1.1.8.7 Delta Mode for Creating SNP Stock Transfers (New)

Use

Previously, the SNP heuristic deleted all existing (and non-fixed) orders at the start of planning and created them as new during planning. As of SAP APO 4.0, you can choose that you want existing SNP stock transfers to be deleted and created as new only if the planning situation has changed and the planning results differ from those of the previous planning run. This is now the default setting.

This setting only applies to SNP planned orders.

If you have chosen delta mode and the planning situation has not changed, the SNP stock transfers will not be transferred to the OLTP system.

Effects on Customizing

You set the delta mode globally for heuristic-based planning in new Customizing activity: Maintain Global SNP Settings.

See also

For information about the new Customizing activity, see the following release information: IMG Activity for Global SNP Settings.

1.1.8.8 SNP Heuristic: Fixed Planning Sequence (changed)

Use

Previously in Supply Network Planning (SNP), you could run a multilevel heuristic (a heuristic that also considers the bill of material (BOM) components of a product) for the entire network but not for individual locations. If you only wanted to plan a part of the supply chain model, you had to run the location heuristic many times for finished products and components, and adhere to a specific planning

sequence for the location products to ensure that the demands were fulfilled correctly.

As of SAP APO 4.0, when running the heuristic in the background, you can choose whether you want the network or location heuristic to plan only the selected products or to also plan all of the associated BOM components. If you choose the new indicator *Take into account found components in planning run*, the location heuristic also considers the components assigned to the specified locations in the planning run. If this indicator is set for the network heuristic, the network heuristic has the same functionality as the former multilevel heuristic. The multilevel heuristic is now only available in interactive Supply Network Planning because the new indicator cannot be chosen here.

The planning sequence of the SNP heuristic is now governed by the low-level codes of location products. You can determine these before a heuristic run using the new *Determine Low-Level Codes* function (choose *Supply Network Planning -> Planning -> Supply Network Planning in the Background -> Determine Low-Level Code*). The low-level code specifies the BOM level and supply chain location at which a location product is located. The heuristic first plans the product with the highest low-level code 0 (for example, a finished product at a customer location), then the product with the second highest low-level code 1 (a finished product at a distribution center), and so on. This ensures that demand is fulfilled correctly even when a partial model has been chosen.

See also

For more information, see SNP documentation: *Low-Level Code Determination*.

1.1.8.9 Error Log for Background Processing (New)

Use

Before now, when running the SNP heuristic, deployment heuristic, or Transport Load Builder (TLB) as background jobs, error messages and information messages were displayed in the spool list. The user was not able to sort or filter within this list.

As of SAP APO 4.0, when any of the aforementioned planning runs are executed as background jobs, a detailed error log will be created. You can now do the following with the new options:

- o Sort the displayed error messages (warnings and information) by message type or in ascending/descending order. You can also set different filters; according to message type or message text, for instance. These sort and filter options are particularly beneficial when you have large numbers of messages.
- o Specify for how long you want to store the log (1-999 days).
- o Switch off automatic log generation if you do not wish to have the error log or need to improve system performance. Error messages will then be shown in the spool list, as before.

1.1.8.10 Hierarchical (Aggregated) Planning (New)

Use

Hierarchical planning within *Supply Network Planning (SNP)* supports planning scenarios for heuristic-based or optimization-based planning where planning takes place at location product group level

and whereby the planning results are then disaggregated over the individual products. This type of planning might be used to improve performance or simplify the planning process.

Example Planning Process

Here is an example of the hierarchical planning process:

1. You choose the location product group in interactive Supply Network Planning. The demand values of the individual products from the product group are then automatically aggregated to the demand key figures.
2. You run the SNP heuristic or SNP optimization at location product group level.
3. You disaggregate the location product group's planning results over the individual products of the group.
4. After the SNP planning run and SNP disaggregation, you can view and change the data in interactive Supply Network Planning. You can also display resource consumption at product group level and product level in the interactive planning capacity view.

New Planning Book and Disaggregation Function

You perform hierarchical planning in interactive Supply Network Planning or in the background. There is a new planning book for hierarchical planning called 9ASNPHRPL with data views SNPHRPL and SNPHRPL(2). You can run SNP disaggregation from interactive planning and in the background. To run SNP disaggregation in the background, follow this path in the SAP APO Easy Access menu: *Supply Network Planning -> Planning -> Supply Network Planning in the Background -> SNP Disaggregation*.

Effects on Customizing

In the *S&DP Administration* IMG activity, a new indicator called *Aggregation* has been added to the detail view of the *Key Figures* tab page. This indicator specifies whether the aggregated or the normal value is to be calculated, saved, and displayed in a key figure at location product group level. It also specifies whether the value at product level is to be retained or deleted after aggregation.

A new tab page called *Hierarchical Planning* has also been added. You use this tab page to assign the location product and production process model (PPM) hierarchy to the planning area. These form the basis of hierarchical planning. You use the location product hierarchy to create the location product group you are planning. The PPM hierarchy is used for source determination with in-house production.

In the *Maintain Global SNP Settings* IMG activity, you can specify what you want the system to do during the SNP planning run and SNP disaggregation with orders resulting from earlier planning runs that exist at product level.

See also

For more information, see the *Hierarchical (Aggregated) Planning* SNP documentation in the SAP library.

1.1.8.11 Extended Production Horizon (New)

Use

Previously, you could specify a period of time in the location product master for *Supply Network Planning (SNP)* and *Capable-to-Match (CTM)* during which SNP and CTM do not plan production or create planned orders. It separates the medium-term SNP and CTM planning from the short-term *Production Planning and Detailed Scheduling (PP/DS)*.

As of SAP APO 4.0, you can now also specify an extended SNP production horizon. In contrast to the SNP production horizon, you can manually create planned orders within this extended horizon in interactive Supply Network Planning.

1.1.8.12 Using Selection IDs in SNP Background Processing (New)

Use

Before now, selections that you made in interactive planning using the Shuffler could be stored in interactive planning and then used there.

As of SAP APO 4.0, you can also use these stored selections in SNP background processing; when running the SNP heuristic, SNP optimizer, deployment heuristic, or deployment optimizer in the background, for example.

You now no longer have to manually choose the objects you want to plan (such as products and locations) for every background planning run, instead you can enter the ID of a stored selection (a selection ID).

1.1.8.13 Subcontracting with Source Location in SNP (New)

Use

As of *SAP APO 4.0*, you can also plan the subcontracting process with a source location in Supply Network Planning (SNP). Until now, this function was only available in Production Planning and Detailed Scheduling (PP/DS). Subcontracting refers to the process whereby a product is manufactured by an external supplier.

For example, screw manufacturers manufacture screws in their own plant. However, the screws are packed by an external service provider (a subcontractor). The screw manufacturers provide the subcontractor with the screws and the packaging. The subcontractor packs the screws and delivers the packaged screws back to the screw manufacturers.

During screw manufacture, the subcontracting component *packaging* is managed as part of the stock on hand at the manufacturer for legal and cost accounting purposes. During goods receipt of the purchase order for the packaged screws, consumption of the subcontracting component is posted at the screw manufacturer.

When **modeling master data**, you have to consider the following:

For each subcontracting component that you want to send from the plant to the subcontractor, you have to manually create a transportation lane from the plant (start location) to the subcontractor (destination location) in the SAP APO system. You also assign the corresponding external procurement relationship to each transportation lane.

Effects on Customizing

In order for SNP orders to be transferred to the SAP R/3 system, you have to make the relevant setting in Customizing. To do this, choose *SAP Advanced Planner and Optimizer -> Supply Chain Planning -> Supply Network Planning -> Basic Settings -> Configure Transfer to OLTP Systems*.

Note the following:

If you do not configure this transfer, orders are not transferred, even if you have made a different setting for the Supply Chain Planning interface for SAP APO.

See also

For more information, see the *SAP Library - SAP Advanced Planner and Optimizer*, following this menu path: *APO - Cross-Application Topics -> Subcontracting*.

1.1.8.14 SCM-APO-SNP-BF Basic Functions

1.1.8.14.1 IMG Activity for Global SNP Settings (New)

Use

As of SAP APO 4.0, there is a new IMG activity for *Supply Network Planning (SNP)* Customizing that you use to make settings for the different Supply Network Planning methods, such as the SNP heuristic, SNP optimizer, deployment, and Transport Load Builder (TLB). The settings apply globally to the entire SNP application and can be transported to other SAP APO systems. To find the IMG activity, follow this menu path: *Basic Settings -> Maintain Global SNP Settings*.

Some parameters from this IMG activity were available as user parameters in previous releases or could be implemented. However, some of the parameters also relate to new planning functions, such as hierarchical planning and interchangeability of products.

Effects on System Administration

When upgrading from SAP APO 3.0 or 3.1 to SAP APO 4.0, you will not typically need to make any adjustments in this IMG activity. Modifications are only required if you had made corresponding system modifications.

However, the following parameters are exceptions: *Heu.: Plnnd Order GR* (consider goods receipt processing time when creating SNP planned orders) and *Heu.: Order Update* (Delta mode for order updating). The standard setting for these parameters in SAP APO 4.0 differs from that of previous releases (see also release information: Delta Mode for Creating SNP Stock Transfers).

See also

For information about the individual parameters mentioned in the IMG activity, see the F1 help documentation at the individual fields.

1.1.8.14.2 Period Factor for PPMs and Transportation Lanes (Enhanced)

Use

Before now, you could specify the period factor for the SNP heuristic on the *Lot Size* tab page in the location product master data. You use this factor to define how the system is to calculate the availability date of a receipt element within a bucket. You could also still specify this factor in the corresponding *Bucket Offset* fields in the production process model (PPM) and transportation lane. These values overwrote the value defined in the product master.

However, the *Bucket Offset* fields were also used in the PPM and transportation lane to define a corresponding factor for the SNP optimizer. The calculation logic for this is clearly different from that of the SNP heuristic.

As of SAP APO 4.0, to clarify this difference in calculation logic by also separating the input fields, two new fields for specifying the period factor have been added to the PPM and transportation lane. This means that in the future the period factor for the SNP heuristic can be defined in the location product master and in the PPM or transportation lane in the *Period Factor* field and the value entered in the product master will continue to be overwritten by the other two values.

In the future, the fields for *Bucket Offset* in the PPM and transportation lane are only to be used for defining the bucket offset for the SNP optimizer.

See also

For more information on the Period Factor and Bucket Offset fields, see the F1 help documentation for these fields.

1.1.8.14.3 Internal SNP Number Ranges (New)

Use

Previously, orders that were created by *Supply Network Planning (SNP)* did not have internal order numbers, which meant they could not be identified. As of SAP APO 4.0, you can now create internal SNP number ranges. The system then assigns internal SNP order numbers to orders created during Supply Network Planning. You can use these numbers to delete specific orders for instance (see release information: Deletion of SNP Transaction Data).

You can use the same number range as in *Production Planning and Detailed Scheduling (PP/DS)* or a dedicated SNP number range that should not overlap with the PP/DS number range.

Effects on Customizing

You create SNP number ranges in IMG activity Set Use of Number Ranges for SNP. You then specify which number range you want to use in IMG activity Maintain Number Ranges for Orders.

1.1.8.14.4 Moving the Planning Start for the SNP Heuristic (Changed)

Use

Before now, the planning start date could be moved in the planning book data view. You could specify the number of buckets by which the planning start was to be moved from the current system date (or date specified in the *Planning Start Date* field). However, this parameter was only taken into account by the SNP optimizer and not by the SNP heuristic.

As of SAP APO 4.0, this parameter is now also taken into account by the SNP heuristic. There has also been a slight modification to the usage of this field. In the Offset field, you can now specify the number of buckets that fall between the current system date (or date specified in the *Planning Start Date* field or by the PDATE user exit for background processing) and the start of the future planning horizon or past horizon.

1.1.8.14.5 Deletion of SNP Transaction Data (Enhanced)

Use

You can use the *Delete Transaction Data* function to delete transaction data (that was planned in SAP APO) from the SAP APO system and a connected SAP R/3 system. Previously, you could execute this function in dialog mode and in the background.

As of SAP APO 4.0, there is also a test mode available. Furthermore, the log has been extended and an option added for deleting orders by order numbers:

- o Test Mode: Deletion does not take place immediately in this mode, instead you first receive a log of the data that is to be deleted. You can then check this data and decide whether you really want to delete it or cancel the operation.
- o Log: The log not only contains the deleted object numbers but also their descriptions, such as order number, category, product, location, and quantity.
- o Deleting orders by order numbers: You can now also delete individual orders by specifying the order number (see also release information Internal SNP Number Ranges).

The initial screen of this function has also been redesigned and is more user-friendly.

As of APO 4.0, you can only use this function to delete SNP orders.

See also

Documentation about the *Delete Transaction Data* function in *Supply Network Planning (SNP)*.

1.1.8.14.6 Semantics in the Planning Area (Changed)

Use

It was previously possible to assign key figure semantics to a key figure in the planning area. You used these semantics to define both the business meaning of a key figure and the meaning for read and write operations in *liveCache*. You could also use the key figure semantics to specify which quantity type was to be considered when reading orders from *liveCache*. The quantity type was thus assigned for each key figure, meaning that it applied to all order categories in a category group.

New key figure function

As of SAP APO 4.0, you can now specify the business meaning of a key figure separately from its *liveCache*-related meaning. You now use a new key figure function to define the business meaning. SNP uses this business meaning to decide how a key figure is used during planning. For example, if the business meaning *Distribution Receipt for Deployment* has been assigned to the **9AFSHIP (DistrReceipt (Conf.))** key figure, Supply Network Planning uses this key figure to store and read the distribution receipt for deployment. You assign a key figure function to the key figures to be considered by Supply Network Planning in the planning area. For auxiliary key figures, you assign the key figure function in the planning book.

To specify the *liveCache*-related meaning of a key figure, you will continue to use the existing key figure semantics.

Assigning the quantity type to individual categories

The quantity type can now be assigned to an individual category rather than to a key figure. In addition to the three quantity types previously available, there is now one more type called *Confirmed Quantity*. The type that was previously called *Confirmed Quantity* is now called the pegging-relevant quantity. It can include both the confirmed and requested quantity and is mainly relevant for *Production Planning and Scheduled Planning (PP/DS)* and *Capable-to-Match Planning (CTM)* (SNP does not support pegging). In SNP, you have to choose the new *Confirmed Quantity* type if you set in Customizing for *Production Planning and Detailed Scheduling* that the requested quantity is a quantity of sales orders that is relevant for pegging but you want to continue working with the confirmed quantity in SNP. For more information, see release info: Pegging-Relevant Quantity for Sales Orders.

Effects on System Administration

An XPRA (/SAPAPO/SNPSEMANTICXPRA) was used to assign a key figure function to all SNP key figures and auxiliary key figures in the planning area.

Effects on Customizing

You use the Maintain Category Groups Customizing activity to assign the quantity type to a category. You can also define for each category whether you want the system to read fixed orders, non-fixed orders, or both when reading orders of this category for a key figure from *liveCache*.

1.1.8.14.7 Transferring Data to Other Systems (Enhanced)

Use

Before now, you could use IMG activity *Maintain Manual Transport Link for DP/SNP* to transfer data (such as planning books and planning areas) that you created in one system to another system (from a

development system to a production system, for instance).

As of SAP APO 4.0, you now have more options for transferring data. You can now use this function to transport saved selections. When you set the appropriate indicator, all selections belonging to a planning area are transferred. You can also choose specific selection IDs that you want to be transferred.

In addition, you can transport the settings you made using IMG activity *Configure Transfer to OLTP Systems* into other systems. In this IMG activity, you can set how orders that are created, changed, or deleted during Supply Network Planning are to be transferred to an OLTP system.

See also

Documentation for IMG activities: Maintain Manual Transport Link for DP/SNP and Configure Transfer to OLTP Systems.

1.1.8.15 SCM-APO-SNP-MAC MacroBuilder

1.1.8.15.1 Changes and Enhancements to Macro Functionality in DP and SNP (Changed)

Use

In Release 4.0 several changes have been made that improve the editing of macros.

Macro Workbench

This replaces the old initial screen of the Macro Builder. It enables you to restrict the macro books to be displayed, for instance

- o Your own books
- o SAP macro books
- o Books that contain macros
- o Books belonging to a particular **macro group**, a new object particularly designed for sorting purposes.
- o Books for a particular application

The macro workbench is based on the SAP list viewer (ALV), so that you can use standard functions to sort and filter macro books.

Where-used lists enable you to find macros in which certain elements, functions, or key figures are used.

From this overview screen you can of course start actions for individual macros, such as

- o Start Macro Builder
- o Activate macros
- o Create notes for macros (new function in Release 4.0)
- o Generate (activate) one or more macros

Furthermore you can copy macros from one planning book to another, transport macros books to other

systems, and start semantic checks for macro books or individual macros.

Semantic Checks

Up to now there have only been syntax checks for the coding of macros within the Macro Builder. These checked the formal correctness of the macro coding. There were however some situations that could not be checked, but caused problems when using the macro. This function has been conceived so that new checks can be added as necessary. At the moment the following checks are available:

- o 'Do not initialize aux. table'
The system checks whether this indicator at the macro level has been set. If not a warning is displayed.
If the auxiliary table is not initialized when you call up the macro, any values that are in the table from the execution of previous macros remain in the table and can be used in the current macro. All entries in the auxiliary table are lost when you leave the planning book.
- o Layout
The system checks that the correct **Change scope** has been assigned to a results element in the attributes. If the function that is called changes the attributes of a cell, for instance by changing the background color or setting an icon, the **Change scope** should be **Attributes**, otherwise **Values** or **Fixed values**.
- o 'Do not display initial values'
This indicator at macro level affects performance. If it is not set initial values, that is cells that have no entry, are converted to '0', and are taken into consideration during calculations.
- o Logical checks
The system also checks that the parentheses, semi-colons, and single inverted commas have been set correctly.

The semantic check can be started at any one of four levels:

1. Macro book
2. Macro
3. Step
4. Result

It can be started from either the macro workbench or the macro builder.

Macro Versions

It is now possible to generate versions of macros. This enables you to backup existing macros before making changes. You can specify that the system automatically create a new version of a macro book each time a macro book is included in a transport request or a different user changes macros in the macro book. You access this function from the menu of the MacroBuilder.

Testing Macros

This improvement lets you test macros directly from the MacroBuilder. A new session appears with a planning grid as in interactive planning. You can make some entries in the relevant key figures and then

test the macros that have been generated. This means that when you are developing macros, you can quickly switch between editing in the MacroBuilder and the test screen. You access this function from the menu of the MacroBuilder.

1.1.8.16 SCM-APO-SNP-OPT SNP Plan Optimization

1.1.8.16.1 Decomposition Method for Resources (New)

Use

It was previously possible to define decomposition methods for the SNP optimization run in the SNP optimizer profile. Decomposition is used to reduce the runtime and memory requirements of optimization. Decomposition can also enable the optimizer to find a feasible solution in the event of difficult discrete problems.

The decomposition methods available before this release were time decomposition and product decomposition. As of SAP APO 4.0, resource decomposition is also available.

Resource decomposition speeds up the solution process by analyzing the material flow and basic optimizer decisions about production, procurement, transportation, and so on to determine a resource sequence. The optimizer can then create partial problems for the individual resources, which are solved in sequence. The optimizer makes decisions in each of these partial problems to load resources.

It is a particularly good idea to use resource decomposition if the production processes always load the resources in a similar sequence. Resource decomposition does not reduce memory requirements. To reduce memory requirements, you can use time decomposition alongside this decomposition method. You cannot use resource decomposition alongside product decomposition or strict prioritization.

Effects on Customizing

You specify resource decomposition in the SNP optimizer profile on the *Solution Methods* tab page.

1.1.8.16.2 Deployment Optimizer Profile and Interactive Execution of the Optimize (New)

Use

Deployment Optimizer Profile

Previously, you could make deployment optimizer settings in the SNP optimizer profile and on the initial screen for running the deployment optimizer.

As of SAP APO 4.0, there is now a dedicated deployment optimizer profile. This profile is very similar to the SNP optimizer profile, but only includes settings that are relevant for the deployment optimizer. On the additional *Deployment Parameters* tab page, you can specify the rules and horizons for deployment that you would previously have defined on the initial screen for deployment optimization.

An indicator called *Earliest Delivery* has been added to the already existing deployment rules. You use this indicator in conjunction with push distribution and fair share distribution by demands to specify that you want the optimizer to completely fulfill the demands at the earliest possible demand time if possible instead of splitting demand fulfillment over several demand times.

Running the Deployment Optimizer in Interactive Supply Network Planning

Previously, you could run the deployment optimizer in the background only. As of SAP APO 4.0, there is now a pushbutton available on the interactive Supply Network Planning desktop that you can choose to run the deployment optimizer interactively. After choosing this button, a window appears in which you can choose your predefined profiles, keep an eye on the optimization process, and display information about the solution that has been found. This window is almost identical to that of the SNP optimizer in interactive Supply Network Planning.

Effects on Customizing

You define the new deployment optimizer profile in Customizing or in the current settings for *Supply Network Planning (SNP)* in Define SNP Deployment Optimizer Profiles.

1.1.8.16.3 Incremental Optimization (Enhanced)

Use

In optimization-based planning in Supply Network Planning (SNP), you have the option of planning only a part of the model or planning on the basis of an already existing plan. This is called incremental optimization. The incremental optimization functionality has been enhanced in SAP APO 4.0.

Selecting Part of a Model

If you are only planning part of a model (by only choosing specific location products for instance), input products of the selected products defined in the production process model (PPM) or products that are available for procurement at a source location through a transportation lane might not be selected and are therefore not planned. Before now, neither input products nor source location products and their stocks were taken into account during planning.

As of SAP APO 4.0, you can specify that the SNP optimizer is to take into account the stocks of non-selected input products or source location products.

Basing on an Existing Plan

If you are planning on the basis of an already existing plan, the plan might be infeasible since the optimizer is not able to plan receipts for shortages that are the result of fixed orders from previous planning runs. To avoid this, it was already possible to specify that the dependent demand and distribution demand of fixed orders were to be treated in the same way as independent requirements; that is, that the optimizer would permit shortages but would calculate costs for not delivering. You can define these non-delivery costs in the product master data for the individual demand types: Customer demand, demand forecast, and corrected demand forecast.

As of SAP APO 4.0, you can also set that the optimizer is to regard the dependent demand and distribution demand of fixed orders and the stocks of unselected input products and source location products as a *pseudo-hard constraint*. This means that shortages are possible but penalty costs are to be calculated that are defined internally in the optimizer and are infinite. You use them to ensure that the optimizer will only permit shortages if it cannot find any other feasible solution.

Effects on Customizing

You can define the new options for incremental optimization on the *Integration* tab page within IMG activity Define SNP Optimizer Profiles.

1.1.8.16.4 Termination of Optimization Runs (New)

Use

Previously, you could only cancel optimization runs immediately. When runs are canceled immediately, the optimizer does not save data and terminates log creation immediately. You also need system administrator authorization to be able to perform this type of cancellation.

As of SAP APO 4.0, you can also terminate optimization runs "carefully," without interrupting current processes. This function is suited mainly to runs that have been started interactively, but it can also be used for background runs. For example, you can terminate an optimization run if the system has already found a solution and would have only made improvements in the remaining runtime.

If you terminate a run, the system still completes this run in the usual way, which means, it saves the data that has been determined up to this point and creates a complete log. Any solution found by this time is also stored and logged.

See also

For more information, see the following SAP Library documentation: *Optimization Run Termination*.

1.1.8.16.5 Quota Arrangement Modification in SNP Optimization (Enhanced)

Use

You could previously set for the SNP optimization run that you wanted the system to create quota arrangements automatically for locations or change already existing quota arrangements for locations

based on the results of the optimization run. These quota arrangements could then be used as a basis for subsequent heuristic or deployment planning runs; for example, if you set that shorter term heuristic plans were to follow a longer term optimization planning.

As of SAP APO 4.0, you now have the following additional options for modifying quota arrangements. You can use these to significantly improve performance:

- o You can specify that you want the SNP optimizer to create and modify inbound quota arrangements only, outbound quota arrangements only, or both. Inbound quota arrangements are only relevant for the SNP heuristic and outbound quota arrangements are only relevant for deployment.
- o You can specify in which horizon you want the system to modify and create quota arrangements.
- o You can specify the smallest period size for which you want the system to modify and create quota arrangements. For instance, you can specify that planning is to take place in weekly periods, whereas quota arrangements are to be modified in monthly periods only.

1.1.8.16.6 Status Indicator for Available Resource Capacity (New)

Use

Before now in the optimization-based planning method of *Supply Network Planning (SNP)*, you could define only two available capacity variants of a resource: A normal available capacity and a maximum available capacity. The SNP optimizer calculated costs (that you could define for a capacity variant) for using the maximum capacity.

As of SAP APO 4.0, you can define multiple capacity variants for a resource and use a status indicator to label them as minimum, normal, and maximum available capacity. You can define costs for falling below the minimum or for using the normal or maximum capacity in the quantity and rate definition or the capacity profile of the resource. The SNP optimizer takes these costs into account during planning. However, the minimum capacity and costs that you defined for a capacity variant with a *Normal Capacity* status are only taken into account for production resources by the SNP optimizer.

You define the status indicator globally for all resources to which the capacity variant is assigned. To do this, go to the initial screen of the resource and choose *Current Settings -> Capacity Variants*. The default value is maximum capacity (empty field). This ensures compatibility with earlier releases. If you have given the same status for multiple capacity variants, the system uses the variant with the lowest number.

New key figure for minimum available capacity in interactive planning

In addition to the existing key figures for normal and maximum available capacity, the capacity view in interactive Supply Network Planning now also contains a minimum available capacity key figure.

See also

SNP documentation: *Master Data Setup for the Optimizer*.

1.1.8.16.7 Defining Time-Based Constraints in Interactive Planning (New)

Use

A number of constraints (such as the capacity constraints defined for resources) are taken into account during the SNP optimization run. Before now, you could define these constraints at resource level but not on a time basis.

However, in certain circumstances constraints need to be defined on a time basis; for example, if the product quantity provided by a supplier varies from period to period. As of SAP APO 4.0, you can define time-based constraints like these in interactive planning. You can set the following bounds (limits):

- o Upper bound for external procurement (at product-location level)
- o Upper bound for stock on hand (at product-location level)
- o Upper bound for production (at product-PPM level)
- o Upper bound for transportation (at product-transportation lane level).

New planning area, planning book, and data view

The following new standard SNP planning area, planning book, and data view are now available for defining time-based constraints: Planning book 9ATSOPT; data view OPT_TSBD; planning area 9ASNP04. In addition to the standard interactive Supply Network Planning functionality, the 9ATSOPT planning book also has a new table in the lower screen area with four new key figures called: *Procurement Upper Bound*, *Storage Upper Bound*, *Production Upper Bound*, and *Transportation Upper Bound*. You can define upper bounds for the individual key figures in specific periods. The system then takes these upper bounds into account when you run the SNP optimizer. The table also has a key figure that corresponds to each upper bound with which you can show that the actual value is zero (otherwise, the value 0 indicates that no upper bound has been specified).

Effects on Customizing

The following two indicators are available as extended settings in the SNP optimizer profile:

- o *Ignore Time-Based Constraints*. You set this if you do not want time-based constraints to be considered during the optimization run. This would be advisable if you wanted to use an SNP optimization bound profile for the optimization run.
- o *Consider Upper Bounds for Stock as a Soft Constraint*. You set this if you want the optimizer to regard the upper bound for stock as a soft constraint rather than a pseudo-hard constraint. The optimizer can calculate penalty costs to violate soft constraints. You define these penalty costs in a time-based key figure in the aforementioned planning book.

See also the IMG documentation regarding SNP optimizer profiles.

See also

For more information, see *Defining Time-Based Constraints in Interactive Planning* in the SNP documentation.

1.1.8.17 SCM-APO-SNP-INS Interactive SNP

1.1.8.17.1 General Changes in Interactive Supply Network Planning (Enhanced)

Use

In SAP APO 4.0, the following small changes have been made in interactive Supply Network Planning:

- o **Key figure selection in interactive planning**
It is now possible to select several key figures that are to be displayed in the current session. You can select the key figures to be displayed from a list. This function is available for both the upper and lower grid.
- o **Copy & paste in interactive planning**
You can now use copy & paste to copy data from one cell or group of cells to another.
- o **Improved export to spreadsheet programs**
When you export data from interactive planning it is stored in CSV format. The resulting file has a similar format to the display in the grid. This means that you can export data after a pivot sort so that the sort order is retained in the spreadsheet file.

1.1.8.17.2 Changing and Fixing Orders in Interactive Planning (Enhanced)

Use

Before now, orders for key figures such as *Distribution Receipts (Planned)* and *Production (Planned)* could be changed manually and fixed for subsequent planning runs.

As of SAP APO 4.0, you now have more options for changing and fixing orders in interactive Supply Network Planning.

Changing orders

In addition to being able to change orders in the *Distribution Receipts (Planned)* key figure, you can now also change orders in the *Distribution Demand (Confirmed)* key figure, which means you can change deployment stock transfers resulting from a deployment run. The system checks the available-to-deploy quantity (ATD quantity) and informs you if there is insufficient quantity available. You can also choose the destination location from a list of relevant locations. You also have the option of moving deployment stock transfers from one transportation lane to another.

You are now able to assign another production process model (PPM) to an existing planned order in the interactive Supply Network Planning detail view. However, you can only do this for unfixed planned orders. In the interactive Supply Network Planning capacity view, if you move a planned order from one resource to another, the PPM is changed to that of the new resource.

You can also move planned orders from one bucket to another using a context menu. When doing this, the entire order quantity is moved to the other bucket, which means it is not possible to move partial quantities or to distribute order quantities over several buckets. You can move the order quantities within a resource or also from one resource to another.

Fixing orders

In addition to being able to fix and unfix an individual order from a context menu or the interactive Supply Network Planning detail view, you can also now fix and unfix all orders in a specific time period (by highlighting the start and end buckets). All existing orders in this period become fixed or unfixed. However, you can still create additional orders in this period.

In addition, you can select several location products using the drilldown function and then fix or unfix the orders for the selected products and a specific time period.

1.1.8.17.3 Detailed Capacity Consumption for PPMs and Periods (New)

Use

Previously in the interactive Supply Network Planning capacity view, you could show the capacity consumption for a production quantity only as a total for each period. As of SAP APO 4.0, it is possible to display the detailed capacity consumption of a production quantity for each production process model (PPM) and period.

In the capacity view, if you choose *Display dependent objects* for PPMs, you will see a list of production quantities for the individual PPMs displayed in the lower table. If you now go to the context menu, the *Production (Planned)* section, and choose *Capacity Consumption (Details)* for a period and PPM, you will see the capacity consumption for this period and PPM displayed in the upper table in the *Capacity Consumption (Details)* key figure. It is possible that the capacity consumption of the corresponding resource will be in earlier periods than the period with the production quantity.

You can also display a detailed view from the context menu by choosing *Display Details* to display the individual orders for the production quantity per PPM and period.

1.1.8.17.4 Switching Between Selections and Data Views (Changed)

Use

Before now, when switching between selections and data views in interactive Supply Network Planning, you received a message asking you to save data. It was not possible to switch without either saving or losing data.

As of SAP APO 4.0, you can switch between different selections and data views without saving. The data is saved temporarily and the individual selections are locked and cannot be accessed by other users. If you choose *Refresh*, data is reset to its last active save status and the lock on the selection is removed.

This functionality is only available for SNP planning areas.

1.1.8.17.5 Status Indicator for Available Resource Capacity (New)

Use

Before now in the optimization-based planning method of *Supply Network Planning (SNP)*, you could define only two available capacity variants of a resource: A normal available capacity and a maximum available capacity. The SNP optimizer calculated costs (that you could define for a capacity variant) for using the maximum capacity.

As of SAP APO 4.0, you can define multiple capacity variants for a resource and use a status indicator to label them as minimum, normal, and maximum available capacity. You can define costs for falling below the minimum or for using the normal or maximum capacity in the quantity and rate definition or the capacity profile of the resource. The SNP optimizer takes these costs into account during planning. However, the minimum capacity and costs that you defined for a capacity variant with a *Normal Capacity* status are only taken into account for production resources by the SNP optimizer.

You define the status indicator globally for all resources to which the capacity variant is assigned. To do this, go to the initial screen of the resource and choose *Current Settings -> Capacity Variants*. The default value is maximum capacity (empty field). This ensures compatibility with earlier releases. If you have given the same status for multiple capacity variants, the system uses the variant with the lowest number.

New key figure for minimum available capacity in interactive planning

In addition to the existing key figures for normal and maximum available capacity, the capacity view in interactive Supply Network Planning now also contains a minimum available capacity key figure.

See also

SNP documentation: *Master Data Setup for the Optimizer*.

1.1.8.18 SCM-APO-SNP-SCH SNP Scheduling Agreement Processing

1.1.8.18.1 Simplified Process for SNP Scheduling Agreement Processing (New)

Use

Before now, you could choose from three different processes in the external procurement relationship for SNP scheduling agreement processing. These processes are: *Process with Expected Confirmations*, *Process Without Confirmations*, and *Process with Confirmations in Exceptional Cases*.

As of SAP APO 4.0, there is a new fourth process available that is called *Process Without Releases*. This process is a simplified version of the process with expected confirmations since it does not create scheduling agreement releases. It is most suited to scenarios whereby the supplier makes the confirmations for collaborative supply planning over the Internet. The supplier sees only the schedule lines on the Internet and then confirms these directly. Alternatively, the manufacturer can enter confirmations in interactive Supply Network Planning.

Effects on Customizing

You have to make the following special settings for this simplified process in Customizing:

- o If you are using Global Available-to-Promise (Global ATP), you have to set in the Customizing for this application component that confirmations are relevant for ATP (choose *Product Availability Check* -> *Maintain Check Control*).
- o You should choose a confirmation profile with tolerance check to receive alerts informing you of large deviations between the required and confirmed quantities (in Customizing for Supply Chain Planning, choose *Collaborative Procurement* -> *Procurement Scheduling Agreement* -> *Confirmation Receipt* -> *Maintain Confirmation Profiles for Confirmation Receipt*).

1.1.8.19 SCM-APO-SNP-DPL **Deployment**

1.1.8.19.1 Deployment Optimizer Profile and Interactive Execution of the Optimize (New)

Use

Deployment Optimizer Profile

Previously, you could make deployment optimizer settings in the SNP optimizer profile and on the initial screen for running the deployment optimizer.

As of SAP APO 4.0, there is now a dedicated deployment optimizer profile. This profile is very similar to the SNP optimizer profile, but only includes settings that are relevant for the deployment optimizer. On the additional *Deployment Parameters* tab page, you can specify the rules and horizons for deployment that you would previously have defined on the initial screen for deployment optimization.

An indicator called *Earliest Delivery* has been added to the already existing deployment rules. You use this indicator in conjunction with push distribution and fair share distribution by demands to specify that you want the optimizer to completely fulfill the demands at the earliest possible demand time if possible instead of splitting demand fulfillment over several demand times.

Running the Deployment Optimizer in Interactive Supply Network Planning

Previously, you could run the deployment optimizer in the background only. As of SAP APO 4.0, there is now a pushbutton available on the interactive Supply Network Planning desktop that you can choose to run the deployment optimizer interactively. After choosing this button, a window appears in which you can choose your predefined profiles, keep an eye on the optimization process, and display information about the solution that has been found. This window is almost identical to that of the SNP optimizer in interactive Supply Network Planning.

Effects on Customizing

You define the new deployment optimizer profile in Customizing or in the current settings for *Supply Network Planning (SNP)* in Define SNP Deployment Optimizer Profiles.

1.1.8.19.2 Deleting Deployment Stock Transfers in Realtime Deployment (New)

Use

Before now, when executing a deployment run or realtime deployment run, existing deployment stock transfers from previous planning runs were not deleted and remained unchanged.

As of SAP APO 4.0, you can now define for realtime deployment that you want the system to delete already existing deployment stock transfers and reschedule them during this planning run. You also have the option of setting that only unfixed deployment stock transfers are to be deleted.

Effects on Customizing

In the active planning version, you can only use this new functionality if you specified in Customizing for *Supply Network Planning (SNP)* in the *Configure Transfer to OLTP Systems* activity that deployment stock transfers are to be transferred to the connected OLTP system as purchase requisitions (not purchase orders).

In simulation versions, you can use this functionality independently of the Customizing settings.

1.1.8.20 SCM-APO-SNP-TLB Transport Load Builder

1.1.8.20.1 Loading Pallets with Different Products (New)

Use

Previously, the Transport Load Builder (TLB) could load pallets with one type of product only. As of SAP APO 4.0, you can specify that you want to load a pallet with several different products (product mix).

This option allows the system to optimize pallet loading. When you choose it, the system first attempts to fill a pallet with products of the same type. If there is still space remaining and no more of that product remaining, the system finds another product with which to load the pallet to its full capacity.

Effects on Customizing

This is a global setting that you make for TLB planning in the new Customizing activity: Maintain Global SNP Settings.

See also

For information about the new Customizing activity, see release information: IMG Activity for Global SNP Settings.

1.1.8.20.2 Deployment Stock Transfer Prioritization (New)

Use

The Transport Load Builder (TLB) creates TLB shipments for multiple products based on the results of the deployment run (deployment stock transfers) to load means of transport to an optimal level. To do this, it takes into account constraints defined in the TLB profile, such as weight and volume. As of SAP APO 4.0, you can use the deployment stock transfer prioritization function to optimize means of transport loading to an even greater extent. Before running the TLB, you can split the deployment stock transfers according to types of demand and assign priorities to the stock transfers that result from this.

If you run the prioritization function, the system first splits a deployment stock transfer quantity into a maximum of three new deployment stock transfers according to the following categories:

- o Category 1: Stock transfers for fulfilling current demands and shortfall quantities
- o Category 2: Stock transfers for fulfilling demands on the basis of a specified target stock level
- o Category 3: Stock transfers representing a surplus delivery that exceeds the target stock level (on the basis of push deployment, for example)

The system then assigns a priority to the new deployment stock transfers according to these categories. A priority area is available for each category. The system makes another weighting within this priority area. The assigned shipment priority is displayed in the TLB view in interactive Supply Network Planning. The transportation planner or TLB system use this information to make sure that important product quantities are loaded first.

Effects on Customizing

Before using the prioritization function, you have to go to Customizing for *Supply Network Planning*, menu path: Configure Transfer to OLTP Systems. Here, you have to specify that the deployment stock transfers you wish to prioritize are only - or not - to be transferred as a purchase requisition to a connected OLTP system.

You cannot use this function to process deployment stock transfers that are to be transferred to the OLTP system as purchase orders.

See also

For more information, see *Prioritization of Deployment Stock Transfers* in the SNP documentation.

1.1.8.20.3 General Changes to the TLB (Changed)

Use

Grouping of Deployment Stock Transfers by Shipment Date

The Transport Load Builder (TLB) groups deployment stock transfers into TLB shipments. Previously, the TLB would take into account the demand date (start of the goods issue activity) in addition to other criteria. This could cause the shipment dates (start of shipment activity) of the deployment stock transfers grouped in a TLB shipment to be different.

As of SAP APO 4.0, the TLB takes into account the shipment date when grouping deployment stock transfers. The items in a TLB shipment now always have the same shipment date. This date and the delivery date (end of the shipment activity) are also displayed in interactive planning for the TLB and can be changed by the user.

TLB Run Simulation

As of SAP APO 4.0, you can specify that you wish to merely simulate a TLB run rather than actually performing it. The results of this simulation are then displayed in a list. The TLB shipments displayed are not created in *liveCache* and the deployment stock transfers created by deployment are neither reduced nor deleted.

1.1.8.21 SCM-APO-SNP-INC Product Interchangeability in SNP

1.1.8.21.1 Interchangeability in Supply Network Planning (New)

Use

In *Supply Network Planning (SNP)*, it was previously possible to use a phase-out control for finished products within heuristic-based planning. This function is still available but as of SAP APO 4.0 it is being replaced by the new product interchangeability function that provides new functionality and is part of a global product interchangeability process within SAP APO.

Interchangeability of products is now taken into account by both heuristic-based planning and optimization-based planning. For example, you can use it to transfer demands for a product that is to be discontinued onto a successor product or to use existing stock of one product to fulfill demand for a successor product.

SNP supports the following product interchangeability options:

- o Discontinuation of products
- o Supersession chain
- o Form-fit-function class (FFF class)

There is a new standard SNP planning book for interchangeability called 9ASNP_PS with data view PROD_SUBST. It has the following new key figures: Substitution Demand and substitution Receipt.

If you use this planning book when running the SNP heuristic or SNP optimizer and have entered corresponding product substitution data in the interchangeability master data, product interchangeability will be taken into account during the SNP planning run. You can then display the results in interactive Supply Network Planning. New display options have been added to the shuffler and the *Display dependent products* function.

Effects on Customizing

Product interchangeability is activated by default in the *Maintain Global SNP Settings* option in SNP Customizing. If you do not wish to use product interchangeability, you can deactivate it (the *SNP: Deact.InC* indicator).

See also

For more information, see the Product Interchangeability release information and the *SNP Product Interchangeability* documentation of the SAP library.

1.1.8.22 SCM-APO-SNP-VMI Vendor-Managed Inventory

1.1.8.22.1 Transportation and Shipment Scheduling Dependent on SNP Master Data

Use

As of SAP APO 4.0, you can choose if *Transportation and Shipment Scheduling* is executed depending on SNP master data or on condition data. Until now, condition data was always used in scheduling.

This is of particular relevance for *vendor-managed inventory* (VMI) sales orders, because the system uses the SNP master data for scheduling when VMI orders are created. When the order is changed and published to SAP R/3, *Transportation and Shipment Scheduling*, which calculated other dates depending on condition data until now, is called up. If you activate *Extended Scheduling for VMI Sales Orders* in SAP APO 4.0, **and** the destination location is a VMI customer, **and** the location-dependent product master data exists, *Transportation and Shipment Scheduling* now also determines the dates depending on the SNP master data.

If you do **not** activate *Extended Scheduling for VMI Sales Orders* **or** the destination location is **not** a VMI customer **or no** location-dependent product master data exists, the system does not determine the dates depending on the SNP master data, but on the condition data.

In *Global Available-to-Promise* (Global ATP) and SAP R/3 documents, you can also schedule depending on SNP master data.

Effects on Existing Data

If you change over the scheduling of SAP R/3 documents to SNP master data, documents created before this change are rescheduled according to the new logic if data that is relevant for scheduling is changed.

Effects on System Administration

If you use the customer exit /SAPAPO/SAPLVCRM_001 or /SAPAPO/SAPLVCRM_002, you may have to adjust the implementation.

Effects on Customizing

- o If you want to schedule VMI sales orders in SAP APO, you activate the extended scheduling in the implementation guide (IMG) under *Advanced Planning and Optimization -> Supply Chain Planning -> Supply Network Planning (SNP) -> Vendor-Managed Inventory -> Activate Extended Scheduling*.

If you create VMI sales orders in SAP APO and transfer them to SAP R/3, in Customizing you have to assign the shipping condition of the relevant SAP R/3 document to the means of transport with which the VMI order was created in SAP APO. To do so, in the SAP APO implementation guide choose *Global Available-to-Promise (Global ATP) -> Transportation and Shipment Scheduling -> Interfaces -> Define Assignment of Default Means of Transport to Shipping Conditions*.

- o If you also want to schedule SAP R/3 documents depending on SNP master data, the following prerequisites must be fulfilled:

- *Extended Scheduling* is activated (see above)
- The location of the ship-to party is defined as a VMI customer
- Location-dependent master data exists for the material/plant combination
- An active integration model exists for the related material/plant combination of the document for Global ATP **or** an active integration model exists for the related material/plant/ship-to party combination for VMI scheduling (the prerequisite for this is SAP R/3 4.6B or higher)

See also

Release information for Vendor-Managed Inventory

1.1.8.22.2 Vendor-Managed Inventory (New)**Use****Stock in Transit**

As of SAP APO 4.0, the following functions have been added to extend observance of stock in transit:

- o If the ship-to party sends the open purchase order quantity, the data sent and the TLB VMI orders are used to determine the stock in transit. If the calculated stock in transit differs from that stored in liveCache, the liveCache quantity is adjusted accordingly.
- o The ship-to party can now also send proof of delivery. (IDoc type: DELVRY03). The stock in transit corresponding to this is then deleted.
- o You can maintain the IDoc settings for stock in transit in Customizing (see: Effects on Customizing).
- o Exceptions occurring during inbound processing are displayed in the Supply Network Planning Alert Monitor.
- o You can manually edit stock in transit in Supply Network Planning.
- o The Do not create stock in transit indicator is available at the means of transport of the transportation lane. You use this indicator to control whether or not to create stock in transit at the SAP APO customer location during a goods issue for a VMI delivery.
- o You use report RLOADVMI in SAP R/3 to initially transfer the stock in transit from SAP R/3 to SAP APO.
- o You can use the BAPI_SLSRVAPS_CREATEINTRANS BAPI to edit the stock in transit yourself.

Extended Scheduling

You can activate extended scheduling for VMI orders in Customizing (see: Effects on Customizing). Extended scheduling is used to schedule VMI sales orders in the SAP APO system. The dates and times scheduled in SAP APO are adopted by the SAP R/3 system.

You can create and modify the following scheduling master data in SAP APO:

- o Source location: Shipping calendar
- o Destination location: Receiving calendar
- o Location product at source location: Goods issue processing time, pick/pack time, transportation lead time
- o Location product at destination location: Goods receipt processing time
- o Means of transport at transportation lane: Transportation calendar, transport duration

You can create an integration model in SAP R/3 for scheduling VMI orders. This means that, when a VMI sales order is changed or created in SAP R/3, scheduling can be performed in SAP APO based on the above master data. If an ATP check is executed in SAP APO, the integration model for scheduling is not required.

Extended Determination of Sales Area Data and Order Type

You need a sales area to create a VMI sales order in SAP R/3. You can assign a sold-to party and plant to a sales area in Customizing for the SAP APO Core Interface (CIF) in SAP R/3 (see: Effects on Customizing). This cancels out the need to enter a sales area in the customer location master. In addition to maintaining the sales area in CIF Customizing, you can also maintain the order category for the VMI sales order when it is created in SAP R/3.

Create VMI Purchase Order Number in APO

In Customizing, you can make the settings for creating a purchase order number in the VMI sales orders (see: Effects on Customizing).

Extended Forecast Consumption

You can maintain extended forecast consumption for VMI in the additional VMI fields of the customer location in SAP APO. This forecast consumption is a consumption between the forecast at the customer location and the sales orders received by the VMI customer from his or her customers. You can store these VMI customer sales orders in the **9ATSSALES** key figure. If the Extended Forecast Consumption field is blank or zero, the requirement is the maximum from the forecast and sales order. If the field has the value '1', the system applies the usual SAP APO forecast consumption.

Receive XML PROACT Messages in SAP APO

You can use the SAP Exchange Infrastructure to also transfer the VMI customer's product activity data in XML format. The system provides the **ProductActivityReportNotification** message for this.

You can make the XML product activity message settings in Customizing (see: Effects on Customizing).

Miscellaneous

- o CIF Compare/Reconcile function
You can now use the /SAPAPO/CIF_DELTAREPORT3 report to delete VMI sales orders (with errors) that cannot be transferred to SAP R/3.
- o Number Assignment for SNP Orders
You can assign an internal APO number for SNP orders (see: Effects on Customizing).

- o Report /SAPAPO/RLCDELETE
This report can now also delete individual orders. For more information, see the following release information: Transaction Data Deletion (extended).

Effects on Customizing

You have to make the following Customizing settings if you want to implement the functions:

Stock In Transit

To maintain the IDoc settings in Customizing, specify the stock information sent to you from the ship-to party by EDI.

For more information, see the mySAP SCM Implementation Guide (IMG), following this menu path: Advanced Planning and Optimization -> Supply Chain Planning -> Supply Network Planning (SNP) -> Vendor-Managed Inventory -> Maintain IDoc Settings for Stock in Transit.

Extended Scheduling

If you want to schedule VMI sales orders in SAP APO, activate extended scheduling in Customizing.

For more information, see the mySAP SCM Implementation Guide (IMG), following this menu path: Advanced Planning and Optimization -> Supply Chain Planning -> Supply Network Planning (SNP) -> Vendor-Managed Inventory -> Activate Extended Scheduling.

Sales Area Data and Order Type Determination

In SAP R/3, you can assign the sales area and order category to a sold-to party/plant combination.

For more information, see the SAP APO Core Interface Implementation Guide (CIF IMG), following this menu path: Integration with Other mySAP.com Components -> Advanced Planner and Optimizer (SAP APO) -> Application-Specific Settings and Enhancements -> Enhancements for Sales Orders -> Settings for Vendor-Managed Inventory (VMI) -> Assign Sales Area and Order Category to Sold-To Party/Plant.

Create VMI Purchase Order Number in APO

You can make the settings for creating a purchase order number in the VMI sales orders in Customizing.

For more information, see the mySAP SCM Implementation Guide (IMG), following this menu path: Advanced Planning and Optimization -> Supply Chain Planning -> Supply Network Planning (SNP) -> Vendor-Managed Inventory -> Maintain Purchase Order Number Assignment in APO.

Receive XML PROACT Messages in SAP APO

Maintain the settings for XML product activity messages.

For more information, see the mySAP SCM Implementation Guide (IMG), following this menu path: Advanced Planning and Optimization -> Supply Chain Planning -> Supply Network Planning (SNP) -> Vendor-Managed Inventory -> Maintain Settings for XML Messages.

Miscellaneous (number assignment for SNP orders)

You can assign an internal APO number in Customizing for SNP orders.

For more information, see the mySAP SCM Implementation Guide (IMG), following this menu path:

Advanced Planning and Optimization -> Supply Chain Planning -> Supply Network Planning (SNP) -> Basic Settings, for the following activities:

- o Set Use of Number Ranges for SNP
- o Maintain Numer Ranges for Orders

1.1.8.23 SCM-APO-SNP-SFT **Safety Stock Planning**

1.1.8.23.1 Extended Safety Stock Planning (Enhanced)

Use

Supply Network Planning (SNP) offers standard safety stock planning and extended safety stock planning. The following changes and enhancements have been made to extended safety stock planning for SAP APO 4.0:

- o **A relative forecast error can be entered directly**

Extended safety stock planning in SNP uses the relative forecast error of demand and replenishment lead time (RLT) as information about the "uncertainty" of demand and RLT forecasts. The larger the relative forecast error, the higher the amount of safety stock required to achieve a predefined service level. Before now, the system calculated these forecast errors using historical data that you made available in a key figure.

As of SAP APO 4.0, you can specify the forecast errors directly in the location master. SAP recommends that you do this if one of the following applies:

- There is no historical data (because the product is new, for instance).
- There is so little historical data that it is not possible to calculate a statistically significant forecast error.
- The forecast error can be said to be almost constant.

- o **Fixed lot size can be considered for the location product**

If you are using extended safety stock method **BS** (beta service level), the system needs to have information about the quantity to be procured. Previously, the system calculated this quantity without taking into account fixed procurement lot sizes.

As of SAP APO 4.0, you can choose that you want the system to take into account the fixed lot size defined in the location product master. To do this, set the relevant indicator in the safety stock planning function. The system then rounds the procurement quantity to the nearest multiple of the fixed lot size.

- o **Local time zones can be considered**

The critical replenishment channel (the channel with the longest replenishment lead time) is calculated during extended safety stock planning. Previously, this calculation would have errors if the locations of the replenishment channel were in different time zones.

As of SAP APO 4.0, the replenishment lead time calculation is able to consider local time zones properly.

- o **Results are saved in time series key figures**

Previously, an auxiliary key figure called SAFETY was used to save the results of safety stock planning. Users could also define their own auxiliary key figures for this purpose.

As of SAP APO 4.0, you have to specify a key figure that you created in the time series *liveCache* for saving the results. This means you can no longer use auxiliary key figures. You can only continue to use the standard 'SAFETY' auxiliary key figure for the standard safety stock planning method. In the standard safety stock calculation macro, you also have to specify the key figure created in the time series *liveCache*.

- o **Use of selection ID**

Previously, you had to manually select the products and locations you wanted to plan every time you executed safety stock planning.

As of SAP APO 4.0, you can now enter the ID of a selection that you stored in interactive Supply Network Planning (selection ID). For more information, see release information: Using Selection IDs in SNP Background Processing.

1.1.8.24 SCM-APO-SNP-CAP Capacity Leveling

1.1.8.24.1 Capacity Leveling (Enhanced)

Use

The existing capacity leveling functionality in *Supply Network Planning (SNP)* has been redesigned and enhanced for SAP APO 4.0.

You can use the enhanced capacity leveling function for heuristic-based planning in SNP to remove resource overloads and move orders or partial order quantities into previous or subsequent time periods (using forward or backward scheduling). SNP capacity leveling is used to level specific bottleneck resources. It is run locally on a resource in a specified horizon, which means that dependencies with other resources are ignored.

These are the main enhancements:

- o Capacity leveling in the background: In addition to the already existing option for accessing capacity leveling in interactive Supply Network Planning, it is now also possible to run capacity leveling in the background. The benefit of this is that you can select several resources for leveling (which can then be processed in sequence). This function is also especially suited to large data volumes and complex models.

You find this function in *Supply Network Planning -> Planning -> Supply Network Planning in the Background -> Capacity Leveling*.

- o Capacity leveling profile: You have the option of using various parameters to control capacity leveling. You can define these parameters in a profile that you can then specify when running capacity leveling in interactive planning or in the background. However, you can also specify the parameters manually or overwrite individual profile parameters before each capacity leveling run.

You define the capacity leveling profile in Customizing for SNP by following this menu path: *Profiles -> Define SNP Capacity Leveling Profiles* or in the SAP APO Easy Access menu: *Supply Network Planning -> Environment -> Current Settings -> Profiles -> Define SNP Capacity Leveling Profiles*.

- o Different leveling methods: You can choose between three leveling methods: Heuristic, optimizer, and BAdI. You can use the BAdI to connect your own leveling method to the system.

See also

For more information, see the *Capacity Leveling SNP* documentation in the SAP Library.

1.1.9 SCM-APO-SDM Multilevel Supply & Demand Matching

1.1.9.1 Availability of Stock in SAP APO (New)

Use

Up to now, it was predefined within SAP APO which stock types were regarded as available as standard in dynamic pegging and the net requirements calculation in *Production Planning and Detailed Scheduling*, and in *Capable-to-Match planning*.

As of SAP APO 4.0, you can configure the availability for selected stock types. You can make these settings in the location product master on the *Demand* tab page under *Available Stocks*, and in the mass maintenance for location products. The following table provides an overview of which stock types are regarded as available as standard, and the stock types for which you can configure the availability in the location product master:

<u>Stock type</u>	<u>Standard</u>	<u>Configurable?</u>
Unrestricted-use stock	available	no
Stock in quality inspection	available	yes
Stock in transfer between sublocations	available	yes
Stock in transfer between locations	not available	yes
Stock in transit	not available	no
Restricted-use stock	not available	yes
Blocked stock	not available	yes

Note:

- o In SAP APO 4.0, the transfer of stock in transfer from SAP R/3 to SAP APO and the representation of stock in transfer in SAP APO has been changed. For more information, see the release information for Transfer and Representation of Stock in Transfer.

- o With the exception of stock in transfer, the descriptions of the stock types in SAP APO correspond to the stock type descriptions in SAP R/3. The links refer to the SAP R/3 definitions of the stock types.

Effects on System Administration

If you have implemented customer exits for modification of the stock availability (for example, in SAP APO, the customer exit APOCF011), check if you still need these.

1.1.9.2 Integration of MRP Areas (Enhanced)

Use

In SAP R/3, storage locations and storage location MRP areas enable detailed procurement planning for individual areas in a plant, for example, for a spare parts store or for a production line. The division of a plant into storage location MRP areas is relatively flexible here, and can be changed with little effort if restructuring necessitates this.

It is already possible to integrate storage location MRP areas with SAP APO: During the transfer to SAP APO, an SAP R/3 plant becomes a location of the type *production plant* or *distribution center*, and a storage location MRP area becomes a location of the type *storage location MRP area*. However, until now there have been various restrictions on the integration of storage location MRP areas and the scope of function of SAP APO. This meant that planning with storage location MRP areas was only possible with restrictions in *Supply Network Planning* (SNP), in *Capable-to-Match* (CTM), and in *Production Planning and Detailed Scheduling* (PP/DS), while it was not at all possible in safety stock planning in SNP. The constraints included the following:

- o You could only transfer storage location MRP areas with one storage location from SAP R/3 to SAP APO.
- o You could only transfer sources of supply for external procurement and in-house production in SAP R/3 to the plant location in SAP APO, and not to the storage location MRP areas. For that reason, in SAP APO, you had to manually create the sources of supply for planning in the storage location MRP areas, if necessary.
- o In SAP APO, you always had to map the internal plant procurement of components for a planned order from the plant location or from another storage location MRP area using stock transfers, and you had to manually create the relevant transportation lanes in SAP APO. This is in contrast to the scope of function in SAP R/3, where, in in-house production, a component can be withdrawn directly from any storage location in the plant; in other words, without stock transfer.
- o You could not transfer a planned independent requirement, which was assigned to a storage location MRP area in SAP R/3, to SAP APO.

In order to support continuous supply chain planning within a plant on the basis of storage location MRP areas and SAP R/3 master data, the integration of storage location MRP areas and the scope of function in SAP APO have been extended for SAP APO 4.0. The prerequisite for the connected SAP R/3 system is a higher release than SAP R/3 4.5B and the Plug-In 2003.1.

Planning with storage location MRP areas is now possible in SNP, CTM, and PP/DS, without the previous constraints, as described below (although deployment still does not support planning with storage location MRP areas):

o **Integration of storage location MRP areas with several storage locations**

You can transfer storage location MRP areas with several storage locations to SAP APO. However, SAP APO does not support processes where storage locations have "equal weighting": The receipt storage location of the storage location MRP area from SAP R/3 is automatically the leading storage location in SAP APO. The system uses the leading storage location as follows:

- The system assigns the requirements and receipts, which a planning application in SAP APO creates in the storage location MRP area, to the leading storage location as standard.
- If the rules-based ATP check in the sales order determines a storage location MRP area, the system enters the leading storage location in the sales order, in addition to the storage location MRP area. It is not possible to perform a check on the two levels of storage location MRP area and storage location in the sales order.

In SAP APO, for stock transfers to or from a storage location MRP area, you can specify a storage location other than the leading storage location in the storage location MRP area as the *issuing storage location* or as the *receiving storage location*. The system automatically assigns the requirement or receipt of a stock transfer to the issuing or receiving storage location.

In SAP APO, the storage locations of a storage location MRP area are on the *Storage Locations* tab page. You cannot change the storage location assignment for a storage location MRP area transferred from SAP R/3.

o **Distribution of the sources of supply in SAP APO**

The sources of supply for external procurement and in-house production in SAP R/3 are automatically distributed to the plant location and the storage location MRP areas for which they are relevant in the transfer to SAP APO. The assignment is based on storage location information in the external procurement sources of supply and in the production versions in SAP R/3. SNP, CTM, and PP/DS have unrestricted access to the sources of supply in storage location MRP areas within source determination. (You have to generate SNP PPMs from PP/DS PPMs as usual.)

o **Stock transfer between storage location MRP areas**

Up until now, you represented the stock transfer between a plant and an MRP area in the plant in SAP R/3 using a relevant special procurement type, which you entered in the material master for a material in the storage location MRP area. As of SAP APO 4.0, when the material master is transferred, a transportation lane is automatically created in SAP APO between the plant and the storage location MRP area. You only have to manually create transportation lanes in SAP APO if you want to represent a stock transfer between two storage location MRP areas in a plant.

As a stock transfer between two storage locations can only be represented using a stock transfer reservation in the standard SAP R/3 system, PP/DS created a stock transfer reservation for a stock transfer that involved at least one storage location MRP area. This has the receipt category BD and the requirement category BC in the standard system.

CTM and SNP, on the other hand, created (until now) a stock transport requisition or an SNP stock transfer, which was transferred to SAP R/3 as a stock transfer reservation. As of SAP APO 4.0, SNP and CTM also create stock transfer reservations. SNP stores the requirement and the receipt for a stock transfer reservation - as in a normal SNP stock transfer - in the key figures *distribution demand (planned)* or *distribution receipt (planned)*. In addition, as of SAP APO 4.0, the new key figures *distribution demand (MRP area)* and *distribution receipt (MRP area)* are available, but only for displaying stock transfer reservations. In order that the system can create a stock transfer reservation for a stock transfer to or from a storage location MRP area, these key figures have to be in the planning area and in the planning book. The key figures are contained in the standard planning areas and books. If necessary, you have to include the key figures in your own planning areas and books. As the standard data view SNP94(1) does not contain the key figures, you

have to include the key figures in the data view, if required.

You cannot use stock transfer reservations to represent the following processes:

- Explicit processing of shipments with shipping papers, Dangerous Goods Movements, and so on
- Deployment

For these processes you require stock transport requisitions and SAP R/3 Enterprise Core Release 4.70 with SAP R/3 Enterprise Extension Set 2.0. Contact SAP for more information.

o **Component withdrawal within a plant without stock transfer**

SAP APO supports component withdrawal in another location in the plant for an in-house production order. In this kind of scenario, the dependent requirement for a component is in a different location in the plant to the receipt. Stock transfer of the component does not apply. Data for the source of supply used is decisive for the location determination:

- For a PP/DS PPM or a PP/DS runtime object, the system determines the withdrawal location for the component from the storage location of the component in the plan. When the sources of supply are transferred to SAP APO, the system automatically determines the storage location. To do so, the system uses SAP R/3 master data and Customizing for storage location determination in SAP R/3. In SAP APO, you can enter a(nother) storage location in a PPM for a component at any time.
- When an iPPE access object is transferred from a DI system, the system determines the withdrawal location for a component and enters this withdrawal location in the iPPE access object.

o **Transfer of planned independent requirements**

You can transfer a planned independent requirement, which is assigned to a storage location MRP area in SAP R/3, to the corresponding storage location MRP area in SAP APO.

o **Terminology**

- As of SAP APO 4.0, the term *production planning area* has been replaced by the term *MRP area* on the interface and in the documentation.
- The location type *MRP area* has been renamed as *storage location MRP area* to distinguish it from the subcontractor MRP area in SAP R/3.

A supply chain model that is based on the storage location MRP areas in SAP R/3 is flexible: You can adjust it quite easily at any time to the changed internal plant processes or changed organizational structures by changing the assignment of storage locations to MRP areas in SAP R/3. With little effort, you can adjust the master data and movement data in SAP APO accordingly (you can execute the restructuring manually or using an SAP report). By using MRP areas in SAP R/3 (or in another OLTP system), you can therefore separate the modeling of the supply chain in the plant from the relatively inflexible plant definitions and the plant-specific master data (material master, bill of material, and routing).

Not only can you create storage location MRP areas in SAP APO through the transfer from SAP R/3, you can also create them manually in SAP APO. This is relevant if you do not have a connected SAP R/3 system.

Effects on System Administration

If you have planned up until now in SAP R/3 and in SAP APO using storage location MRP areas, you may want to change the MRP area structure in SAP R/3 as part of the upgrade to SAP APO 4.0. (Until

now, only storage location MRP areas with one storage location were supported in SAP APO.) You should use the procedure described in the documentation here. For integration with an SAP R/3 system with release 4.6B or higher, SAP supports restructuring with the SAP R/3 report RMRPAEVAL. For more information, see the SAP note 593463.

See also

Supply Chain Planning Within a Plant in the SAP APO documentation

1.1.9.3 Transfer and Representation of Stock in Transfer (Changed)

Use

SAP R/3 distinguishes between the following types of stock in transfer:

- o **Stock in transfer between plants**
Until now, this stock type was represented in the standard SAP APO system by the same order category as stock in transit. In dynamic pegging and in the net requirements calculation in *Production Planning and Detailed Scheduling* (PP/DS) and in *Capable-To-Match* (CTM), the stock in transit and thus also the stock in transfer between plants were regarded as unavailable. (In Customizing for material requirements planning in SAP R/3, you can define if you want the cross-plant stock in transfer to be available for material requirements planning in SAP R/3.)
- o **Stock in transfer between storage locations in a plant**
Until now, this stock type was represented in the standard SAP APO system by the same order category as unrestricted-use stock, and was therefore always regarded as available for the net requirements calculation and dynamic pegging. (In SAP R/3, internal plant stock in transfer is also always available.)

Until now, therefore, stock in transfer belonged to stock in transit and to unrestricted-use stock. SAP APO 4.0 distinguishes between the various types of stock in transfer: The stock in transfer between plants is transferred to SAP APO as **stock in transfer between locations** as of SAP APO 4.0. Stock in transfer between storage locations in a plant is transferred as **stock in transfer between sublocations**. (This corresponds to the mapping *Plant* -> *Location* and *Storage Location* -> *Sublocation*.) This is possible because of the enhancements in SAP APO described below.

New order categories in SAP APO

Until now, stock in transfer in SAP APO was represented by the order category GC_OM_STOCK_IN_TRANSIT (stock in transit) or the order category GC_OM_STOCK_UNRESTRICTED (unrestricted-use stock). The following new order categories are now available:

- o **Stock in transfer between sublocations**
Order category: GC_OM_STOCK_TRANSF_SUBLOC
- o **Stock in transfer between locations**
Order category: GC_OM_STOCK_TRANSF_LOC

The new order categories in SAP APO allow a distinction to be made between the stock in transfer in PP/DS and CTM; that is, they represent independent stock elements for dynamic pegging and the net requirements calculation. The new order categories allow the availability of the stock in transfer types to be defined independently of each other for pegging and for the net requirements calculation.

ATP categories in SAP APO

Supply Network Planning (SNP) and *Global Available-to-Promise* (Global ATP) do not control stock availability on the basis of the order category but based on the ATP category. In order that a distinction can be made between the various SAP R/3 stock in transfer types in SAP APO using the ATP category, the new ATP category CS has been implemented in SAP APO 4.0 for stock in transit. The previous categories in SAP APO are still valid without change for stock in transfer. The following list gives you an overview:

- o **Stock in transit**
Category until now: CA, Stock/tsfr
Category as of SAP APO 4.0: **CS, StkInTrnst**
- o **Stock in transfer between locations**
Category until now and in SAP APO 4.0: CA, Stock/tsfr
This category used to also include the stock in transit, but as of SAP APO 4.0 it only contains the stock in transfer between locations.
- o **Stock in transfer between sublocations**
Category until now and in SAP APO 4.0: CN, TsStkSb

Enhancement of the SAP APO Core Interface

As before, stock in transit and stock in transfer are transferred together from SAP R/3 to SAP APO if an active integration model exists for stock in transit. Prerequisite for the changed representation of stock in transfer in SAP APO is SAP R/3 Plug-In 2003.1.

Effects on Existing Data

Check if the new standard settings fulfill your requirements and make changes if necessary.

- o **PP/DS and CTM**
In the standard system, it is defined in the location product master on the *Demand* tab page under *Available Stocks* that *Stock in Transfer Between Locations* is not available and that *Stock in Transfer Between Sublocations* is. Change the settings in the location product master if necessary.
- o **SNP and Global ATP**
SNP and Global ATP do not automatically take the new category for stock in transit (CS, StkInTrnst) into consideration. You have to extend the category group for stock or the scope of check accordingly, if required.
- o **Customer exits**
Check your customer exits for processing stock.

See also

Release Information on the Availability of Stock

1.1.9.4 SCM-APO-SDM-CTM Capable to Match

1.1.9.4.1 Deactivate Dynamic Pegging (New)

Use

Up to now, dynamic pegging was active as standard. As of SAP APO 4.0, you can deactivate dynamic pegging in the location product master, on the *Demand* tab page under *Pegging* by setting the *Deactivate Dynamic Pegging* indicator.

Note that deactivating dynamic pegging has consequences for all applications that use dynamic pegging and evaluate dynamic pegging relationships. In addition to Detailed Scheduling, PP/DS optimization, and specific PP/DS heuristics, the alerts display is also affected: Without dynamic pegging, the system creates quantity alerts for all requirements and receipt elements; in other words, all receipts represent scrap and all requirements are regarded as being insufficiently covered. The system cannot create any date/time alerts. The affected applications cannot execute dynamic pegging again or evaluate the dynamic pegging relationships accordingly until you reactivate dynamic pegging.

Effects on Existing Data

Dynamic pegging is active in the standard system.

See also

Documentation for *Production Planning and Detailed Scheduling* under *Deactivate Dynamic Pegging*

1.1.9.4.2 Production in Another Location (New)

Use

As of SAP APO 4.0, *production in another location* is available in SAP APO as a new form of procurement for in-house production. You use *production in another location* if several locations (often warehouses or distribution centers) are responsible for planning a finished product, but this product is manufactured in another location (typically a production plant) that does not have any planning responsibility.

To model this scenario in SAP APO, you use an in-house production source of supply (PPM, R/3 runtime object, or iPPE access object) in SAP APO, in which the planning location and the production location are different, for the finished product that you want to procure using *production in another location*. In SAP APO 4.0, the *planning location* has been added to the maintenance of PPMs and iPPE access objects. SAP APO uses such an in-house production source of supply to create a planned order whose receipt is in the planning location and whose component requirements are in the production location. You execute procurement planning for the finished product in the planning location, and procurement planning for the components and capacity planning in the production location.

The benefits of *production in another location* are as follows:

- o There is no stocking level (the stocking level for the finished product in the production location), thus reducing total stock and lead times
- o The shipment of the finished product from the production location to the planning location is not modeled, thus reducing the administrative work involved

Note the following constraints:

- o Due to the simplified process, you cannot implement *production in another location* for stock

transfer and transport-based scenarios such as subcontracting, *Deployment*, and *Transportation Planning and Vehicle Scheduling*. Stock transfer and transport processes play a key role here; you have to model them explicitly using the relevant master data (transportation lanes).

- o It is not possible to group together the requirements of the various planning locations and form lots for the production location.

The following planning applications support *production in another location*:

- o *Supply Network Planning*
- o *Capable-to-Match*
- o *Production Planning and Detailed Scheduling*

Production in another location is also supported continuously in an integrated scenario in which you implement SAP APO as a planning system, and SAP R/3 for master data management and order processing. *Production in another location* extends the SAP R/3 special form of procurement here, *production in another plant*, which is defined in SAP R/3 by a corresponding special procurement key for the finished product in the planning plant. When the SAP R/3 master data for *production in another plant* is transferred, PPMs or PP/DS runtime objects are automatically created in SAP APO for *production in another location*. When an in-house production order that is created in SAP APO is processed, the receipt for the finished product is in the planning location, and component withdrawal is in the production location.

1.1.9.4.3 Forecasting Without Final Assembly Capable-to-Match (New)

Use

As of SAP APO 4.0, Capable-to-Match planning (CTM) supports **Forecasting Without Final Assembly** and **Make-to-Order Production**.

Restrictions

- o In make-to-order production, only time-continuous planning is possible.
- o In forecasting without final assembly, you can display the orders created by CTM in the SNP planning book, but not change them. A prerequisite for displaying orders is that you have already implemented Business Add-In (BAI) /SAPAPO/SDP_INTERACT with method GET_KEYF_SPECIALS.
- o In forecasting without final assembly, the restrictions for *Production Planning and Detailed Scheduling* (PP/DS): are also valid for CTM:
 - Forecasting without final assembly is only valid for the first BOM level
 - The system only creates safety stock in the make-to-stock segment
 - CTM only supports forecasting without final assembly for in-house production
 - Only demands in the make-to-stock segment can consume stock

1.1.9.4.4 Supply Categorization in CTM (Changed)

Use

In SAP APO 4.0, supply categorization in *Capable-to-Match planning* (CTM) was substantially revised.

- o You can now use ATP categories for supply categorization. To do this, assign ATP categories or category group to supply categories.
- o You can create different categorization profiles to use in different CTM profiles. In the categorization profile, decide between categorization with ATP categories or categorization with supply limits. You can now make the corresponding assignments in the categorization profile too.
- o All receipts and supplies that you do not categorize, are assigned by the system to a standard category. If you do not specify your supply categories as the standard category, the system continues to use the predefined standard category "00".

Effects on Existing Data

If you use a CTM profile from an older release, and it has settings for supply categorization, you can display these settings in the categorization profile, but not change them. To change the settings, first save the categorization profile under a new name.

1.1.9.4.5 Master Data and Order Selection in CTM (Changed)

Use

For SAP APO 4.0, the master data and order selection in *Capable-to-Match planning* (CTM) was substantially revised:

- o The master data selection itself will no longer be saved in the CTM profiles, but the name of a separately saved master data selection will be.
- o You can create different master data selections.
- o In the order selection, you now use master data selections. You can also use general master data selections for the order selection, or create master data selections especially for the order selection.
- o You can decide whether the master data itself (static master data selection) or simply the selection criteria (dynamic master data selection) are saved.
In static master data selection, the system saves the master data determined from the selection criteria with the master data selection. Changes in the basic supply chain model do not affect CTM planning.
In dynamic master data selection, specify the name of a selection profile. For each planning run, the system recombines the master data based on the selection criteria. Changes to the supply chain model therefore always affect the selection.
- o The master data selection has essentially become more flexible, as there are now more selection criteria available, in contrast to older releases.

Effects on Existing Data

You can convert CTM profiles with master data selections that you created in SAP APO 3.0 or 3.1, using report CTM_MSEL_CONVERT. The result will be master data selections that you can use in CTM profiles as of SAP APO 4.0.

1.1.9.4.6 General Changes in the CTM Profile (Changed)

Use

For SAP APO 4.0, the profile for *Capable-to-Match planning* (CTM) was partly revised:

- o New tab pages
The tab pages of the CTM profile have been arranged more clearly. On the *Strategies* and *Settings* tab pages, you will find new, lower-level tab pages.
- o Planning parameters
Until now, you have selected the planning parameters, that are available for CTM in the CTM profile under *Control -> Control Parameters*, on a separate screen as a fixed parameter, or entered them as variable parameters. As of SAP APO 4.0, you will find frequently used planning parameters as settings on the *Strategies* and *Settings* tab pages of the CTM profile. You can still enter seldom used planning parameters as variable parameters, under *Control -> Planning Parameters*.
- o Tab page *Supplies*
The functions for supply categorization are no longer on the *Supplies* tab page, but in the new menu function *Edit -> Categorization Profile*. See also Supply Categorization.

1.1.9.4.7 Strategies to Limit Storage Duration in CTM (New)

Use

Until now, *Capable-to-Match Planning* (CTM) did not consider restrictions regarding the maximum storage duration of a receipt. As of SAP APO 4.0, there are two new functions in CTM planning that you can use to limit the storage duration of a receipt:

- o Order creation frame
You can use this function to limit the processing time for a product across all BOM levels, so that the storage duration is reduced.
- o Maximum earliness
You can use this function to limit the timeframe between the demand dates of demands and the availability dates of receipts for a location product. You can specify that a demand is not fulfilled too early, and therefore avoid storage problems.
The system only considers the maximum earliness during backwards scheduling.

1.1.9.4.8 Planning Components in CTM (Changed)

Use

Until now, *Capable-to-Match planning* (CTM) only processed input products that were assigned to the first activity of a *production process model* (PPM). All input products that were assigned to subsequent activities were ignored. CTM planning did not consider setup activities.

As of SAP APO 4.0, CTM plans all input products, regardless of which activity they are assigned to. Setup activities are now also taken into consideration in CTM planning.

Note

CTM planning still only considers output products that are assigned to the last activity of a source of supply for in-house production. CTM planning does not support setup matrices.

1.1.9.4.9 GR and GI Processing Times for External Procurement in CTM (Changed)

Use

As of SAP APO 4.0, *Capable-to-Match planning* (CTM) creates activities for the goods receipt (GR) and the goods issue (GI) for external procurement orders. For this, CTM considers the GR and GI processing times in the location product master. For calculating the GR processing times, CTM creates the receiving calendar, and for calculating the GI processing times, it creates the shipping calendar. You specify both calendars in the location master.

CTM planning uses the calendar for scheduling and does not use handling resources.

See also

Receiving Calendar for Locations

Transportation Lane Adoption of Goods Receipt Processing Time

1.1.9.4.10 Extended Production Horizon (New)

Use

Previously, you could specify a period of time in the location product master for *Supply Network Planning* (SNP) and *Capable-to-Match* (CTM) during which SNP and CTM do not plan production or create planned orders. It separates the medium-term SNP and CTM planning from the short-term *Production Planning and Detailed Scheduling* (PP/DS).

As of SAP APO 4.0, you can now also specify an extended SNP production horizon. In contrast to the SNP production horizon, you can manually create planned orders within this extended horizon in interactive Supply Network Planning.

1.1.10 SCM-APO-FCS Demand Planning

1.1.10.1 Function Improvements in Demand Planning (Enhanced)

Use

The following small changes have been made in Demand Planning:

Deletion of characteristic combinations

It is now possible to select individual characteristic combinations from a list and then to delete the selected combinations.

Calculation type D

A new calculation type is now available for aggregation/disaggregation

D - Average based on lowest level

This is similar to calculation type A - Average. However as opposed to type A, type D calculates the average of the entries at the lowest (detail) level., type A averages the entries at the next lower level.

Key figure selection in interactive planning

It is now possible to select several key figures that are to be displayed in the current session. You can select the key figures to be displayed from a list. This function is available for both the upper and lower grid.

Copy & Paste in Interactive Planning

You can now use copy & paste to copy data from one cell or group of cells to another.

Improved Export to Spreadsheet Programs

When you export data from interactive planning it is stored in CSV format. The resulting file has a similar format to the display in the grid. This means that you can export data after a pivot sort so that the sort order is retained in the spreadsheet file.

Changes to Fixing

If you enter fixing information at aggregate level in interactive planning, the details are also fixed. You no longer require an aggregate for the planning object structure.

Paging in Collaborative Demand Planning

By setting the user parameter /SAPAPO/CLP_DRILLROW you can include a page-up/page-down function for the online display of planning books.

Changes to DP-BOM Functionality

Up to the current release the free characteristics for dependent characteristic combinations (input products) had to be the same as those of the independent characteristic combinations (output product). The internal design of the function has been changed in Release 4.0 so that it is possible to change the free characteristic values of the dependent characteristic combinations using BAdI

/SAPAPO/SDP_MASTER (method COMBI_ENRICH).

1.1.10.2 Changes to Realignment (Enhanced)

Use

The realignment function has been redesigned in SAP SCM Release 4.0.

Realignment is necessary when changes are made to the characteristic value combinations, which are the basis for planning in Demand Planning. For instance, you want to introduce new products or manufacture a product in another location.

In Release 4.0 there are two methods available

1. Realignment
Characteristic value combinations are maintained for master planning object structures. Realignment itself works at this level. You maintain a table with the required new entries and periodically execute realignment based on the entries in this table. The system creates new characteristic value combinations based on selected values from existing combinations. It then copies the data from the old combinations to the new ones. The data of all key figures in all planning areas that are based on the master planning object structure is copied.
If required, the old combinations are then deleted together with the data.
2. Copy Function
Data itself is stored at planning area level. If the characteristic value combinations already exist and you want to copy data from one combination to another, you use this function. Since the extent of the function is limited to the planning area, more selection options are available than for the master planning object structure. It is possible:
 - To copy data between individual versions
 - To select the key figures to be copied
 - To restrict the period in which data is copied

An extensive log is available for both functions.

Effects on Existing Data

If you have created a realignment table for a master planning object structure in a previous release, you must create a new table in SCM 4.0. This means that before upgrading you should execute all the realignment steps in the table. After the upgrade you create a new realignment table before entering new steps.

1.1.10.3 Integration of MRP Areas (Enhanced)

Use

In SAP R/3, storage locations and storage location MRP areas enable detailed procurement planning for individual areas in a plant, for example, for a spare parts store or for a production line. The division of a plant into storage location MRP areas is relatively flexible here, and can be changed with little effort if

restructuring necessitates this.

It is already possible to integrate storage location MRP areas with SAP APO: During the transfer to SAP APO, an SAP R/3 plant becomes a location of the type *production plant* or *distribution center*, and a storage location MRP area becomes a location of the type *storage location MRP area*. However, until now there have been various restrictions on the integration of storage location MRP areas and the scope of function of SAP APO. This meant that planning with storage location MRP areas was only possible with restrictions in *Supply Network Planning* (SNP), in *Capable-to-Match* (CTM), and in *Production Planning and Detailed Scheduling* (PP/DS), while it was not at all possible in safety stock planning in SNP. The constraints included the following:

- o You could only transfer storage location MRP areas with one storage location from SAP R/3 to SAP APO.
- o You could only transfer sources of supply for external procurement and in-house production in SAP R/3 to the plant location in SAP APO, and not to the storage location MRP areas. For that reason, in SAP APO, you had to manually create the sources of supply for planning in the storage location MRP areas, if necessary.
- o In SAP APO, you always had to map the internal plant procurement of components for a planned order from the plant location or from another storage location MRP area using stock transfers, and you had to manually create the relevant transportation lanes in SAP APO. This is in contrast to the scope of function in SAP R/3, where, in in-house production, a component can be withdrawn directly from any storage location in the plant; in other words, without stock transfer.
- o You could not transfer a planned independent requirement, which was assigned to a storage location MRP area in SAP R/3, to SAP APO.

In order to support continuous supply chain planning within a plant on the basis of storage location MRP areas and SAP R/3 master data, the integration of storage location MRP areas and the scope of function in SAP APO have been extended for SAP APO 4.0. The prerequisite for the connected SAP R/3 system is a higher release than SAP R/3 4.5B and the Plug-In 2003.1.

Planning with storage location MRP areas is now possible in SNP, CTM, and PP/DS, without the previous constraints, as described below (although deployment still does not support planning with storage location MRP areas):

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You can transfer storage location MRP areas with several storage locations to SAP APO. However, SAP APO does not support processes where storage locations have "equal weighting": The receipt storage location of the storage location MRP area from SAP R/3 is automatically the leading storage location in SAP APO. The system uses the leading storage location as follows:

 - The system assigns the requirements and receipts, which a planning application in SAP APO creates in the storage location MRP area, to the leading storage location as standard.
 - If the rules-based ATP check in the sales order determines a storage location MRP area, the system enters the leading storage location in the sales order, in addition to the storage location MRP area. It is not possible to perform a check on the two levels of storage location MRP area and storage location in the sales order.

In SAP APO, for stock transfers to or from a storage location MRP area, you can specify a storage location other than the leading storage location in the storage location MRP area as the *issuing storage location* or as the *receiving storage location*. The system automatically assigns the requirement or receipt of a stock transfer to the issuing or receiving storage location.

In SAP APO, the storage locations of a storage location MRP area are on the *Storage Locations*

tab page. You cannot change the storage location assignment for a storage location MRP area transferred from SAP R/3.

o **Distribution of the sources of supply in SAP APO**

The sources of supply for external procurement and in-house production in SAP R/3 are automatically distributed to the plant location and the storage location MRP areas for which they are relevant in the transfer to SAP APO. The assignment is based on storage location information in the external procurement sources of supply and in the production versions in SAP R/3. SNP, CTM, and PP/DS have unrestricted access to the sources of supply in storage location MRP areas within source determination. (You have to generate SNP PPMs from PP/DS PPMs as usual.)

o **Stock transfer between storage location MRP areas**

Up until now, you represented the stock transfer between a plant and an MRP area in the plant in SAP R/3 using a relevant special procurement type, which you entered in the material master for a material in the storage location MRP area. As of SAP APO 4.0, when the material master is transferred, a transportation lane is automatically created in SAP APO between the plant and the storage location MRP area. You only have to manually create transportation lanes in SAP APO if you want to represent a stock transfer between two storage location MRP areas in a plant.

As a stock transfer between two storage locations can only be represented using a stock transfer reservation in the standard SAP R/3 system, PP/DS created a stock transfer reservation for a stock transfer that involved at least one storage location MRP area. This has the receipt category BD and the requirement category BC in the standard system.

CTM and SNP, on the other hand, created (until now) a stock transport requisition or an SNP stock transfer, which was transferred to SAP R/3 as a stock transfer reservation. As of SAP APO 4.0, SNP and CTM also create stock transfer reservations. SNP stores the requirement and the receipt for a stock transfer reservation - as in a normal SNP stock transfer - in the key figures *distribution demand (planned)* or *distribution receipt (planned)*. In addition, as of SAP APO 4.0, the new key figures *distribution demand (MRP area)* and *distribution receipt (MRP area)* are available, but only for displaying stock transfer reservations. In order that the system can create a stock transfer reservation for a stock transfer to or from a storage location MRP area, these key figures have to be in the planning area and in the planning book. The key figures are contained in the standard planning areas and books. If necessary, you have to include the key figures in your own planning areas and books. As the standard data view SNP94(1) does not contain the key figures, you have to include the key figures in the data view, if required.

You cannot use stock transfer reservations to represent the following processes:

- Explicit processing of shipments with shipping papers, Dangerous Goods Movements, and so on
- Deployment

For these processes you require stock transport requisitions and SAP R/3 Enterprise Core Release 4.70 with SAP R/3 Enterprise Extension Set 2.0. Contact SAP for more information.

o **Component withdrawal within a plant without stock transfer**

SAP APO supports component withdrawal in another location in the plant for an in-house production order. In this kind of scenario, the dependent requirement for a component is in a different location in the plant to the receipt. Stock transfer of the component does not apply. Data for the source of supply used is decisive for the location determination:

- For a PP/DS PPM or a PP/DS runtime object, the system determines the withdrawal location for the component from the storage location of the component in the plan. When the sources of supply are transferred to SAP APO, the system automatically determines the storage location. To do so, the system uses SAP R/3 master data and Customizing for storage location

determination in SAP R/3. In SAP APO, you can enter a(nother) storage location in a PPM for a component at any time.

- When an iPPE access object is transferred from a DI system, the system determines the withdrawal location for a component and enters this withdrawal location in the iPPE access object.
- o **Transfer of planned independent requirements**
You can transfer a planned independent requirement, which is assigned to a storage location MRP area in SAP R/3, to the corresponding storage location MRP area in SAP APO.
- o **Terminology**
 - As of SAP APO 4.0, the term *production planning area* has been replaced by the term *MRP area* on the interface and in the documentation.
 - The location type *MRP area* has been renamed as *storage location MRP area* to distinguish it from the subcontractor MRP area in SAP R/3.

A supply chain model that is based on the storage location MRP areas in SAP R/3 is flexible: You can adjust it quite easily at any time to the changed internal plant processes or changed organizational structures by changing the assignment of storage locations to MRP areas in SAP R/3. With little effort, you can adjust the master data and movement data in SAP APO accordingly (you can execute the restructuring manually or using an SAP report). By using MRP areas in SAP R/3 (or in another OLTP system), you can therefore separate the modeling of the supply chain in the plant from the relatively inflexible plant definitions and the plant-specific master data (material master, bill of material, and routing).

Not only can you create storage location MRP areas in SAP APO through the transfer from SAP R/3, you can also create them manually in SAP APO. This is relevant if you do not have a connected SAP R/3 system.

Effects on System Administration

If you have planned up until now in SAP R/3 and in SAP APO using storage location MRP areas, you may want to change the MRP area structure in SAP R/3 as part of the upgrade to SAP APO 4.0. (Until now, only storage location MRP areas with one storage location were supported in SAP APO.) You should use the procedure described in the documentation here. For integration with an SAP R/3 system with release 4.6B or higher, SAP supports restructuring with the SAP R/3 report RMRPAEVAL. For more information, see the SAP note 593463.

See also

Supply Chain Planning Within a Plant in the SAP APO documentation

1.1.10.4 SCM-APO-FCS-MAC MacroBuilder

1.1.10.4.1 Changes and Enhancements to Macro Functionality in DP and SNP (Changed)

Use

In Release 4.0 several changes have been made that improve the editing of macros.

Macro Workbench

This replaces the old initial screen of the Macro Builder. It enables you to restrict the macro books to be displayed, for instance

- o Your own books
- o SAP macro books
- o Books that contain macros
- o Books belonging to a particular **macro group**, a new object particularly designed for sorting purposes.
- o Books for a particular application

The macro workbench is based on the SAP list viewer (ALV), so that you can use standard functions to sort and filter macro books.

Where-used lists enable you to find macros in which certain elements, functions, or key figures are used.

From this overview screen you can of course start actions for individual macros, such as

- o Start Macro Builder
- o Activate macros
- o Create notes for macros (new function in Release 4.0)
- o Generate (activate) one or more macros

Furthermore you can copy macros from one planning book to another, transport macro books to other systems, and start semantic checks for macro books or individual macros.

Semantic Checks

Up to now there have only been syntax checks for the coding of macros within the Macro Builder. These checked the formal correctness of the macro coding. There were however some situations that could not be checked, but caused problems when using the macro. This function has been conceived so that new checks can be added as necessary. At the moment the following checks are available:

- o 'Do not initialize aux. table'
The system checks whether this indicator at the macro level has been set. If not a warning is displayed.
If the auxiliary table is not initialized when you call up the macro, any values that are in the table from the execution of previous macros remain in the table and can be used in the current macro. All entries in the auxiliary table are lost when you leave the planning book.
- o Layout
The system checks that the correct **Change scope** has been assigned to a results element in the attributes. If the function that is called changes the attributes of a cell, for instance by changing the background color or setting an icon, the **Change scope** should be **Attributes**, otherwise **Values** or **Fixed values**.
- o 'Do not display initial values'
This indicator at macro level affects performance. If it is not set initial values, that is cells that have

no entry, are converted to '0', and are taken into consideration during calculations.

o Logical checks

The system also checks that the parentheses, semi-colons, and single inverted commas have been set correctly.

The semantic check can be started at any one of four levels:

1. Macro book
2. Macro
3. Step
4. Result

It can be started from either the macro workbench or the macro builder.

Macro Versions

It is now possible to generate versions of macros. This enables you to backup existing macros before making changes. You can specify that the system automatically create a new version of a macro book each time a macro book is included in a transport request or a different user changes macros in the macro book. You access this function from the menu of the MacroBuilder.

Testing Macros

This improvement lets you test macros directly from the MacroBuilder. A new session appears with a planning grid as in interactive planning. You can make some entries in the relevant key figures and then test the macros that have been generated. This means that when you are developing macros, you can quickly switch between editing in the MacroBuilder and the test screen. You access this function from the menu of the MacroBuilder.

1.1.10.5 SCM-APO-FCS-STF Statistical Forecast

1.1.10.5.1 Changes in Forecasting

Use

The following changes have been made in forecasting:

Aggregated lifecycle planning

See Lifecycle Planning.

BAdI for Measure of Error

A BAdI (/SAPAPO/SDP_FCSTERR) is now available with which you can calculate your own measure of error.

Automatic Selection in Composite Forecasting

A composite forecasting profile contains several univariate profiles. You can now specify that based on one measure of error the system automatically selects the best profile. This is particularly of use when you are choosing and optimizing a profile for a particular forecasting task. You can also use the measure of error that you calculate with the new BAdI for this purpose.

Exclude Erroneous Univariate Profiles in Composite Forecasting

You can set an indicator for univariate profiles in composite forecasting so that if errors occur when calculating the forecast results for this profile, the profile is not taken in account for the composite forecast. This means that the proportion that was intended for this profile is distributed amongst the other individual profiles.

Generic Forecast Profile Assignment

You can now specify when assigning a forecast profile to a selection ID that the the assignment is also valid for all related selections. For example, if the selection is `PRODUCT = P1`, the profile is also used for `PRODUCT =P1, LOCATION = 0001`. You can however specify more detailed assignments to other profiles without invalidating the more generic assignment. A BAdI is available with which you define the priority for different characteristics, if there are several possible selections which are equally possible.

Changes to Automatic Model Selection Procedure 2

In a univariate forecast profile using this method (strategy 56) you can specify which measure of error, including one defined in the BAdI, is used for parameter optimization. You can also optimize the the number of seasonal periods used in the model by specifying the margin in which the system should carry out the optimization.

Sporadic Forecast in Croston Model

Previously the Croston method (strategy 80) used sporadic historical data to produce a forecast that was constant over all time buckets in the forecast horizon. It is now additionally possible to produce a forecast with intermittent demand. The system determines an interval after which the demand is scheduled, for instance 100 kg every 6 weeks instead of 100 kg every week.

The system now generates an ex-post forecast for the Croston method.

Additional Rounding Method

In forecasting with integer values the system only saves whole values, for example when using the unit of measure Pieces. This meant previously that if a forecast run were to calculate values of 0.4 for 10 time buckets, the system would write a value of 0 for all buckets. The new optional method enables you to specify a new rounding method in a univariate forecast profile.

The first value in a series of forecast values is rounded up to the next integer value. The remainder,

which can be negative, is passed on to the next bucket and added to the value in the next bucket. The integer part is written to the screen and the remainder passed on the next bucket, where the process is repeated. As a result the overall error due to rounding effects is reduced.

1.1.10.6 SCM-APO-FCS-INF Interactive Forecasting

1.1.10.6.1 Changes in Forecasting

Use

The following changes have been made in forecasting:

Aggregated lifecycle planning

See Lifecycle Planning.

BAdI for Measure of Error

A BAdI (/SAPAPO/SDP_FCSTERR) is now available with which you can calculate your own measure of error.

Automatic Selection in Composite Forecasting

A composite forecasting profile contains several univariate profiles. You can now specify that based on one measure of error the system automatically selects the best profile. This is particularly of use when you are choosing and optimizing a profile for a particular forecasting task. You can also use the measure of error that you calculate with the new BAdI for this purpose.

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You can set an indicator for univariate profiles in composite forecasting so that if errors occur when calculating the forecast results for this profile, the profile is not taken in account for the composite forecast. This means that the proportion that was intended for this profile is distributed amongst the other individual profiles.

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Changes to Automatic Model Selection Procedure 2

In a univariate forecast profile using this method (strategy 56) you can specify which measure of error, including one defined in the BAdI, is used for parameter optimization. You can also optimize the the number of seasonal periods used in the model by specifying the margin in which the system should carry out the optimization.

Sporadic Forecast in Croston Model

Previously the Croston method (strategy 80) used sporadic historical data to produce a forecast that was constant over all time buckets in the forecast horizon. It is now additionally possible to produce a forecast with intermittent demand. The system determines an interval after which the demand is scheduled, for instance 100 kg every 6 weeks instead of 100 kg every week.

The system now generates an ex-post forecast for the Croston method.

Additional Rounding Method

In forecasting with integer values the system only saves whole values, for example when using the unit of measure Pieces. This meant previously that if a forecast run were to calculate values of 0.4 for 10 time buckets, the system would write a value of 0 for all buckets. The new optional method enables you to specify a new rounding method in a univariate forecast profile.

The first value in a series of forecast values is rounded up to the next integer value. The remainder, which can be negative, is passed on to the next bucket and added to the value in the next bucket. The integer part is written to the screen and the remainder passed on the next bucket, where the process is repeated. As a result the overall error due to rounding effects is reduced.

1.1.10.7 SCM-APO-FCS-PRP Promotion Planning

1.1.10.7.1 Changes and Enhancements to Promotion Planning (Enhanced)

Use

In Release 4.0 several changes and enhancements have been made to Promotion Planning:

Promotion Base

It is now possible to define characteristic combinations for which a promotion is valid. For instance if a promotion is to be valid for a product and a customer, you create a promotion base that includes the characteristics for product and customer. When creating the promotion itself, you assign it the relevant promotion base. You can then only assign characteristic values that are in the promotion base to the promotion. Each promotion base has a key figure assigned to it. You define promotion bases in a separate transaction.

Promotion bases enable you to distinguish between individual promotions to a much larger degree than previously. In the new promotion reporting (see below) it is possible to display lines for individual promotions, if you use promotion bases.

The use of promotion bases is optional. As a result existing promotions are not affected by them.

Promotion Reporting

In this new transaction you can quickly create and execute reports based on planning areas that contain promotions. You can use several options to control the layout of the reports and the amount of detail that

they contain. You can execute reports directly online or in the background and call up the results later.

You can use this transaction in conjunction with promotions based on promotion bases and those to which no promotion base have been assigned. If you use promotion bases, you can display information on individual promotions. This is referred to as promotion analysis .

In promotion reporting you can also display promotion attributes.

Furthermore you can use standard macros to change the display of reports, for instance to change the color of a key figure, and to carry out calculations.

1.1.10.8 SCM-APO-FCS-LCP Lifecycle Planning

1.1.10.8.1 Changes in Lifecycle Planning (Changed)

Use

Like Modeling for any Characteristic

In previous releases it was only possible to use lifecycle planning with products. It is now possible to use it with any characteristic that is contained in the planning area. In the basic settings you specify at which level lifecycle profiles can be assigned, that is, to which characteristics the profiles are assigned. For each of these characteristics you can create like profiles. For instance you can specify that the historical values from location A are used when planning for location B.

The restraints that applied to characteristics used in lifecycle planning, in particular the product and location characteristic, no longer apply.

Aggregated Lifecycle Planning

In Release 4.0 aggregated planning has been extended to include lifecycle planning. This means that you can use lifecycle planning (like modeling and phase-in/out) not only at detail level but at aggregated levels.

In Like Modeling

The system carries out the following activities:

1. It reads any existing historical data at aggregate level.
2. It reads the selection and determines the individual characteristic value combinations at the level of the basic settings.
3. It determines for which characteristic value combinations like profiles exist
4. It determines the new aggregated historical value by taking the value from step 1 and for each detail level that has been assigned a like profile subtracting any historical value and adding the value determined using the like profile.
5. It now uses this aggregated historical data to carry out a forecast.
6. The result is initially written to the aggregate level and then disaggregated to the detail levels using the calculation type specified for the key figure in the planning area.

In Phase-In/Out Modeling

The system proceeds as follows:

1. It carries out the forecast at aggregated level.
2. It saves the data at aggregated level. During this process the data is automatically disaggregated to lower levels.
3. It reads the data at the level of the basic settings of life cycle planning.
4. It checks if assignments of phase-in/out profiles exist
5. It applies the phase-in/out profiles at the basic settings level
6. It saves the data at the basic settings level. During this process the data is automatically aggregated to higher levels
7. It reads the data at aggregated level and presents the results in the interactive planning screen (not in batch processing)

Changes to User Interface

Lifecycle planning is now a separate transaction that you access through the Easy Access menu. It is no longer accessible through forecast profile maintenance.

Restricted Access to Assignment Screen

As of Release 4.0 it is possible to optionally set a filter for individual characteristics and characteristic values when a user accesses the *Assignment of Lifecycle Profiles* screen. At this stage the system checks the user's authorization to edit data for the particular characteristic value. For example in the basic settings you restrict access for the product characteristic. A user must then enter a product when entering the assignment screen. He/she can then only assign lifecycle profiles to this value (combined with the other unrestricted characteristics). If they do not have authorization to edit this product, an error message is issued and processing terminated.

Effects on Existing Data

Like profiles are now specific to a planning area. They are assigned to the planning area when you create them. This means that oif you want to use like profiles from earlier releases it is necessary to run the upgrade report program `/SAPAPO/RMDP_FCST_LC_UPGRADE`. For more details see SAP Note 588986.

1.1.10.9 SCM-APO-FCS-CHS Characteristics-Based Forecasting

1.1.10.9.1 Enhancements to Characteristics-Based Forecasting (CBF)

Use

Consumption for Configurable Products

The exiting functionality has been extended in Release 4.0 to allow sales orders for configurable products to consume the forecast at characteristics level. When a sales order is received for a configurable product and in the process of creating the sales order the product is configured, the quantities for this configuration consume the forecast for the same configuration.

This has been achieved by making use of descriptive characteristics .

This functionality can be used with both CDP characteristics and CBF (IBase) characteristics

Drill Down on Non-CBF Characteristics

It is now possible in CBF planning books to drill down on characteristics that are not in the CBF profile, that is on the normal planning book characteristics such as location or sales organization.

Effects on Customizing

You create a consumption group for the planning area and assign the relevant CBF characteristics to this group. You assign the consumption group to the products in their product master records. Similarly you must also specify this consumption group when releasing the forecast from Demand Planning.

1.1.10.10 SCM-APO-FCS-RLG Realignment

1.1.10.10.1 Changes to Realignment (Enhanced)

Use

The realignment function has been redesigned in SAP SCM Release 4.0.

Realignment is necessary when changes are made to the characteristic value combinations, which are the basis for planning in Demand Planning. For instance, you want to introduce new products or manufacture a product in another location.

In Release 4.0 there are two methods available

1. **Realignment**
Characteristic value combinations are maintained for master planning object structures. Realignment itself works at this level. You maintain a table with the required new entries and periodically execute realignment based on the entries in this table . The system creates new characteristic value combinations based on selected values from existing combinations. It then copies the data from the old combinations to the new ones. The data of all key figures in all planning areas that are based on the master planning object structure is copied.
If required, the old combinations are then deleted together with the data.
2. **Copy Function**
Data itself is stored at planning area level. If the characteristic value combinations already exist and you want to copy data from one combination to another, you use this function. Since the extent of the function is limited to the planning area, more selection options are available than for the master planning object structure. It is possible:
 - To copy data between individual versions

- To select the key figures to be copied
- To restrict the period in which data is copied

An extensive log is available for both functions.

Effects on Existing Data

If you have created a realignment table for a master planning object structure in a previous release, you must create a new table in SCM 4.0. This means that before upgrading you should execute all the realignment steps in the table. After the upgrade you create a new realignment table before entering new steps.

1.1.11 SCM-APO-PPS Production Planning and Detailed Scheduling

1.1.11.1 Assignment of a Component to an Operation Segment (New)

Use

SAP R/3 uses the first operation segment of the assigned order to determine the requirements date of a component. In the SAP R/3 production order, this is the *Start Setup* date. For receipt elements (co/by-products), the system adopts the end date of the assigned operation. However, in SAP APO you can assign a component to any desired activity. If you assign the *Setup* activity and use setup matrices or sequence-dependent setup activities, this leads to significant drops in performance during the optimization of setup time. Also, the components are usually only needed at the *Start Processing* date in production at the earliest.

As of SAP R/3 Plug-In 2003.1 and SAP APO 4.0, you can use IMG activity *Assign Components to an Operation Segment* for the integration of production orders to control specifically from which operation segment (*Setup*, *Process*, or *Teardown*) the system determines the requirement dates of the associated components of an order. This enables you to specify to which activity of an operation SAP APO assigns the components.

You can avoid a strictly defined assignment to the *Setup* operation segment and implement consistent component assignment in SAP R/3 and SAP APO. This also leads to a significant performance increase during the optimization of setup times in SAP APO.

For the integration of the production process model (PPM), this setting specifies to which activity of the operation the components are assigned in PPM generation.

These settings only refer to requirement elements (reservations) of a production order or the associated PPM, not to the receipt elements or process orders.

Effects on Customizing

You find the *Assign Components to an Operation Segment* IMG activity in the APO Core Interface implementation guide (CIF IMG) under *Application-Specific Settings and Enhancements -> Settings and Enhancements for Manufacturing Orders -> General Settings for Manufacturing Orders*.

1.1.11.2 Period Category for the SNP Production Horizon (Enhanced)

Use

You define the SNP production horizon or SNP stock transfer horizon in the product master (transaction /SAPAPO/MAT1). Previously, this was always defined in calendar days. As of SAP APO 4.0, you can specify whether the given SNP production horizon or the SNP stock transfer horizon is defined in calendar days, weeks (calculated from a Monday or Sunday), or months.

At the end of the current period of the period category that has been set, the SNP production horizon or SNP stock transfer horizon moves one period into the former SNP planning horizon.

We recommend that you choose a period category for the SNP production horizon or SNP stock transfer horizon that corresponds to the set frequency of your SNP planning. This avoids data inconsistencies (if SNP planned order integration is configured) caused by planned orders transferred from SAP R/3 in particular.

See also

Integration of Planned Orders

1.1.11.3 Availability of Stock in SAP APO (New)

Use

Up to now, it was predefined within SAP APO which stock types were regarded as available as standard in dynamic pegging and the net requirements calculation in *Production Planning and Detailed Scheduling*, and in *Capable-to-Match planning*.

As of SAP APO 4.0, you can configure the availability for selected stock types. You can make these settings in the location product master on the *Demand* tab page under *Available Stocks*, and in the mass maintenance for location products. The following table provides an overview of which stock types are regarded as available as standard, and the stock types for which you can configure the availability in the location product master:

<u>Stock type</u>	<u>Standard</u>	<u>Configurable?</u>
Unrestricted-use stock	available	no
Stock in quality inspection	available	yes
Stock in transfer between sublocations	available	yes
Stock in transfer between locations	not available	yes
Stock in transit	not available	no
Restricted-use stock	not available	yes
Blocked stock	not available	yes

Note:

- o In SAP APO 4.0, the transfer of stock in transfer from SAP R/3 to SAP APO and the representation of stock in transfer in SAP APO has been changed. For more information, see the release information for Transfer and Representation of Stock in Transfer.

- o With the exception of stock in transfer, the descriptions of the stock types in SAP APO correspond to the stock type descriptions in SAP R/3. The links refer to the SAP R/3 definitions of the stock types.

Effects on System Administration

If you have implemented customer exits for modification of the stock availability (for example, in SAP APO, the customer exit APOCF011), check if you still need these.

1.1.11.4 Purchase Requisitions Without Source of Supply (New)

Use

When creating a purchase requisition, the system determines whether there are any valid sources of supply for the requested product. As soon as a valid source of supply is found, the system assigns it to the purchase requisition.

Before now, you could only create a purchase requisition without a source of supply, if absolutely no valid sources could be found. As of *SAP APO 4.0*, you can also create purchase requisitions without a source of supply even if the system has determined one or more valid sources.

It would be advisable to create a purchase requisition without a source of supply in the following instances:

- o If you want to find a new vendor (for a purchase requisition) with whom there is currently no agreement.
- o If only a part of the contract in SAP APO exists however, the purchase requisition should (atypically) be done using a contract that is only familiar to SAP R/3.

To create a purchase requisition without source of supply, first create a purchase requisition with a source of supply and remove it again after it has been created.

1.1.11.5 Finiteness Level of Resources (New)

Use

If you want to schedule a resource either finitely or infinitely in different applications, you can control this as of SAP APO 4.0 using the finiteness level at the resource and in the settings for each application.

You assign a fixed finiteness level to the resource in the master data. In the settings for the application, you define the maximum finiteness level up to which resources can be scheduled finitely.

Effects on Existing Data

Existing resources, for which the *finite scheduling* indicator is set in the master data, are assigned the finiteness level **0** as standard; that is, the resource is scheduled finitely in all applications.

In the SAP standard strategy profile SAP001 for the DS planning board and in the SAP standard optimization profiles, the maximum value **9999** is defined as the finiteness level, which means that all resources for which the *finite scheduling* indicator is set are scheduled finitely.

In all other existing strategy profiles and optimization profiles, the value is initial at first.

If you assign a finiteness level (> 0) to an existing resource that is flagged as finite, you also have to adjust the finiteness level in the settings (heuristic settings, strategy profiles, or optimization profiles) of the applications that scheduled this resource finitely until now, if you want these applications to continue scheduling the resource finitely.

Effects on Customizing

You define finiteness levels in Customizing under *Advanced Planning and Optimization -> Master Data -> Resource -> Define Finiteness Levels for Resources*.

1.1.11.6 Deactivate Dynamic Pegging (New)

Use

Up to now, dynamic pegging was active as standard. As of SAP APO 4.0, you can deactivate dynamic pegging in the location product master, on the *Demand* tab page under *Pegging* by setting the *Deactivate Dynamic Pegging* indicator.

Note that deactivating dynamic pegging has consequences for all applications that use dynamic pegging and evaluate dynamic pegging relationships. In addition to Detailed Scheduling, PP/DS optimization, and specific PP/DS heuristics, the alerts display is also affected: Without dynamic pegging, the system creates quantity alerts for all requirements and receipt elements; in other words, all receipts represent scrap and all requirements are regarded as being insufficiently covered. The system cannot create any date/time alerts. The affected applications cannot execute dynamic pegging again or evaluate the dynamic pegging relationships accordingly until you reactivate dynamic pegging.

Effects on Existing Data

Dynamic pegging is active in the standard system.

See also

Documentation for *Production Planning and Detailed Scheduling* under *Deactivate Dynamic Pegging*

1.1.11.7 Integration of MRP Areas (Enhanced)

Use

In SAP R/3, storage locations and storage location MRP areas enable detailed procurement planning for individual areas in a plant, for example, for a spare parts store or for a production line. The division of a plant into storage location MRP areas is relatively flexible here, and can be changed with little effort if restructuring necessitates this.

It is already possible to integrate storage location MRP areas with SAP APO: During the transfer to SAP APO, an SAP R/3 plant becomes a location of the type *production plant* or *distribution center*, and a storage location MRP area becomes a location of the type *storage location MRP area*. However, until

now there have been various restrictions on the integration of storage location MRP areas and the scope of function of SAP APO. This meant that planning with storage location MRP areas was only possible with restrictions in *Supply Network Planning* (SNP), in *Capable-to-Match* (CTM), and in *Production Planning and Detailed Scheduling* (PP/DS), while it was not at all possible in safety stock planning in SNP. The constraints included the following:

- o You could only transfer storage location MRP areas with one storage location from SAP R/3 to SAP APO.
- o You could only transfer sources of supply for external procurement and in-house production in SAP R/3 to the plant location in SAP APO, and not to the storage location MRP areas. For that reason, in SAP APO, you had to manually create the sources of supply for planning in the storage location MRP areas, if necessary.
- o In SAP APO, you always had to map the internal plant procurement of components for a planned order from the plant location or from another storage location MRP area using stock transfers, and you had to manually create the relevant transportation lanes in SAP APO. This is in contrast to the scope of function in SAP R/3, where, in in-house production, a component can be withdrawn directly from any storage location in the plant; in other words, without stock transfer.
- o You could not transfer a planned independent requirement, which was assigned to a storage location MRP area in SAP R/3, to SAP APO.

In order to support continuous supply chain planning within a plant on the basis of storage location MRP areas and SAP R/3 master data, the integration of storage location MRP areas and the scope of function in SAP APO have been extended for SAP APO 4.0. The prerequisite for the connected SAP R/3 system is a higher release than SAP R/3 4.5B and the Plug-In 2003.1.

Planning with storage location MRP areas is now possible in SNP, CTM, and PP/DS, without the previous constraints, as described below (although deployment still does not support planning with storage location MRP areas):

- o **Integration of storage location MRP areas with several storage locations**
You can transfer storage location MRP areas with several storage locations to SAP APO. However, SAP APO does not support processes where storage locations have "equal weighting": The receipt storage location of the storage location MRP area from SAP R/3 is automatically the leading storage location in SAP APO. The system uses the leading storage location as follows:
 - The system assigns the requirements and receipts, which a planning application in SAP APO creates in the storage location MRP area, to the leading storage location as standard.
 - If the rules-based ATP check in the sales order determines a storage location MRP area, the system enters the leading storage location in the sales order, in addition to the storage location MRP area. It is not possible to perform a check on the two levels of storage location MRP area and storage location in the sales order.

In SAP APO, for stock transfers to or from a storage location MRP area, you can specify a storage location other than the leading storage location in the storage location MRP area as the *issuing storage location* or as the *receiving storage location*. The system automatically assigns the requirement or receipt of a stock transfer to the issuing or receiving storage location.

In SAP APO, the storage locations of a storage location MRP area are on the *Storage Locations* tab page. You cannot change the storage location assignment for a storage location MRP area transferred from SAP R/3.
- o **Distribution of the sources of supply in SAP APO**
The sources of supply for external procurement and in-house production in SAP R/3 are

automatically distributed to the plant location and the storage location MRP areas for which they are relevant in the transfer to SAP APO. The assignment is based on storage location information in the external procurement sources of supply and in the production versions in SAP R/3. SNP, CTM, and PP/DS have unrestricted access to the sources of supply in storage location MRP areas within source determination. (You have to generate SNP PPMs from PP/DS PPMs as usual.)

o **Stock transfer between storage location MRP areas**

Up until now, you represented the stock transfer between a plant and an MRP area in the plant in SAP R/3 using a relevant special procurement type, which you entered in the material master for a material in the storage location MRP area. As of SAP APO 4.0, when the material master is transferred, a transportation lane is automatically created in SAP APO between the plant and the storage location MRP area. You only have to manually create transportation lanes in SAP APO if you want to represent a stock transfer between two storage location MRP areas in a plant.

As a stock transfer between two storage locations can only be represented using a stock transfer reservation in the standard SAP R/3 system, PP/DS created a stock transfer reservation for a stock transfer that involved at least one storage location MRP area. This has the receipt category BD and the requirement category BC in the standard system.

CTM and SNP, on the other hand, created (until now) a stock transport requisition or an SNP stock transfer, which was transferred to SAP R/3 as a stock transfer reservation. As of SAP APO 4.0, SNP and CTM also create stock transfer reservations. SNP stores the requirement and the receipt for a stock transfer reservation - as in a normal SNP stock transfer - in the key figures *distribution demand (planned)* or *distribution receipt (planned)*. In addition, as of SAP APO 4.0, the new key figures *distribution demand (MRP area)* and *distribution receipt (MRP area)* are available, but only for displaying stock transfer reservations. In order that the system can create a stock transfer reservation for a stock transfer to or from a storage location MRP area, these key figures have to be in the planning area and in the planning book. The key figures are contained in the standard planning areas and books. If necessary, you have to include the key figures in your own planning areas and books. As the standard data view SNP94(1) does not contain the key figures, you have to include the key figures in the data view, if required.

You cannot use stock transfer reservations to represent the following processes:

- Explicit processing of shipments with shipping papers, Dangerous Goods Movements, and so on
- Deployment

For these processes you require stock transport requisitions and SAP R/3 Enterprise Core Release 4.70 with SAP R/3 Enterprise Extension Set 2.0. Contact SAP for more information.

o **Component withdrawal within a plant without stock transfer**

SAP APO supports component withdrawal in another location in the plant for an in-house production order. In this kind of scenario, the dependent requirement for a component is in a different location in the plant to the receipt. Stock transfer of the component does not apply. Data for the source of supply used is decisive for the location determination:

- For a PP/DS PPM or a PP/DS runtime object, the system determines the withdrawal location for the component from the storage location of the component in the plan. When the sources of supply are transferred to SAP APO, the system automatically determines the storage location. To do so, the system uses SAP R/3 master data and Customizing for storage location determination in SAP R/3. In SAP APO, you can enter a(nother) storage location in a PPM for a component at any time.
- When an iPPE access object is transferred from a DI system, the system determines the withdrawal location for a component and enters this withdrawal location in the iPPE access

object.

- o **Transfer of planned independent requirements**

You can transfer a planned independent requirement, which is assigned to a storage location MRP area in SAP R/3, to the corresponding storage location MRP area in SAP APO.

- o **Terminology**

- As of SAP APO 4.0, the term *production planning area* has been replaced by the term *MRP area* on the interface and in the documentation.
- The location type *MRP area* has been renamed as *storage location MRP area* to distinguish it from the subcontractor MRP area in SAP R/3.

A supply chain model that is based on the storage location MRP areas in SAP R/3 is flexible: You can adjust it quite easily at any time to the changed internal plant processes or changed organizational structures by changing the assignment of storage locations to MRP areas in SAP R/3. With little effort, you can adjust the master data and movement data in SAP APO accordingly (you can execute the restructuring manually or using an SAP report). By using MRP areas in SAP R/3 (or in another OLTP system), you can therefore separate the modeling of the supply chain in the plant from the relatively inflexible plant definitions and the plant-specific master data (material master, bill of material, and routing).

Not only can you create storage location MRP areas in SAP APO through the transfer from SAP R/3, you can also create them manually in SAP APO. This is relevant if you do not have a connected SAP R/3 system.

Effects on System Administration

If you have planned up until now in SAP R/3 and in SAP APO using storage location MRP areas, you may want to change the MRP area structure in SAP R/3 as part of the upgrade to SAP APO 4.0. (Until now, only storage location MRP areas with one storage location were supported in SAP APO.) You should use the procedure described in the documentation here. For integration with an SAP R/3 system with release 4.6B or higher, SAP supports restructuring with the SAP R/3 report RMRPAEVAL. For more information, see the SAP note 593463.

See also

Supply Chain Planning Within a Plant in the SAP APO documentation

1.1.11.8 Changing the Order Priority (New)

Use

On creation of an order, the system is able to automatically determine the order priority from the location product master or from the pegged requirement. You define how the system determines the priority in the *PP/DS: Determine Priority* field in the planning version. Until now, you were not able to change the order priority in interactive production planning. This is possible as of SAP APO 4.0 on the *Elements* tab page. You use this function, for example, if you want to execute sequencing for orders according to order priority.

1.1.11.9 Planned Delivery Time of Zero in the External Procurement Relationship (New)

Use

During source determination, the planned delivery time is determined for every external procurement source. In SAP APO, the planned delivery time can be stored both in the location product and in the external procurement relationship.

Until now, the system determined the planned delivery time as follows:

- o It would use the **planned delivery time from the external procurement relationship** if an external procurement relationship was assigned to a transportation lane (source of supply).
- o It would use the **planned delivery time from the location product** in the following instances:
 - If no reference to an external procurement relationship existed for an external procurement source of supply; for example, when transportation lanes are created manually
 - If the planned delivery time from the external procurement relationship was not specified or was zero

As of *SAP APO 4.0*, you can specify that, during source determination, you want the system to take into account a planned delivery time that is explicitly defined as zero in the external procurement relationship. For this, you also need to set the *Consider* indicator for the *Planned Delivery Time* field in the external procurement relationship.

If you do **not** set the *Consider* indicator for a planned delivery time of zero, the system takes into account the planned delivery time from the location product. However, planned delivery times in the external procurement relationship that are larger than zero are always taken into account, even if the *Consider* indicator is not set.

It might be necessary to take into account a planned delivery time of zero if the planned delivery time in the connected purchasing info record, contract, or scheduling agreement in the SAP R/3 system has been changed to zero.

When the purchasing data is transferred from the SAP R/3 system using the Core Interface (CIF), the planned delivery time stored in the purchasing info record, contract, or scheduling agreement is automatically copied to the external procurement relationship. The system sets the *Consider* indicator at the same time. Manual changes to the planned delivery time can also be made directly in the SAP APO external procurement relationship.

1.1.11.10 Adjustment of the PP/DS Horizon (New)

Use

If you enter no value or the duration 0 for the PP/DS horizon, the system automatically uses the SNP production horizon as the PP/DS horizon during planning. The PP/DS horizon is therefore just as long as the SNP production horizon and the SNP and PP/DS planning periods thus follow on from each other without any gaps and without overlapping.

Therefore, do not enter a value or enter the duration zero for the PP/DS horizon:

- o **If there should not be a gap between the PP/DS horizon and the SNP planning period**
A gap between the end of the PP/DS horizon and the start of the SNP planning period is a time segment that is neither planned by PP/DS nor SNP. This can lead to inconsistencies.
- o **If the PP/DS horizon and the SNP planning period must not overlap**
Planning periods without any overlaps are relevant for decoupling SNP planning and PP/DS planning and for the integration of planned orders that you transfer from SAP R/3 to SAP APO. If you specify the SNP production horizon in days, you can avoid overlaps by specifying the same number of days for the PP/DS horizon. If you specify the SNP production horizon in calendar weeks or calendar months, and want planning periods that do not overlap, you should not enter a value for the PP/DS horizon. If you specify the SNP production horizon in calendar days or calendar weeks, the SNP production horizon does not have any fixed duration. It always reaches to the end of the current period defined by the calendar weeks or the calendar months. The duration of the SNP production horizon therefore automatically gets shorter during a period. If, for example, you specify a calendar week for the SNP production horizon, the SNP production horizon reaches seven days into the future at the start of a calendar week. If you have specified a PP/DS production horizon of seven calendar days, the SNP planning horizon and the PP/DS horizon do not overlap at the start of the calendar week. After three days have elapsed, the SNP production horizon only reaches four days into the future, but the PP/DS horizon still reaches seven days into the future. Therefore, the SNP planning period and the PP/DS horizon overlap.

See also

Integration of Planned Orders

Period Category for the SNP Production Horizon

1.1.11.11 Production in Another Location (New)**Use**

As of SAP APO 4.0, *production in another location* is available in SAP APO as a new form of procurement for in-house production. You use *production in another location* if several locations (often warehouses or distribution centers) are responsible for planning a finished product, but this product is manufactured in another location (typically a production plant) that does not have any planning responsibility.

To model this scenario in SAP APO, you use an in-house production source of supply (PPM, R/3 runtime object, or iPPE access object) in SAP APO, in which the planning location and the production location are different, for the finished product that you want to procure using *production in another location*. In SAP APO 4.0, the *planning location* has been added to the maintenance of PPMs and iPPE access objects. SAP APO uses such an in-house production source of supply to create a planned order whose receipt is in the planning location and whose component requirements are in the production location. You execute procurement planning for the finished product in the planning location, and procurement planning for the components and capacity planning in the production location.

The benefits of *production in another location* are as follows:

- o There is no stocking level (the stocking level for the finished product in the production location), thus reducing total stock and lead times

- o The shipment of the finished product from the production location to the planning location is not modeled, thus reducing the administrative work involved

Note the following constraints:

- o Due to the simplified process, you cannot implement *production in another location* for stock transfer and transport-based scenarios such as subcontracting, *Deployment*, and *Transportation Planning and Vehicle Scheduling*. Stock transfer and transport processes play a key role here; you have to model them explicitly using the relevant master data (transportation lanes).
- o It is not possible to group together the requirements of the various planning locations and form lots for the production location.

The following planning applications support *production in another location*:

- o *Supply Network Planning*
- o *Capable-to-Match*
- o *Production Planning and Detailed Scheduling*

Production in another location is also supported continuously in an integrated scenario in which you implement SAP APO as a planning system, and SAP R/3 for master data management and order processing. *Production in another location* extends the SAP R/3 special form of procurement here, *production in another plant*, which is defined in SAP R/3 by a corresponding special procurement key for the finished product in the planning plant. When the SAP R/3 master data for *production in another plant* is transferred, PPMs or PP/DS runtime objects are automatically created in SAP APO for *production in another location*. When an in-house production order that is created in SAP APO is processed, the receipt for the finished product is in the planning location, and component withdrawal is in the production location.

1.1.11.12 Improvements in the Maintenance of the Setup Matrix (Enhanced)

Use

In SAP APO 4.0, you can process the setup transitions as follows:

- o Filter setup transitions according to field contents
- o Change the field contents of several setup transitions simultaneously
- o Add values to or subtract values from the field values

Changes to the setup matrix values are written in the planning log.

1.1.11.13 Strategy Settings for Production Planning and Detailed Scheduling (Changed)

Use

- o **Strategy profiles for the directly called DS planning board**

As of SAP APO 4.0, you can specify 2 different strategy profiles in the overall profile of the detailed scheduling planning board:

- **DS strategy profile**
The system uses this profile for all DS functions executed in the DS planning board, such as *scheduling* or *rescheduling*.
- **PP strategy profile**
The system uses this profile for all available PP functions within the DS planning board, such as *Create Order* or *Change Order Quantity*.
- o **Strategy profiles for the integrated DS planning board**
Up to now, the system has used the strategy profile for the DS planning board, which is integrated in another application. You could enter this strategy profile in Customizing for *Production Planning and Detailed Scheduling* (PP/DS) under *Maintain Global Parameters and Defaults* in the *Interactive Planning* field. This was valid for the DS planning board called up in the product planning table or in the order view. As of SAP APO 4.0, the system uses the strategy profile that has been entered in the *Integrated DS Planning Board* field. You are still able to change strategy settings in interactive planning with the DS planning board at any time (but you cannot save them in the strategy profile).
- o **Change strategy settings in interactive planning**
If you call up the strategy settings within interactive planning in *Production Planning* or *Detailed Scheduling*, you have 2 different views at your disposal as of SAP APO 4.0:
 - In the *expert view*, you can display and change all available settings
 - In the application-specific *PP view* or *DS view*, only the settings relevant or recommended for the corresponding application are available

Effects on System Administration

In the overall profile for the DS planning board, you have to specify an additional strategy profile for PP functions.

1.1.11.14 Subcontracting: Third-Party Comp. Provision in SNP and PP/DS (Enhanced)

Use

As of *SAP APO 4.0*, you can plan subcontracting with third-party provision of materials or components in Supply Network Planning (SNP) and Production Planning and Detailed Scheduling (PP/DS). Subcontracting refers to the process whereby a product is manufactured by an external supplier. Third-party order processing can be used if you want an external supplier to provide the components for a product that is to be manufactured by a subcontractor, rather than providing the components yourself from your own plant.

For example, a company in the USA sells hand-held devices. However, the company itself does not manufacture the devices; it has a subcontractor in Asia for this. An external supplier who is also based in Asia supplies the components for the hand-held devices, such as the casing.

With the standard subcontracting procedure, the supplier from Asia would deliver the components to the

plant in the USA and the USA plant would then send the components to the subcontractor in Asia. To avoid this unnecessarily indirect route, the supplier can send the components directly to the subcontractor.

You can now model this process in the SAP system using third party order processing.

Note the following when **modeling master data**:

For every subcontracting component that you want to send directly from supplier to subcontractor, you have to manually create a transportation lane from the supplier (start location) to the subcontractor (destination location) in the SAP APO system. You also assign the associated external procurement relationship to each transportation lane.

If a purchase requisition is created at the supplier's location, the SAP R/3 system automatically assigns to the purchase requisition the address of the subcontractor in Asia as the delivery address and not the address of the plant in the USA. The *Subcontracting vendor* indicator is set at the same time. The purchase order adopts the delivery address of the purchase requisition during conversion. During goods receipt for a purchase order of this kind, the components of the hand-held device are automatically posted to the stock with subcontractor.

Effects on Customizing

In order for SNP orders to be transferred to the SAP R/3 system, you have to make the relevant setting in Customizing. To do this, choose **SAP Advanced Planning and Optimization** -> *Supply Chain Planning* -> *Supply Network Planning* -> *Basic Settings* -> *Configure Transfer to OLTP Systems*.

Note the following:

If you set *No Transfer*, the orders are not transferred, even if you have made a different setting for SAP APO at the Supply Chain Planning interface.

See also

For more information, see the *SAP Library - SAP Advanced Planning and Optimization*, following this menu path: *APO - Cross-Application Topics* -> *Subcontracting*.

1.1.11.15 Transfer and Representation of Stock in Transfer (Changed)

Use

SAP R/3 distinguishes between the following types of stock in transfer:

- o *Stock in transfer between plants*
Until now, this stock type was represented in the standard SAP APO system by the same order category as stock in transit. In dynamic pegging and in the net requirements calculation in *Production Planning and Detailed Scheduling* (PP/DS) and in *Capable-To-Match* (CTM), the stock in transit and thus also the stock in transfer between plants were regarded as unavailable. (In Customizing for material requirements planning in SAP R/3, you can define if you want the cross-plant stock in transfer to be available for material requirements planning in SAP R/3.)
- o *Stock in transfer between storage locations in a plant*
Until now, this stock type was represented in the standard SAP APO system by the same order category as unrestricted-use stock, and was therefore always regarded as available for the net

requirements calculation and dynamic pegging. (In SAP R/3, internal plant stock in transfer is also always available.)

Until now, therefore, stock in transfer belonged to stock in transit and to unrestricted-use stock. SAP APO 4.0 distinguishes between the various types of stock in transfer: The stock in transfer between plants is transferred to SAP APO as **stock in transfer between locations** as of SAP APO 4.0. Stock in transfer between storage locations in a plant is transferred as **stock in transfer between sublocations**. (This corresponds to the mapping *Plant* -> *Location* and *Storage Location* -> *Sublocation*.) This is possible because of the enhancements in SAP APO described below.

New order categories in SAP APO

Until now, stock in transfer in SAP APO was represented by the order category GC_OM_STOCK_IN_TRANSIT (stock in transit) or the order category GC_OM_STOCK_UNRESTRICTED (unrestricted-use stock). The following new order categories are now available:

- o **Stock in transfer between sublocations**
Order category: GC_OM_STOCK_TRANSF_SUBLOC
- o **Stock in transfer between locations**
Order category: GC_OM_STOCK_TRANSF_LOC

The new order categories in SAP APO allow a distinction to be made between the stock in transfer in PP/DS and CTM; that is, they represent independent stock elements for dynamic pegging and the net requirements calculation. The new order categories allow the availability of the stock in transfer types to be defined independently of each other for pegging and for the net requirements calculation.

ATP categories in SAP APO

Supply Network Planning (SNP) and *Global Available-to-Promise* (Global ATP) do not control stock availability on the basis of the order category but based on the ATP category. In order that a distinction can be made between the various SAP R/3 stock in transfer types in SAP APO using the ATP category, the new ATP category CS has been implemented in SAP APO 4.0 for stock in transit. The previous categories in SAP APO are still valid without change for stock in transfer. The following list gives you an overview:

- o **Stock in transit**
Category until now: CA, Stock/tsfr
Category as of SAP APO 4.0: **CS, StkInTrnst**
- o **Stock in transfer between locations**
Category until now and in SAP APO 4.0: CA, Stock/tsfr
This category used to also include the stock in transit, but as of SAP APO 4.0 it only contains the stock in transfer between locations.
- o **Stock in transfer between sublocations**
Category until now and in SAP APO 4.0: CN, TsStkSb

Enhancement of the SAP APO Core Interface

As before, stock in transit and stock in transfer are transferred together from SAP R/3 to SAP APO if an active integration model exists for stock in transit. Prerequisite for the changed representation of stock in transfer in SAP APO is SAP R/3 Plug-In 2003.1.

Effects on Existing Data

Check if the new standard settings fulfill your requirements and make changes if necessary.

- o **PP/DS and CTM**

In the standard system, it is defined in the location product master on the *Demand* tab page under *Available Stocks* that *Stock in Transfer Between Locations* is not available and that *Stock in Transfer Between Sublocations* is. Change the settings in the location product master if necessary.

- o **SNP and Global ATP**

SNP and Global ATP do not automatically take the new category for stock in transit (CS, StkInTrnst) into consideration. You have to extend the category group for stock or the scope of check accordingly, if required.

- o **Customer exits**

Check your customer exits for processing stock.

See also

Release Information on the Availability of Stock

1.1.11.16 Goods Receipt Processing Time in the Transportation Lane (New)

Use

In the SAP R/3 system, you can store a goods receipt processing time specific to an outline agreement in a contract or scheduling agreement. In the SAP APO system, the goods receipt processing time is used for scheduling external procurement orders.

Until now, the goods receipt processing time from outline agreements from the the SAP R/3 system was not adopted by the SAP APO system during the CIF transfer. Instead, the goods receipt processing time stored in the product master was used for scheduling the availability date and time of an external procurement order.

As of *SAP APO 4.0*, the goods receipt processing time stored in the R/3 contract or R/3 scheduling agreement is automatically copied to the transportation lane during the CIF transfer, which means that it is also available in the associated external procurement relationship. At the same time, the system sets the *Consider* indicator at the *Goods Receipt Time* field. This means that the system is to explicitly use the goods receipt processing time from the transportation lane during source of supply determination.

You can manually remove the *Consider* indicator at the transportation lane. If the *Consider* indicator is not set, the system takes into account the goods receipt processing time from the location product during source of supply determination.

1.1.11.17 Deletion of SNP Transaction Data (Enhanced)

Use

You can use the *Delete Transaction Data* function to delete transaction data (that was planned in SAP APO) from the SAP APO system and a connected SAP R/3 system. Previously, you could execute this

function in dialog mode and in the background.

As of SAP APO 4.0, there is also a test mode available. Furthermore, the log has been extended and an option added for deleting orders by order numbers:

- o Test Mode: Deletion does not take place immediately in this mode, instead you first receive a log of the data that is to be deleted. You can then check this data and decide whether you really want to delete it or cancel the operation.
- o Log: The log not only contains the deleted object numbers but also their descriptions, such as order number, category, product, location, and quantity.
- o Deleting orders by order numbers: You can now also delete individual orders by specifying the order number (see also release information Internal SNP Number Ranges).

The initial screen of this function has also been redesigned and is more user-friendly.

As of APO 4.0, you can only use this function to delete SNP orders.

See also

Documentation about the *Delete Transaction Data* function in *Supply Network Planning (SNP)*.

1.1.11.18 SCM-APO-PPS-PPT Product Planning Table

1.1.11.18.1 Product Planning Table (Enhanced)

Use

In release, SAP APO 4.0 the product planning table will be enhanced with the following functions:

- o **Usability Improvements**
 - The navigation tree now gives you a better overview of your planning. You can now choose your sort criteria flexibly, as well as determine the sequence of the columns in the navigation tree. You can also hide individual columns to meet your requirements. Using a Business Add-In, you can also define your own columns in the navigation tree, which are then available in addition to the standard columns.
 - You can switch off the automatic update of the navigation tree, so that it is not updated when the planning is changed. This gives you an overview of the previous planning situation, and allows you to manually update the navigation tree to meet your requirements. You then update the complete product planning table to see the planning done by others.
 - Objects, that you highlight in one chart, can also be synchronously highlighted in all other charts.
 - Using a new search function, you can search for individual objects, for example, a particular order.
 - Some functions in the product planning table require considerable system resources. This can lead to a deterioration in performance. To avoid the system being strained in this way, you can specify a maximum number of products/resources, that should be considered by the system when accessing the product planning table, for example. By doing this, you can reduce the

strain on the system, and therefore avoid performance problems.

o **Planning and Better Visibility**

- You can only display the sources of supply that are relevant for your planning. You can choose one from those available. For each source of supply, you can show or hide specific rows. You can do this either using the navigation tree, or the source of supply determination function.
- The totals rows in the periodic product view are now ready for entry.
- You can now also plan bottleneck resources using midpoint scheduling. When planning with bottleneck resources, you can plan using both forward and backward scheduling. In the case of forward scheduling, orders are displayed in the period in which the bottleneck activity begins. In the case of backward scheduling, orders are displayed in the period in which the bottleneck activity ends. A Business Add-In is available, if you want to specify your own criteria for bottleneck resources.
- The information rows in the periodic product view have been enhanced by adding the key figures *maximum available quantity*, *minimum available quantity*, *minimum* and *maximum days' supply*.

o **Product Overview**

There is now a product overview in the product planning table, which is similar to the collective display given by the stock/requirements in SAP R/3. You can access the product overview either as a chart in the product planning table, or as an individual transaction. Various key figures and alerts give bottlenecks, which you can then focus on in your interactive planning.

o **Business Add-Ins (BAIs)**

The following BAIs are now available in Customizing:

- Define Bottleneck Activities (new for SAP APO 4.0)
- Define Colors
- Calculate Flexible Periods
- Include Information Rows
- Define Row Texts
- Round Numerical Values
- Restrict Selection
- Sort Material-Location Combinations
- Sort Resources
- Show Alternative Procurement Sources (new for SAP APO 4.0)
- Define Customer-Specific Columns in Navigation Tree(new for SAP APO 4.0)
- Process User Commandos
- Process User Commandos in Product Overview(new for SAP APO 4.0)
- Define Customer-Specific Columns in Product Overview(new for SAP APO 4.0)

For further information, see the documentation for the individual BAIs.

Effects on Existing Data

SAP recommends that you check your Customizing after upgrading to SAP APO 4.0. Normally an XPRA runs to update the data in Customizing.

If necessary, make the following settings manually:

- o **Overall profile for the Product Planning Table:** *Advanced Planning and Optimization -> Supply Chain Planning -> Production Planning and Detailed Scheduling (PP/DS) -> Product Planning Table -> Make Overall Settings for the Product Planning Table.*

Maintain the fields *Pushbutton Profile*, *Color Profile*, *Navigation Tree Profile* and *Sort Profile* with value SAP001.

- o **Period Profile for the Product Planning Table:** In Customizing choose *Advanced Planning and Optimization -> Supply Chain Planning -> Production Planning and Detailed Scheduling (PP/DS) -> Product Planning Table -> Set Layout: Maintain Period Profile' ->'Period Settings'*

Make the following entries there:

- Period 1: Shift
- Period 2: Day
- Period 3: Week
- Period 4: Month
- Period 5: User

- o **Chart Profile for the Product Planning Table:** In Customizing, choose *Advanced Planning and Optimization -> Supply Chain Planning -> Production Planning and Detailed Scheduling (PP/DS) -> Product Planning Table ->Set Layout: Maintain Chart Profile -> Chart Settings*

Change value *KAPA* to *RESPER*.

1.1.11.19 SCM-APO-PPS-DST Detailed Scheduling Planning Board

1.1.11.19.1 Functions for Improving Performance for the Detailed Scheduling Planning Board (New)

Use

- o **Performance improvement when data is read from SAP liveCache**
As of SAP APO 4.0, the system can use the following functions when reading data from *SAP liveCache*:
 - Use buffer
 - Read in blocks
 - Parallel readingYou activate the relevant functions in the planning board profile using the Performance Functions indicator.
- o **Operation filter for the operation chart**
Up to now, all operations on all transferred resources for an operation chart were transferred when the DS planning board was called. In SAP APO 4.0, you can define sets of resources as *operation filters* for a static operation chart in the work area.

1.1.11.19.2 Display Functions in the Detailed Scheduling Planning Board (Enhanced)

Use

As of SAP APO 4.0, the following DS planning board enhancements are available:

- o **Adjust the toolbar and the context menus for the DS planning board**
As of SAP APO 4.0, you can define in the planning board profile
 - Which functions are contained in the context menus of the objects in the DS planning board
 - Which function keys are available in the toolbar
- o **Display of charts**
As of SAP APO 4.0, you can select or deselect the *Do Not Display* indicator for all charts defined in the planning board profile in the initial screen of the DS planning board.
- o **Show hidden objects**
Up until now in the DS planning board, hidden objects could only be shown again when the DS planning board was refreshed. However, this meant that unwanted data, such as information on the confirmation of orders, was also imported into the DS planning board. In SAP APO 4.0, the menu function *Show Hidden Objects Again* is available. You can use this function to specifically redisplay objects that were previously hidden.
- o **Positioning of orders**
Within a chart, you can move rows with selected objects to the top of the chart.
- o **Enhancement of the order and operation list**
If you have selected objects in the DS planning board, you can call up the order or operation list for selected orders or operations. Further columns have been added to the lists.
- o **Display of inspection lots**
As of SAP APO 4.0, inspection lots can be displayed in the DS planning board. In the SAP standard profiles, the relevant graphical objects are defined as brown with a red stripe. However, you cannot change the related data. Since the inspection lots are not scheduled on resources, and no operations

are assigned, they are only visible in the following charts:

- Product chart
- Product stock chart
- Network view chart for orders
- o **Alternative unit of measure for products**
As of SAP APO 4.0, you can change the unit of measure for products in the DS planning board to an alternative unit of measure defined in the product master. You can do this interactively or globally in the planning board profile.

1.1.11.19.3 New Scheduling Functions in the Detailed Scheduling Planning Board (New)

Use

As of SAP APO 4.0, the following functions are available in the DS planning board:

- o **Order processing in the DS planning board**
Up to now, it was possible to process orders from the DS planning board by branching to order processing. As of SAP APO 4.0, the following functions are directly available for order processing in the DS planning board under *Functions* -> *Order* and using the relevant options in the context menu:
 - Create orders
 - Delete orders
 - Switch source of supply
 - Change order quantity
- o **Save a simulation version with deleted orders**
Up to now, the information about deleted orders was lost when a simulation version was saved. In SAP APO 4.0, this is saved in the simulation version.
- o **Improved dialog for the definition of fixing intervals**
As of SAP APO 4.0, you can simultaneously create, change, or delete *fixing intervals* for several selected resources in the DS planning board. In addition, you can now define *planning intervals*. A resource for which a planning interval has been defined is only available within this interval for scheduling; outside the interval, it is fixed for scheduling.
- o **Undo a scheduling function**
As of SAP APO 4.0, you can undo the following scheduling functions in the DS planning board:
 - Manual scheduling with Drag&Drop
 - The *Reschedule* function
 - The *Deallocate* function

1.1.11.20 SCM-APO-PPS-PVW Product View

1.1.11.20.1 Application in the Order Processing View (New)

Use

As of SAP APO 4.0, the *APO Application* field in the *order processing view* displays which application has created an order.

1.1.11.21 SCM-APO-PPS-POM Planned Order Management (for iPPE-Based Orders)

1.1.11.21.1 Time Dependent Process Parameters (TDPP) in iPPE (New)

Use

As of release SAP APO 4.0, Integrated Product and Process Engineering (iPPE) is enhanced in APO to support Time Dependent Process Parameters (TDPP) for Production Planning applications.

What are Time Dependent Process Parameters?

TDPP are parameters required for accurate production planning, especially in the semiconductor Industry. They include:

- o **Activity Level Yield** - (scrap) of product. From the start of production to end of life, the yield received from the production of a product changes. Early production will see a slower, lower yield than later production. At product mid-life, faster production with higher yield values will be achieved.
- o **Resource Capacity Consumption** - The amount of resource capacity used to produce a product over time changes over the life of the product.
- o **Material Consumption** - The amount of material consumed to produce a product changes over the life of the product.
- o **Activity Duration #** The amount of time required to conduct a particular activity during the production of a product changes over the life of that product.

TDPP are version dependent. Supply chain planners use different APO planning versions to perform what-if simulation runs based on different TDPP settings before finalizing the production plan.

Business Scenarios Supported:

TDPPs can be maintained for product variants, shop floor activities, and Supply Network Planning (SNP) activities.

iPPE TDPP Specific Enhancements include:

- o Data modeling to support TDPP in iPPE. Seven new database tables were created in APO to store the TDPP data.
- o User interface enhancement enables TDPP related data maintenance in PPE transaction.
- o Application Programming Interface (API) for TDPP data retrieval and maintenance loads the TDPP data into APO.
- o Enhancement for iPPE order explosion take TDPPs into account.
- o TDPP-ECN conflict resolution report allows users to quickly identify and resolve any conflicts between TDPP and Engineering Change Number (ECN) data.

iPPE TDPP User Interface (UI) Enhancement

A user interface is provided for TDPP maintenance in iPPE. Additional tab strips allow a direct jump to the TDPP screens of the iPPE object.

The TDPP and ECN Conflict Resolution Report

The *TDPP and ECN Conflict report* provides the user with a one point access tool to identify conflicts that exist between the TDPP and ECN. The TDPP data corresponding to an ECN is displayed, along with a validity icon indicating whether or not the TDPP is valid. The user can then go to the iPPE maintenance transaction and change the invalid data.

API for maintaining TDPP data in APO

An RFC function module (PPEHI_TDPP_MAINTAIN) uploads the TDPP Data into the iPPE structures.

API for reading the TDPP from APO

An RFC function module (PPEHI_TDPP_READ) downloads the TDPP data from the iPPE structures.

Effects on Customizing

TDPPs must be activated in customizing. This customizing controls the visibility of all TDPP related screens and tab strips and also decides whether to check for TDPP parameters during iPPE order creation.

1.1.11.22 SCM-APO-PPS-EOG Multiple Output Planning

1.1.11.22.1 MOP Heuristic (New)

Use

As of SAP APO 4.0, you can use the MOP heuristic if you activated **Multiple Output Planning (MOP)** . This provides you with the following additional options:

- o Sort procurement proposals in a BAdI method
- o In batch reservations, created fixed pegging relationships between the reservation and batch
- o Plan pegged requirements
- o Delete surplus, taking account of co-products in the order

1.1.11.23 SCM-APO-PPS-LPP Length-Based Planning

1.1.11.23.1 Length-based planning (New)

Use

As of SAP APO 4.0, you can use the length-based functions in Planning (PP/DS) and the global ATP check in which requirements of length-based materials can be covered. The following individual functions are available:

- o **Length-based planning heuristic:** Creates new receipt elements to cover product requirements (sales orders, planned independent requirements, transfer requirements, dependent requirements). During calculation of the receipt quantities, the length calculation takes account of parameters from the product master and PPM. A cutting functionality, which can be activated or deactivated as requires, enables requirements to be covered by also cutting longer stocks that specified in the requirement. This cutting activity can be carried out with or without orders.
- o **Length calculation:** Carried out during creation/changing of planned orders (PPM explosion) in APO.
The length calculation contains two main functions:
 - a) Enhanced calculation of operation quantity based on operation lengths
 - b) Enhanced calculation of component quantity based on component lengths

1.1.11.24 SCM-APO-PPS-CDS Sales Scheduling Agreement Processing

1.1.11.24.1 Send Pick-up Date or Delivery Date (New)

Use

As of *SAP APO 4.0* you can send the pick-up date instead of the delivery date in scheduling agreement releases and confirmations for scheduling agreement releases.

On the procurement side, you use the date key in the *release creation profile* to set which date you want to send to your vendor in the release.

On the sales side, the date key of the schedule line is displayed in the master data in the release header or the release and confirmation history of sales scheduling agreement releases and taken into account in transport and shipment scheduling.

Effects on Customizing

For procurement scheduling agreements, you define in Customizing for *Supply Chain Planning*, under *Collaborative Procurement -> Procurement Scheduling Agreement -> Maintain Release Creation Profile*, whether you want to send the pick-up date or the delivery date in scheduling agreement releases that you send to your vendors.

For sales scheduling agreement items that you plan in SAP APO you must select *ATP Check* in the integration model in SAP R/3 so that scheduling for the material is carried out in SAP APO. This ensures that when releases are created by CIF in the SAP R/3 system the dates (delivery date, goods issue date, loading date, material availability date and so on) that are determined are the same as in the SAP APO system.

See also

For more information see *Global Availability Check (Global ATP)* in the section *Delivery Scheduling and Transportation Scheduling*.

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.11.24.2 New Alert for the Sales Scheduling Agreement (New)**Use**

As of SAP APO 4.0 the alert *Sales Scheduling Agreement in the Past* in the Alert Monitor informs you if schedule lines (requested or confirmed quantities) lie in the past.

You can also set the Start of Past Period (in Days) in the alert profile to define when this past period starts.

See also

For more information see the documentation for *Supply Chain Monitoring* under *Alert Monitor*.

1.1.11.24.3 Overview of Innovations in Sales Scheduling Agreement Processing

The following innovations are available in *SAP APO 4.0*:

General:

- o Collaborative Management of Delivery Schedules with SAP R/3 Enterprise Core 4.70 (New)
- o Plan Additional Sales Scheduling Agreement Types (New)
- o Authorization Object for Delivery Schedule Processing for the Sales Scheduling Agreement (New)
- o Compare/Reconcile Function for Sales Scheduling Agreements (Delta Report) (New)
- o Change the Time of Sales Scheduling Agreement Lines in Backorder Processing (New)

Sales Scheduling Agreement:

- o Display Deliveries (New)
- o Execute Fiscal Year Change (New)
- o Pick-up Date (New)
- o Industry Month (New)
- o New Alert for the Sales Scheduling Agreement (New)
- o To-the-Day or To-the-Second Tolerance Check for Scheduling Agreement Releases within the Admissibility Check (New)

Releases and Confirmations:

- o Heuristics for the Feasibility Check (Changed)
- o Heuristics for the Admissibility Check (Changed)
- o More Flexible Determination of the Confirmation Status (New)
- o Delete Releases and Confirmations for Sales Scheduling Agreements (New)
- o New Selection Criteria for Outputting Confirmations (New)

Business Add-Ins (BADIs):

- o Business Add-Ins (BADIs) for Collaborative Management of Delivery Schedules (New)

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.11.24.4 Authorization Object for Delivery Schedule Processing for the Sales

Scheduling Agreement (New)

Use

As of SAP APO 4.0 you can use the authorization object C_APO_SSA to define which activities a user is allowed to carry out within *Delivery Scheduling Processing for the Sales Scheduling Agreement*.

You use the authorization object to define which sales scheduling agreement data a user is allowed to edit:

- o Sales scheduling agreement item master data
- o Current status of the sales scheduling agreement item
- o Fiscal year of the sales scheduling agreement item (Carry out fiscal year change)
- o Releases for the sales scheduling agreement item
- o Confirmations for the sales scheduling agreement item
- o Release and confirmation history

You use the authorization object to define whether a user can add or generate this data, change it, display it, delete it or edit it.

You assign these authorizations in user master data maintenance. You can also use the following criteria to further restrict the data that a user can edit: product, production planner, source location and destination location.

See also

Authorization object C_APO_SSA

1.1.11.24.5 Business Add-Ins (BAdIs) for Collaborative Management of Delivery Schedules (New)

Use

As of SAP APO 4.0 you can use the following BAdIs:

- o /SAPAPO/CMDS_STATDET *BAdI: Determine Confirmation Status*,
to implement your own confirmation status determination process.
See release notes *More Flexible Determination of the Confirmation Status*
- o /SAPAPO/COMPSCHEDLIN *BAdI: Compare Two Time Series*,
to enhance the standard comparison of two time series by adding time intervals that you define yourself (for example, weekly or monthly intervals) for variance calculation.
- o /SAPAPO/CMDS_CONFOUT *BAdI: Generate IDoc for the Confirmation*,
to change confirmation data before it is sent as an IDoc.
- o /SAPAPO/CMDS_SD_CONF *BAdI: Generate Confirmation*,
to change confirmation data, add to it or to control the way confirmations are sent.

- o /SAPAPO/CMDS_RES_CDQ *BAdI: Control the Fiscal Year Change*,
to define under what circumstances a fiscal year change is necessary and to check whether a fiscal year change is necessary, for sales scheduling agreements for which you have defined that the change should be carried out manually.
- o /SAPAPO/CMDS_SL_DATE *BAdI: Edit User-defined Period Formats*,
to define and use your own periods (for example, industry months) for sales scheduling agreement schedule lines.

As of *SAP R/3 Enterprise Core 4.70 (SAP_APPL 470)* with Plug-In *PI 2002.1 (2002_1_470)* you can use the following Business Add-Ins (BAdIs):

For sales scheduling agreement items that are to be sent by APO Core Interface (CIF) (SAP R/3 -> SAP APO):

- o CIF_SDLSE_001 *BAdI Transfer Sales Scheduling Agreement Items (CIF Outbound)*,
to change the data of selected sales scheduling agreements.
You can also store the customer-specific information in an additional structure.
- o CIF_SDLSE_002 *BAdI Filter Object Selection for SSA Items (CIF Outbound)*,
to select materials and plants again using additional selection criteria.
If you have an SAP R/3 system with Release *DI 4.6C2* then the following Customer Exits are available instead of the BAdIs:
 - EXIT_SAPLSDSE_001 (corresponds to the BAdI CIF_SDLSE_001)
 - EXIT_SAPLSDSE_002 (corresponds to the BAdI CIF_SDLSE_002)

For confirmations that are to be transferred by CIF (SAP APO -> SAP R/3):

- o BADI_SCOCONF *BAdI Process customer-specific structures (CIF Inbound)*,
to add to or change customer-specific data or data for confirmations that is transferred via CIF from the SAP APO system to the linked SAP R/3 system.
(The quantities confirmed in the SAP APO system are displayed as schedule lines in the JIT or forecast delivery schedule in the sales scheduling agreement in the SAP-R/3-System.)

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.11.24.6 Change the Time of Sales Scheduling Agreement Lines in Backorder Processing (New)

Use

Until *SAP APO 3.1* you could only change the date of confirmed schedule lines in the *product planning table* (chart *backorder processing*), *product view* (tab page *ATP*) or *interactive backorder processing*.

As of *SAP APO 4.0* you can change not only the date but also the time of the confirmed schedule lines in

these functions.

1.1.11.24.7 Compare/Reconcile Function for Sales Scheduling Agreements (Delta Report) (New)

Use

As of *SAP APO 4.0* you can also use the *Compare/Reconcile Function* to identify and correct inconsistencies in sales scheduling agreement data between SAP APO and SAP R/3.
For more information see the documentation on the Compare/Reconcile Function.

The comparison function for sales scheduling agreements is only possible as of *SAP R/3 Enterprise Core 4.70* with Plug-In *PI 2003.1* or *DIMP 4.71* with *Plug-In 2003.1*.

See also

For more information on the *Compare/Reconcile Function* see the SAP Library: *Integration of SAP APO and SAP R/3 -> Technical Integration -> APO Core Interface -> Administration -> The Compare/Reconcile Function (Delta Report) -> Comparison of Sales Scheduling Agreements*.

1.1.11.24.8 More Flexible Determination of the Confirmation Status (New)

Use

In *SAP APO 3.1* the current status of a sales scheduling agreement item was determined on a to-the-second basis when you created confirmations in the product view, product planning table or in backorder processing.

This meant that if the confirmed quantities and dates did not match the requested quantities and dates to-the-second, then the corresponding sales scheduling agreement item was regarded as only partially confirmed (confirmed with deviation).

As of *SAP APO 4.0* you can define whether you want the system to determine the current status of a sales scheduling agreement item on a to-the-second, to-the-minute, to-the-hour or to-the-day basis when you create confirmations in the product view, product planning table or in backorder processing.

The *determination type* defined in the confirmation profile controls whether requested quantities are confirmed fully or partially, that is with deviation, (confirmation status determination), and the result of the check is then displayed as the *current status* of the sales scheduling agreement item.

Using the Business Add-In (BAI) /SAPAPO/CMDS_STATDET, *Determine Confirmation Status*, you can create your own checks, for example if you want to use a to-the-week check or if you want to use different checks for different customers.

Effects on Customizing

You use the determination type in the confirmation profile to define whether the confirmation status should be determined on a to-the-second, to-the- minute, to-the-hour or to-the-day basis.

You use the Business Add-In (BAI) /SAPAPO/CMDS_STATDET (*Determine Confirmation Status*) to implement your own confirmation status determination procedure.

You can also use the BAI /SAPAPO/COMPSCHEDLIN (*Compare Two Time Series*) to compare two time series or to define your own time intervals.

Further notes

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.11.24.9 Collaborative Management of Delivery Schedules with SAP R/3 Enterprise Core 4.70 (New)

Use

As of *SAP APO 4.0* you can use Collaborative Management of Delivery Schedules together with *SAP R/3 Enterprise Core 4.70 (SAP_APPL 470)* with Plug-In *PI 2002.1 (2002_1_470)*.

In *SAP APO 3.1* it was only possible to implement Collaborative Management of Delivery Schedules with an SAP R/3 system with Release DI 4.6C2 and CRT4.

It was not possible to use other release levels or other OLTP systems.

For more information see the release notes for Release 3.1 Collaborative Management of Delivery Schedules (CMDS) (Changed)

Restrictions

Only certain types of sales scheduling agreements are supported.

For more information see the release notes: Plan Additional Sales Scheduling Agreement Types (New)

You can find additional information on the upgrade from SAP R/3 with Release *DI 4.6C2* to *SAP R/3 Enterprise Core 4.70* see SAP Note 534097.

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.11.24.10 Delete Releases and Confirmations for Sales Scheduling Agreements (New)

Use

As of *SAP APO 4.0* you can delete releases and confirmations that you no longer need.

You use the report /SAPAPO/CMDS_DELSCHED_DELETE to delete the release and confirmation

history in order to delete the number of releases and confirmations saved for sales scheduling agreements. You can choose whether you want to delete releases or confirmations or both.

You can find this report in the menu under *Supply Chain Collaboration -> Sales Scheduling Agreement Processing -> Delete Releases and Confirmations*.

See also

For more information see the documentation on the report /SAPAPO/CMDS_DELSCHED_DELETE and in the SAP Library under *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling (PP/DS) -> Collaborative Management of Delivery Schedules*.

1.1.11.24.11 Fiscal Year Change (New)

Use

In *SAP APO 3.1* the fiscal year change (the resetting of cumulative quantities) was carried out automatically by the system, if this setting had been made in the linked SAP R/3 system.

As of *SAP APO 4.0* you can also carry out the fiscal year change manually.

To carry out the manual fiscal year change choose *Master Data -> Master Data for Sales Scheduling Agreement Processing -> Change Fiscal Year*.

Effects on Customizing

In the control profile that you assign to sales scheduling agreement items you can define whether the system should carry out an automatic fiscal year change with resetting of the cumulative quantities, or whether the cumulative quantities should not be reset or whether you want to carry out the fiscal year change manually.

Using the Business Add-Ins (BAdIs) *BAdI:Control the Fiscal Year Change (/SAPAPO/CMDS_RES_CDQ)*, you can decide whether a fiscal year change is necessary for sales scheduling agreements for which you have defined a manual fiscal year change.

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.11.24.12 Heuristics for the Feasibility Check (Changed)

Use

In *SAP APO 3.1* the feasibility check was carried out using procedures.

As of *SAP APO 4.0* the procedures for the feasibility check are replaced by heuristics.

The following heuristics are available:

- o SAP_CDS_F01 Confirm Fully without Check
- o SAP_CDS_F02 Days' Supply Check
- o SAP_CDS_F03 Product Heuristic with Days' Supply Check

You can also define and use your own algorithms without making any modifications.

You can execute heuristics for the feasibility check in the production planning run, in the product view and in the product planning table.

With regard to the current status of the sales scheduling agreement items, the feasibility check has been standardized. Regardless of the application in which the feasibility check is carried out, the system either always or never takes the *current status* of the items into account.

For each heuristic, you can choose whether you want the system to take the current status of the items into account and which statuses you regard as admissible. For example, you can define that the feasibility check is not carried out for a product if one or more of the items relating to the product has the status *Admissibility Not OK*.

Effects on Customizing

You can define these heuristics in Customizing for *Supply Chain Planning* under *Delivery Schedule Processing for the Sales Scheduling Agreement -> Heuristics*.

Note

If you have used your own procedures (function modules) for the feasibility check then, when you upgrade, you must convert to heuristics in Customizing for the control profile.

If you have only used procedures delivered by SAP then no Customizing is necessary when you upgrade. The conversion of procedures into heuristics occurs automatically with the XPRA /SAPAPO/CMDS_XPRA0001 (*Control Profile: Conversion of Procedures into Heuristics*). See the documentation on the XPRA /SAPAPO/CMDS_XPRA0001

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.11.24.13 Heuristics for the Admissibility Check (Changed)

Use

In SAP APO 3.1 the admissibility check was executed using procedures.

As of SAP APO 4.0 the procedures for the admissibility check are replaced by heuristics.

The following heuristics are available:

- o SAP_CDS_A01 Admissibility OK Without Check
- o SAP_CDS_A02 Tolerance Check

You can also define and use your own algorithms without making any modifications.

You can execute heuristics for the admissibility check in the production planning run, in the product view and in the product planning table.

Effects on Customizing

You can define these heuristics in Customizing for *Supply Chain Planning* under *Delivery Schedule Processing for the Sales Scheduling Agreement -> Heuristics*.

Note

If you have used your own procedures (function modules) for the admissibility check then, when you upgrade, you must convert to heuristics in Customizing for the control profile.

If you have only used procedures delivered by SAP then no Customizing is necessary when you upgrade. The conversion of procedures into heuristics occurs automatically with the XPRA */SAPAPO/CMDS_XPRA0001* (*Control Profile: Conversion of Procedures into Heuristics*).

See the documentation on the XPRA */SAPAPO/CMDS_XPRA0001*

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.11.24.14 Industry Month (New)

Use

In *SAP APO 3.1* you could only receive and process releases containing quantities for days, weeks or months (and, if applicable, interval schedule lines).

As of *SAP APO 4.0* you can also use industry months or your own period formats.

Effects on Customizing

To use industry months or your own period formats you must implement the Business Add-In (BApI) *Edit User-defined Period Formats* (*/SAPAPO/CMDS_SL_DATE*).

The BApI contains example coding with which you can implement industry months.

If you also want the system to take user-defined periods into account in the delivery schedule split on generation of the due delivery schedule (in other words, to split them) then you must assign the appropriate splitting rules to the user-defined date or period type in the splitting profile. (*Supply Chain Planning -> Delivery Schedule Processing for the Sales Scheduling Agreement -> Delivery Schedule Splitting -> Define Delivery Schedule Splitting Profile* and *Assign Delivery Schedule Splitting Profile*)

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.11.24.15 Display Last Deliveries (New)

Use

As of *SAP APO 4.0* you can display a list of deliveries for a sales scheduling agreement item in master data maintenance for sales scheduling agreement items.

The list of last deliveries contains information about the delivery, delivery date, delivery quantity, cumulative delivered and cumulative received quantity, goods issue in the OLTP system and so on.

To view all deliveries for an item choose *@3W@ Display Deliveries* in master data maintenance of sales scheduling agreements (*Master Data -> Sales Scheduling Agreement Processing Master Data -> Maintain Sales Scheduling Agreement*).

You then see a list in which deliveries are displayed in red if the cumulative received and cumulative delivered quantity or the delivery number do not match.

The system compares cumulative quantities and the delivery based on either the last operative delivery schedule or the last forecast/ planning delivery schedule or the current release.

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.11.24.16 New Selection Criteria for Outputting Confirmations (New)

Use

Until *SAP APO 3.1* you could only select and output confirmations (or actions) that were to be sent on the basis of relatively abstract criteria, such as application or application key.

As of *SAP APO 4.0* you can select sales scheduling agreement items for which you want to output confirmations using criteria such as product, location or the planner responsible.

The function Output of Confirmations now has a new initial screen on which you can directly enter either these criteria or the sales scheduling agreement item.

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.11.24.17 To-the-Day or To-the-Second Tolerance Check for Scheduling Agreement Releases within the Admissibility Check (New)

Use

Until *SAP APO 3.1* a to-the-day tolerance check for individual quantity/date pairs was carried out on receipt of scheduling agreement releases as part of the admissibility check (individual check).

As of *SAP APO 4.0* you can choose either a to-the-day or a to-the- second check for the individual check of quantity/date pairs.

In this way you can define a more exact to-the-second check for the near future and a more approximate to-the-day check for the longer term.

Effects on Customizing

Select the indicator Check Time Stamp in Customizing for *Supply Chain Planning* under *Delivery Schedule Processing for the Sales Scheduling -> Heuristics -> Define Tolerance Profile for the Admissibility Check* , to set a to-the-second or to-the-day tolerance check of individual quantity/date pairs.

1.1.11.24.18 Plan Additional Sales Scheduling Agreement Types (New)

Use

As of *SAP APO 4.0* you can also plan external agent (EA) scheduling agreements and JIT scheduling agreements in the SAP APO system.

You can also display a list of last deliveries or a list of issues by external agents against EA scheduling agreements in master data maintenance.

For more information see the release notes Display Last Deliveries.

These scheduling agreements are taken into account when the data is sent from the SAP R/3 system via the APO Core Interface(CIF) to the SAP APO system.

As of *SAP R/3 Enterprise Core 4.70* it is possible to send EA scheduling agreements via CIF. For JIT scheduling agreements you need a SAP R/3 system with Release *DIMP 4.71*.

It is not possible to work with JIT scheduling agreements with processing by an external agent.

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.11.25 SCM-APO-PPS-EVA Evaluation

1.1.11.25.1 Planning Log in PP/DS (Enhanced)

Use

The *Production Planning and Detailed Scheduling*(PP/DS) planning log contains messages that the system creates during interactive planning or background planning. You can use the planning log to analyze planning problems and identify the causes of the problems. As of SAP APO 4.0, the following enhancements are available for messages and the planning log.

Exception groups

As of SAP APO 4.0, you group messages in an exception group that the system creates when planning for specific exception situations. The exception group is used as a filter and sort criterion for the planning logs in PP/DS and enables a selection of planning logs according to the planner's area of responsibility. SAP delivers standard exception groups in which the messages are grouped according to the various steps in the procurement planning process. For example, there are exception groups with messages for the procurement quantity calculation or for source determination. A default exception group contains all error and termination messages that are not assigned to another exception group. You define exception groups in Customizing for *Production Planning* under *Application Logs for PP/DS -> Maintain Exception Groups*.

Messages for procurement planning in the Alert Monitor

When you maintain exception groups, you can define for each message if the system should create a database alert of the type *exception in procurement planning* for the message. You can display database alerts in the *Alert Monitor*. You can only create database alerts for messages that result from planning with procurement planning heuristics and that refer to a specific pegging area.

Selection and filtering of planning logs

As of SAP APO 4.0, extended selection and filter options are available for planning logs. You can then select planning logs according to:

- o Whether they were created in interactive planning or in background planning
- o Which types of messages they contain; for example, termination messages or warnings

You can use various new filter criteria to filter logs from the selection of logs that you have defined using the selection criteria:

- o **Planning version**
The system only displays a log if it has been created for one of the specified planning versions.
- o **Exception group**
The system only displays a log if it contains messages that belong to the specified exception groups.
- o **Context information**
The system only displays a log if it contains messages that the system has created in the specified context. The heuristic is an example of context information. You can filter the logs according to whether they contain messages that have been created during planning with a specific heuristic. Other context information refers to the pegging area. You can select logs, for example, that contain a message for a specific location product or that have arisen during planning for a specific location. The application that creates the message determines whether context information on the pegging area is available for a message. This context information is not available for all messages.

The filter criteria is also available in the list of messages for the selected logs. If you filter messages, you can only see the messages that correspond to the filter criteria. However, the connection to other messages may be lost during the filtering process. To restore the connection for a message, you display the planning log for the message. Select the message and choose *Technical Information -> Display Planning Log*.

Log overview

Until now, the messages in the log overview were grouped on two levels according to application and processing step. As of SAP APO 4.0, there are additional, application-specific hierarchy levels that group

related messages.

Log for the last planning run

As of SAP APO 4.0, you can call up the planning log for a selected product for the planning run in which the product was last planned. To do this, in the SAP Easy Access menu choose *Production Planning Reporting -> Logs -> Log for Last Planning Run*. The function is available for production planning runs with procurement planning heuristics. Instead of showing all messages that have arisen during product planning, the system shows for the log number the message with the highest priority. You define the priority of a message in Customizing for exception groups.

You can branch to the planning log by double-clicking on the log number. You can also navigate from the log list to the product view, the product overview, or the product planning table.

New menu paths

Until now, you called up the planning logs in the area menu for *Production Planning* under *Planning Run Reporting*. As of SAP APO 4.0, this menu entry is called *Logs*.

Effects on Customizing

Check the standard exception groups and define your own exception groups, if necessary, in Customizing for *Production Planning and Detailed Scheduling (PP/DS)* under *Application Logs for PP/DS -> Maintain Exception Groups*.

1.1.11.26 SCM-APO-PPS-SNP SNP to PP/DS Conversion

1.1.11.26.1 Heuristic for the Conversion of SNP and CTM Orders (New)

Use

In SAP APO 4.0, the conversion of *Supply Network Planning* (SNP) orders or *Capable-to-Match* (CTM) orders into *Production Planning and Detailed Scheduling* (PP/DS) orders is implemented as a heuristic based on the algorithm /SAPAPO/HEU_SNP_CONVERT. SAP provides the standard heuristic SAP_SNP_SNGL that uses this algorithm. The conversion is thus included in the heuristic framework as of SAP APO 4.0 and utilizes its functions:

- o You can schedule the conversion as a processing step in the production planning run and combine it flexibly with other processing steps. The conversion is made either for selected orders or for orders for selected products.
- o You can call up the heuristic SAP_SNP_SNGL using an MRP heuristic (algorithm /SAPAPO/HEU_MRP_PLANNING) in the production planning run, and thus use the service functions of the MRP heuristic for the conversion. These are important for a high-performing mass conversion and include extended logging, parallel processing, and bundling. The standard heuristic SAP_SNP_MULT is available for this purpose.

In the heuristic settings, you make all settings for controlling the conversion, as well as the strategy settings for scheduling PP/DS orders. Only the strategy settings that are relevant for the conversion are available, such as infinite scheduling. You now no longer use a strategy profile.

The heuristic SAP_SNP_SNGL replaces - alone or combined with the MRP heuristic SAP_SNP_MULT -

the previous conversion functions as follows:

- o **Call in the order view**
If you call up the conversion in the order processing view, in the receipts view, or - and this is new - in the product view, the system starts the standard heuristic SAP_SNP_SNGL. The system uses the Customizing settings of this heuristic for the conversion. If you want to use a conversion heuristic with other settings in the order view by default, you enter this heuristic in Customizing for *Production Planning and Detailed Scheduling* (PP/DS) under *Maintain Global Parameters and Defaults*.
- o **Call in the Production Planning area menu**
As before, you can call up an online mass conversion or background mass conversion using predefined variants in the area menu for *Production Planning* under *Environment*. A distinction should be made here between a new installation and an upgrade, as described below:
 - **New Installation**
In the menu, you start the new report /SAPAPO/RRP_SNP2PPDS2 that uses a heuristic for the conversion.
 - **Upgrade**
In the menu, you start the report /SAPAPO/RRP_SNP2PPDS as before. Therefore, you can still work with the jobs and variants that you used until now. With a strategy profile, you still define the detailed scheduling strategies for scheduling PP/DS orders.
If you want to use the new functions, you use the production planning run or call the new report /SAPAPO/RRP_SNP2PPDS2 using the transaction SE38.

Until now, the system did not take account of a propagation range during the conversion. The heuristic, on the other hand, takes account of the propagation range that you defined for the application in which you start the heuristic.

1.1.11.27 SCM-APO-PPS-PCM Production Campaign

1.1.11.27.1 New heuristics for campaign planning

Use

As of SAP APO 4.0, the following new heuristics are available for planning production campaigns in the DS planning board and in the production planning run:

- o Create production campaigns
- o Dissolve production campaigns
- o Adjust setup/clean-out orders
- o Delete setup/clean-out orders

These heuristics are contained in the SAP standard heuristic profile SAP_PCM.

1.1.11.28 SCM-APO-PPS-MMP Model Mix Planning

1.1.11.28.1 Model Mix Planning (Enhanced)

Use

The following new functions have been added to Model Mix Planning in SAP APO 4.0:

- o New Heuristic for Dispatching Large Quantities of Orders (Orders with Lot Size 1)
The Slotting Heuristic is provided to schedule large quantities of orders (orders with lot size 1) for multi-variant products in the short-term horizon for make-to-order production. It provides relatively good results even if only executed for short runtimes. The use of the slotting heuristic is recommended when dealing with problems concerning mainly hard restrictions.
You can include the slotting heuristic in a procedure package for the *planning run* in model mix planning or you can access it directly in the sequence schedule.
- o Planning Requested Quantities
The standard setting in production planning in APO until now was to plan the confirmed quantity in the sales order. In order to execute the model mix planning run on the basis of the requested quantity instead of the confirmed quantity, you had to set the indicator *Planning with the Requested Quantity* in Customizing for Model Mix Planning in the IMG activity *Define Procedure Packages*.
In this release, planning is now executed as standard on the basis of the requested quantity. For this reason the indicator *Planning with the Requested Quantity* is no longer included in the procedure package.
If you want to execute model mix planning on the basis of the confirmed quantity then you have to set the Planning with Confirmed Quantity for the PP planning procedure *Manual Without Check* you entered in the product master for the products you want to plan using model mix planning. For more information, refer to the release information Pegging-Relevant Quantity of a Schedule Line in the Sales Order.
- o Planning Time Fence
In SAP APO 4.0, you can now also use the Planning Time Fence in model mix planning. Using the planning time fence you can protect the results of planning from any further changes for products for which you entered a planning time fence in the form of working days in the product master. However, the planning time fence only applies if you execute the planning run with the following procedures for which you have defined a requirements-oriented planning basis:
 - Genetic Algorithm
 - Prioritized Equal Distribution
 - LP Procedure
 The planning time fence does not apply to any order-based procedures you use in the short-term horizon. And it is not taken into account for the processing functions in the sequence schedule either as, in this case, the planner deliberately changes the planning situation in the short-term planning horizon.
- o Sequencing
The Sequence Schedule has been Enhanced by the Following New Functions:
 - Optimization Graphic

- Creation of visualization profiles for displaying the 10 most important restrictions or characteristics directly in the sequence schedule.
- You can define the size of the individual charts in the sequence schedule.
- You can move forward late orders.
- Accessibility Functions
To allow users with disabilities more accessible functions, you can now access rescheduling functions using icons. These functions were previously only available using drag and drop.
- o Restrictions
The Restrictions function has been enhanced by the following new functions:
 - New tab page for maintaining the restriction quantities per day or per shift in table form.
 - New dependency editor (enhanced editor from the iPPE environment) for maintaining the characteristic valuation.
 - API interface for transferring restrictions from OLTP Systems.

Effects on Customizing

The following changes have been made in Customizing for Model Mix Planning:

- o The IMG activity "Define Characteristics View" has been renamed to Define Visualization Profiles.
- o The IMG activity Define Slotting Heuristic has been added for defining the optimization parameters for this heuristic.
- o The slotting heuristic was included as a new individual procedure in the IMG activity Define Procedure Packages and can now be included in a procedure package.

See also

New Functions in Restriction Processing

New Functions in Sequencing

1.1.11.28.2 Restrictions Maintenance (Enhanced)

Use

Restrictions Maintenance in Model Mix Planning has been enhanced by the following new functions in SAP APO 4.0:

Vertical Period View

This new tab page provides a tabular overview of the quantities and weightings over the next 100 workdays for the selected restriction. You can also define another number of workdays in the user settings.

Using the vertical period view, you can change quantities and weightings for individual days or shifts more quickly.

You can only use the vertical period view to process quantity, spacing, K-in-M and block restrictions.

The vertical period view is not available for processing position restrictions or the equal distribution restrictions.

The changes you make for certain days and shifts are transferred to the start date view and are displayed in one or several new rows.

Enhanced Dependency Editor

The enhanced dependency editor is a new development from the integrated Project and Process Engineering (iPPE) which has now been linked to restrictions maintenance. You can now define the selection conditions for a restriction using this editor in a separate tab page of the restrictions maintenance.

The advantage of the enhanced editor is that the class and the characteristics with the characteristic values are displayed together with the editor. This greatly simplifies the task of maintaining the dependencies for a restriction as you can create the dependency simply by double-clicking the appropriate characteristic values. However, it is still possible to maintain the dependencies manually using the SAP Syntax.

To make optimum use of the enhanced editor, you have to define certain settings for the editor in Customizing before you start maintaining the restrictions. You can find a description of the required Customizing activities in the document, Customizing Settings for the Enhanced Dependency Editor.

In the enhanced editor (which is set as standard) you must note the following processing sequence when accessing the restrictions maintenance function:

1. You first have to maintain the *header data*.
2. Then, choose the *Start Date View* tab page and maintain the validity period, quantity and weighting.
3. Then choose the tab page *Dependencies*.
On the tab page, the system displays the class with the corresponding characteristics and characteristic values on the left-hand side. On the right-hand side is the Editor which is ready-for-input. The selected restriction is displayed in the Editor. Select this restriction and then double-click the desired characteristic value. The system copies this dependency into the Editor.
4. Save your entries.

You can hide the *Dependencies* tab page and therefore the new Editor in your *user settings*. Simultaneously, the system shows the *Characteristic Values* function key and you can continue working with the old Editor.

API Interface

Using APIs, you can transfer restrictions from OLPT Systems to the APO. The following function modules are available:

- o Creating Restrictions
- o Changing Restrictions
- o Deleting Restrictions
- o Reading Restrictions

1.1.11.28.3 Sequencing (Enhanced)

Use

The Sequence Schedule in Model Mix Planning has been enhanced by the following new functions in SAP APO 4.0:

- o **Optimization Graphic**
Optimization in the sequence schedule has been enhanced by the genetic algorithm with graphic. If you select this option, the system displays an optimization interface from which you can start the optimization. Parallel to the optimization run, the system creates a graphic which shows the quality of the results of the procedures being executed. If, for example, you selected the parameter earliness or lateness of the availability date of sales orders, the graphic shows how well these parameters are being taken into account during the optimization.
- o **Visualization Profile in the Sequence Schedule**
The characteristics view used to show characteristics or restrictions as additional columns in the sequence schedule has been renamed and is now called the Visualization Profile.
Until now the planner could only create the visualization profile manually in Customizing assigning the necessary characteristics or restrictions. In this new release, a wizard function is now available in the sequence schedule which you can use to create various visualization profiles automatically.
Using a visualization profile, you can create a clear overview of the 10 most important characteristics or restrictions in the sequence schedule. The characteristics or restrictions assigned to the visualization profile are displayed in a separate column with a colored background.
- o **Defining the Size of the Charts in the Sequence Schedule**
You can now easily define the size of the four charts (restrictions, dispatched orders, deallocated orders and backlog) in the sequence schedule as necessary. You can make them bigger or smaller or you can show or hide them as necessary. You find this function in the sequence schedule by choosing the menu path *Goto --> Change Chart Size*. In the following dialog box you can specify the size for each chart in the form of percentages. Using the function key *Change Size* you adopt your changes.
You can hide a chart by removing the percentage value and removing the indicator before the chart. Then choose *Change Size*. The system then hides the chart.
- o **Bringing Forward Late Orders**
Late orders are marked by the icon @AG@. Using this icon, you can call up a function that moves the order forward to reduce the delay.
- o **Accessibility Functions**
To allow users with disabilities more accessible functions, you can now access rescheduling functions using icons. These functions were previously only available using drag and drop. You show these icons by choosing @59@ Accessibility. The following functions are available:
 - **Orders to Beginning**
If you select an order and choose this icon, the system moves the selected order to the first position in the selected shift. If you select several orders, the first order is scheduled to the first position and the following orders are scheduled to positions two, three and so on.
 - **Orders to End**
If you select an order and choose this icon, the system moves the selected order to the last

position in the selected shift. If you select several orders, the first order is scheduled to the last position, the next order to the second last position and so on.

- One Position Upwards
This function moves the selected order(s) exactly one position further up.
- One Position Downwards
This function moves the selected order(s) exactly one position further down.

See also

Model Mix Planning

1.1.11.29 SCM-APO-PPS-RPM Planning Matrix

1.1.11.29.1 Planing Matrix (Enhanced)

Use

In SAP APO 4.0, the planning matrix has been enhanced by the following new functions:

o Planning Phantom Assemblies

From this release it is now also possible to plan phantom assemblies using the planning matrix. You can plan configurable phantom assemblies and non-configurable phantom assemblies.

You represent a configurable phantom assembly using a single-level product variant structure. You create the phantom assembly itself as an access node. And you create the components of the phantom assembly as component variants of structure nodes which are linked to the access node.

You create non-configurable phantom assemblies using assembly groups. And you create the components of the phantom assembly as assembly items.

You use a reference to link the phantom assembly to the component variant in the product variant structure of the finished product.

Initially, you can create the phantom assembly without specifying a material master record.

However, you must specify a material master record for the phantom assembly when planning in APO. Otherwise, the planning matrix cannot explode the phantom assembly. Therefore, you have to create a material master record for the phantom assembly and enter this material number in the access node of the phantom assembly or in the assembly header of the phantom assembly.

For more information on phantom assemblies in integrated Product and Process Engineering, refer to the corresponding iPPE Release Information.

The planning matrix creates separate rows in the matrix for the phantom assembly and for the components. If you make multiple use of a phantom assembly in a product variant structure, separate rows are created in the matrix for each use.

Limitations

- There is no comparative key in the APO product master for the special procurement key **50** (phantom assembly) in the material master. Therefore, SAP APO cannot take this special procurement key into account. The planning of phantom assemblies in SAP APO is only possible via iPPE product structures.
- As is the case for BOMs in R/3, it is not possible within a product structure to define different plant-dependent splits for a phantom assembly. This means, you cannot plan the phantom

assembly in one plant as a phantom assembly and in another plant as a 'normal' assembly.

- The use of colored materials is not possible for phantom assemblies. However, the components of the phantom assembly can be colored.
- The use of product interchangeability is only possible for the components of a phantom assembly. You execute the product substitution for the components in the planned order for the finished product using the ATP check. See also: Release Information on Product Interchangeability
- The configuration of a phantom assembly is determined by the configuration of the order for the finished product. Therefore, the characteristics you use for maintaining the dependencies of the phantom assembly must be included in the class of the finished product.
- If you create an assembly group for the phantom assembly and assign different activities to the assembly items and then you assign these activities to different line elements during line balancing, the planning matrix will also determine the line element where the components are to be assembled. When backflushing, on the other hand, all the components are backflushed at the first reporting point irrespective of planning.

o **Introduction of a Characteristics Filter in the Transaction Matrix Evaluations**

A characteristics filter is now available in the matrix evaluations (transaction RPMEVAL) for filtering out planned orders with selection conditions based on characteristics and characteristic values. Using the characteristics filter, you can define a certain selection condition.

Example

You can define that out of all the orders that were selected according to your selection criteria, you only want to see the orders for vehicles with sunroofs. You achieve this by creating a characteristics filter with the dependency **Sunroof = 'YES'** in the initial screen of the matrix evaluation.

o **Technical Improvements in the Planning Run of the Planning Matrix**

The planning run of the planning matrix has been optimized so that the existing component variant matrix and, if necessary, the activity matrix remain valid until planning has completed the creation of the new matrices and has activated them. The old matrices are not deleted until the new ones have been activated by the system. This provides you with the following advantages:

- For the first time, it is possible for the system to read data in the matrix (component variant matrix and the activity matrix) parallel to the planning run. This is particularly significant for backflushing. You can now execute a backflush in APO at the same time as the planning run.
- Another advantage is that up-to-date matrices are still available even if the planning run is terminated. As the 'old' matrices are not deleted until the planning run has been executed successfully, these 'old' matrices continue to be available if no 'new' matrices could be created in the planning run.

o **Maintaining Additional Data**

Using the transaction 'maintain additional data' (MDRPM), you can now make the settings for the RPM products dependent on the planning version. This means you can define different settings for inactive and active planning versions.

1.1.11.30 SCM-APO-PPS-AHT Action Handler & Tracking

1.1.11.30.1 Enhancements to the Action Handler

Use

In SAP APO 4.01, the existing functionalities of the Action Handler (SCM-APO-PPS-AHT) have been improved and enhanced as follows:

- o The following **actions** have been added:
 - 01SAP_FOT_ORDER_MERGE *FOT: Merge orders*
01SAP_FOT_ORDER_PRODCH *FOT: Change product*
01SAP_FOT_ORDER_SPLIT *FOT: Split order*
These three actions are used within the new component *Flexible Order Transactions* (SCM-APO-PPS-FOT).
 - 01SAP_ORDER_INITIALIZE *Reset Action Handler status (last action point, action network)*
- o The **data security concept** prevents the loss of data: If an event has been saved but cannot be processed completely due to an error or a system crash, and the event is delivered again, the system only carries out those actions that were cancelled. This means that those actions that were carried out successfully for this event do not need to be repeated.
- o The **check and update of data** in the Action Handler is now more flexible. You can now create check and update profiles in Customizing. These profiles control which checks the Action Handler runs before carrying out an action and how the data is updated once the action has been completed. When updating data, the system decides which action point status or action status an order is to receive, that is, which action point is to be regarded as having been reported last or which action of an action network is to be regarded as completed. The profiles contain function modules with individual checks/updates that are carried out in the specified sequence. The function modules can either be SAP standard or customer-specific function modules.
- o There is a new document in the SAP library which contains a **description of the interface** between the Action Handler and the external production control system. To call up the document, choose *SAP Advanced Planning and Optimization (SAP APO) -> Production Planning and Detailed Scheduling (PP/DS) -> PP/DS Process -> Manufacturing Execution -> Action Handler* in the SAP library.

Effects on Customizing

The IMG activity *Carry out Settings for the Action Handler* has been moved to the node *Action Handler in Production* and renamed Define Actions and Action Networks.

Also, the IMG activity Check and Update Profiles has been added.

1.1.11.31 SCM-APO-PPS-PPC Product and Process Confirmation

1.1.11.31.1 Production Backflush (Enhanced)

Use

In release SAP APO 4.0 the production backflush will be enhanced with the following functions:

- o **Changed Reporting Point Determination for Goods Receipt Posting**

Previously in the production backflush with line-based production, goods receipts were posted with the backflush at the last reporting point, for which the *Post Goods Receipt* indicator was set.

In shop-floor-oriented repetitive manufacturing with iPPE it can be the case that several output nodes are assigned to different reporting points. For this reason, it is possible that several by-products can be assigned to several activities/reporting points. That is, goods movements can be posted at different reporting points.

From SAP APO 4.0, the *Post Goods Receipt* indicator in the production backflush is no longer considered.

In the case of line-based production, it is not possible to assign output nodes to reporting points. The goods receipt is, therefore, always posted at the last reporting point on the line.

When working with shop-floor-oriented repetitive manufacturing with iPPE, the goods receipt for an output node is always posted at the reporting point that the output node is assigned to, as long as the *Post Goods Movements and Activities* indicator is set for this reporting point. If the indicator is not set for the reporting point, the goods receipt is posted at the next reporting point for which the indicator is set.

- o **Cancel "with reference"**

Using this new function you can cancel a backflush with reference to an existing one. This new function is particularly useful if the original backflush for a component or assembly was created with a variance. The function enables you to cancel all goods movements and activities generated for the backflush.

- o **Resetting the status of a planned order**

Previously, planned orders could not be changed once they had been partially backflushed. Even if all the backflushed quantities had been reset, the status of the planned order remained *partially backflushed*.

If, using the new functions, you reset all backflushes for a planned order and backflush the quantity zero in each case, the overall status of the planned order is reset to initial. That is, the status is reset both at planned order level as well as at activity level.

- o **Components for sales order stock without stock value segments**

If a production backflush contains several components and/or activities that have to be processed, the Work in Progress (WIP) for the components and assemblies must also be updated during processing, and the goods movements must be executed. Previously, the backflush could not be executed for components/assemblies, if a component has requirements for sales order stock, and no goods receipt has been posted.

From this release, the processing will no longer be stopped and such components/assemblies will be

saved for postprocessing (*COGI* in the DI system), even if no stock value segments exist.

- o **iPPE master data**
The production backflush supports product interchangeability, phantom assemblies, and by-products in iPPE master data. For further information, see the release information for these topics.
- o **Business Add-In (BAdIs) for the production backflush**
You find the Business Add-In Further Process Production Backflushes and Subsequent Processes in Customizing under *Business Add-Ins PP/DS*. For further information, see the documentation for this BAdI.

1.1.11.32 SCM-APO-PPS-FOT Flexible Order Transactions

1.1.11.32.1 Flexible Order Transaction (FOT)

Use

As of APO Release 4.01 Flexible Order Transaction (FOT) enables the following functionality for started iPPE orders:

- o One order can be split into several different orders
- o Multiple orders can be merged into one order
- o The output product on the original order can be changed to another product

The functionality only works for APO Planned Orders based on Integrated Product and Process Engineering (iPPE), not R/3 orders. These orders are confirmed in APO via Product Process Confirmation (PPC). FOT incorporates the ability to represent lot-based MES work in process (WIP) and supports plant level WIP scheduling based on up-to-date WIP visibility.

The requirement for different order transactions like order split, order merge, and product change comes mainly from the semiconductor industry but is also used in other industries such as Aerospace and Defense (A&D). These industries commonly use the same type of shop floor control (SFC) systems which operate on a lot base.

In a typical scenario, SFC orders are represented as iPPE orders in APO and the actions are triggered from the connected SFC system. The SFC system may trigger the functionality by using Production Action Handler (PAH) or by calling the BAPIs `iPPEOrderAPSManufactOrderAPS.SplitPPE`, `MergePPE` and `ChangeProductPPE`. A manual interface for more restrictive functionality is also provided in the planned order management transaction `/SAPAPO/POM1`.

Flexible Order Transaction adds business value because it:

- o Reflects changes on the shop floor in the planning system (APO) which provides an up-to-date picture of execution in APO.
- o Transfers actual cost to R/3 during product change or production version change.
- o Updates the WIP costs in R/3.
- o Enables you to transfer WIP costs from reporting points of one order to reporting points of another order.
- o Is available via an RFC enabled Application Program Interface (API) in APO.
- o Is available via Production Action Handler in APO.
- o Is available interactively in APO via Planned Order Management (POM).

Flexible Order Transaction gives you the possibility to reflect changes on the shop floor in your planning and ERP system. In the semiconductor industry a lot changes frequently. These changes are reflected in the Manufacturing Execution System (MES) but usually not in the planning system (APO). Via FOT and its external interfaces (PAH or API) you can make these changes also visible in APO, maintaining a one-to-one relationship between the MES lot and an APO order. Through the seamless integration of APO and R/3 you also get all the benefits of costing in R/3.

Limitations

FOT works only for APO Planned Orders based on integrated Product and Process Engineering (iPPE). The confirmations for these orders are done in APO via Product Process Confirmation (PPC).

FOT does not support models with parallel reporting points as it is based on iPPE orders which also do not support parallel reporting point structures. Alternative reporting point structures are supported.

Integration

If you want to...

Split, merge, and change process orders
 Transfer actual costs between orders
 release DI46C2

You must install...

APO 4.0 with IPPE 5.0
 DI46C2 or higher
 mySAP Automotive add-on

Effects on Customizing

Following fields should be maintained in the table /SAPAPO/FOTMOD. (The delivered values are indicated in column two).

<u>Field</u>	<u>Delivered Value</u>
WIPMOVE	'H'- indicating a HARD action.
LOG_WRITE no log	'X'- indicating log is to be written. Leave BLANK if is desired.

MSG_TYPE be to write the	'AEISWX'- indicating which type of messages should written to the log. Leave BLANK if you do not want particular message type to the log.
KEEP_ORD_STATUS	'X'- means keep the status of the original order
NO_ACT_COST done by utilizations confirmed resulting order(s).	'BLANK' - indicates that actual costs are to be transferred from original to resulting orders. This is reversing the goods movements and resource with original order(s) and posting them with the
R3_INDEPENDENT an 'X' if goods there is an original	'BLANK' - indicates that an R/3 system is connected and the goods movements will be posted in R/3. Put movements are not required in R/3. If left blank, and error in reading earlier goods movement data for the order(s) the action will terminate.

1.1.11.33 SCM-APO-PPS-HEU Heuristics

1.1.11.33.1 "Rescheduling: Bottom-Up" Heuristic (Enhanced)

Use

Using a heuristic based on the algorithm /SAPAPO/HEU_MIN_PEG_GIV_SUPPLY, for example, using the standard heuristic SAP_PP_009, you can reschedule dependent and stock transfer requirements of PP/DS orders so that, as far as possible, they can be covered in time by the existing SNP and PP/DS receipts. The following enhancements have been made for SAP APO 4.0:

- o **Sort sequence for requirements**
To determine which dependent and stock transfer requirements can be covered, the heuristic assigns

SNP or PP/DS receipts to the requirements of SNP and PP/DS orders. Until now, the heuristic first processed the requirements with a fixed pegging relationship to a receipt in the sequence of the requirements dates/times. Then the heuristic processed the requirements without fixed pegging relationships in a time sequence. As of SAP APO 4.0, you can use the *sort sequence* in the heuristic settings to define the sequence in which the heuristic processes requirements without fixed pegging relationships. Apart from sorting the requirements according to requirement date/time and priority, you can sort them according to whether the affected PP/DS orders contain deallocated operations or have the status *output firmed*.

o **Assignment strategy**

Until now, the heuristic assigned the receipts to a requirement according to the availability date/time; that is, the earliest receipt first, and if this was not sufficient, then the next receipt, and so on. As of SAP APO 4.0, you can define an assignment strategy in the heuristic settings. In addition to the FIFO strategy implemented up until now, another strategy is available, which the heuristic can use to assign the requirement receipts that are as timely as possible. The heuristic starts from the requirements date/time and searches into the past for receipts. If it does not find sufficient receipts here, it starts from the requirements date/time and searches into the future for receipts. If the requirement can be covered, the heuristic tries to shift the requirement to the latest availability date/time of the receipts that it assigned to the requirement, just as in the FIFO strategy.

o **Processing horizon**

Until now, the heuristic only took account of requirements and receipts in the planning period when assigning receipts to requirements and when rescheduling requirements. As of SAP APO 4.0, you can use a processing horizon to further restrict the relevant period; the heuristic only considers requirements and receipts that are in the overlap period between the planning period and the processing horizon. The end of the processing horizon is defined by the PP/DS planning time fence, the planned delivery time or a time interval that you have entered in the heuristic settings. While uncovered requirements in the planning period retained their requirements date/time previously, as of SAP APO 4.0 the heuristic tries to shift uncovered requirements to the end of the processing horizon. In an ideal situation, shortages no longer arise in the processing horizon as of SAP APO 4.0.

o **Enhancement of the evaluation**

The evaluation that is available for the heuristic run in interactive planning has been structured more clearly. In addition, the evaluation shows

- Which receipts the heuristic has assigned to a requirement
- The date on which the heuristic has actually rescheduled a requirement
(Rescheduling to the desired date/time - the latest availability date/time of the receipts assigned to the requirement - is not always possible.)

o **Strategy settings**

In the heuristic settings, there is a new tab page *Strategy*. On this tab page, you can define the strategy settings that the heuristic should use for rescheduling orders. After the upgrade to SAP APO 4.0, you can either use the strategy settings from the heuristic, or work with the strategy profile as before. For more information on strategies in SAP APO 4.0, see the release information Strategy Settings for PP Heuristics.

o **BAdIs**

You can use the new BAdI /SAPAPO/RRP_BOTTOMUP as of SAP APO 4.0 to modify the requirement and receipt elements to be taken into account (FILTER_IO_NODES method), their sort sequence (SORT_IO_NODES method), and the processing of orders with uncovered requirements

(CHECK_IO_RESCHEDULE method). The EVALUATION method is available for modifying the evaluation for the heuristic run. You can use this method to prepare (for example, filter) the results of the heuristic run, or to further process them, (for example, trigger follow-up actions, depending on the results).

Effects on Customizing

In the standard system, a heuristic based on the algorithm /SAPAPO/HEU_MIN_PEG_GIV_SUPPLY works as in SAP APO 3.1. In other words, requirements are sorted according to requirements date/time, the FIFO strategy is used for receipts as the assignment strategy, and there is no processing horizon. This also applies to the SAP standard heuristic SAP_PP_009. If you want to implement the new heuristic functions, create an individual heuristic with the desired heuristic settings in Customizing for *Production Planning and Detailed Scheduling* under Maintain Heuristics.

See also

System documentation for the heuristic SAP_PP_009

To call up the system documentation for a heuristic, go to Customizing for *Production Planning and Detailed Scheduling* and under Maintain Heuristics, click on the information symbol at the end of the row for this heuristic.

1.1.11.33.2 BAdI for Procurement Planning Heuristics (Enhanced)

Use

Until now, you used the BAdI /SAPAPO/RRP_PLANNING to modify a procurement planning heuristic based on the algorithm /SAPAPO/HEU_PLAN_STANDARDLOTS, such as the standard heuristic for *planning standard lots* SAP_PP_002. As of SAP APO 4.0, the BAdI is also available for the following algorithms or procurement planning heuristics:

- o **/SAPAPO/HEU_PEGID_PERIODIC_LOT**
Standard heuristic SAP_PP_004 for *planning standard lots in 3 horizons*
- o **/SAPAPO/HEU_PLAN_COPRODUCTS**
Standard heuristic SAP_PP_017 for *planning standard lots for co-products*
- o **/SAPAPO/HEU_PART_PERIOD**
 - Standard heuristic SAP_PP_005 for *part period balancing*
 - Standard heuristic SAP_PP_013 for the *Groff procedure*
- o **/SAPAPO/HEU_PUR_PLANNING**
Standard heuristic SAP_PP_006 for the *least-unit cost procedure: external procurement*
- o **/SAPAPO/HEU_PLAN_STDLOTS_CONTI**
Standard heuristic SAP_PP_C001 for *planning standard lots for conti.-I/O*
- o **/SAPAPO/HEU_REORDER_POINT_PLAN**
Standard heuristic SAP_PP_007 for *reorder point planning*
- o **/SAPAPO/HEU_PLAN_DEFICITS**
Standard heuristic SAP_PP_003 for *planning shortage quantities*

The BAdI contains the following new methods:

- o **EVALUATION**
You can use this method to modify the evaluation of a heuristic. You can prepare the results of the heuristic run (for example, filter) or further process them (for example, trigger follow-up actions, depending on the results).
- o **SETTINGS_SUBSCREEN**
You can use this method to show an additional tab page in the heuristic settings with the name *Additional Settings*. It contains additional setting options that are not available in the heuristic settings in the standard system.
- o **SETTINGS_SET**
You can use this method to display the values of the fields on the *Additional Settings* tab page.
- o **SETTINGS_GET**
You can use this method to read the values currently entered in the fields on the *Additional Settings* tab page (for example, after an interactive change), so that the BAdI can further process these values.

1.1.11.33.3 Evaluations for PP Heuristics (Enhanced)

Use

Until now, an evaluation was available for production planning heuristics (standard heuristics, SAP_PP_...). The evaluation contains information on the requirements and receipts that the heuristic has processed and is relevant for heuristic runs in interactive planning.

As of SAP APO 4.0, the evaluation has been extended. It now also shows which receipts the heuristic has assigned to which requirements, for example, in the net requirements calculation. In addition, there is now also an evaluation for the standard heuristic SAP_PP_003 for *planning shortage quantities* (algorithm /SAPAPO/HEU_PLAN_DEFICITS).

1.1.11.33.4 Procurement Planning Heuristics for Interchangeable Products (Enhanced)

Use

The following heuristic algorithms have been extended for SAP APO 4.0 so that they take account of the product interchangeability master data and thus the limited time validity of products in procurement planning:

- o Algorithm /SAPAPO/HEU_PLAN_STANDARDLOTS
Standard heuristic SAP_PP_002 *Planning Standard Lots*
Standard heuristic SAP_PP_SL001 *Planning Standard Lots with Shelf Life*
- o Algorithm /SAPAPO/HEU_PEGID_PERIODIC_LOT
Standard heuristic SAP_PP_004 *Planning Standard Lots in 3 Horizons*

- o Algorithm /SAPAPO/HEU_PART_PERIOD
Standard heuristic SAP_PP_005 *Part Period Balancing*
Standard heuristic SAP_PP_013 *Groff Procedure*
- o Algorithm /SAPAPO/HEU_PUR_PLANNING
Standard heuristic SAP_PP_006 *Least-Unit Cost Procedure: External Procurement*

See also

- o Release information on product interchangeability in PP/DS
- o Documentation for product interchangeability

1.1.11.33.5 Lot Size Settings for Procurement Planning Heuristics (Enhanced)**Use**

Until now, procurement planning heuristics from production planning (standard heuristics SAP_PP_...) generally used the data from the location product master in the procurement quantity calculation. (Exception: In the heuristic SAP_PP_004 for planning *standard lots in 3 horizons*, you could also define a lot-sizing procedure in the heuristic settings for each horizon.)

As of SAP APO 4.0, heuristics can use either the data from the location product master or the data from the heuristic settings in the procurement quantity calculation. As you can still change the lot size settings in interactive planning when you call a heuristic, the new option is above all relevant for executing a heuristic in the production planning run.

If you want the heuristic to use the data from the heuristic settings, you set the *Use Lot Size Settings from Heuristic* indicator on the new tab page *Lot Sizes*. In the standard system, the indicator is not set. The tab page contains parameters for the procurement quantity calculation that are relevant for the heuristic. However, the heuristic still determines parameters that are particularly product-specific from the location product master. These include the remaining lot-for-lot order quantity and the parameters for planning safety stock.

1.1.11.33.6 Reuse Mode for /SAPAPO/HEU_PLAN_DEFICITS (Enhanced)**Use**

Until now, you could not define a reuse mode in the settings of a heuristic based on the algorithm /SAPAPO/HEU_PLAN_DEFICITS. During planning, the system used a reuse mode that it determined from the reuse mode in the planning file entry and - in the case of an MRP run - from the reuse mode of the MRP heuristic. The reuse mode *Delete Unfirmed Receipt Elements* was not possible.

As of SAP APO 4.0, you can specify a reuse mode in the heuristic settings. If you specify the reuse mode *Delete Unfirmed Receipt Elements*, the heuristic takes account of the unfirmed receipts. After the net requirements calculation, the heuristic deletes the unfirmed receipts and replaces them with new receipts of the same quantity.

1.1.11.33.7 Strategy Settings for PP Heuristics (Enhanced)

Use

Until now, production planning heuristics (SAP_PP_...) used a strategy profile for scheduling or rescheduling orders. In SAP APO 4.0, strategy settings have been included in the heuristics on the new tab page *Strategy*. The tab contains all strategy parameters that are relevant for each heuristic.

A heuristic uses either a strategy profile or the strategy settings in the heuristic itself, depending on whether you have installed SAP APO 4.0 new, or whether you have upgraded to SAP APO 4.0, as follows:

- o In the case of a **new installation** of SAP APO 4.0, a heuristic always uses the strategy settings from the heuristic. The strategy profile is obsolete for planning with heuristics.
- o After an **upgrade to SAP APO 4.0**, you can either work with the strategy settings in the heuristic, or use strategy profiles as before.
 - If you want the heuristic to use your own strategy settings, you set the new indicator *Use Strategy Settings from Heuristic* on the new tab page *Basic Settings* in the heuristic settings. The indicator is not set in the standard system.
 - If you want the heuristic to use the strategy profile, you do not set the indicator. In the production planning run, the heuristic uses, as before, the strategy profile that you have specified for the processing step. If you have not entered a strategy profile, the heuristic uses the strategy profile that you entered in Customizing for *Production Planning and Detailed Scheduling (PP/DS)* under *Maintain Global Parameters and Defaults* in the *Planning Run* field. In interactive planning, the heuristic uses the strategy profile that you specified in the *Interactive Planning* field. In the strategy profiles, you should only use the settings recommended by SAP.

1.1.11.33.8 Remaining lot-for-lot order quantity (New)

Use

As of SAP APO 4.0, you can plan using the remaining lot-for-lot order quantity in *Production Planning and Detailed Scheduling (PP/DS)*. Using this quantity, a procurement planning heuristic creates the last receipt in a specific period, not according to the lot-sizing procedure defined, but using a reduced receipt quantity, so that the available quantity at the end of the period is 0. In the case of a product that is not part of a supersession chain, the period is the PP/DS horizon. For a product that belongs to a supersession chain, the period is the validity period of the product; however, the remaining lot-for-lot order quantity is only used here if the validity period ends within the PP/DS horizon. By planning with the remaining lot-for-lot order quantity, you can, for example, prevent planning from creating too large a receipt for a product that is to be discontinued, and thus causing excess stock, which would possibly represent scrap.

If you want to plan using the remaining lot-for-lot order quantity, you set the *Last Lot Exact* indicator on the *Lot Size* tab page in the location product master. Note:

- o Heuristics, which execute procurement planning according to a reorder point method, do not take the remaining lot-for-lot order quantity into consideration

- o The remaining lot-for-lot order quantity is only relevant for PP/DS, and not for *Supply Network Planning* and *Capable-to-Match*

1.1.11.33.9 New heuristics for campaign planning

Use

As of SAP APO 4.0, the following new heuristics are available for planning production campaigns in the DS planning board and in the production planning run:

- o Create production campaigns
- o Dissolve production campaigns
- o Adjust setup/clean-out orders
- o Delete setup/clean-out orders

These heuristics are contained in the SAP standard heuristic profile SAP_PCM.

1.1.11.33.10 Planning Group for the Production Planning Run (New)

Use

As of SAP APO 4.0, the *planning group* is available as a new grouping and selection criteria for products, which you can use to execute the production planning run specifically for particular groups of products. Planning groups are relevant to all heuristics that execute planning or service tasks for products, such as procurement planning heuristics or MRP heuristics. By dividing up your products into planning groups, and matching the sequence of heuristic runs in the production planning run to the various planning groups, you can more easily solve planning tasks such as the creation of a finite production plan or master production scheduling.

To group products in a planning group, you enter the name of the planning group in the location product master on the *PP/DS* tab page. You can select the products according to planning group in the product selection for a processing step of the production planning run. The planning group is also available in the propagation range as a selection criterion; that is, you can restrict the products that the system may plan in the production planning run to the planning groups.

Effects on Customizing

You define the names of planning groups in Customizing for *Production Planning and Detailed Scheduling (PP/DS)* under *MRP Planning Run -> Maintain Planning Groups*.

1.1.11.33.11 Creation and Deletion of Safety Stock in SAP liveCache (New)

Use

Up to now, the safety stock for a location product was only a virtual requirement; in other words, a requirement that does not exist in SAP liveCache and which is only taken into consideration by the net requirements calculation and not by dynamic pegging in *Production Planning and Detailed Scheduling* (PP/DS). The system cannot therefore link receipts, which are created in procurement planning in PP/DS to cover safety stock, with the virtual requirement. This affects all functions that evaluate dynamic pegging relationships; for example, the system creates "incorrect" surplus alerts because of non-existent pegging relationships for receipts that have been created to cover the safety stock, or the system cannot take the requirements dates/times of the safety stock requirements into consideration when optimizing the delay costs.

As of SAP APO 4.0, the standard heuristic SAP_PP_018 *Create Safety Stock in SAP liveCache* (algorithm /SAPAPO/HEU_PLAN_SAFETY_STOCK) is available for make-to-stock production scenarios. You can use this standard heuristic to create, adjust, and delete static safety stock requirements in SAP liveCache. In the standard system, the static safety stock requirement is represented by an order that consists of a requirements element with the category SR. Depending on the planning version, the system takes the safety stock requirements in SAP liveCache into consideration in the net requirements calculation and in dynamic pegging, if you have selected the new option *Consider Safety Stock Requirements in SAP liveCache* in the field *PP/DS: Take Safety Stock into Account* in the planning version.

Using the BAdI /SAPAPO/RRP_SFTY_STK (UPDATE_IO_NODES method), you can extend the heuristic for non-make-to-stock scenarios and for the implementation of safety stock methods.

Capable-to-Match (CTM) and *Global ATP* can take the safety stock requirements in SAP liveCache into consideration. These safety stock requirements are not relevant for safety stock planning in *Supply Network Planning* (SNP).

Effects on Customizing

If you want to plan using safety stock requirements in SAP liveCache, you check the settings in the SAP standard heuristic SAP_PP_018 in Customizing for *Production Planning and Detailed Scheduling* under Maintain Heuristics. If you want to use your own settings, you create your own heuristic with the desired heuristic settings by copying the heuristic SAP_PP_018, for example, and changing the settings.

See also

- o Release information for Safety Stock in Global Available-to-Promise (new)
- o System documentation for the heuristic SAP_PP_018

To call up the system documentation for a heuristic, go to Customizing for *Production Planning and Detailed Scheduling* and under Maintain Heuristics, click on the information symbol at the end of the row for this heuristic.

1.1.11.34 SCM-APO-PPS-INC Product Interchangeability in PP/DS

1.1.11.34.1 Product Interchangeability in PP/DS (New)

Use

The continued development of products or changes to production processes can make it necessary to

discontinue a product and substitute it with a successor product. *Production Planning and Detailed Scheduling* (PP/DS) supports the discontinuation of products in the procurement planning process and in the processing of in-house production orders that contain components with limited time validity. In the transition phase after the discontinuation date of a product, procurement planning uses up any existing surplus product stock - if permitted - and procures the successor product to cover open product requirements. In the execution phase of an in-house production order with interchangeable components, you have functions at your disposal with which you can react to short-term date/time and quantity changes, and update the order components based on the supersession chain.

PP/DS supports planning with product interchangeability in the following in-house production scenarios:

- o **Shop Floor Production or Repetitive Manufacturing Based on PPMs or PP/DS Runtime Objects with Order Processing in SAP R/3**
Prerequisite for manufacturing order processing with SAP R/3 is a standard release SAP R/3 4.0B or higher.
- o **Repetitive Manufacturing Based on iPPE with Backflush in SAP APO**
Prerequisite is an SAP R/3 DI system with release 4.6B or higher.

PP/DS always plans here based on product interchangeability master data from SAP APO. The usage of product interchangeability master data is integrated in the following PP/DS applications:

- o **MRP Planning Run and Planning with the Product Heuristic**
To avoid an unnecessarily large amount of surplus stock resulting for a discontinued product, or to avoid requirements not being covered, the MRP planning run or the product heuristic always automatically plans all products in a supersession chain. The system forwards uncovered requirements and any surplus stock of a discontinued product to the successor product and takes account of the requirements and stock when planning the successor product. To forward a requirement or stock, the system creates a product substitution order. The product substitution is not mapped in the in-house production order in the planning phase. The in-house production order contains the components that the system determined on order creation by exploding the in-house production source of supply.
- o **Setting the Conversion Indicator and ATP Check for In-House Production Orders in PP/DS**
To take account of the limited time validity of the order components at the start of the execution phase at the latest, and to adopt substitute components in the order, if necessary, you have to set the conversion indicator for the order in PP/DS - dependent on a scenario - or perform a suitably configured ATP check. The system then updates the order components according to the supersession chain data.

Planning with product interchangeability in PP/DS is not possible:

- o For manufacturer part number management
- o For configurable products
- o For products with continuous requirements
- o In the Capable-to-Promise scenario

Planning with **shelf life data** is only possible with specific restrictions.

See also

- o Release information for Product Interchangeability in SAP APO
- o Release information for ATP Check for Planned Orders in Repetitive Manufacturing

- o Documentation for planning with product interchangeability in PP/DS

1.1.11.34.2 ATP Check for Planned Orders in Repetitive Manufacturing (New)

Use

If you work with repetitive manufacturing and want to implement **product interchangeability**, you must carry out an ATP check for the planned orders with interchangeable components, at the end of the planning phase, before the planned orders for the end product are transferred to production. It is only possible to carry out further steps in the production process of repetitive manufacturing once the ATP check has been carried out. Product substitution in the planned orders is only possible using the ATP check. In other words, if the ATP check has not taken place the planned order does not contain any components at all (when planning with the planning matrix) or only contains components that are no longer valid, because the interchangeability dates are not taken into account.

In the ATP check, the stocks/receipts of the components that were determined by the planning matrix or by single explosion in iPPE or the PPM are checked. In addition, the stocks and receipts of the successor product are checked.

When planning with the planning matrix, the system creates the components in the order for the end product using the ATP check, because, initially, the orders do not contain any components. The system carries out product substitution, in other words, the system copies the necessary components (products that are being discontinued and their successors) to the order. The allocation of the requirement quantities is carried out according to the ATP situation, based on the stocks and receipts, according to the scope of the ATP check that has been defined. The ATP check leads to a firming of the confirmed components in the planned order for the RPM product. It is then not possible to remove this firming.

In planned orders that were planned with single explosion, only the requirements quantities are allocated because the components (input nodes) are already contained in these orders.

If you carry out an ATP check later, it updates or replaces the substitution data in the order.

In product interchangeability you must carry out the ATP check for a number of orders in repetitive manufacturing. To do this you can use the report *ATP Check for Planned Orders in Repetitive Manufacturing (Transaction /SAPAPO/RRP8)*. You should note that the report should only be used in conjunction with product interchangeability.

See also

Release Info Product Interchangeability in PP/DS (New)

Documentation on product interchangeability in repetitive manufacturing with production backflush in SAP APO

1.1.11.34.3 Remaining lot-for-lot order quantity (New)

Use

As of SAP APO 4.0, you can plan using the remaining lot-for-lot order quantity in *Production Planning and Detailed Scheduling* (PP/DS). Using this quantity, a procurement planning heuristic creates the last receipt in a specific period, not according to the lot-sizing procedure defined, but using a reduced receipt quantity, so that the available quantity at the end of the period is 0. In the case of a product that is not part of a supersession chain, the period is the PP/DS horizon. For a product that belongs to a supersession chain, the period is the validity period of the product; however, the remaining lot-for-lot order quantity is only used here if the validity period ends within the PP/DS horizon. By planning with the remaining lot-for-lot order quantity, you can, for example, prevent planning from creating too large a receipt for a product that is to be discontinued, and thus causing excess stock, which would possibly represent scrap.

If you want to plan using the remaining lot-for-lot order quantity, you set the *Last Lot Exact* indicator on the *Lot Size* tab page in the location product master. Note:

- o Heuristics, which execute procurement planning according to a reorder point method, do not take the remaining lot-for-lot order quantity into consideration
- o The remaining lot-for-lot order quantity is only relevant for PP/DS, and not for *Supply Network Planning* and *Capable-to-Match*

1.1.12 SCM-APO-MSP Maintenance Planning

1.1.12.1 Maintenance and Service Planning (New)

Use

As of SAP APO 4.0, the Maintenance and Service Planning (MSP) component can support your maintenance organization in the following two planning processes:

1. Strategic planning over a long-term horizon (for example 5-10 years). By forecasting the maintenance demands of all maintenance objects, you can determine the resources (service areas, mechanics, tools, and so on) that are necessary to meet future maintenance demands. Simulating different what-if scenarios allows you to evaluate different planning situations in order to make business decisions.
2. Tactical planning over a mid-term horizon (such as 1-18 months). The main aim of tactical planning is to ensure your maintenance objects remain serviceable, optimize the utilization of each maintenance object, and balance the resource load within your service areas.

The MSP component offers planners the following:

Maintenance and Service Planning Board

- o Planning Functions
 - In the automated planning run, the system executes the planning run. You can choose between a new plan, which deletes any existing plan and creates a new one, or a net change plan, which plans demands that have not been planned within their tolerance window.
 - In interactive planning, the planner executes the planning run. The planner can plan, reschedule, or deallocate work packages, merge/split work packages, create/reschedule/delete free slots, assign/deallocate work packages to/from slots, and fix/unfix work packages.

- o Object Functions
Various functions (such as *Display*, and so on) are available in a context menu for work packages, slots, maintenance orders, maintenance objects, and service areas.
- o Chart Functions
 - Planners can personalize the settings for the Maintenance and Service Planning Board to best fit their needs. Once saved, the personalized settings are effective every time the user starts the Maintenance and Service Planning Board.
 - Various other functions are also available to aid the planner in using the Maintenance and Service Planning Board, such as show/hide chart, print all parts or individual charts, zoom in/out, edit time and view scales, show/hide alerts, and display the due date for work packages.

Planning Simulations

Planning simulations enable planners to examine all aspects and options of a given situation and stimulate the effect of various parameters.

Transfer of Master Data from the Discrete Industries R/3 System (from SAP DIMP 4.71)

MSP requires locations and resources. This master data is transferred from the SAP R/3 System (work centers and the plants to which they belong) using the standard Integration Model in the SAP R/3 System.

Transfer of Planning Data to the DI R/3 System (from SAP DIMP 4.71)

The standard SAP APO function *Process Change Pointer* is used to transfer the planning data to the SAP R/3 System. Publishing type *033 Work Package Maintenance* has been added to the *APO Order Type* field. The data is transferred to the *Maintenance Event Builder (MEB)* component in the Discrete Industries system. The SAP R/3 revision number and the APO slot number are identical.

Miscellaneous

- o Maintenance Task List (MTL)
A new type of maintenance iPPE has been developed enabling you to describe the maintenance work to be performed in the form of a list of activities. The activities have capacity requirements of resources and activity relationships.
- o Maintenance Profiles
These contain SAP APO-specific planning data for an SAP R/3 maintenance plan. These profiles contain header and item data. You assign a maintenance profile when you assign a maintenance plan to a maintenance object. Maintenance profiles are used for specific planning versions.
- o Alert Monitor
In MSP, you can view alert situations for the maintenance object and service areas in the standalone Alert Monitor, the Alert Monitor in the Maintenance and Service Planning Board, or in the Supply Chain Cockpit (SCC).
New alert profiles have been added for the MSP alerts. For more information, see Changes and New Functions in the Alert Monitor (Enhanced).
- o SCC functions
 - You can launch queries on the maintenance object, maintenance task list, Maintenance and Service Planning Board, and the Alert Monitor in the APO planning application SCC/SCE.
 - You can perform model consistency checks on the master data assigned to a model or work

area. The system checks the maintenance task list belonging to a maintenance object for inconsistencies.

- o Consistency Check for Missing Orders in liveCache
A new object type *Maintenance Orders* has been added to the *Consistency Check liveCache - APO DB* function. This provides a list of inconsistencies where check and/or slot orders exist in liveCache but not in the SAP APO database and vice versa.
- o CIF Compare/Reconcile function
This existing function has been enhanced with a checkbox for *Maintenance and Service Planning* enabling an inconsistency check between the SAP R/3 System and the SAP APO System after transfer over the APO Core Interface (APO CIF).

Effects on System Administration

The APO CIF can run as a background job.

Authorization C_APO_MSPC controls activities that can be performed on maintenance profiles.

Authorization C_APO_MSPO controls activities that can be performed on maintenance objects.

Authorization C_APO_MSPP controls activities that can be performed on maintenance plans.

You maintain authorizations in user maintenance. From the SAP Easy Access menu choose *Tools -> Administration -> User Maintenance*.

Effects on Customizing

You have to define the following Customizing settings in the mySAP SCM Implementation Guide (IMG) under *Advanced Planning and Optimization -> Maintenance and Service Planning*:

- o Define Maintenance Object Group.
- o Define Check Types.
- o Define Tolerance Profile.
- o **Number Ranges:**
 - Define Number Range for Slots
 - Define Number Range for Demands
 - Define Number Range for Maintenance Profiles
 - Define Number Range for Maintenance OrdersNote that you do **not** have to execute the Customizing activity *Define Number Range for Maintenance Items*.

As of SAP DIMP 4.71, in SAP R/3 you also have to define the Customizing setting *Maintain Revision Type and Number Range for Inbound Data Transfer* in the SAP R/3 Implementation Guide (IMG) under *Plant Maintenance and Service Processing -> Maintenance and Service Processing -> Maintenance and Service Planning (MSP)*.

Business Add-Ins (Add-Ins)

- o The following Add-Ins are also available in the mySAP SCM Implementation Guide (IMG):
 - Read Maintenance Plans from External System

- Read Maintenance Object Data from External System
- MSP User Interface Enhancements
- Set Average Performance Data for Maintenance Object List
- o As of SAP DIMP 4.71, the following Add-Ins are available in that SAP R/3 System for use with the MSP component:
 - *DI MSP CIF Inbound*
This Add-In enables you to include data in the transaction that the standard SAP APO System would normally not transmit to the SAP R/3 System. This data can, for example, be customer-specific fields that do not exist in a standard SAP APO System.
 - *Maintenance Plan Details*
This Add-In enables you to manipulate the maintenance plan details that are sent to the SAP APO System for MSP.
 - *Maintenance Objects and Plans for MSP*
This Add-In enables you to select the maintenance plans that are offered for planning in the SAP APO System for MSP.

For more information on these Add-Ins, see the activity documentation in the Discrete Industries system in the IMG under *Plant Maintenance and Customer Service -> System Enhancements and Data Transfer -> Business Add-Ins -> Maintenance and Service Planning (MSP)*.

See also

Optional mySAP SCM IMG activity Define iPPE Node Types for Maintenance Task List

SAP Library:

- o *SAP Advanced Planner and Optimizer (SAP APO) -> Maintenance and Service Planning*
- o *SAP Advanced Planner and Optimizer (SAP APO) -> Integration of SAP APO and SAP R/3*
- o *SAP Advanced Planner and Optimizer (SAP APO) -> SAP APO Master Data -> Integrated Product and Process Engineering (iPPE)*
- o *SAP Advanced Planner and Optimizer (SAP APO) -> Supply Chain Monitoring> Alert Monitor*
- o *SAP Discrete Industries -> mySAP Aerospace & Defense -> Maintenance, Repair, and Overhaul (MRO) -> Maintenance Planning -> Work Packaging and Sequencing -> Maintenance Event Builder*

1.1.13 SCM-APO-ATP

Global Available-to-Promise

1.1.13.1 Transfer of Pegging Information for Batches (New)

Use

As of SAP APO 4.0, you can transfer the quantity of a batch that is linked to a requirement by a pegging relationship to an SAP R/3 system and evaluate it there in batch determination.

In SAP R/3, a default quantity is available that proposes the quantities currently linked by a pegging relationship as split quantities in batch determination.

Note

This function is only available in an SAP R/3 system with release DIMP 4.71.

Caution

This function **cannot** guarantee the continuity of fixed pegging.

Effects on Customizing

In order to transfer pegging information to SAP R/3, you have to select the *Pegg. Info* indicator in Customizing for *Advanced Planning and Optimization* under *Global Available-to-Promise (Global ATP)* -> *General Settings* -> *Maintain Global Settings for Availability Check*.

You define the default quantity in SAP R/3 in the batch search strategy for the relevant document (for example, in the *SAP Menu* under *Batch Management* -> *Batch Determination* -> *Batch Search Strategy* -> *For Production Orders*).

1.1.13.2 Reduced Available Quantity of a Batch (New)

Use

As of SAP APO 4.0, you can define if the available quantity of a batch, which is displayed in batch determination in SAP R/3, should be reduced by the quantity linked with another requirement by a fixed pegging relationship.

Example

A batch has a total available quantity of 100 pieces. Of these 100 pieces, however, 15 are linked to another requirement by a pegging relationship. For this reason, the system uses this function to display only an available quantity of 85 pieces in batch determination.

Effects on Customizing

You can define which type of fixed pegging reduces the available quantity in Customizing for *Advanced Planning and Optimization* under *Global Available-to-Promise (Global ATP)* -> *Product Availability Check* -> *Maintain Check Control* for an ATP group and a business event using the *Consider Pegging* indicator.

1.1.13.3 Receiving Calendar for Locations (New)

Use

Until now, the shipping calendar of the location was used for scheduling receiving and shipping activities in *Transportation and Shipment Scheduling* and in *Capable-to-Match planning*.

As of SAP APO 4.0, you can define a *receiving calendar* in the master data at the location. The system now uses this *receiving calendar* of the destination location for calculating the delivery date and the unloading date. The system now uses the *shipping calendar* of the start location exclusively for calculating the following dates:

- o Material availability date
- o MRP date
- o Loading date
- o Goods issue date

The receiving calendar is also displayed in the result and log display. The calendar that is relevant for each activity is shown in the graphical display for the dates and working times.

Effects on Existing Data

During the upgrade to SAP APO 4.0, an *Executable Program After Upgrade* (XPRA) also enters the shipping calendars of all locations as the receiving calendar. This ensures that the same calendar is used for scheduling receiving activities as before the upgrade.

Effects on System Administration

If you use the customer exit /SAPAPO/SAPLVCRM_002, you may have to adjust the implementation.

See also

Release information GR and GI Processing Times for External Procurement in CTM

1.1.13.4 Transfer and Representation of Stock in Transfer (Changed)

Use

SAP R/3 distinguishes between the following types of stock in transfer:

- o *Stock in transfer between plants*
Until now, this stock type was represented in the standard SAP APO system by the same order category as stock in transit. In dynamic pegging and in the net requirements calculation in *Production Planning and Detailed Scheduling* (PP/DS) and in *Capable-To-Match* (CTM), the stock in transit and thus also the stock in transfer between plants were regarded as unavailable. (In Customizing for material requirements planning in SAP R/3, you can define if you want the cross-plant stock in transfer to be available for material requirements planning in SAP R/3.)
- o *Stock in transfer between storage locations in a plant*
Until now, this stock type was represented in the standard SAP APO system by the same order category as unrestricted-use stock, and was therefore always regarded as available for the net requirements calculation and dynamic pegging. (In SAP R/3, internal plant stock in transfer is also always available.)

Until now, therefore, stock in transfer belonged to stock in transit and to unrestricted-use stock. SAP APO 4.0 distinguishes between the various types of stock in transfer: The stock in transfer between plants is transferred to SAP APO as **stock in transfer between locations** as of SAP APO 4.0. Stock in transfer between storage locations in a plant is transferred as **stock in transfer between sublocations**. (This corresponds to the mapping *Plant -> Location* and *Storage Location -> Sublocation*.) This is possible because of the enhancements in SAP APO described below.

New order categories in SAP APO

Until now, stock in transfer in SAP APO was represented by the order category GC_OM_STOCK_IN_TRANSIT (stock in transit) or the order category GC_OM_STOCK_UNRESTRICTED (unrestricted-use stock). The following new order categories are now available:

- o **Stock in transfer between sublocations**
Order category: GC_OM_STOCK_TRANSF_SUBLOC
- o **Stock in transfer between locations**
Order category: GC_OM_STOCK_TRANSF_LOC

The new order categories in SAP APO allow a distinction to be made between the stock in transfer in PP/DS and CTM; that is, they represent independent stock elements for dynamic pegging and the net requirements calculation. The new order categories allow the availability of the stock in transfer types to be defined independently of each other for pegging and for the net requirements calculation.

ATP categories in SAP APO

Supply Network Planning (SNP) and *Global Available-to-Promise* (Global ATP) do not control stock availability on the basis of the order category but based on the ATP category. In order that a distinction can be made between the various SAP R/3 stock in transfer types in SAP APO using the ATP category, the new ATP category CS has been implemented in SAP APO 4.0 for stock in transit. The previous categories in SAP APO are still valid without change for stock in transfer. The following list gives you an overview:

- o **Stock in transit**
Category until now: CA, Stock/tsfr
Category as of SAP APO 4.0: CS, StkInTrnst
- o **Stock in transfer between locations**
Category until now and in SAP APO 4.0: CA, Stock/tsfr
This category used to also include the stock in transit, but as of SAP APO 4.0 it only contains the stock in transfer between locations.
- o **Stock in transfer between sublocations**
Category until now and in SAP APO 4.0: CN, TsStkSb

Enhancement of the SAP APO Core Interface

As before, stock in transit and stock in transfer are transferred together from SAP R/3 to SAP APO if an active integration model exists for stock in transit. Prerequisite for the changed representation of stock in transfer in SAP APO is SAP R/3 Plug-In 2003.1.

Effects on Existing Data

Check if the new standard settings fulfill your requirements and make changes if necessary.

- o **PP/DS and CTM**
In the standard system, it is defined in the location product master on the *Demand* tab page under *Available Stocks* that *Stock in Transfer Between Locations* is not available and that *Stock in Transfer Between Sublocations* is. Change the settings in the location product master if necessary.
- o **SNP and Global ATP**
SNP and Global ATP do not automatically take the new category for stock in transit (CS, StkInTrnst) into consideration. You have to extend the category group for stock or the scope of

check accordingly, if required.

- o **Customer exits**
Check your customer exits for processing stock.

See also

Release Information on the Availability of Stock

1.1.13.5 SCM-APO-ATP-BF Basic Functions

1.1.13.5.1 Consideration of SD Returns in the Availability Check (New)

Use

As of SAP APO 4.0, you can include SD returns and their returns deliveries from SAP R/3 as receipt elements in the scope of check for the *product availability check*, if you implement SAP APO in combination with SAP R/3 4.6B or a higher release.

In the check against product allocations, returns are **not taken into account**, because they do not reduce the withdrawal quantities.

You can also use returns and returns deliveries in the product availability check if you do not use these categories in TP/VS.

Effects on Customizing

If you want to include SD returns or SD returns deliveries in the check, you enter the category *SD returns* (BZ) or *SD returns delivery* (BY) in the scope of check.

In Customizing in SAP R/3 you also have to activate the transfer of SD returns and returns deliveries for the relevant SAP APO system.

An active CIF integration model for sales orders must exist.

See also

Release information for processing SD returns from SAP R/3 in TP/VS

1.1.13.5.2 Safety Stock in Global Available-to-Promise (Global ATP) (New)

Use

Up to now, the safety stock for a location product could not be taken into consideration within a product availability check in SAP APO.

As of SAP APO 4.0, the safety stock can be included as a requirement in the scope of check for the product availability check for make-to-stock production scenarios. Using the PP/DS standard heuristic SAP_PP_018 *Create Safety Stock in SAP liveCache* (algorithm /SAPAPO/HEU_PLAN_SAFETY_STOCK), you can create, adjust, and delete safety stock requirements in SAP liveCache. In the planning version, you must have specified that the safety stock should be taken

into consideration in planning in PP/DS.

If you do not use the safety stock in PP/DS, you can generate this for ATP using the report /SAPAPO/RRP_SR_ATP_GENERATE. You have to start this report every time the safety stock changes.

Effects on Customizing

If you want to include the safety stock in the check, enter the category **SR** in the scope of check.

If you transfer ATP Customizing from SAP R/3, the scope of check is taken into consideration with regard to the safety stock as follows:

- o SAP APO does **not** take account of the safety stock requirement in the scope of check if the *With Safety Stock* indicator is set in the scope of check in SAP R/3.
- o SAP APO does take account of the safety stock requirement in the scope of check if this indicator is **not** set in the scope of check in SAP R/3.

See also

Release information for Creation and Deletion of Safety Stock in SAP liveCache

1.1.13.5.3 Change Bucket Limits for the Product Availability Check (New)

Use

The product availability check checks based on to-the-day data (daily buckets). As of SAP APO 4.0, you can define the limits of these daily buckets across the system for receipt and issue buckets. In addition, you can define if receipts are available at the start or at the end of a bucket.

If you use locations in time zones other than UTC, you can put the bucket limits on a date that lies in a non-working time (for example, at night) for most of the locations.

Effects on Existing Data

If you change the bucket limits, you can only activate them by either deleting and creating new the active planning version 000, or initializing SAP liveCache again.

1.1.13.5.4 Stock Transfers in Global Available-to-Promise (Global ATP) (New)

Use

Until now, items from stock transport orders with location products relevant for product allocation could always be confirmed (in contrast to items from sales and distribution documents) if the product availability was specified, even if the product allocation situation was tight.

If you implement SAP APO 4.0 in connection with SAP R/3 4.6C (with support package 44 or SAP note 600883) or higher, you are now also able to check the items from stock transport orders against product allocations. This ensures that internal requirements (stock transport orders) and external requirements (for example, sales orders) are handled in the same way.

You can manually trigger the availability check for stock transport orders on creation of a stock transport order in SAP R/3 under *Environment -> Availability*. Before you reach the *Product Availability Overview* screen, the system displays a confirmation proposal. From here, you can display check details. If the items have been checked against product allocations, you can also show the product allocation situation from the confirmation proposal (like in the delivery proposal for sales requirements).

1.1.13.6 SCM-APO-ATP-SCH Time and Scheduling Functions

1.1.13.6.1 Receiving Calendar for Locations (New)

Use

Until now, the shipping calendar of the location was used for scheduling receiving and shipping activities in *Transportation and Shipment Scheduling* and in *Capable-to-Match planning*.

As of SAP APO 4.0, you can define a *receiving calendar* in the master data at the location. The system now uses this *receiving calendar* of the destination location for calculating the delivery date and the unloading date. The system now uses the *shipping calendar* of the start location exclusively for calculating the following dates:

- o Material availability date
- o MRP date
- o Loading date
- o Goods issue date

The receiving calendar is also displayed in the result and log display. The calendar that is relevant for each activity is shown in the graphical display for the dates and working times.

Effects on Existing Data

During the upgrade to SAP APO 4.0, an *Executable Program After Upgrade* (XPRA) also enters the shipping calendars of all locations as the receiving calendar. This ensures that the same calendar is used for scheduling receiving activities as before the upgrade.

Effects on System Administration

If you use the customer exit /SAPAPO/SAPLVCRM_002, you may have to adjust the implementation.

See also

Release information GR and GI Processing Times for External Procurement in CTM

1.1.13.6.2 Transportation and Shipment Scheduling Dependent on SNP Master Data

Use

As of SAP APO 4.0, you can choose if *Transportation and Shipment Scheduling* is executed depending on SNP master data or on condition data. Until now, condition data was always used in scheduling.

This is of particular relevance for *vendor-managed inventory* (VMI) sales orders, because the system uses the SNP master data for scheduling when VMI orders are created. When the order is changed and published to SAP R/3, *Transportation and Shipment Scheduling*, which calculated other dates depending on condition data until now, is called up. If you activate *Extended Scheduling for VMI Sales Orders* in SAP APO 4.0, **and** the destination location is a VMI customer, **and** the location-dependent product master data exists, *Transportation and Shipment Scheduling* now also determines the dates depending on the SNP master data.

If you do **not** activate *Extended Scheduling for VMI Sales Orders* **or** the destination location is **not** a VMI customer **or no** location-dependent product master data exists, the system does not determine the dates depending on the SNP master data, but on the condition data.

In *Global Available-to-Promise* (Global ATP) and SAP R/3 documents, you can also schedule depending on SNP master data.

Effects on Existing Data

If you change over the scheduling of SAP R/3 documents to SNP master data, documents created before this change are rescheduled according to the new logic if data that is relevant for scheduling is changed.

Effects on System Administration

If you use the customer exit /SAPAPO/SAPLVCRM_001 or /SAPAPO/SAPLVCRM_002, you may have to adjust the implementation.

Effects on Customizing

- o If you want to schedule VMI sales orders in SAP APO, you activate the extended scheduling in the implementation guide (IMG) under *Advanced Planning and Optimization -> Supply Chain Planning -> Supply Network Planning (SNP) -> Vendor-Managed Inventory -> Activate Extended Scheduling*.

If you create VMI sales orders in SAP APO and transfer them to SAP R/3, in Customizing you have to assign the shipping condition of the relevant SAP R/3 document to the means of transport with which the VMI order was created in SAP APO. To do so, in the SAP APO implementation guide choose *Global Available-to-Promise (Global ATP) -> Transportation and Shipment Scheduling -> Interfaces -> Define Assignment of Default Means of Transport to Shipping Conditions*.

- o If you also want to schedule SAP R/3 documents depending on SNP master data, the following prerequisites must be fulfilled:
 - *Extended Scheduling* is activated (see above)
 - The location of the ship-to party is defined as a VMI customer
 - Location-dependent master data exists for the material/plant combination
 - An active integration model exists for the related material/plant combination of the document for Global ATP **or** an active integration model exists for the related material/plant/ship-to party combination for VMI scheduling (the prerequisite for this is SAP R/3 4.6B or higher)

See also

Release information for Vendor-Managed Inventory

1.1.13.7 SCM-APO-ATP-RBA Rules-Based ATP Check

1.1.13.7.1 Extensions to the Rules-Based Availability Check

Use

As of SAP APO 4.0, the following extensions are available in the rules-based availability check (rules-based ATP):

- o Create Subitems for Requested Requirements
Until SAP APO 2.0, during direct rule execution (Immediate start), an individual requirement was always created for the original requirement. As of SAP APO 3.0, an individual requirement was only created if the directly executed rule only determined the original requirement as a result, and therefore did not return any other additional substitutions. As of SAP APO 4.0, you can choose between the two options.
- o Use Calculation Profiles on Requested Requirement
If you also use rules-based ATP to determine calculation profiles, you can control as of SAP APO 4.0 whether you want the requested requirement to be checked for each calculation profile. This means that the settings are easier, in particular for scenarios in which several rules are used, some with substitution procedures and some with simply a calculation profile.
- o Alternative master data basis for rules-based ATP
As of SAP APO 4.0, you can also use product interchangeability master data instead of rule master data (integrated rule maintenance and condition technique) for pure product substitution. In this case, you cannot use the following functions:
 - Location determination
 - PPM substitution
 - Characteristic substitution
 - Calculation profiles
 - Alternative check (NRECS = 1)
- o Take account of stock and receipt elements if the availability date is before the validity start date of a substitution
Until now, rules-based ATP only took account of stock and receipt elements whose availability date was in the validity period of a substitution. If a product only becomes valid in the future, a requirements element for the product cannot therefore use an earlier available stock or receipt element. As of SAP APO 4.0, you can set in the new field Validity Mode:
 - If rules-based ATP only takes account of elements in the validity period of a substitution, as before
 - If rules-based ATP also takes account of elements lying before the validity start date of a substitution

1.1.13.7.2 Characteristics in Rules-Based ATP (New)

Use

- o Rules for the substitution of characteristics
As of SAP APO 4.0, in rules-based ATP, in addition to the rules for product and location substitutions, you can also enter rules for characteristic substitutions.
This means that batch selection criteria can be substituted or restricted when sales orders are created.
See also:
 - Release information Batch Classification
 - Release information Batch Selection in Sales Order for CDP
- o Copying characteristics to subitems
As of SAP APO 4.0, the system automatically copies characteristics from the main item to the subitems when locations and products are being substituted, if you have created a relevant ATP characteristics view.

1.1.13.7.3 Changes in Integrated Rule Maintenance

Use

Until now, graphical elements were available in *Integrated Rule Maintenance* in addition to the substitution tables. These were used to clarify the substitution structures and the interactive selection of substitute products and substitute locations. Initialization of these elements was very performance-intensive.

As of SAP APO 4.0, therefore, the following elements are deactivated:

- o World map for the graphical display of location substitutions
- o Network for the graphical display of product substitutions
- o Interactive selection for products and locations

This means that the initialization phase of the transaction is much shorter and the overview has improved.

1.1.13.7.4 Preparation for Integration of Condition Technique from SAP CRM (New)

Use

For SAP APO 4.0, the new name space /SAPCN1/ was introduced, which is to allow the integration of condition technique from *SAP Customer Relationship Management* (SAP CRM) in SAP APO in a later release.

Effects on Data Transfer

Before the upgrade, report /SAPAPO/CUST_CND_TO_INDX automatically shifts the data from database tables /SAPCND/T68* and /SAPCND/TMC1* into table INDX. Report /SAPCN1/CUST_INDX_TO_CN1 is automatically started after the upgrade as an *Executable Program After Upgrade* (XPRA) in the background. This report converts parts of the database table INDX into new tables /SAPCN1/T68* and /SAPCN1/TMC1*. A subsequent processing by the system administrator is only then necessary if one or more of these database tables has been extended by several fields.

For more information, see the documentation for report /SAPCN1/CUST_INDX_TO_CN1.

1.1.13.8 SCM-APO-ATP-BOP Backorder Processing

1.1.13.8.1 Check at Schedule Line Level in Backorder Processing (New)

Use

As of SAP APO 4.0, you can choose individually for each ATP category that is relevant to backorder processing whether the check takes place at item level (as before) or if it now takes place at schedule line level.

Documents with many request schedule lines for each item, such as scheduling agreements, usually generate confirmations over a longer time period (a year, for example). The dates for the request schedule lines are distributed over this longer time period.

- o If backorder processing checks a document at item level, it checks all these schedule lines simultaneously. The system also confirms schedule lines that lie far in the future. This might mean that other earlier requirements can no longer be confirmed.
- o If backorder processing checks at schedule line level, the system sorts and checks the schedule lines for these requirements individually. By using suitable sort criteria, you can prevent long-term confirmations.

For more information, see the *SAP APO Implementation Guide (IMG)* under *Global Available-to-Promise (Global ATP)-> Tools -> Define Check Level*.

1.1.13.8.2 Results List for Backorder Processing (Enhanced)

Use

Until now, the system displayed the following data in the results list for backorder processing:

- o The current requirements from SAP liveCache
- o The current confirmations from SAP liveCache
- o The confirmations determined by backorder processing

As of SAP APO 4.0, you can define on the initial screen for backorder processing which stock/requirements situation the system displays. You do this in the new Display Mode field. You can

choose between the previous display mode (*Current Requirements/Confirmation Situation*) and a new display mode (LS>Original Requirements/Confirmation Situation). In this case, the system displays the following data:

- o The requirements before backorder processing
- o The confirmations before backorder processing
- o The confirmations determined by backorder processing

For performance reasons, you should always use this option for large worklists (over 3000 items).

Depending on your setting in the *Display Mode* field, the system always uses the display mode *Current Requirements/Confirmation Situation*:

- o If you postprocess the backorder processing results interactively
- o If you display the results of the backorder processing you executed before the upgrade to SAP APO 4.0

1.1.13.8.3 Stock Transport Orders in Backorder Processing (New)

Use

If you use SAP APO 4.0 in connection with SAP R/3 4.6C or higher, you can include items from stock transport orders in the backorder processing worklist.

Until now, backorder processing was only able to process items from sales and distribution documents.

In the sort for backorder processing, you can thus prioritize internal requirements (for example, stock transport orders) and external requirements (for example, sales orders) flexibly. If both internal and external requirements are used, the system only evaluates both common sort criteria, such as requested delivery date, material availability date, and delivery priority.

The items from the stock transport orders can be checked both for product availability and against product allocations.

Effects on Customizing

If you want to take account of stock transport orders in backorder processing, you have to include the relevant ATP categories BI, EG, and EJ in the filter type. In the *mySAP SCM Implementation Guide*, choose *Advanced Planning and Optimization -> Global Available-to-Promise (Global ATP) -> Tools -> Maintain Filter Type*.

1.1.14 SCM-APO-AMO Alert Monitor

1.1.14.1 Changes and New Functions in the Alert Monitor (Enhanced)

Use

The following new Alert Monitor functions are available in SAP APO 4.0:

- o **Changes in profile maintenance**
You can now process all profiles for the Alert Monitor on the same screen. The previous *settings* have been replaced by the *overall profile* for the Alert Monitor. This enables you to create or change application-specific alert profiles and assign them to an overall profile (e.g. for the directly invoked Alert Monitor) in a single step.
- o **Substitute rule (relating to overall profile)**
Substitutes for the directly invoked Alert Monitor can now be named on a time-dependent basis for all a user's favorites. When invoking the Alert Monitor, this substitute can then choose between his own favorites and those for which he has been named as substitute.
- o **Administrator role for Alert Monitor**
The authorization object C_APO_AMO with activity 22 provides authorization to administer favorites and substitutes for other users too. This is included in the *AMON superuser* role.
- o **New alert types**
In SAP APO 4.0, additional alert profiles are available for alerts from *Maintenance and Service Planning* (MSP) and *Vendor-Managed Inventory* (VMI). Already existing alert profiles have been extended by the addition of alert types. For example, new alert types for procurement planning are available in the PP/DS alert profile.
- o **Link to the Alert Notification Engine of SCM Basis**
As of SAP APO 4.0, the *Alert Notification Engine* of SCM Basis is available for the purpose of automatic notification of the occurrence of alerts.
- o **Descriptive texts for alert types**
You can define a descriptive text for each alert type. This text can then be invoked in the Alert Monitor window in the context menu of the alert.
- o **Assignment of double-click functions**
You can specify for each alert object type which function is to be performed if a user double-clicks on an alert in the Alert Monitor window for this alert object type.
- o **New Business Add-In (BAId)**
With the BAId /SAPAPO/AM_ALERTLIST, you can extend the output list of alerts. You will find the BAId in the SAP APO Implementation Guide under *Alert Monitor -> Business Add-Ins (BadIs) for the Alert Monitor*.

1.1.14.2 Alert Notification Engine (New)

Use

As of SAP SCM 4.0, you can use the SCM Basis *Alert Notification Engine* to send automatically information about alerts that occur in the *Alert Monitor* of SAP APO or the *Alert Engine* of *SCM Inventory Collaboration Hub*. For this, the *Alert Notification Engine* uses *Alert Management* functions of *SAP Web Application Server 6.20*.

You specify the form of notification under *Message Profiles*, and enter the recipient, the message channel used, and the alerts for which a notification should be issued under *Alert Notification Profiles*.

1.1.15 SCM-APO-OPT Optimization

1.1.15.1 Termination of Optimization Runs (New)

Use

Previously, you could only cancel optimization runs immediately. When runs are canceled immediately, the optimizer does not save data and terminates log creation immediately. You also need system administrator authorization to be able to perform this type of cancellation.

As of SAP APO 4.0, you can also terminate optimization runs "carefully," without interrupting current processes. This function is suited mainly to runs that have been started interactively, but it can also be used for background runs. For example, you can terminate an optimization run if the system has already found a solution and would have only made improvements in the remaining runtime.

If you terminate a run, the system still completes this run in the usual way, which means, it saves the data that has been determined up to this point and creates a complete log. Any solution found by this time is also stored and logged.

See also

For more information, see the following SAP Library documentation: *Optimization Run Termination*.

1.1.15.2 SCM-APO-OPT-PPS Production Planning and Detailed Scheduling

1.1.15.2.1 Extended Settings for PP/DS Optimization

Use

As of SAP APO 4.0, the optimization profile has the following new settings:

- o **Validity Periods of Orders**
You can choose whether you want optimization to regard the validity period of an order as a hard or soft constraint.
- o **Lower Levels**
You can choose whether optimization has to consider time relationships or pegging relationships for upstream orders when processing lower levels.
- o **Resource Processing**
You can specify the following:
 - The lowest mode priority to be taken into account by optimization during automatic model selection and how optimization reschedules orders that are already scheduled on a lower priority mode.
 - Whether or not optimization is to take into account the time buffers of resources for time relationships and pegging relationships
 - Whether optimization is to schedule relationships

- Whether optimization is to use the planning-related minimum interval
- o **Finiteness Level**
You can set that you want optimization to plan as finite only those resources with a particular finiteness level. For more information, see the following release information: Finiteness Level of Resources

1.1.15.2.2 Optimization with Decomposition (Enhanced)

Use

During decomposition, optimization splits the optimization range into several overlapping partial windows and first solves these subproblems. The system then optimizes the entire problem based on the partial solutions.

Previously, you made the decomposition settings (such as window size) globally. As of SAP APO 4.0, you can change the threshold value for the number of orders from which optimization is use decomposition and also the window size in the optimization profile. You can influence optimization performance by doing this and improve the quality of the solution.

1.1.15.2.3 Finiteness Level of Resources (New)

Use

If you want to schedule a resource either finitely or infinitely in different applications, you can control this as of SAP APO 4.0 using the finiteness level at the resource and in the settings for each application.

You assign a fixed finiteness level to the resource in the master data. In the settings for the application, you define the maximum finiteness level up to which resources can be scheduled finitely.

Effects on Existing Data

Existing resources, for which the *finite scheduling* indicator is set in the master data, are assigned the finiteness level **0** as standard; that is, the resource is scheduled finitely in all applications.

In the SAP standard strategy profile SAP001 for the DS planning board and in the SAP standard optimization profiles, the maximum value **9999** is defined as the finiteness level, which means that all resources for which the *finite scheduling* indicator is set are scheduled finitely.

In all other existing strategy profiles and optimization profiles, the value is initial at first.

If you assign a finiteness level (**> 0**) to an existing resource that is flagged as finite, you also have to adjust the finiteness level in the settings (heuristic settings, strategy profiles, or optimization profiles) of the applications that scheduled this resource finitely until now, if you want these applications to continue scheduling the resource finitely.

Effects on Customizing

You define finiteness levels in Customizing under *Advanced Planning and Optimization -> Master Data -> Resource -> Define Finiteness Levels for Resources*.

1.1.15.3 SCM-APO-OPT-SNP Supply Network Planning

1.1.15.3.1 Deployment Optimizer Profile and Interactive Execution of the Optimize (New)

Use

Deployment Optimizer Profile

Previously, you could make deployment optimizer settings in the SNP optimizer profile and on the initial screen for running the deployment optimizer.

As of SAP APO 4.0, there is now a dedicated deployment optimizer profile. This profile is very similar to the SNP optimizer profile, but only includes settings that are relevant for the deployment optimizer. On the additional *Deployment Parameters* tab page, you can specify the rules and horizons for deployment that you would previously have defined on the initial screen for deployment optimization.

An indicator called *Earliest Delivery* has been added to the already existing deployment rules. You use this indicator in conjunction with push distribution and fair share distribution by demands to specify that you want the optimizer to completely fulfill the demands at the earliest possible demand time if possible instead of splitting demand fulfillment over several demand times.

Running the Deployment Optimizer in Interactive Supply Network Planning

Previously, you could run the deployment optimizer in the background only. As of SAP APO 4.0, there is now a pushbutton available on the interactive Supply Network Planning desktop that you can choose to run the deployment optimizer interactively. After choosing this button, a window appears in which you can choose your predefined profiles, keep an eye on the optimization process, and display information about the solution that has been found. This window is almost identical to that of the SNP optimizer in interactive Supply Network Planning.

Effects on Customizing

You define the new deployment optimizer profile in Customizing or in the current settings for *Supply Network Planning (SNP)* in Define SNP Deployment Optimizer Profiles.

1.1.15.3.2 Incremental Optimization (Enhanced)

Use

In optimization-based planning in Supply Network Planning (SNP), you have the option of planning only a part of the model or planning on the basis of an already existing plan. This is called incremental optimization. The incremental optimization functionality has been enhanced in SAP APO 4.0.

Selecting Part of a Model

If you are only planning part of a model (by only choosing specific location products for instance), input products of the selected products defined in the production process model (PPM) or products that are available for procurement at a source location through a transportation lane might not be selected and are therefore not planned. Before now, neither input products nor source location products and their stocks were taken into account during planning.

As of SAP APO 4.0, you can specify that the SNP optimizer is to take into account the stocks of non-selected input products or source location products.

Basing on an Existing Plan

If you are planning on the basis of an already existing plan, the plan might be infeasible since the optimizer is not able to plan receipts for shortages that are the result of fixed orders from previous planning runs. To avoid this, it was already possible to specify that the dependent demand and distribution demand of fixed orders were to be treated in the same way as independent requirements; that is, that the optimizer would permit shortages but would calculate costs for not delivering. You can define these non-delivery costs in the product master data for the individual demand types: Customer demand, demand forecast, and corrected demand forecast.

As of SAP APO 4.0, you can also set that the optimizer is to regard the dependent demand and distribution demand of fixed orders and the stocks of unselected input products and source location products as a *pseudo-hard constraint*. This means that shortages are possible but penalty costs are to be calculated that are defined internally in the optimizer and are infinite. You use them to ensure that the optimizer will only permit shortages if it cannot find any other feasible solution.

Effects on Customizing

You can define the new options for incremental optimization on the *Integration* tab page within IMG activity Define SNP Optimizer Profiles.

1.1.15.3.3 Quota Arrangement Modification in SNP Optimization (Enhanced)

Use

You could previously set for the SNP optimization run that you wanted the system to create quota arrangements automatically for locations or change already existing quota arrangements for locations based on the results of the optimization run. These quota arrangements could then be used as a basis for subsequent heuristic or deployment planning runs; for example, if you set that shorter term heuristic plans were to follow a longer term optimization planning.

As of SAP APO 4.0, you now have the following additional options for modifying quota arrangements. You can use these to significantly improve performance:

- o You can specify that you want the SNP optimizer to create and modify inbound quota arrangements only, outbound quota arrangements only, or both. Inbound quota arrangements are only relevant for the SNP heuristic and outbound quota arrangements are only relevant for deployment.
- o You can specify in which horizon you want the system to modify and create quota arrangements.

- o You can specify the smallest period size for which you want the system to modify and create quota arrangements. For instance, you can specify that planning is to take place in weekly periods, whereas quota arrangements are to be modified in monthly periods only.

1.1.15.3.4 Status Indicator for Available Resource Capacity (New)

Use

Before now in the optimization-based planning method of *Supply Network Planning (SNP)*, you could define only two available capacity variants of a resource: A normal available capacity and a maximum available capacity. The SNP optimizer calculated costs (that you could define for a capacity variant) for using the maximum capacity.

As of SAP APO 4.0, you can define multiple capacity variants for a resource and use a status indicator to label them as minimum, normal, and maximum available capacity. You can define costs for falling below the minimum or for using the normal or maximum capacity in the quantity and rate definition or the capacity profile of the resource. The SNP optimizer takes these costs into account during planning. However, the minimum capacity and costs that you defined for a capacity variant with a *Normal Capacity* status are only taken into account for production resources by the SNP optimizer.

You define the status indicator globally for all resources to which the capacity variant is assigned. To do this, go to the initial screen of the resource and choose *Current Settings -> Capacity Variants*. The default value is maximum capacity (empty field). This ensures compatibility with earlier releases. If you have given the same status for multiple capacity variants, the system uses the variant with the lowest number.

New key figure for minimum available capacity in interactive planning

In addition to the existing key figures for normal and maximum available capacity, the capacity view in interactive Supply Network Planning now also contains a minimum available capacity key figure.

See also

SNP documentation: *Master Data Setup for the Optimizer*.

1.1.15.3.5 Defining Time-Based Constraints in Interactive Planning (New)

Use

A number of constraints (such as the capacity constraints defined for resources) are taken into account during the SNP optimization run. Before now, you could define these constraints at resource level but not on a time basis.

However, in certain circumstances constraints need to be defined on a time basis; for example, if the product quantity provided by a supplier varies from period to period. As of SAP APO 4.0, you can define time-based constraints like these in interactive planning. You can set the following bounds (limits):

- o Upper bound for external procurement (at product-location level)

- o Upper bound for stock on hand (at product-location level)
- o Upper bound for production (at product-PPM level)
- o Upper bound for transportation (at product-transportation lane level).

New planning area, planning book, and data view

The following new standard SNP planning area, planning book, and data view are now available for defining time-based constraints: Planning book 9ATSOPT; data view OPT_TSBD; planning area 9ASNP04. In addition to the standard interactive Supply Network Planning functionality, the 9ATSOPT planning book also has a new table in the lower screen area with four new key figures called: *Procurement Upper Bound*, *Storage Upper Bound*, *Production Upper Bound*, and *Transportation Upper Bound*. You can define upper bounds for the individual key figures in specific periods. The system then takes these upper bounds into account when you run the SNP optimizer. The table also has a key figure that corresponds to each upper bound with which you can show that the actual value is zero (otherwise, the value 0 indicates that no upper bound has been specified).

Effects on Customizing

The following two indicators are available as extended settings in the SNP optimizer profile:

- o *Ignore Time-Based Constraints*. You set this if you do not want time-based constraints to be considered during the optimization run. This would be advisable if you wanted to use an SNP optimization bound profile for the optimization run.
- o *Consider Upper Bounds for Stock as a Soft Constraint*. You set this if you want the optimizer to regard the upper bound for stock as a soft constraint rather than a pseudo-hard constraint. The optimizer can calculate penalty costs to violate soft constraints. You define these penalty costs in a time-based key figure in the aforementioned planning book.

See also the IMG documentation regarding SNP optimizer profiles.

See also

For more information, see *Defining Time-Based Constraints in Interactive Planning* in the SNP documentation.

1.1.16 SCM-APO-CPR Collaborative Procurement

1.1.16.1 Overview of Innovations in Collaborative Procurement

As of *SAP APO 4.0* the following functions are available:

General:

- o Authorization Object for the External Procurement Relationship (New)

Scheduling Agreement:

- o Plan Subcontracting Scheduling Agreements in SAP APO (New)

- o Plan Scheduling Agreements with Account Assignment in SAP APO (New)
- o Simplified Process for SNP Scheduling Agreement Processing (New)

Delivery Schedule:

- o Acknowledge Internet Releases (New)
- o Display Unloading Point and Output in Release (New)
- o Display Status of the Inbound Delivery ('In Plant') (New)

Confirmation:

- o BAdI: Change the Confirmation IDoc Data (New)
- o To-the-day or To-the-second Tolerance Check for Confirmations (New)

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.16.2 SCM-APO-CPR-SCH Procurement Scheduling Agreement

1.1.16.2.1 Scheduling Agreements with Account Assignment in SAP APO (New)

Use

As of *SAP APO 4.0* you can transfer procurement scheduling agreements with account assignment to SAP APO, so that they are taken into account in source determination and can be planned in their own planning segment (pegging area).

If a scheduling agreement with account assignment exists then, in the planning segment *Make-to-Order*, the system proposes an existing info record as the source of supply; scheduling agreements without account assignment are not proposed as sources of supply.

In the planning segment *Make-to-Stock* scheduling agreements with account assignment are not proposed as possible sources or supply; info records and scheduling agreements without account assignment are.

The account assignment data is sent from SAP R/3 via the APO Core Interface (CIF) to SAP APO at the same time as procurement scheduling agreements. In the SAP APO system the account assignment data is displayed in master data maintenance for the procurement scheduling agreement in the *General Data* chart.

If you make a change to the account assignment in SAP R/3 then the schedule lines are adjusted accordingly in SAP APO.

Scheduling agreements with account assignment are not taken into account in Supply Network Planning (SNP), in other words they are not a valid source of supply.

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) ->*

Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules.

1.1.16.2.2 BAdI: Change the Confirmation IDoc Data (New)

Use

As of *SAP APO 4.0* you can use the Business Add-In (BAdI) *Edit the IDoc Data* (/SAPAPO/MOD_EDI_DATA) or its methods EDI_DATA_MM_CONF_CHANGE to change or add further values to IDoc data for confirmations before IDoc inbound processing.

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules.*

1.1.16.2.3 Display the Status of the Inbound Delivery (*In Plant*) (New)

Use

As of *SAP APO 4.0* together with *SAP Automotive 2.0* with *PI 2002.2* you can send the status of the inbound delivery, which is assigned during parking with Automotive Goods Receipt, from the SAP R/3 system to the SAP APO system.

As of *SAP Automotive 2.0* the status *In Plant* is assigned during two-step automotive goods receipt in goods receipt parking.

In the SAP R/3 system the status *In Plant* is displayed in the confirmation overview for the scheduling agreement. This status is sent from the SAP R/3 system via the APO Core Interface (APO CIF) to the SAP APO system at the same time as the inbound delivery.

The system can take outbound deliveries with this status into account as category *IW* when calculating the days' supply or receipt days' supply.

Make the necessary settings in Customizing for *Advanced Planning and Optimization* under *Supply Chain Planning -> Production Planning and Detailed Scheduling (PP/DS) -> Product Planning Table -> Define Days' Supply Types*.

If an inbound delivery has been registered and has the status *In Plant* in the SAP R/3 system then this is displayed in the product view/product planning table.

The category changes from *PO Memo* to *In Plant*.

The status *In Plant* is displayed in the list of last deliveries, which you access from the external procurement relationship or the product view/product planning table.

If you have set in the release creation profile that the last deliveries are sent in the release then the status of the inbound delivery is also sent.

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) ->*

Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules.

1.1.16.2.4 To-the-Day or To-the-Second Tolerance Check for Confirmations (New)

Use

Until *SAP APO 3.1* a to-the-day tolerance check for individual quantity/date pairs was carried out on receipt of confirmations (individual check).

As of *SAP APO 4.0* you can choose either a to-the-day or a to-the-second check for the individual check of quantity/date pairs.

In this way you can define a more exact to-the-second check for the near future and a more approximate to-the-day check for the longer term.

Effects on Customizing

Select the indicator *Check Time Stamp* in Customizing for *Supply Chain Planning* under *Collaborative Procurement -> Procurement Scheduling Agreement -> Confirmation -> Define Tolerance Profile*, to set a to-the-second or to-the-day tolerance check of individual quantity/date pairs.

1.1.16.2.5 Display Unloading Point (Staging Area) and Output in Release (New)

Use

As of *SAP APO 4.0* together with *SAP Automotive 2.0* with *PI 2002.2* you can copy the staging area from the linked SAP R/3 system to the SAP APO system.

In the SAP APO system, the staging area is displayed in the external procurement relationship on the *@71@ Scheduling Agreement* tab page and is sent to the vendor in the scheduling agreement release.

In the SAP R/3 system the staging area (the unloading point) is saved in the additional data of the scheduling agreement.

Effects on Data Transfer

If you want to copy the unloading point from the SAP R/3 system to the SAP APO system then you must use the enhancement CIFSRC01 (EXIT_SAPLCSRS_002 *Customer Exit for Selecting Customer-specific Scheduling Agreement Data*).

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules.*

1.1.16.2.6 Acknowledge Internet Releases (Changed)

Use

In *SAP APO 3.1*, vendors were able to look at and acknowledge scheduling agreement releases (Internet releases) in the Supplier Workplace.

As of *SAP APO 4.0* you can take on the role of the vendor and also acknowledge Internet releases yourself in the SAP APO system.

You can acknowledge Internet releases in the function Process Scheduling Agreement Releases.

To do this, select the release you want to acknowledge and choose *Acknowledge Internet Release*.

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.16.2.7 Subcontracting Scheduling Agreements in SAP APO (New)

Use

As of *SAP APO 4.0* you can also plan subcontracting scheduling agreements, to complete Collaborative Management of Delivery Schedules.

Therefore, it is also possible to create a subcontracting scheduling agreement as an external procurment relationship using the APO Core Interface (CIF) and to choose it as a source of supply.

You can also plan ordered materials and subcontracting components in the vendor location. Doing this keeps you informed about the stock of subcontracting components at the vendor.

As in the existing processes, goods movement and invoice verification take place in the SAP R/3 system.

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.16.2.8 Simplified Process for SNP Scheduling Agreement Processing (New)

Use

Before now, you could choose from three different processes in the external procurement relationship for SNP scheduling agreement processing. These processes are: *Process with Expected Confirmations*, *Process Without Confirmations*, and *Process with Confirmations in Exceptional Cases*.

As of SAP APO 4.0, there is a new fourth process available that is called *Process Without Releases*.

This process is a simplified version of the process with expected confirmations since it does not create scheduling agreement releases. It is most suited to scenarios whereby the supplier makes the confirmations for collaborative supply planning over the Internet. The supplier sees only the schedule lines on the Internet and then confirms these directly. Alternatively, the manufacturer can enter confirmations in interactive Supply Network Planning.

Effects on Customizing

You have to make the following special settings for this simplified process in Customizing:

- o If you are using Global Available-to-Promise (Global ATP), you have to set in the Customizing for this application component that confirmations are relevant for ATP (choose *Product Availability Check -> Maintain Check Control*).
- o You should choose a confirmation profile with tolerance check to receive alerts informing you of large deviations between the required and confirmed quantities (in Customizing for Supply Chain Planning, choose *Collaborative Procurement -> Procurement Scheduling Agreement -> Confirmation Receipt -> Maintain Confirmation Profiles for Confirmation Receipt*).

1.1.16.3 SCM-APO-CPR-SCT Subcontracting

1.1.16.3.1 Subcontracting Scheduling Agreements in SAP APO (New)

Use

As of *SAP APO 4.0* you can also plan subcontracting scheduling agreements, to complete Collaborative Management of Delivery Schedules.

Therefore, it is also possible to create a subcontracting scheduling agreement as an external procurment relationship using the APO Core Interface (CIF) and to choose it as a source of supply.

You can also plan ordered materials and subcontracting components in the vendor location. Doing this keeps you informed about the stock of subcontracting components at the vendor.

As in the existing processes, goods movement and invoice verification take place in the SAP R/3 system.

See also

For more information, see the SAP Library: *SAP Advanced Planner and Optimizer (SAP APO) -> Production Planning and Detailed Scheduling PP/DS -> External Procurement -> Collaborative Management of Delivery Schedules*.

1.1.17 SCM-APO-INT Interfaces

1.1.17.1 Deletion of Obsolete Transactions for SAP R/3 Plug-In 2003.1 (Deleted)

Use

As of SAP R/3 Plug-In 2003.1, the transactions mentioned below are no longer available.

- o CFC5
You could previously use this transaction to configure the change transfer for master data. You should now use transaction CFC9 or CIF Customizing under *Basic Settings for the Data Transfer -> Change Transfer -> Change Transfer for Master Data -> Configure Change Transfer for Master Data*.
- o CFM6
You could previously use transaction CFM6 to change integration models. We recommend that you do not change integration models using this transaction. Instead, you should use transaction CFM1 to create a new version of the integration model. To do this, change an existing variant of an integration model and generate a new version. Then, save the variant. In the CIF menu you can access the *Create Integration Model* screen under *Logistics -> Central Functions -> Supply Chain Planning Interface -> Core Interface Advanced Planner and Optimizer -> Integration Model -> Generate -> Create*. Note also that the *Change Integration Model* function will no longer exist in the SAP Menu as of SAP Plug-In 2003.1.
- o CFQ1, CFS0, CFS1, and CFP2
You could previously use these transactions to access the qRFC Monitor for outbound queues, display all outbound queues, and monitor the transfer of transaction data. Now, you should instead use transaction SMQ1 or the SCM Queue Manager in SAP APO (transaction /SAPAPO/CQ). In the SAP APO menu, you can access the SCM Queue Manager under *Tools -> APO Administration -> Integration -> Monitor*.
- o NDV1
This transaction is obsolete. It was removed without substitution.

1.1.17.2 CIF Compare/Reconcile: Save Results and Load Later (Enhanced)

Use

As of SAP APO 4.0, you find the CIF Compare/Reconcile function in the SAP menu under *APO Administration -> Integration -> CIF Compare/Reconcile Function -> Execute Compare/Reconcile*.

CIF Compare/Reconcile is used to compare data objects in SAP APO and SAP R/3 and to ensure that data is consistent in both systems. In addition to the comparison of data objects, you can execute the data reconcile if inconsistencies are found. With larger amounts of integration data and the corresponding increased runtime of the comparison, you can schedule the comparison as a background job. Previously, the results of the comparison were only available in the job log (a spool list) from which it was not possible to continue processing the inconsistencies that were displayed. To be able to execute the reconcile, you previously had to execute a new comparison in dialog mode.

As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, you can save the results of the comparison. This function is available in both dialog and background modes. You can then load the saved results at a later point in time and continue processing the data inconsistencies that are displayed without having to execute the comparison again. In this way, it is possible to run the comparison at night for a large amount of data and then load and continue processing the results on the following morning.

If you execute the iteration, you receive more precise results both when saving and loading the data.

Since the saved results should be processed as soon as possible and to avoid the unnecessary use of memory, we recommend that you delete the saved results on a regular basis. To do this, you can use program *Reorganize Comparison Results* (transaction /SAPAPO/CCR), which you can also plan as a periodic job. You find this program in the SAP menu under *APO Administration -> Integration -> CIF Compare/Reconcile Function*.

See also

You can find release information about earlier SAP R/3 Plug-In releases in the SAP Service Marketplace under *R3-Plug-In -> Media Center*.

1.1.17.3 Error Handling in the APO Core Interface (New)

Use

The data transfer between SAP R/3 and SAP APO usually takes place in serial using queued remote function calls (qRFC). Faulty queue entries and the associated serialization effect can lead to extended queue blocks and, therefore, inconsistencies between SAP APO and SAP R/3. As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, you can use CIF error handling for the change transfer of transaction data.

CIF error handling ensures that all queue entries are processed during the data transfer. Faulty objects no longer lead to queue blocks; instead, they are logged in postprocessing records. You can then call these postprocessing records in CIF postprocessing, rectify the errors, and retransfer the objects to the relevant target system. The original sequence of transfers is retained for this.

CIF error handling offers you the following options:

- o The logging of faulty transfers in postprocessing records
- o A program for postprocessing the faulty transfers
- o A jump to the application log
- o The postprocessing of faulty transfers by new transfers to the target system.
- o A message issued to the person who triggered the faulty transfer (for example, through an order change) using SAP Office Mail (Express)

CIF error handling is not active as standard. You activate CIF error handling for both SAP R/3 and SAP APO in SAP APO Customizing under *Basis Settings -> Integration -> Business System Group -> Assign Logical System and Queue Type*. For the relevant logical system, choose the setting **Postprocessing for Errors, No Splitting of LUWs** under *Error Handling*.

You call CIF postprocessing in the SAP menu under *APO Administration -> Integration -> CIF Error Handling -> CIF Postprocessing* or using transaction /SAPAPO/PPP.

See also

See the restrictions for CIF error handling that are outlined in SAP Note 602484.

You can find release information about earlier SAP R/3 Plug-In releases in the SAP Service Marketplace under *R3-Plug-In -> Media Center*.

1.1.17.4 Retention of Activity Dates Planned in SAP APO (New)

Use

If you change a planned or manufacturing order in SAP R/3 that has already been planned in SAP APO (for example, by releasing or adding operations) and transfer this change, SAP APO would previously execute automatic rescheduling for the activities of the order. This could change the entire planning situation in SAP APO.

As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, SAP APO retains the activity dates of an order that was already planned in SAP APO as standard, even if this order was retransferred from SAP R/3 using an initial transfer, change transfer, the CIF compare/reconcile function, or as part of cross-system update logic. This prevents undesired rescheduling in SAP APO and the original planning situation is retained.

The new system behavior applies to the setup, process, and teardown activities, as well as for receipts or requirements that are assigned to these activities.

Dates for sequence-dependent setup activities and dates for activities for goods receipt processing time are **not** retained, including associated header materials.

The activity dates are also **not** retained in the following cases:

- o Change to the order quantity in SAP R/3
- o Change to the characteristic in SAP R/3
- o Re-explosion of master data in SAP APO and SAP R/3
- o Change to production version in SAP R/3 and change to the production process model in SAP APO
- o Confirmation of operations/manufacturing orders in SAP R/3

If you do **not** want to retain the activity dates planned in SAP APO, you can deactivate this features by using method ORDER_INB_PROCESSING_DECIDE of business add-in (BAI) /SAPAPO/CL_EX_CIF_IP. You can also use method ORDER_INB_REDET_DATES_DECIDE of the same BAI to deactivate the retention of activity dates for individual orders.

1.1.17.5 Assignment of a Component to an Operation Segment (New)

Use

SAP R/3 uses the first operation segment of the assigned order to determine the requirements date of a component. In the SAP R/3 production order, this is the *Start Setup* date. For receipt elements (co/by-products), the system adopts the end date of the assigned operation. However, in SAP APO you can assign a component to any desired activity. If you assign the *Setup* activity and use setup matrices or sequence-dependent setup activities, this leads to significant drops in performance during the optimization of setup time. Also, the components are usually only needed at the *Start Processing* date in production at the earliest.

As of SAP R/3 Plug-In 2003.1 and SAP APO 4.0, you can use IMG activity *Assign Components to an*

Operation Segment for the integration of production orders to control specifically from which operation segment (*Setup*, *Process*, or *Teardown*) the system determines the requirement dates of the associated components of an order. This enables you to specify to which activity of an operation SAP APO assigns the components.

You can avoid a strictly defined assignment to the *Setup* operation segment and implement consistent component assignment in SAP R/3 and SAP APO. This also leads to a significant performance increase during the optimization of setup times in SAP APO.

For the integration of the production process model (PPM), this setting specifies to which activity of the operation the components are assigned in PPM generation.

These settings only refer to requirement elements (reservations) of a production order or the associated PPM, not to the receipt elements or process orders.

Effects on Customizing

You find the *Assign Components to an Operation Segment* IMG activity in the APO Core Interface implementation guide (CIF IMG) under *Application-Specific Settings and Enhancements -> Settings and Enhancements for Manufacturing Orders -> General Settings for Manufacturing Orders*.

1.1.17.6 Logging of Errors in the Initial Data Transfer (New)

Use

Previously, if an error occurred during the selection of orders to be transferred in SAP R/3, the system terminated the initial data transfer with the message *Error in order selection*. Since no other log entries were written for this error, determining the cause of the termination of the initial data transfer was very time-intensive.

As of SAP R/3 Plug-In 2003.1, the system generates entries in the CIF application log in SAP R/3 during the transfer of planned and manufacturing orders if errors occur. The orders affected by errors are not posted in the target system but the initial transfer continues without interruption and subsequent orders continue to be transferred. Note that the system only generates entries in the application log for the current user if you have set *X (Normal)* or *D (Detailed)* for this user in the *Logging* column in the APO Core Interface implementation guide (CIF IMG) under *Basic Settings for the Data Transfer -> Set User Parameters*.

If you want an error in order selection to trigger a termination of the initial transfer (as was previously the case), you can use customer exit CIFORD002. SAP Note 593413 describes the necessary steps.

Effects on System Administration

The system issues a message that an error has occurred and that an entry was created in the application log. After each initial transfer, you therefore need to check whether entries exist in the application log that relate to planned and manufacturing orders. You call the application log in the CIF menu under *Monitoring* or by using transaction CFG1.

After analyzing the errors, change the order concerned in SAP R/3. The change is automatically transferred to SAP APO as part of the change transfer. If the order does not yet exist in SAP APO, it is created automatically. Otherwise, it is changed as necessary.

The automatic change transfer to SAP APO requires an active integration model. The integration model is not active if, for example, you have used customer exit CIFORD002 to set that the initial transfer should terminate.

1.1.17.7 Proportional Adjustment of Quantities (New)

Use

Previously, when you changed the total quantity of a planned or manufacturing order in SAP R/3 and the order was transferred to SAP APO in a change transfer, SAP APO re-exploded the production process model (PPM).

As of SAP APO 4.0, SAP APO no longer re-explodes the PPM when changes are made to the SAP R/3 order unless you change the production version at the same time. Instead, SAP APO retains the data for the order that already exists and adopts the quantity changes that were sent from SAP R/3. The system adjusts the requirement and receipt quantities proportional to the change in the total quantity. Confirmed quantities are not adjusted proportionally.

If a quantity-dependent formula is entered for the duration in the *Process* operation segment of an SAP R/3 order, SAP APO also adjusts the duration of the *Produce* activity in proportion.

After proportional quantity adjustment, SAP always reschedules the order.

If you are using characteristics-dependent planning, the quantities are not adjusted proportionally in SAP APO. Instead, the PPM is re-exploded.

If you do **not** want to use proportional quantity adjustment, you can deactivate it by using method ORDER_INB_PROCESSING_DECIDE of business add-in (BAI) /SAPAPO/CL_EX_CIF_IP.

1.1.17.8 Change to Queue Contents Using CIF Queue Display (New)

Use

Previously, you could use the CIF queue display to display and delete queue contents. As of SAP R/3 2003.1 and SAP APO 4.0, you can also change the contents of CIF queues in SAP APO inbound or outbound. This makes it much easier to rectify transfer errors. The CIF queue display for queues in SAP APO inbound and outbound now has a new layout.

You can now also reach the CIF queue display from the CIF queue manager (transaction /SAPAPO/CQ), as well as from the qRFC monitor as before.

1.1.17.9 Integration of Planned Orders (Enhanced)

Use

Planned orders generated in SAP APO can either be assigned to Supply Network Planning (SNP) or Production Planning and Detailed Scheduling (PP/DS). Previously, planned orders that were created in

SAP R/3 and transferred to SAP APO were always mapped as PP/DS planned orders in SAP APO.

Initial data transfer with creation of SNP planned orders in SAP APO

As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, a planned order generated in SAP R/3 and transferred to SAP APO can be mapped as an SNP planned order also. This applies to planned orders that meet the following criteria:

- o The planned order does not yet exist in SAP APO.
- o MRP procedure X (without material requirements planning, with BOM explosion) is assigned to the header material of the planned order in SAP R/3.
- o The availability date of the header material is outside of the SNP production horizon.
- o It is neither a planned order of type "forecast" nor a planned order for project stock or sales order stock.
- o The SNP production horizon or extended SNP production horizon has been maintained in the SNP 2 tab page of the product master (transaction /SAPAPO/MAT1).

If the planned orders created in R/3 meet the aforementioned criteria and you want the orders to be mapped as SNP planned orders in SAP APO, you have to set indicator *Create planned orders as SNP planned orders* in SAP R/3 when you activate the relevant integration model for planned orders (transaction CFM2). Activating the integration model triggers the initial data transfer of planned orders. If the availability date of the header material is within the SNP production horizon, SAP APO creates a PP/DS planned order, as was previously the case.

Stopping change transfer for SNP planned orders in SAP APO inbound

In an integrated system infrastructure, critical components are usually planned in SNP and the results are published to SAP R/3 at regular intervals. However, non-critical components are often planned in SAP R/3 using material requirements planning (MRP). It is possible for planned orders whose components are planned in both SAP R/3 and SAP APO to be changed in SAP R/3 using BOM explosions or lead time scheduling, even if their header material is assigned with MRP procedure X, which does not really allow for changes to be made. These changes are transferred to SAP APO during change transfer and can cause inconsistencies between SAP R/3 and SAP APO.

As of SAP APO 4.0 and SAP R/3-Plug-In 2003.1, you can set in SNP Customizing that SAP APO will permit transfer from SAP R/3 only for planned orders in the SNP production horizon. To do this, follow this menu path: *Basic Settings -> Maintain Global SNP Settings -> Planned Order Integ.* As a result, SAP APO does not adopt any changes to SNP planned orders from SAP R/3.

The option: *Allow transfer from SAP R/3 for all planned orders* is set by default. Planned orders are not filtered out in SAP APO inbound. SAP APO updates all planned orders and planned order changes that are sent from SAP R/3.

If you set the *Only allow transfer for planned orders in SNP productn hor.* option, all planned orders that meet the prerequisites listed below are filtered out in SAP inbound and are therefore are not updated:

- o In SAP R/3, the header material of the planned order is assigned with MRP procedure X (without material requirements planning, with BOM explosion).
- o The availability date of the header material is outside of the SNP production horizon.
- o The SNP production horizon or extended SNP production horizon has been maintained in the SNP 2 tab page of the product master (transaction /SAPAPO/MAT1).

However, the following transfers are still updated:

- o Initial data transfers of planned orders
- o Changes to planned orders that are triggered by the Compare/Reconcile Function
- o PP/DS planned orders
- o New orders created in SAP R/3 (these are automatically created as PP/DS planned orders)
- o Planned order deletions

Initial data transfer only for PP/DS planned orders

As of SAP APO 4.0, it is possible to supply PP/DS with current data from SAP R/3 without the SNP results overwriting the data from SAP R/3. For this to be possible, the following prerequisites have to be met:

- o In SAP APO, you have to have set the following in SNP Customizing (as described above): *Only allow transfer for planned orders in SNP productn hor.*
- o The *Create planned orders as SNP planned orders* indicator must **not** be set in SAP R/3 when activating the integration model.

During activation of the integration model for planned orders, planned orders that meet the following prerequisites are filtered out in SAP APO inbound and are therefore **not** updated:

- o In SAP R/3, the header material of the planned order is MRP procedure X (without material requirements planning, with BOM explosion).
- o The availability date of the header material is outside of the SNP production horizon or the planned order is an SNP planned order.
- o The SNP production horizon or extended SNP production horizon has been maintained in the SNP 2 tab page of the product master (transaction /SAPAPO/MAT1).

An initial data transfer is therefore only carried out for PP/DS planned orders.

Effects on Customizing

There is an extra setting in SNP Customizing for controlling the initial data transfer and change transfer of planned orders from SAP R/3. This setting is called *Planned Order Integration* and can be found by following this SNP Customizing path: *Basic Settings -> Maintain Global SNP Settings -> Plnnd Ord.Integratn*. For more information, see Control for Transferring Planned Orders from SAP R/3.

See also

Period Category for the SNP Production Horizon

1.1.17.10 Period Category for the SNP Production Horizon (Enhanced)

Use

You define the SNP production horizon or SNP stock transfer horizon in the product master (transaction /SAPAPO/MAT1). Previously, this was always defined in calendar days. As of SAP APO 4.0, you can specify whether the given SNP production horizon or the SNP stock transfer horizon is defined in

calendar days, weeks (calculated from a Monday or Sunday), or months.

At the end of the current period of the period category that has been set, the SNP production horizon or SNP stock transfer horizon moves one period into the former SNP planning horizon.

We recommend that you choose a period category for the SNP production horizon or SNP stock transfer horizon that corresponds to the set frequency of your SNP planning. This avoids data inconsistencies (if SNP planned order integration is configured) caused by planned orders transferred from SAP R/3 in particular.

See also

Integration of Planned Orders

1.1.17.11 Cross-System Update Logic (New)

Use

Inconsistencies can occur if manufacturing orders are changed in parallel in SAP APO and SAP R/3 in an integrated system landscape.

As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, you can use cross-system update logic to prevent data inconsistencies of this type. Cross-system update logic assigns order changes in SAP R/3 a higher priority than parallel changes in SAP APO. Cross-system update logic influences system behavior in the following ways:

1. If an order is changed at the same time in SAP APO and SAP R/3 and the changes are transferred to the relevant target system, SAP R/3 inbound automatically recognizes that the changes in SAP APO refer to an older data status than those in SAP R/3 and ignores the order changes from SAP APO.
2. If an order change is made in SAP R/3 and transferred to SAP APO while a change to the same order is being posted in SAP APO, APO recognizes this situation and stops the save. In dialog mode, you can choose whether SAP APO should save other orders from the same transaction or whether it should reject the entire transaction. In background processing, the system always rejects the entire transaction.

Cross-system update logic is not active as standard.

If you want to use cross-system update logic, you can choose between the following settings:

- o Use update logic, no automatic retransfer
The different change statuses in SAP APO and SAP R/3 are initially retained. You can evaluate and rectify them using the CIF Compare/Reconcile function in SAP APO.
- o Use update logic, automatic retransfer
The current order status in SAP R/3 is completely retransferred to SAP APO. This ensures that the order in SAP APO is automatically synchronized with the current status in SAP R/3.

Effects on Customizing

You activate cross-system update logic in the Implementation Guide for the APO Core Interface (CIF-IMG) under *Basic Settings for the Data Transfer -> Change Transfer -> Change Transfer for Transaction Data -> Activate Cross-System Update Logic*.

See also

You can find release information about earlier SAP R/3 Plug-In releases in the SAP Service Marketplace under *R3-Plug-In -> Media Center*.

1.1.17.12 Production in Another Location (New)**Use**

As of SAP APO 4.0, *production in another location* is available in SAP APO as a new form of procurement for in-house production. You use *production in another location* if several locations (often warehouses or distribution centers) are responsible for planning a finished product, but this product is manufactured in another location (typically a production plant) that does not have any planning responsibility.

To model this scenario in SAP APO, you use an in-house production source of supply (PPM, R/3 runtime object, or iPPE access object) in SAP APO, in which the planning location and the production location are different, for the finished product that you want to procure using *production in another location*. In SAP APO 4.0, the *planning location* has been added to the maintenance of PPMs and iPPE access objects. SAP APO uses such an in-house production source of supply to create a planned order whose receipt is in the planning location and whose component requirements are in the production location. You execute procurement planning for the finished product in the planning location, and procurement planning for the components and capacity planning in the production location.

The benefits of *production in another location* are as follows:

- o There is no stocking level (the stocking level for the finished product in the production location), thus reducing total stock and lead times
- o The shipment of the finished product from the production location to the planning location is not modeled, thus reducing the administrative work involved

Note the following constraints:

- o Due to the simplified process, you cannot implement *production in another location* for stock transfer and transport-based scenarios such as subcontracting, *Deployment*, and *Transportation Planning and Vehicle Scheduling*. Stock transfer and transport processes play a key role here; you have to model them explicitly using the relevant master data (transportation lanes).
- o It is not possible to group together the requirements of the various planning locations and form lots for the production location.

The following planning applications support *production in another location*:

- o *Supply Network Planning*
- o *Capable-to-Match*
- o *Production Planning and Detailed Scheduling*

Production in another location is also supported continuously in an integrated scenario in which you implement SAP APO as a planning system, and SAP R/3 for master data management and order processing. *Production in another location* extends the SAP R/3 special form of procurement here, *production in another plant*, which is defined in SAP R/3 by a corresponding special procurement key

for the finished product in the planning plant. When the SAP R/3 master data for *production in another plant* is transferred, PPMs or PP/DS runtime objects are automatically created in SAP APO for *production in another location*. When an in-house production order that is created in SAP APO is processed, the receipt for the finished product is in the planning location, and component withdrawal is in the production location.

1.1.17.13 Transfer and Representation of Stock in Transfer (Changed)

Use

SAP R/3 distinguishes between the following types of stock in transfer:

- o **Stock in transfer between plants**
Until now, this stock type was represented in the standard SAP APO system by the same order category as stock in transit. In dynamic pegging and in the net requirements calculation in *Production Planning and Detailed Scheduling* (PP/DS) and in *Capable-To-Match* (CTM), the stock in transit and thus also the stock in transfer between plants were regarded as unavailable. (In Customizing for material requirements planning in SAP R/3, you can define if you want the cross-plant stock in transfer to be available for material requirements planning in SAP R/3.)
- o **Stock in transfer between storage locations in a plant**
Until now, this stock type was represented in the standard SAP APO system by the same order category as unrestricted-use stock, and was therefore always regarded as available for the net requirements calculation and dynamic pegging. (In SAP R/3, internal plant stock in transfer is also always available.)

Until now, therefore, stock in transfer belonged to stock in transit and to unrestricted-use stock. SAP APO 4.0 distinguishes between the various types of stock in transfer: The stock in transfer between plants is transferred to SAP APO as **stock in transfer between locations** as of SAP APO 4.0. Stock in transfer between storage locations in a plant is transferred as **stock in transfer between sublocations**. (This corresponds to the mapping *Plant* -> *Location* and *Storage Location* -> *Sublocation*.) This is possible because of the enhancements in SAP APO described below.

New order categories in SAP APO

Until now, stock in transfer in SAP APO was represented by the order category GC_OM_STOCK_IN_TRANSIT (stock in transit) or the order category GC_OM_STOCK_UNRESTRICTED (unrestricted-use stock). The following new order categories are now available:

- o **Stock in transfer between sublocations**
Order category: GC_OM_STOCK_TRANSF_SUBLOC
- o **Stock in transfer between locations**
Order category: GC_OM_STOCK_TRANSF_LOC

The new order categories in SAP APO allow a distinction to be made between the stock in transfer in PP/DS and CTM; that is, they represent independent stock elements for dynamic pegging and the net requirements calculation. The new order categories allow the availability of the stock in transfer types to be defined independently of each other for pegging and for the net requirements calculation.

ATP categories in SAP APO

Supply Network Planning (SNP) and *Global Available-to-Promise* (Global ATP) do not control stock availability on the basis of the order category but based on the ATP category. In order that a distinction can be made between the various SAP R/3 stock in transfer types in SAP APO using the ATP category, the new ATP category CS has been implemented in SAP APO 4.0 for stock in transit. The previous categories in SAP APO are still valid without change for stock in transfer. The following list gives you an overview:

- o **Stock in transit**
Category until now: CA, Stock/tsfr
Category as of SAP APO 4.0: **CS, StkInTrnst**
- o **Stock in transfer between locations**
Category until now and in SAP APO 4.0: CA, Stock/tsfr
This category used to also include the stock in transit, but as of SAP APO 4.0 it only contains the stock in transfer between locations.
- o **Stock in transfer between sublocations**
Category until now and in SAP APO 4.0: CN, TsStkSb

Enhancement of the SAP APO Core Interface

As before, stock in transit and stock in transfer are transferred together from SAP R/3 to SAP APO if an active integration model exists for stock in transit. Prerequisite for the changed representation of stock in transfer in SAP APO is SAP R/3 Plug-In 2003.1.

Effects on Existing Data

Check if the new standard settings fulfill your requirements and make changes if necessary.

- o **PP/DS and CTM**
In the standard system, it is defined in the location product master on the *Demand* tab page under *Available Stocks* that *Stock in Transfer Between Locations* is not available and that *Stock in Transfer Between Sublocations* is. Change the settings in the location product master if necessary.
- o **SNP and Global ATP**
SNP and Global ATP do not automatically take the new category for stock in transit (CS, StkInTrnst) into consideration. You have to extend the category group for stock or the scope of check accordingly, if required.
- o **Customer exits**
Check your customer exits for processing stock.

See also

Release Information on the Availability of Stock

1.1.17.14 Processing of Returns from SAP R/3 in TP/VS (New)

Use

As of SAP APO 4.0, in the *Transportation Planning/Vehicle Scheduling (TP/VS)* component you can plan and optimize returns that you created in Sales and Distribution in SAP R/3 and their associated

returns deliveries. This process is also useful for planning the return shipment of empties. In this case, the aim of planning and optimization in TP/VS is to transport returns to the issuing plant during the return journey of the shipment; that is, to plan deliveries and returns to one outbound shipment.

The planning of returns and returns deliveries corresponds to the planning of sales orders. The returns are treated as outbound deliveries, although they are actually inbound deliveries. However, the start and destination locations are to be interpreted as their opposites for returns. The delivery date for returns corresponds to the goods receipt in the plant. In contrast to sales order, delivery scheduling does not take place for resources in TP/VS.

Effects on Existing Data

System prerequisites:

- o SAP R/3 4.6B and higher.

Effects on Customizing

To transfer returns from SAP R/3 to SAP APO, you have to activate the transfer in SAP R/3 Customizing under *Integration with Other SAP Components -> Advanced Planning and Optimization -> Application-Specific Settings and Enhancements -> Settings and Enhancements for Sales Orders -> Set the Transfer of Returns to SAP APO*.

See also

For more information, see the SAP Library under *Advanced Planning and Optimization -> Transportation Planning/Vehicle Scheduling -> Vehicle Scheduling -> Planning -> Planning of Returns*.

1.1.17.15 SCM-APO-INT-EXT Interface to External Systems

1.1.17.15.1 Business and Interface Objects and BAPI Methods (Changed)

Use

This information refers to changes that were made in SAP APO 4.0 for business and interface objects, as well as the BAPIs and ALE interfaces (message types) they contain. The changes affect the following components:

- o SCM-APO-MD Master Data
- o SCM-APO-PPS Production Planning and Detailed Scheduling
- o SCM-APO-VS Vehicle Scheduling
- o SCM-APO-FCS Demand Planning
- o SCM-APO-ATP Global Available-to-Promise

The technical names of the objects concerned in the Business Object Repository (BOR) are as follows:

- o BUS10003 - BUS10004

- o BUS10008 - BUS10009
- o BUS10020, BUS10030
- o BUS10300
- o BUS10400
- o BUS10500 - BUS10505
- o BUS10510
- o BUS11201
- o BUS11102
- o BUS11411 - BUS11415

The associated interface objects have the same numbers, if they exist. That is, the interface object for BUS10501 is IF10501.

In particular, you should note that some interfaces have been set to obsolete. Some incompatible changes were also made, which means that some changeovers may be necessary.

Use of IDocs/ALE interfaces and function modules of BAPI methods

Changes to BAPI methods affect the associated ALE interfaces or message types. If you use IDoc message types that call the associated BAPI methods of these business objects, read the release information for the relevant BAPI methods.

Example

You are using message type SOAPS_SAVEMULTIPLE. Since this is derived from BAPI BUS10501.SaveMultiple (sales order APS), changes to BUS10501.SaveMultiple also have an effect on message type SOAPS_SAVEMULTIPLE.

In the same way, changes to BAPI methods also have an effect on the function modules used as a basis. For example, a change to method SalesOrderAPS.SaveMultiple has an effect on the function module BAPI_SLSRVAPS_SAVEMULTI.

Changes that affect most business/interface objects of these components or their methods and ALE message types

New structures for characteristics: Support of IBase configurations or classifications

Previously, only CDP characteristics were supported in BAPIs. For this, one or more table parameters (for example, CHARACTERISTICS) were used in most interfaces. As of SAP APO 4.0, IBase configurations and classifications are also supported. Since these new class systems offer more functions than or different functions to CDP, new structures were created that support both IBase and CDP class systems. For information about which BAPI methods are affected by this, see the details about the individual business objects.

Enhanced transaction control

External transaction control can also be made using the COMMIT_CONTROL parameter for different write methods (for example, SaveMultiple or DeleteMultiple) of objects BUS10502 - BUS10505, BUS10505m, and BUS10300. The relevant read methods (for example, GetList) of these business objects now also support the reading of non-persistent data if, for example, a transactional simulation is open at the time of the call and the orders have not yet been posted.

New field in request methods

In these methods (for example, RequestList or RequestLoad), field ADD_APPLICATION_MESSAGES was included in parameter REQUEST_INTERFACE. This can be used to control whether messages of the "synchronous" method are to be returned in the RETURN parameter or not. For more information, see the parameter documentation of the method.

Changes that only affect certain business objects/interface objects of these components or their methods and ALE message types

Below, there is a list of new and changed business objects and BAPIs. For more information, see the documentation for the individual BAPIs.

Note that some of the BAPIs listed have not yet been released. These BAPIs may be used already, but changes may still be made that lead to compatibility problems.

If you use the associated function modules instead of BAPIs, the changes also apply for these function modules.

BUS10501 (Sales Order APS)

CreateIntransits

New methods for creating and changing orders in transit.

DeleteMultiple, RemoveItems

New parameter PLNG_VERSION for specifying a planning version. Orders from different planning versions can now be deleted.

SaveMultiple, GetList und RequestList

Methods were set to obsolete. Successor methods exist with version 2. For example, SaveMultiple2 is the successor method of SaveMultiple.

For method SaveMultiple, additional fields for account assignment were included in the parameters REQUIREMENTS and REQUIREMENTS_X. The method now allows changes to be made to additional fields.

SaveMultiple2, GetList2, RequestList2

New methods are successor methods of the obsolete versions. The main difference is that these versions use the new structures for IBASE and the CDP characteristics system.

ChangePeggingMultiple

Method was set to obsolete. The successor method is ChangePeggingMultiple of Business object PPDSServiceAPS (BUS10500).

IF10501 (Interface: Sales Order APS)

ReceiveList

Method was set to obsolete. The successor method is ReceiveList2.

ReceiveList2

New method. This method is the successor method of the obsolete version. The main difference is that this version uses the new structures for IBASE and the CDP characteristics system.

BUS10500 (PPDSServiceAPS)*ChangePeggingMultiple*

New method. This replaces the ChangePeggingMultiple method of the individual order objects and allows a change to the pegging between order categories. This means that you can use this method instead of having to call different ChangePeggingMultiple methods.

TransactionCommit, TransactionRollback

New methods for transaction control; that is, for posting (commit) or ROLLBACK.

BUS10502 (Procurement Order APS)*SaveMultiple, GetList und RequestList*

Methods were set to obsolete. Successor methods exist with version 2. For example, SaveMultiple2 is the successor method of SaveMultiple.

For the SaveMultiple method, additional fields for account assignment data were included in parameters RECEIPTS and RECEIPTS_X.

SaveMultiple2, GetList2, RequestList2

New methods. These methods are successor methods of the obsolete versions. The main difference is that these versions use the new structures for IBASE and the CDP characteristics system.

ChangePeggingMultiple

Method was set to obsolete. The successor method is ChangePeggingMultiple of business object PPDSServiceAPS (BUS10500).

IF10502 (Interface: Procurement Order APS)*ReceiveList*

Method was set to obsolete. The successor method is ReceiveList2.

ReceiveList2

New method. This method is the successor method of the obsolete version. The main difference is that this version uses the new structures for IBASE and the CDP characteristics system.

BUS10503 (Manufacturing Order APS)*CreateFromTemplate*

- o New field NO_DATE_FIX in parameter ORDER_HEAD. This can be used to prevent automatic fixing.
- o New field SEQUENCE_NUMBER in parameter ORDER_STRUCTURE. This can be used for subsequent heuristics or sorting, for example.

SaveMultiple, GetList und RequestList

Methods were set to obsolete. Successor methods exist with version 2. For example, SaveMultiple2 is the successor method of SaveMultiple.

SaveMultiple2, GetList2, RequestList2

New methods. These methods are successor methods of the obsolete versions. The main difference is that

this version uses the new structures for IBASE and the CDP characteristics system.

ChangePeggingMultiple

Method was set to obsolete. The successor method is *ChangePeggingMultiple* of business object *PPDSServiceAPS* (BUS10500).

GetList

New fields CNVIN (conversion indicator), SOURCE_TYPE, and SOURCE_NAME included in parameter ORDER_HEAD for sources of supply.

ChangeActivities

Method was released.

IF10503 (Interface: Manufacturing Order APS)

ReceiveList

Method was set to obsolete. The successor method is *ReceiveList2*.

ReceiveList2

New method. This method is the successor method of the obsolete version. The main difference is that this version uses the new structures for IBASE and the CDP characteristics system.

BUS10504 (Stock APS)

For SAP APO 4.0, there was a conversion of the version (batch) system. This has an effect on stock methods. The main difference is that versions/batches are now separate objects that can exist independently of a stock. Business object BUS4711 (version) exists for this. This object can be used to create/change/delete versions. You can find more information about versions/batches at this object and its methods, in particular at the *SaveMultiple* method. Since this object does not support location dependent versions/batches, it cannot be used by stock methods.

The following settings are necessary for the use of stock BAPIs:

- o If you previously used location-dependent batches, you need to carry out a conversion and database conversion to location-independent versions/batches.
- o To ensure compatibility with previous releases, versions can only be created using the stock BAPIs (as before). However, if a stock is set to zero, the version is not deleted automatically.
- o If you use classifications/characteristics with versions/batches, the following prerequisites must also be met:
 - Versions/batches must be used.
 - The product must be assigned to a class in the product master. For CDP, this must be a class of class type 400. In addition, a class with the same name must exist with class type 230. This class with class type 230 must contain the same characteristics as the class with class type 400, although it may also contain additional characteristics.
 - Example:
The class CLASS1 (class type 400) with characteristics LENGTH and WIDTH is assigned to a product. If you are using versions/batches, a class CLASS1 with class type 230 must also be created. This class must contain the characteristics LENGTH and WIDTH, although it can also contain additional characteristics.

SaveMultiple, GetList und RequestList

Methods were set to obsolete. Successor methods exist with version 2. For example, SaveMultiple2 is the successor method of SaveMultiple.

SaveMultiple

Incompatible change: Location-dependent batches (versions) are no longer supported. This means that it is not possible to create or change location-dependent batches because there are no longer any location-dependent batches in SAP APO. A conversion or database conversion must be made to location-independent batches.

SaveMultiple2, GetList2, RequestList2

New methods. These methods are successor methods of the obsolete versions. The main difference is that this version uses the new structures for IBASE and the CDP characteristics system.

SaveMultiple2

This successor method of SaveMultiple now also supports different planning versions (parameter PLANNING_VERSION) and forecast consumption with parameter FCS_REDUCTION.

IF10504 (Interface: Stock APS)

ReceiveList

Method was set to obsolete. The successor method is ReceiveList2.

ReceiveList2

New method. This method is the successor method of the obsolete version. The main difference is that this version uses the new structures for IBASE and the CDP characteristics system.

BUS10505 (Order Request APS)

GetList

New fields SOURCE_TYPE and SOURCE_NAME included for source of supply in parameter ORDER_HEAD.

BUS10020 (Planned Independent Requirement APS)

New business object for planned independent requirements.

SaveMultiple

New method for creating and changing planned independent requirements.

GetList

New method for reading planned independent requirements.

DeleteMultiple

New method for deleting planned independent requirements.

BUS10030 (Vehicle Scheduling Planning Services)

GetOptimizerProfile, GetOrderSets, UnplanOrders, UpdateShipments

The methods were released.

GetOptimizerProfile

The method was extended by new fields and parameters because the optimization profile was enhanced.

TransactionCommit, TransactionRollback

New methods for transaction control; that is, for posting (commit) or ROLLBACK.

BUS10004 (Resource APS)*BlocksSaveMultiple*

Incompatible change: Parameter BUSINESS_SYSTEMGROUP was renamed as BUSINESSSYSTEMGROUP.

GetBlocks

Incompatible change. The function module used as a basis for this method was changed to BAPI_RSSRVAPS_GETBLOCKS2. The main difference is that this version uses the new structures for IBASE and the CDP characteristics system.

Function BAPI_RSSRVAPS_GETBLOCKS

The function module was set as obsolete. The successor function is BAPI_RSSRVAPS_GETBLOCKS2.

GetDefinitions, GetBlocks

The methods were released.

RequestBlocks, RequestDefinitions

Parameter TRANSFER_MODE was deleted. This represents an incompatible change. Since the field was not used, this does not lead to a functional change.

IF10004 (Interface: Resource APS)*ReceiveBlocks, ReceiveDefinitions*

The TRANSFER_MODE parameter was deleted. This represents an incompatible change. Since the field was not used, this does not lead to a functional change.

BUS11201 (Transportation Lane APS)*SaveMultiple*

- o Extension of the key for the use of external procurement relationships by the fields SUBCO and CONSI. This means that these fields also have a key character if external procurement relationships are used. This affects the parameters PROD_PROCUREMENT and PROD_MEANS_OF_TRANSPORT.
- o New fields were included that are also new in master data.
- o The object is no longer locked during a transfer.
- o The time zone of the recipient/destination location is now used to determine the day (previously, this was always the UTC time zone).
- o Method was released.

RequestList

- o Parameter TRANSFER_MODE was deleted. This represents an incompatible change. Since the

field was not used, this does not lead to a functional change.

- o New fields were included that are also new in the master data.

GetList

- o New fields were included that are also new in the master data.
- o Methods were released.

IF11201 (Interface: Transportation lane APS)

ReceiveList

Parameter TRANSFER_MODE was deleted. This represents an incompatible change. Since the field was not used, this does not lead to a functional change.

BUS10009 (Quota Arrangement APS)

SaveMultiple

- o The object is no longer locked during a transfer.
- o Methods were released.

GetList

Methods were released.

RequestList

- o Parameter TRANSFER_MODE was deleted. This represents an incompatible change. Since the field was not used, this does not lead to a functional change.

IF10009 (Interface: Quota arrangement APS)

ReceiveList

Parameter TRANSFER_MODE was deleted. This represents an incompatible change. Since the field was not used, this does not lead to a functional change.

BUS11411 (LocSubProc APS)

New object for location determination procedures: The following methods were implemented:

- o SaveMultiple
- o GetList
- o DeleteMultiple
- o RequestList

IF11411 (Interface Object for LocSubProcAPS)

New interface object for object BUS11411. The following methods were implemented:

- o ReceiveList

BUS11412 (PrdSubProc APS)

New object for product substitution procedures. The following methods were implemented:

- o SaveMultiple

- o GetList
- o DeleteMultiple
- o RequestList

IF11412 (Interface Object for PrdSubProcAPS)

New interface object for object BUS11412. The following methods were implemented:

- o ReceiveList

BUS11413 (RuleAPS)

New object for ATP substitution rules. The following methods were implemented:

- o SaveMultiple
- o GetList
- o DeleteMultiple
- o RequestList

IF11413 (Interface Object for RuleAPS)

New interface object for object BUS11413. The following methods were implemented:

- o ReceiveList

BUS11414 (LocPrdSubProcAPS)

New object for location product substitution procedures. The following methods were implemented:

- o SaveMultiple
- o GetList
- o DeleteMultiple
- o RequestList

IF11414 (Interface Object for LocPrdSubProcAPS)

New interface object for object BUS11414. The following methods were implemented:

- o ReceiveList

BUS11415 (PPMSubProcAPS)

New object for PPM substitution procedures. The following methods were implemented:

- o SaveMultiple
- o GetList
- o DeleteMultiple
- o RequestList

IF11415 (Interface Object for PPMSubProcAPS)

New interface object for object BUS11415. The following methods were implemented:

- o ReceiveList

BUS11102 (PromotionAPS)

New object for promotions. The following methods were implemented:

- o SaveMultiple
- o GetList
- o DeleteMultiple
- o RequestList

IF11102 (Interface Object for PromotionAPS)

New interface object for object BUS11102. The following methods were implemented:

- o ReceiveList

BUS10030 (PlanningBookAPS)

Compatible extension of GetDetail method by the optional parameter ReadOptions.

Compatible extension of RequestDetail method by the optional parameters ReadOptions, CharacteristicMapping, and CharCombMapping.

BUS10002 (LocationAPS)

The following methods were set to obsolete:

- o SaveMultiple
- o GetList
- o RequestList
- o DeleteMultiple

The following successor functions were implemented:

- o SaveMultiple2
- o GetList2
- o RequestList2
- o DeleteMultiple2

IF10002 (Interface Object for LocationAPS)

The following methods were set to obsolete:

- o ReceiveList

The following successor methods were implemented:

- o ReceiveList2

BUS10001 (ProductAPS)

The following methods were set to obsolete:

- o SaveMultiple
- o GetList
- o RequestList

The following successor methods were implemented:

- o SaveMultiple2
- o GetList2
- o RequestList2

IF10001 (Interface Object for ProductAPS)

The following methods were set to obsolete:

- o ReceiveList

The following successor methods were implemented:

- o ReceiveList2

BUS10003 (ProdProcessModelAPS)

Compatible extension of the GetList method by the optional parameters PpmModel, MaxNumberOfPlans, and NumberOfPlans. In addition, parameters Ppm and ActivityRelation that already existed were extended.

Compatible extension of the RequestList method by the optional parameter MaxNumberOfPlans.

Compatible extension of the SaveMultiple method. For this, the parameters PpmModel, Ppm and PpmX, and ActivityRelation and ActivityRelationX were extended.

IF10003 (Interface Object for ProdProcessModelAPS)

Compatible extension of the GetList method by the optional parameters PpmModel and NumberOfPlans. In addition, parameters Ppm and ActivityRelation that already existed were extended.

BUS10004 (ResourceAPS)

Compatible extension of the GetList method by the optional parameters ResourceModel and ResourceDowntimeText. Parameter ResourceHead was also extended.

Compatible extension of the SaveMultiple method by the optional parameters ResourceDowntimeText and ResourceDowntimeTextX. In addition, the parameters ResourceModel, ResourceHead, and ResourceHeadX were extended.

Compatible extension of the ChangeMultiple method by the optional parameters ResourceDowntimeText and ResourceDowntimeTextX. In addition, parameters ResourceHead and ResourceHeadX were extended.

New method DeleteMultiple implemented.

IF10004 (Interface Object for ResourceAPS)

Compatible extension of the ReceiveList method by the optional parameters ResourceDowntimeText and ResourceModel. In addition, parameter ResourceHead was extended.

1.1.17.16 SCM-APO-INT-IMO Integration Model

1.1.17.16.1 Integration of Inspection Lots (New)

Use

In SAP R/3, inspection lots that are relevant to planning are created by a goods receipt for a manufacturing order or a purchase order. You have a start date that results from the date of the goods receipt and an end date that results from the average inspection time defined in the material master. The current stock/requirements list contains the quantity to be posted as a planned receipt for the end date of the inspection lot.

Previously, an inspection lot was transferred from SAP R/3 to SAP APO as stock in quality inspection. Stock in quality inspection appears without receipt dates and is therefore immediately available for planning. This meant that the inspection lot dates in SAP R/3 were not previously taken into account in SAP APO.

As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, you can set up inspection lot integration. In this case, inspection lots from SAP R/3 are no longer mapped as stock in quality inspection in SAP APO. Instead, they are mapped in the same way as in SAP R/3 with a planned receipt for the end date of the inspection lot. This means that the quantity to be posted is only available as unrestricted-use stock at this date.

As standard, inspection lot integration is not active. You activate it by setting the **Inspection Lots Allowed** indicator in SAP R/3 Customizing. An active integration model for inspection lots must also exist. In this case, all inspection lots relevant to APO are transferred to SAP APO that meet the following criteria:

- o The inspection lots has the status SPRQ (stock posting required).
- o The quantity to be posted for the inspection lot is greater than zero.
- o The inspection lot quantity is posted to stock in quality inspection when the inspection lot is opened. This means that the *Insp. Stock* indicator has to be set on the *Inspection Lot Quantities* tab page.

You can only change integrated inspection lots in SAP R/3. The following changes are transferred to SAP APO automatically:

- o Change to start and end date
- o Change to quantity to be posted
- o Change of status from *Opened* to *Released*.

The inspection lot in SAP APO is deleted automatically if the quantity to be posted in SAP R/3 is reduced to zero. This happens if a reposting is made to unrestricted-use stock within a usage decision for the inspection lot.

Effects on Existing Data

If inspection lot integration is active, the system no longer transfers stock in quality inspection to SAP APO for the materials concerned.

For information about how you can change your release to SAP APO 4.0 while retaining old stocks or about how you can convert to inspection lot integration at a later point in time after you have already

changed release, see the documentation about integrating inspection lots under *Conversion to Inspection Lot Integration*.

Effects on Customizing

You set the **Allow Inspection Lots** indicator in SAP R/3 in the Implementation Guide for the APO Core Interface (CIF IMG) under *Application-Specific Settings and Enhancements -> Settings and Enhancements for Stocks -> Set Up Transfer of Inspection Lots to SAP APO*.

In SAP R/3 3.1I, you are not able to use an implementation guide. Here, you call the maintenance view V_CIFQLOT1 by using transaction SM30.

See also

For more information about mapping the inspection lot in SAP APO and about its use in Production Planning and Detailed Scheduling, see the documentation for Production Planning and Detailed Scheduling under *Order -> Inspection Lot*.

For more information about integrating the inspection lot, see the documentation about integrating SAP APO and SAP R/3 under *Integration of Master Data and Transaction Data -> Integration of Transaction Data -> Integration of Order -> Integration of Inspection Lots*.

1.1.17.17 SCM-APO-INT-MD Master Data

1.1.17.17.1 Automatic Creation of Transportation Lane from SAP R/3 Material Master (New)

Use

Transportation lanes must exist so that stock transfers can be created between plants in SAP APO. Previously, SAP APO only automatically created transportation lanes when purchasing data (purchasing info records, scheduling agreements, and contracts) was transferred from SAP R/3. If no purchasing data existed, you had to create transportation lanes manually in SAP APO.

As of SAP APO 4.0 and PI 2003.1, SAP APO also automatically creates transportation lanes when material masters are transferred from SAP R/3. For this, the system uses the data for the special procurement type that is stored in the SAP R/3 material master. For special procurement types with procurement type *F* (external procurement) and special procurement *U* (stock transfer), SAP APO generates a transportation lane between plant and supplying plant. The required data is transferred from SAP R/3 to SAP APO as an initial data transfer or a change transfer for the material master.

Effects on Existing Data

If a manually created transportation lane already exists in SAP APO, this is retained and the system does not create a new transportation lane.

If transportation lanes already exist in SAP APO that were created during the transfer of purchasing data from SAP R/3, SAP APO takes these lanes into account for source determination. In this case, the transportation lanes that are automatically created from the SAP R/3 material master are not taken into account.

1.1.17.17.2 New Functions for Resources

Use

The following new functions for the management of master data for resources are available in SAP APO 4.0 with SAP R/3 Plug-In 2003.1 and SAP R/3 4.0B (or higher).

- o **Management of Header Data for Resources in SAP R/3**
You can also specify the header data of resources destined for SAP APO at the capacity in SAP R/3 and transfer it to SAP APO via the *SAP APO Core Interface* (CIF). Other data on available capacity from SAP R/3, such as intervals and shifts, is not transferred directly.
- o **External Capacity**
If you want to manage all data in SAP R/3, you can use the external capacity. SAP APO then determines available capacity directly from the data in SAP R/3. In the CIF IMG you can elect either to use the external capacity for all transferred resources or specify it for each resource individually.
- o **Choice of Resource Type Prior to Transfer**
Prior to the first transfer of capacities from SAP R/3 to SAP APO, you can specify in the CIF implementation guide (CIF IMG) or in the master data for the relevant capacity in SAP R/3 which resource type is to be assigned to the resources created in SAP APO. Previously, only single or multiple activity resources were generated in the standard system. The resource type cannot be changed in SAP APO.
- o **Change Transfer for Header Data of Resources**
You can use the change transfer facility for the header data of the resource. In the CIF IMG, you specify whether changes in a capacity are to be adopted merely in the planning-version-independent resource, additionally in planning version 000, or additionally in all planning versions of model 000.
- o **Changes in the Capacity Profile**
Hitherto, if you changed the available capacity of a resource in the capacity profile the capacity profile was stored for the entire generation timeframe of the resource. Changes in capacity (e.g. in the definitions) thus had no effect on available capacity if a capacity profile existed.
As of SAP APO 4.0, the system stores only the changed data in the capacity profile. This means that the capacity defined at the resource applies for the times at which no variances are defined in the capacity profile.

Effects on Existing Data

Previously, you could use customer exit APOBP002 to cause resources to be created as mixed resources during transfer via SAP APO CIF, or change the header data of the resource (e.g. the resource name). As of SAP APO 4.0, you can no longer use this customer exit for transfers via SAP APO CIF. You now create the resource type in the CIF IMG, as described above. *Business add-in /SAPAPO/CRESCIF* is now available for changes to the header data or the transfer of additional data. You will find this in the SAP APO implementation guide under *Master Dat -> Resources -> Business Add-Ins (BAdIs) for Resources -> Change or Enhance Resource Data Transferred via SAP APO CIF*.

1.1.17.17.3 SCM-APO-INT-MD-RTO R/3 Runtime Object

1.1.17.17.3.1 R/3 Runtime Objects in SAP APO

Use

As of SAP APO 4.0, the PP/DS runtime object is available in SAP APO. You can use it in a similar way to the production process model (PPM) as a source of supply for in-house production. In contrast to the PPM, the PP/DS runtime object supports object dependencies and time-based change management.

The PP/DS runtime object is generated from the following data in SAP R/3 when the master data is transferred by means of SAP APO CIF:

- o Production version with routing and bill of material
- o Production version based on a master recipe (as of SAP R/3 4.6B)
- o Bill of material for phantom assemblies

For the initial data transfer of PP/DS runtime objects, you create an active integration model containing the production versions or bills of material. You can use the transactions CURTO_CREATE (production versions) and CURTO_CREATE_BOM (bills of material) to transfer changes to production versions and bills of material that are contained in an active integration model.

You can also use these transactions to test out the transfer of data, without saving it in SAP APO.

1.1.17.18 SCM-APO-INT-SNP Supply Network Planning Integration

1.1.17.18.1 Integration of Planned Orders (Enhanced)

Use

Planned orders generated in SAP APO can either be assigned to Supply Network Planning (SNP) or Production Planning and Detailed Scheduling (PP/DS). Previously, planned orders that were created in SAP R/3 and transferred to SAP APO were always mapped as PP/DS planned orders in SAP APO.

Initial data transfer with creation of SNP planned orders in SAP APO

As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, a planned order generated in SAP R/3 and transferred to SAP APO can be mapped as an SNP planned order also. This applies to planned orders that meet the following criteria:

- o The planned order does not yet exist in SAP APO.
- o MRP procedure X (without material requirements planning, with BOM explosion) is assigned to the header material of the planned order in SAP R/3.
- o The availability date of the header material is outside of the SNP production horizon.
- o It is neither a planned order of type "forecast" nor a planned order for project stock or sales order stock.

- o The SNP production horizon or extended SNP production horizon has been maintained in the SNP 2 tab page of the product master (transaction /SAPAPO/MAT1).

If the planned orders created in R/3 meet the aforementioned criteria and you want the orders to be mapped as SNP planned orders in SAP APO, you have to set indicator *Create planned orders as SNP planned orders* in SAP R/3 when you activate the relevant integration model for planned orders (transaction CFM2). Activating the integration model triggers the initial data transfer of planned orders. If the availability date of the header material is within the SNP production horizon, SAP APO creates a PP/DS planned order, as was previously the case.

Stopping change transfer for SNP planned orders in SAP APO inbound

In an integrated system infrastructure, critical components are usually planned in SNP and the results are published to SAP R/3 at regular intervals. However, non-critical components are often planned in SAP R/3 using material requirements planning (MRP). It is possible for planned orders whose components are planned in both SAP R/3 and SAP APO to be changed in SAP R/3 using BOM explosions or lead time scheduling, even if their header material is assigned with MRP procedure X, which does not really allow for changes to be made. These changes are transferred to SAP APO during change transfer and can cause inconsistencies between SAP R/3 and SAP APO.

As of SAP APO 4.0 and SAP R/3-Plug-In 2003.1, you can set in SNP Customizing that SAP APO will permit transfer from SAP R/3 only for planned orders in the SNP production horizon. To do this, follow this menu path: *Basic Settings -> Maintain Global SNP Settings -> Planned Order Integ.* As a result, SAP APO does not adopt any changes to SNP planned orders from SAP R/3.

The option: *Allow transfer from SAP R/3 for all planned orders* is set by default. Planned orders are not filtered out in SAP APO inbound. SAP APO updates all planned orders and planned order changes that are sent from SAP R/3.

If you set the *Only allow transfer for planned orders in SNP productn hor.* option, all planned orders that meet the prerequisites listed below are filtered out in SAP inbound and are therefore are not updated:

- o In SAP R/3, the header material of the planned order is assigned with MRP procedure X (without material requirements planning, with BOM explosion).
- o The availability date of the header material is outside of the SNP production horizon.
- o The SNP production horizon or extended SNP production horizon has been maintained in the SNP 2 tab page of the product master (transaction /SAPAPO/MAT1).

However, the following transfers are still updated:

- o Initial data transfers of planned orders
- o Changes to planned orders that are triggered by the Compare/Reconcile Function
- o PP/DS planned orders
- o New orders created in SAP R/3 (these are automatically created as PP/DS planned orders)
- o Planned order deletions

Initial data transfer only for PP/DS planned orders

As of SAP APO 4.0, it is possible to supply PP/DS with current data from SAP R/3 without the SNP results overwriting the data from SAP R/3. For this to be possible, the following prerequisites have to be met:

- o In SAP APO, you have to have set the following in SNP Customizing (as described above): *Only allow transfer for planned orders in SNP productn hor.*
- o The *Create planned orders as SNP planned orders* indicator must **not** be set in SAP R/3 when activating the integration model.

During activation of the integration model for planned orders, planned orders that meet the following prerequisites are filtered out in SAP APO inbound and are therefore **not** updated:

- o In SAP R/3, the header material of the planned order is MRP procedure X (without material requirements planning, with BOM explosion).
- o The availability date of the header material is outside of the SNP production horizon or the planned order is an SNP planned order.
- o The SNP production horizon or extended SNP production horizon has been maintained in the SNP 2 tab page of the product master (transaction /SAPAPO/MAT1).

An initial data transfer is therefore only carried out for PP/DS planned orders.

Effects on Customizing

There is an extra setting in SNP Customizing for controlling the initial data transfer and change transfer of planned orders from SAP R/3. This setting is called *Planned Order Integration* and can be found by following this SNP Customizing path: *Basic Settings -> Maintain Global SNP Settings -> Plnnd Ord.Integratn*. For more information, see Control for Transferring Planned Orders from SAP R/3.

See also

Period Category for the SNP Production Horizon

1.1.17.19 SCM-APO-INT-PPS PP/DS - Production Process Order

1.1.17.19.1 Retention of Activity Dates Planned in SAP APO (New)

Use

If you change a planned or manufacturing order in SAP R/3 that has already been planned in SAP APO (for example, by releasing or adding operations) and transfer this change, SAP APO would previously execute automatic rescheduling for the activities of the order. This could change the entire planning situation in SAP APO.

As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, SAP APO retains the activity dates of an order that was already planned in SAP APO as standard, even if this order was retransferred from SAP R/3 using an initial transfer, change transfer, the CIF compare/reconcile function, or as part of cross-system update logic. This prevents undesired rescheduling in SAP APO and the original planning situation is retained.

The new system behavior applies to the setup, process, and teardown activities, as well as for receipts or requirements that are assigned to these activities.

Dates for sequence-dependent setup activities and dates for activities for goods receipt processing time are **not** retained, including associated header materials.

The activity dates are also **not** retained in the following cases:

- o Change to the order quantity in SAP R/3
- o Change to the characteristic in SAP R/3
- o Re-explosion of master data in SAP APO and SAP R/3
- o Change to production version in SAP R/3 and change to the production process model in SAP APO
- o Confirmation of operations/manufacturing orders in SAP R/3

If you do **not** want to retain the activity dates planned in SAP APO, you can deactivate this features by using method ORDER_INB_PROCESSING_DECIDE of business add-in (BAdI) /SAPAPO/CL_EX_CIF_IP. You can also use method ORDER_INB_REDET_DATES_DECIDE of the same BAdI to deactivate the retention of activity dates for individual orders.

1.1.17.19.2 Integration of Inspection Lots (New)

Use

In SAP R/3, inspection lots that are relevant to planning are created by a goods receipt for a manufacturing order or a purchase order. You have a start date that results from the date of the goods receipt and an end date that results from the average inspection time defined in the material master. The current stock/requirements list contains the quantity to be posted as a planned receipt for the end date of the inspection lot.

Previously, an inspection lot was transferred from SAP R/3 to SAP APO as stock in quality inspection. Stock in quality inspection appears without receipt dates and is therefore immediately available for planning. This meant that the inspection lot dates in SAP R/3 were not previously taken into account in SAP APO.

As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, you can set up inspection lot integration. In this case, inspection lots from SAP R/3 are no longer mapped as stock in quality inspection in SAP APO. Instead, they are mapped in the same way as in SAP R/3 with a planned receipt for the end date of the inspection lot. This means that the quantity to be posted is only available as unrestricted-use stock at this date.

As standard, inspection lot integration is not active. You activate it by setting the **Inspection Lots Allowed** indicator in SAP R/3 Customizing. An active integration model for inspection lots must also exist. In this case, all inspection lots relevant to APO are transferred to SAP APO that meet the following criteria:

- o The inspection lots has the status SPRQ (stock posting required).
- o The quantity to be posted for the inspection lot is greater than zero.
- o The inspection lot quantity is posted to stock in quality inspection when the inspection lot is opened. This means that the *Insp. Stock* indicator has to be set on the *Inspection Lot Quantities* tab page.

You can only change integrated inspection lots in SAP R/3. The following changes are transferred to SAP APO automatically:

- o Change to start and end date
- o Change to quantity to be posted

- o Change of status from *Opened* to *Released*.

The inspection lot in SAP APO is deleted automatically if the quantity to be posted in SAP R/3 is reduced to zero. This happens if a reposting is made to unrestricted-use stock within a usage decision for the inspection lot.

Effects on Existing Data

If inspection lot integration is active, the system no longer transfers stock in quality inspection to SAP APO for the materials concerned.

For information about how you can change your release to SAP APO 4.0 while retaining old stocks or about how you can convert to inspection lot integration at a later point in time after you have already changed release, see the documentation about integrating inspection lots under *Conversion to Inspection Lot Integration*.

Effects on Customizing

You set the **Allow Inspection Lots** indicator in SAP R/3 in the Implementation Guide for the APO Core Interface (CIF IMG) under *Application-Specific Settings and Enhancements -> Settings and Enhancements for Stocks -> Set Up Transfer of Inspection Lots to SAP APO*.

In SAP R/3 3.1I, you are not able to use an implementation guide. Here, you call the maintenance view V_CIFQLOT1 by using transaction SM30.

See also

For more information about mapping the inspection lot in SAP APO and about its use in Production Planning and Detailed Scheduling, see the documentation for Production Planning and Detailed Scheduling under *Order -> Inspection Lot*.

For more information about integrating the inspection lot, see the documentation about integrating SAP APO and SAP R/3 under *Integration of Master Data and Transaction Data -> Integration of Transaction Data -> Integration of Order -> Integration of Inspection Lots*.

1.1.17.19.3 Proportional Adjustment of Quantities (New)

Use

Previously, when you changed the total quantity of a planned or manufacturing order in SAP R/3 and the order was transferred to SAP APO in a change transfer, SAP APO re-exploded the production process model (PPM).

As of SAP APO 4.0, SAP APO no longer re-explodes the PPM when changes are made to the SAP R/3 order unless you change the production version at the same time. Instead, SAP APO retains the data for the order that already exists and adopts the quantity changes that were sent from SAP R/3. The system adjusts the requirement and receipt quantities proportional to the change in the total quantity. Confirmed quantities are not adjusted proportionally.

If a quantity-dependent formula is entered for the duration in the *Process* operation segment of an SAP R/3 order, SAP APO also adjusts the duration of the *Produce* activity in proportion.

After proportional quantity adjustment, SAP always reschedules the order.

If you are using characteristics-dependent planning, the quantities are not adjusted proportionally in SAP APO. Instead, the PPM is re-exploded.

If you do **not** want to use proportional quantity adjustment, you can deactivate it by using method ORDER_INB_PROCESSING_DECIDE of business add-in (BAI) /SAPAPO/CL_EX_CIF_IP.

1.1.17.19.4 Integration of Planned Orders (Enhanced)

Use

Planned orders generated in SAP APO can either be assigned to Supply Network Planning (SNP) or Production Planning and Detailed Scheduling (PP/DS). Previously, planned orders that were created in SAP R/3 and transferred to SAP APO were always mapped as PP/DS planned orders in SAP APO.

Initial data transfer with creation of SNP planned orders in SAP APO

As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, a planned order generated in SAP R/3 and transferred to SAP APO can be mapped as an SNP planned order also. This applies to planned orders that meet the following criteria:

- o The planned order does not yet exist in SAP APO.
- o MRP procedure X (without material requirements planning, with BOM explosion) is assigned to the header material of the planned order in SAP R/3.
- o The availability date of the header material is outside of the SNP production horizon.
- o It is neither a planned order of type "forecast" nor a planned order for project stock or sales order stock.
- o The SNP production horizon or extended SNP production horizon has been maintained in the SNP 2 tab page of the product master (transaction /SAPAPO/MAT1).

If the planned orders created in R/3 meet the aforementioned criteria and you want the orders to be mapped as SNP planned orders in SAP APO, you have to set indicator *Create planned orders as SNP planned orders* in SAP R/3 when you activate the relevant integration model for planned orders (transaction CFM2). Activating the integration model triggers the initial data transfer of planned orders. If the availability date of the header material is within the SNP production horizon, SAP APO creates a PP/DS planned order, as was previously the case.

Stopping change transfer for SNP planned orders in SAP APO inbound

In an integrated system infrastructure, critical components are usually planned in SNP and the results are published to SAP R/3 at regular intervals. However, non-critical components are often planned in SAP R/3 using material requirements planning (MRP). It is possible for planned orders whose components are planned in both SAP R/3 and SAP APO to be changed in SAP R/3 using BOM explosions or lead time scheduling, even if their header material is assigned with MRP procedure X, which does not really allow for changes to be made. These changes are transferred to SAP APO during change transfer and can cause inconsistencies between SAP R/3 and SAP APO.

As of SAP APO 4.0 and SAP R/3-Plug-In 2003.1, you can set in SNP Customizing that SAP APO will permit transfer from SAP R/3 only for planned orders in the SNP production horizon. To do this, follow this menu path: *Basic Settings -> Maintain Global SNP Settings -> Planned Order Integ.* As a

result, SAP APO does not adopt any changes to SNP planned orders from SAP R/3.

The option: *Allow transfer from SAP R/3 for all planned orders* is set by default. Planned orders are not filtered out in SAP APO inbound. SAP APO updates all planned orders and planned order changes that are sent from SAP R/3.

If you set the *Only allow transfer for planned orders in SNP productn hor.* option, all planned orders that meet the prerequisites listed below are filtered out in SAP inbound and are therefore are not updated:

- o In SAP R/3, the header material of the planned order is assigned with MRP procedure X (without material requirements planning, with BOM explosion).
- o The availability date of the header material is outside of the SNP production horizon.
- o The SNP production horizon or extended SNP production horizon has been maintained in the SNP 2 tab page of the product master (transaction /SAPAPO/MAT1).

However, the following transfers are still updated:

- o Initial data transfers of planned orders
- o Changes to planned orders that are triggered by the Compare/Reconcile Function
- o PP/DS planned orders
- o New orders created in SAP R/3 (these are automatically created as PP/DS planned orders)
- o Planned order deletions

Initial data transfer only for PP/DS planned orders

As of SAP APO 4.0, it is possible to supply PP/DS with current data from SAP R/3 without the SNP results overwriting the data from SAP R/3. For this to be possible, the following prerequisites have to be met:

- o In SAP APO, you have to have set the following in SNP Customizing (as described above): *Only allow transfer for planned orders in SNP productn hor.*
- o The *Create planned orders as SNP planned orders* indicator must **not** be set in SAP R/3 when activating the integration model.

During activation of the integration model for planned orders, planned orders that meet the following prerequisites are filtered out in SAP APO inbound and are therefore **not** updated:

- o In SAP R/3, the header material of the planned order is MRP procedure X (without material requirements planning, with BOM explosion).
- o The availability date of the header material is outside of the SNP production horizon or the planned order is an SNP planned order.
- o The SNP production horizon or extended SNP production horizon has been maintained in the SNP 2 tab page of the product master (transaction /SAPAPO/MAT1).

An initial data transfer is therefore only carried out for PP/DS planned orders.

Effects on Customizing

There is an extra setting in SNP Customizing for controlling the initial data transfer and change transfer of planned orders from SAP R/3. This setting is called *Planned Order Integration* and can be found by following this SNP Customizing path: *Basic Settings -> Maintain Global SNP Settings -> Plnnd*

Ord.Integratn. For more information, see Control for Transferring Planned Orders from SAP R/3.

See also

Period Category for the SNP Production Horizon

1.1.17.20 SCM-APO-INT-SLS Sales

1.1.17.20.1 Redesign of the APO Inbound Interface

Use

As of SAP APO 4.0, the standard fields in the field catalog /SAPAPO/SDFIELD are updated for data from SAP R/3 SD in the non-nested table /SAPAPO/SD_DOC. In addition, the new tables /SAPAPO/MM_DOC and /SAPAPO/MMFIELD are now available for data from SAP R/3 MM.

This improves the performance of all applications that use data from these tables, such as backorder processing.

Effects on Existing Data

As of SAP APO 4.0 the field catalog /SAPAPO/SDFIELD is only used for customer-specific fields; fields delivered by SAP are now stored in the table /SAPAPO/SD_DOC. After the upgrade to SAP APO 4.0, both data formats coexist at first without this having a detrimental effect on the system when it is running. You can use the report /SAPAPO/SDORDER_MIGRATE to convert the old data into the new format.

1.1.17.21 SCM-APO-INT-CCR CIF Compare/Reconcile

1.1.17.21.1 CIF Compare/Reconcile: Save Results and Load Later (Enhanced)

Use

As of SAP APO 4.0, you find the CIF Compare/Reconcile function in the SAP menu under *APO Administration -> Integration -> CIF Compare/Reconcile Function -> Execute Compare/Reconcile*.

CIF Compare/Reconcile is used to compare data objects in SAP APO and SAP R/3 and to ensure that data is consistent in both systems. In addition to the comparison of data objects, you can execute the data reconcile if inconsistencies are found. With larger amounts of integration data and the corresponding increased runtime of the comparison, you can schedule the comparison as a background job. Previously, the results of the comparison were only available in the job log (a spool list) from which it was not possible to continue processing the inconsistencies that were displayed. To be able to execute the reconcile, you previously had to execute a new comparison in dialog mode.

As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, you can save the results of the comparison. This function is available in both dialog and background modes. You can then load the saved results at a later point in time and continue processing the data inconsistencies that are displayed without having to

execute the comparison again. In this way, it is possible to run the comparison at night for a large amount of data and then load and continue processing the results on the following morning.

If you execute the iteration, you receive more precise results both when saving and loading the data.

Since the saved results should be processed as soon as possible and to avoid the unnecessary use of memory, we recommend that you delete the saved results on a regular basis. To do this, you can use program *Reorganize Comparison Results* (transaction /SAPAPO/CCR), which you can also plan as a periodic job. You find this program in the SAP menu under *APO Administration -> Integration -> CIF Compare/Reconcile Function*.

See also

You can find release information about earlier SAP R/3 Plug-In releases in the SAP Service Marketplace under *R3-Plug-In -> Media Center*.

1.1.17.21.2 Integration of Inspection Lots (New)

Use

In SAP R/3, inspection lots that are relevant to planning are created by a goods receipt for a manufacturing order or a purchase order. You have a start date that results from the date of the goods receipt and an end date that results from the average inspection time defined in the material master. The current stock/requirements list contains the quantity to be posted as a planned receipt for the end date of the inspection lot.

Previously, an inspection lot was transferred from SAP R/3 to SAP APO as stock in quality inspection. Stock in quality inspection appears without receipt dates and is therefore immediately available for planning. This meant that the inspection lot dates in SAP R/3 were not previously taken into account in SAP APO.

As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, you can set up inspection lot integration. In this case, inspection lots from SAP R/3 are no longer mapped as stock in quality inspection in SAP APO. Instead, they are mapped in the same way as in SAP R/3 with a planned receipt for the end date of the inspection lot. This means that the quantity to be posted is only available as unrestricted-use stock at this date.

As standard, inspection lot integration is not active. You activate it by setting the **Inspection Lots Allowed** indicator in SAP R/3 Customizing. An active integration model for inspection lots must also exist. In this case, all inspection lots relevant to APO are transferred to SAP APO that meet the following criteria:

- o The inspection lots has the status SPRQ (stock posting required).
- o The quantity to be posted for the inspection lot is greater than zero.
- o The inspection lot quantity is posted to stock in quality inspection when the inspection lot is opened. This means that the *Insp. Stock* indicator has to be set on the *Inspection Lot Quantities* tab page.

You can only change integrated inspection lots in SAP R/3. The following changes are transferred to SAP APO automatically:

- o Change to start and end date
- o Change to quantity to be posted

- o Change of status from *Opened* to *Released*.

The inspection lot in SAP APO is deleted automatically if the quantity to be posted in SAP R/3 is reduced to zero. This happens if a reposting is made to unrestricted-use stock within a usage decision for the inspection lot.

Effects on Existing Data

If inspection lot integration is active, the system no longer transfers stock in quality inspection to SAP APO for the materials concerned.

For information about how you can change your release to SAP APO 4.0 while retaining old stocks or about how you can convert to inspection lot integration at a later point in time after you have already changed release, see the documentation about integrating inspection lots under *Conversion to Inspection Lot Integration*.

Effects on Customizing

You set the **Allow Inspection Lots** indicator in SAP R/3 in the Implementation Guide for the APO Core Interface (CIF IMG) under *Application-Specific Settings and Enhancements -> Settings and Enhancements for Stocks -> Set Up Transfer of Inspection Lots to SAP APO*.

In SAP R/3 3.1I, you are not able to use an implementation guide. Here, you call the maintenance view V_CIFQLOT1 by using transaction SM30.

See also

For more information about mapping the inspection lot in SAP APO and about its use in Production Planning and Detailed Scheduling, see the documentation for Production Planning and Detailed Scheduling under *Order -> Inspection Lot*.

For more information about integrating the inspection lot, see the documentation about integrating SAP APO and SAP R/3 under *Integration of Master Data and Transaction Data -> Integration of Transaction Data -> Integration of Order -> Integration of Inspection Lots*.

1.1.17.21.3 Compare/Reconcile Function for Sales Scheduling Agreements (Delta Report) (New)

Use

As of *SAP APO 4.0* you can also use the *Compare/Reconcile Function* to identify and correct inconsistencies in sales scheduling agreement data between SAP APO and SAP R/3.

For more information see the documentation on the Compare/Reconcile Function.

The comparison function for sales scheduling agreements is only possible as of *SAP R/3 Enterprise Core 4.70* with Plug-In *PI 2003.1* or *DIMP 4.71* with Plug-In *2003.1*.

See also

For more information on the *Compare/Reconcile Function* see the SAP Library: *Integration of SAP APO and SAP R/3 -> Technical Integration -> APO Core Interface -> Administration -> The Compare/Reconcile Function (Delta Report) -> Comparison of Sales Scheduling Agreements*.

1.1.17.22 SCM-APO-INT-MP Mill Products Interfaces

1.1.17.22.1 Trim Optimization Interface (New)

Use

As of SAP APO 4.0, APO supports Production Planning and Detailed Scheduling with **integrated trim optimization** through the connection of an external optimization tool. The optimization results are created as planned orders in SAP APO that represent a cut plan directly. This happens using the BAPI Create From Template. The results are then transferred to SAP R/3 for execution. System DIMP 4.71 is required in SAP R/3.

1.1.17.23 SCM-APO-INT-CUS Customizing

1.1.17.23.1 Integration of Inspection Lots (New)

Use

In SAP R/3, inspection lots that are relevant to planning are created by a goods receipt for a manufacturing order or a purchase order. You have a start date that results from the date of the goods receipt and an end date that results from the average inspection time defined in the material master. The current stock/requirements list contains the quantity to be posted as a planned receipt for the end date of the inspection lot.

Previously, an inspection lot was transferred from SAP R/3 to SAP APO as stock in quality inspection. Stock in quality inspection appears without receipt dates and is therefore immediately available for planning. This meant that the inspection lot dates in SAP R/3 were not previously taken into account in SAP APO.

As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, you can set up inspection lot integration. In this case, inspection lots from SAP R/3 are no longer mapped as stock in quality inspection in SAP APO. Instead, they are mapped in the same way as in SAP R/3 with a planned receipt for the end date of the inspection lot. This means that the quantity to be posted is only available as unrestricted-use stock at this date.

As standard, inspection lot integration is not active. You activate it by setting the **Inspection Lots Allowed** indicator in SAP R/3 Customizing. An active integration model for inspection lots must also exist. In this case, all inspection lots relevant to APO are transferred to SAP APO that meet the following criteria:

- o The inspection lots has the status SPRQ (stock posting required).
- o The quantity to be posted for the inspection lot is greater than zero.
- o The inspection lot quantity is posted to stock in quality inspection when the inspection lot is opened. This means that the *Insp. Stock* indicator has to be set on the *Inspection Lot Quantities* tab page.

You can only change integrated inspection lots in SAP R/3. The following changes are transferred to SAP APO automatically:

- o Change to start and end date
- o Change to quantity to be posted
- o Change of status from *Opened* to *Released*.

The inspection lot in SAP APO is deleted automatically if the quantity to be posted in SAP R/3 is reduced to zero. This happens if a reposting is made to unrestricted-use stock within a usage decision for the inspection lot.

Effects on Existing Data

If inspection lot integration is active, the system no longer transfers stock in quality inspection to SAP APO for the materials concerned.

For information about how you can change your release to SAP APO 4.0 while retaining old stocks or about how you can convert to inspection lot integration at a later point in time after you have already changed release, see the documentation about integrating inspection lots under *Conversion to Inspection Lot Integration*.

Effects on Customizing

You set the **Allow Inspection Lots** indicator in SAP R/3 in the Implementation Guide for the APO Core Interface (CIF IMG) under *Application-Specific Settings and Enhancements -> Settings and Enhancements for Stocks -> Set Up Transfer of Inspection Lots to SAP APO*.

In SAP R/3 3.1I, you are not able to use an implementation guide. Here, you call the maintenance view V_CIFQLOT1 by using transaction SM30.

See also

For more information about mapping the inspection lot in SAP APO and about its use in Production Planning and Detailed Scheduling, see the documentation for Production Planning and Detailed Scheduling under *Order -> Inspection Lot*.

For more information about integrating the inspection lot, see the documentation about integrating SAP APO and SAP R/3 under *Integration of Master Data and Transaction Data -> Integration of Transaction Data -> Integration of Order -> Integration of Inspection Lots*.

1.1.17.24 SCM-APO-INT-QM Inspection Lot Integration

1.1.17.24.1 Integration of Inspection Lots (New)

Use

In SAP R/3, inspection lots that are relevant to planning are created by a goods receipt for a manufacturing order or a purchase order. You have a start date that results from the date of the goods receipt and an end date that results from the average inspection time defined in the material master. The current stock/requirements list contains the quantity to be posted as a planned receipt for the end date of the inspection lot.

Previously, an inspection lot was transferred from SAP R/3 to SAP APO as stock in quality inspection. Stock in quality inspection appears without receipt dates and is therefore immediately available for planning. This meant that the inspection lot dates in SAP R/3 were not previously taken into account in SAP APO.

As of SAP APO 4.0 and SAP R/3 Plug-In 2003.1, you can set up inspection lot integration. In this case, inspection lots from SAP R/3 are no longer mapped as stock in quality inspection in SAP APO. Instead, they are mapped in the same way as in SAP R/3 with a planned receipt for the end date of the inspection lot. This means that the quantity to be posted is only available as unrestricted-use stock at this date.

As standard, inspection lot integration is not active. You activate it by setting the **Inspection Lots Allowed** indicator in SAP R/3 Customizing. An active integration model for inspection lots must also exist. In this case, all inspection lots relevant to APO are transferred to SAP APO that meet the following criteria:

- o The inspection lots has the status SPRQ (stock posting required).
- o The quantity to be posted for the inspection lot is greater than zero.
- o The inspection lot quantity is posted to stock in quality inspection when the inspection lot is opened. This means that the *Insp. Stock* indicator has to be set on the *Inspection Lot Quantities* tab page.

You can only change integrated inspection lots in SAP R/3. The following changes are transferred to SAP APO automatically:

- o Change to start and end date
- o Change to quantity to be posted
- o Change of status from *Opened* to *Released*.

The inspection lot in SAP APO is deleted automatically if the quantity to be posted in SAP R/3 is reduced to zero. This happens if a reposting is made to unrestricted-use stock within a usage decision for the inspection lot.

Effects on Existing Data

If inspection lot integration is active, the system no longer transfers stock in quality inspection to SAP APO for the materials concerned.

For information about how you can change your release to SAP APO 4.0 while retaining old stocks or about how you can convert to inspection lot integration at a later point in time after you have already changed release, see the documentation about integrating inspection lots under *Conversion to Inspection Lot Integration*.

Effects on Customizing

You set the **Allow Inspection Lots** indicator in SAP R/3 in the Implementation Guide for the APO Core Interface (CIF IMG) under *Application-Specific Settings and Enhancements -> Settings and Enhancements for Stocks -> Set Up Transfer of Inspection Lots to SAP APO*.

In SAP R/3 3.1I, you are not able to use an implementation guide. Here, you call the maintenance view V_CIFQLOT1 by using transaction SM30.

See also

For more information about mapping the inspection lot in SAP APO and about its use in Production Planning and Detailed Scheduling, see the documentation for Production Planning and Detailed

Scheduling under *Order -> Inspection Lot*.

For more information about integrating the inspection lot, see the documentation about integrating SAP APO and SAP R/3 under *Integration of Master Data and Transaction Data -> Integration of Transaction Data -> Integration of Order -> Integration of Inspection Lots*.

1.2 SCM-BAS SCM Basis

1.2.1 Alert Notification Engine (New)

Use

As of SAP SCM 4.0, you can use the SCM Basis *Alert Notification Engine* to send automatically information about alerts that occur in the *Alert Monitor* of SAP APO or the *Alert Engine* of *SCM Inventory Collaboration Hub*. For this, the *Alert Notification Engine* uses *Alert Management* functions of *SAP Web Application Server 6.20*.

You specify the form of notification under *Message Profiles*, and enter the recipient, the message channel used, and the alerts for which a notification should be issued under *Alert Notification Profiles*.

1.3 SCM-EM Event Management

1.3.1 SCM-EM-AS Application System

1.3.1.1 Changes to SAP Basis Plug-In 2003.1 and SAP R/3 Plug-In 2003.1

Use

You use SAP Basis Plug-In 2003.1 and SAP R/3 Plug-In 2003.1 to enable you to connect SAP Event Management to an SAP R/3 system in a general and standardized way.

See also

For more information on the SAP R/3 Plug-In 2003.1 area, use the release information in the *SAP Service Marketplace* (service.sap.com/r3-plug-in) under *SAP R/3 Plug-In -> Media Center -> Release Notes*.

For more information on the SAP Basis Plug-In 2003.1 area, use the release information in the *SAP Service Marketplace* (service.sap.com/basis-plug-in) under *SAP Basis Plug-In -> Media Center -> Release Notes*.

1.3.2 SCM-EM-MGR Event Manager

1.3.2.1 Archiving/Deleting EHs/Event Handler Sets and Event Messages (Enhanced)

Use

As of release 4.0, the following enhancements to archiving/deleting event handlers/event handler sets are available:

- o Service functions
 - Archiving event handler sets using an activity in a rule set EH_AUTO_ARCH_SET.
The activity sets an event handler set to *inactive* by setting all event handlers that belong to this event handler set to *inactive*. If an event handler belongs to several event handler sets, the activity sets all related event handler sets (including all event handlers) to *inactive*.
 - Automatically archiving an event handler/event handler set
You can use an activity in a rule set to designate event handlers/event handler sets for archiving by defining the appropriate activity parameters.
For example, you can use an activity in a rule set to specify that the system archives an event handler 30 days after the last event for this event handler has been reported.
- o Deleting event handlers/event handler sets or event messages without archiving using a delete report:
 - /SAPTRX/DELETE_EH for deleting event handlers
 - /SAPTRX/DELETE_EVMGS for deleting event messages

Effects on Customizing

If you want to use the functions for archiving event handlers/event handler sets, you must use the corresponding activities in rule sets. To do this, you must define rule sets.

If you want to use the functions for deleting event handlers/event handler sets or event messages, you must call the corresponding reports.

1.3.2.2 Displaying Event Handlers (Enhanced)

Use

As of release 4.0, the following enhancements to the event handler overview are available:

- o Configurable status icons for displaying events
You can specify which event status should be displayed with which icon.
You can group these assignments in status icon schemas to ensure that an event status is displayed consistently following queries (for example, using the Internet or directly in SAP Event Management).
You can use default status icon schemas or define your own.

- o Changing expected events
If you have the appropriate authorization, you can change the date and time of expected events.

As of release 4.0, the following enhancements to the event handler details are available:

- o Changing parameters
If you have the appropriate authorization, you can change info parameters, control parameters, and system parameters.
- o Changing IDs
If you have the appropriate authorization, you can change query IDs, tracking IDs, and additional tracking IDs.
- o Changing the event handler status
If you have the appropriate authorization, you can change the status of an event handler.
- o Displaying measurement data and measurement history
Measurement data (for example, temperature) from event messages and the measurement history are displayed in separate tab pages as additional event handler information.
- o Linking to original documents from an SAP system to track an exceptional situation more closely, for example.
- o Linking to a tracking service provider's Internet page to display additional information on an event.

As of release 4.0, the following enhancements to the event handler overview and the event handler details are available:

- o Personalizing the event handler overview and event handler detail overview
You can configure the following
 - The tab pages that the system displays
 - The order of the tab pages
 - The first tab page that is displayed when you reach the event handler overview or the event handler details
 - Whether the system should use default settings

Effects on Customizing

You must complete the following Customizing settings for the event handler overview:

- o If you want to use the function for configuring status icons for displaying events in the event handler overview, you must define status icons.
- o If you want to use the function for changing expected events in the event handler overview, you must generate roles/profiles and assign users that have the appropriate authorization.

You must complete the following Customizing settings for the event handler details:

- o If you want to use the function for changing parameters in the event handler details, you must generate roles/profiles and assign users that have the appropriate authorization.

- o If you want to use the function for changing IDs in the event handler details, you must generate roles/profiles and assign users that have the appropriate authorization.
- o If you want to use the function for changing the event handler status in the event handler details, you must generate roles/profiles and assign users that have the appropriate authorization.
- o If you want to use the function for displaying measurement data and the measurement history, you must configure fields for user profiles.
- o If you want to use the function for displaying original documents from an SAP system, you must display original documents from an SAP system.
You can specify for which application object type you can display original documents from an SAP system. The link is displayed in the Query IDs tab page in the event handler details.
- o If you want to use the function for displaying a tracking ID provider's URL, you must define URL templates for tracking ID providers.
You can maintain an URL template for a Web hyperlink that leads to this tracking ID provider's Internet page. This link is displayed in the Tracking IDs tab page in the event handler details.

If you want to personalize the event handler overview and/or event handler details, you must select the personalization icon in the respective view in the event handler list and make your settings.

1.3.2.3 Technical Improvements to Event Handlers/Event Handler Sets (Enhanced)

Use

As of release 4.0, the following enhancements to event handlers are available:

- o Plug-in function modules to specifically create or change individual expected events
You can define your own plug-in function module and assign it in the expected event profile.
- o New table with planned and actual measurement data
You can use the data contained in this table within the new rule activities for measurement data to compare planned and actual values (for example, temperatures).
- o New table for measurement history
The system uses this table to display the measurement data history in the event handler detail overview.
- o Extended table in which the references to business objects in the SAP system are stored. This table allows you to display original documents from an SAP system.
- o New table in which the URL templates for Web hyperlinks are stored. This table allows you to display a tracking ID provider's Internet page.
- o Authorizations to update event handlers and send event messages
You can create new roles to assign authorizations to update event handlers and send event messages. To do this, use
 - Authorization objects

- X_EM_EH_CH for updating event handlers
 - X_EM_EVM for event messages
- Subobjects for authorization object X_EM_EH_CH
 - ACT for activating/deactivating
 - LOCK for locking
 - LOG for logging
 - EXEV for expected events
 - SPAR for system parameters
 - IPAR for info parameters
 - CPAR for control parameters
 - QID for query IDs
 - ATID for additional tracking IDs
 - MTID for tracking IDs
 - STAT for event handler statuses
- Subobjects for authorization object X_EM_EVM
 - SND_CS for event message sender code sets
 - SND_CD for event message sender code IDs
- Activities for authorization object X_EM_EH_CH
 - 01 Create or generate
 - 02 Change
 - 05 Lock
 - 06 Delete
 - 63 Activate
 - 95 Unlock
- Activities for authorization object X_EM_EVM
 - 32 Save
- o The event handler header table contains the event handler information that is used most frequently for Event Management. In addition to the location identification, you can now also find the following in the event handler header table
 - Location name
 - Valid time zone for the location
 - City or location
 - Country code
 - Region or state
 - Postal code

If there is more than one location in the location segment, only the first one is saved in the event handler header table.
- o Application logging at different levels of detail and for different objects

When defining event handler types, you can specify that the system keeps a log for event handler updates, event message processing, and external updates (for example, BAPIs). You can choose from different levels of detail.
- o Creating event handlers using IDoc format
- o Dynamically creating event handlers by sending event messages

You can write your own plug-in function modules for this.

As of release 4.0, the following enhancements to event handler sets are available:

- o Status attributes for event handler sets
You can assign status attributes to an event handler set that can represent the overall status of a business process.
Activities are available on event handler level that you can use to modify this status.

Effects on Customizing

- o If you want to use the function for displaying original documents from an SAP system, you must display original documents from an SAP system.
You can specify for which application object type it is possible to display original documents from an SAP system. The link is displayed in the Query IDs tab page in the event handler details.
- o If you want to use the function for displaying a tracking ID provider's URL, you must define URL templates for tracking ID providers.
You can maintain an URL template for a Web hyperlink that leads to this tracking ID provider's Internet page. This link is displayed in the Tracking IDs tab page in the event handler details.
- o If you want to use the function for authorizing users to update event handlers and send event messages, you must generate roles/profiles and assign users.

1.3.2.4 SAP Event Management (SAP EM) Customizing (Enhanced)

Use

As of release 4.0, the following enhancements to SAP EM Customizing are available:

- o Enhancements for implementing solutions and scenarios on the SAP EM side
You can assign the following Customizing settings to scenarios
 - Event handler types, rule sets, and extension tables
 - Profiles and internal event codes
 - Parameters and conditions
 - Functions and activities
 - WCL transactions, internal event reason codesThe existing input help for solutions and scenarios has been changed in such a way that the system now only offers values belonging to scenarios that you are assigned to or values that are not assigned to any scenario. In this way, the system displays only your scenario-relevant values and unassigned values in the input help.
- o You can define code sets for application objects and tracking IDs that you can use within rules in a rule set and within event messages.
By defining these code sets, you create, above all, input options for a Web interface user.
- o You can define location codes and partner codes and how they are mapped.

You use internal location codes or partner codes to enable you to map several external location codes or partner codes onto one internal location code or internal partner code.

The system maps the external codes onto the internal codes when an event handler is created or when an event message is sent.

You can define both sender-dependent and sender-independent mapping.

You can specify the data sources for a location that are mapped onto the standard SAP Event Management (SAP EM) code sets.

- o You can call report /SAPTRX/CONS_CHECK for SAP EM Customizing for the following consistency checks
 - Whether the data format and length of the system parameters that are assigned to the defined extension tables are correct
 - Whether extension tables are active, inactive, new, changed, or do not exist
 - Whether the parameters defined in the application system are consistent with those in SAP EM. The system checks all info and control parameters to see if they have the correct data format and the correct length.
 - Whether the foreign keys in Customizing tables are used correctly.
 - You can select all SAP EM Customizing tables with development class *E* or *C* that begin with the prefix **/SAPTRX/** for checking.
- o You can call a where-used list for all activities. A new window appears containing a tree structure from where you can jump directly to the place where the respective activity is used (for example, rule set, expected event profile).
- o You can call a where-used list for all conditions. A new window appears containing a tree structure from where you can jump directly to the place where the respective condition is used (for example, defining event handler types, rule activities).
- o You can use metadata to define activity parameters in rules.
For example, you define metadata for the info parameter *E-mail Address*. This means that SAP EM uses the concrete value contained in an event message (for example, for an alert).

Effects on Customizing

- o If you want to use the functions for the enhanced implementation of solutions and scenarios, you must
 - Define solutions and scenarios
 - Assign event handler types, rule sets, and extension tables
 - Assign profiles and internal event codes
 - Assign parameters and conditions
 - Assign functions
 - Assign activities

- Assign WCL transactions
- o If you want to use the function for defining code sets, you must define the code set Customizing.
- o If you want to use the functions for defining location codes and partner codes with their mapping, you must define location codes and how they are mapped and define partner codes and how they are mapped.
- o If you want to use the function for the consistency check in SAP EM Customizing, you must call the transaction for Customizing consistency checks in the SAP menu for Event Management.
- o If you want to use info, control, and rule processing parameters as metadata when defining activity parameters, you must define control, info, and rule processing parameters.
If you want to permit the use of activity parameters when defining rule activity functions, you must choose *Required* or *Optional* for the activity parameter usage, to enable you to specify data (for example, metadata) for the activity parameters when defining rules.

1.3.2.5 Event Management Service Functions (Enhanced)

Use

As of release 4.0, the following Event Management service functions are available:

- o Connecting SAP Event Management (SAP EM) to the SAP APO Alert Monitor for PP/DS or Vehicle Scheduling using activities that you can use in a rule set or in the expected event monitor:
 - SEND_PPDS_APO_ALERT (Send PP/DS alert to SAP APO Alert Monitor)
 - SEND_VS_APO_ALERT (Send Vehicle Scheduling alert to SAP APO Alert Monitor)
- o Rule activity for automatically archiving an event handler/event handler set
You can use an activity in a rule set to specify that event handlers/event handler sets are to be archived. To do this, you define appropriate activity parameters:
 - EH_AUTO_ARCH (Event handler automatic archiving)
 - EH_AUTO_ARCH_SET (Event handler set automatic archiving)For example, you can use to an activity in a rule set to specify that the system archives an event handler 30 days after the last event for this event handler is reported.
- o Rule activity for connecting SAP EM to LES delivery
By specifying the delivery and item numbers, the material, and, in the case of deviations, the deviation number, you can send a proof of delivery to the application system: SEND_POD (Send a proof of delivery).
- o Rule activities for event handlers
 - Checking the status of related event handlers
By entering the tracking ID code set, you can search for all event handlers that are related to one another: CHECK_RELATED_EH (Check status of related event handlers).
Event handlers are related if they have the same tracking ID as the current event handler belonging to the tracking ID code set specified.
 - Checking the status of event handlers in an event handler set

You can check the status of all event handlers that belong to the same event handler set as the current event handler: `CHECK_EH_IN_SETS` (Check the status of event handlers in event handler set).

To provide a unique identification for an event handler set, you can optionally specify the event handler set profile ID.

o Rule activities for event handler sets

- Adding the current event handler to an event handler set

You can add the current event handler to an event handler set that contains the event handler that you identify by specifying the tracking ID and the tracking ID code set or the event handler GUID: `ADD_TO_SET` (Add current event handler to event handler set).

To provide a unique identification for an event handler set, you can optionally specify the event handler set profile ID.

- Setting, changing, or checking the status of an event handler set

You can set, change, or check the current status of an event handler set by specifying the corresponding status attribute names and values, and the event handler set IDs:

`EHSET_STATUS_SET` (Create or update a status attribute name for event handler set)

`EHSET_STATUS_CHECK` (Check status records for status attribute name and value for event handler set).

o Rule activities for event messages

- Sending event messages to another event handler

By specifying a new tracking ID code set and a new tracking ID, you can resend an event message to SAP EM: `RESEND` (Resend event messages to another event handler).

- Checking whether the event message has already been sent to SAP EM for another event handler

By specifying the tracking ID code set and the tracking ID, you can check whether an expected event has already been sent for another event handler: `IS_REPORTED_FOR_EH` (Was this event message already reported for another event handler?).

- Using an activity to trigger the automatic update of the expected event list from a rule set

By sending event messages, you can send data to SAP EM to update the list of expected events. The event messages are processed using a rule set, in which you can use the activity for changing the list of expected events. This activity deletes, adds, or updates expected events: `EVM_EE_UPDATE` (Update EE list from event message EE-MODIFY table).

o Rule activities for measurement data

- You can process measurement data that was transferred to SAP EM with an event message: `PROCESS_MEASUREMENTS` (Process measurement data).

- You can check if the measurement is an expected event and if it was confirmed within the tolerance range: `IS_MEASUREMENT_CONF` (Did the event message confirm an expected measurement result?).

- You can check if the expected and reported measurement data can be compared: `IS_MSRMNT_NOT_COMPAR` (Was the event message not comparable to the expected measurement result?).

- You can check if the measurement is an expected measurement that has not yet been confirmed (within the tolerance range) `IS_MSRMNT_OUT_OF_TOL` (Did the reported measurement result exceed the expected measurement result?).

Effects on Customizing

- o If you want to use the Event Management event handler service functions, you must use the corresponding activities within rule sets and/or in the expected event monitor. To do this, you must define rule sets or define EE monitor activities.

1.3.2.6 Event Message Processing (Enhanced)**Use**

As of release 4.0, the following enhancements to event message processing are available:

- o You can use plug-in function modules to dynamically create event handlers using event messages. You specify certain criteria (for example, internal event code, event message sender) that the system uses to create a new event handler when you send an event message to SAP EM. You define plug-in function modules that you use to create event handlers using an event message.
- o You can define additional checks for preprocessing event messages using appropriate plug-in function modules. You specify certain criteria (for example, internal event code, event message sender) that the system uses to execute additional checks for preprocessing event messages. You define plug-in function modules that you use to define additional checks.
- o You can specify where an event message attachment should be saved (in the event message database or in the file system). You define criteria (for example, internal event code, event message sender) to specify the storage location.
- o You can specify criteria (for example, sender ID) that the system uses to assign the time zone for date and time information within an event message. You either specify a default value directly or define a plug-in function module that the system uses to determine the time zone for the event message.
- o You can specify certain criteria (for example, internal event code, event message sender) that the system uses to process event messages for inactive event handlers.
- o You can send links in event messages, for example, to refer to partners' Internet pages where you can find additional information on the event.

Effects on Customizing

- o If you want to use the function for creating event handlers using event messages, you must define criteria for event message processing .
- o If you want to check event codes within the function for creating event handlers using event messages, you must define external event codes and how they are mapped and define internal event codes and internal event code groups.
- o If you want to use the function for creating plug-in function modules to preprocess event messages, you must define criteria for event message processing .
- o If you want to use the function for saving event message attachments, you must define criteria for

event message processing.

- o If you want to use the function for assigning time zones to dates and times, you must define criteria for event message processing .
- o If you want to use the function for processing event messages for inactive event handlers, you must define criteria for event message processing.
- o If you want to use the function for sending links in event messages, you must maintain URL templates for tracking ID providers.

1.3.2.7 Rule Processing (Enhanced)

Use

As of release 4.0, a simpler rule set structure is available:

- o Displaying rule sets
As of SAP EM, you can display a rule set with all its components in a clear tree structure either when defining a rule set or later on using the SAP menu for Event Management.
- o Changed rule set structure
 - Single-task activities replace functions which were used within procedures (for rules, updating event handlers and expected events)
 - Multi-task activities replace procedures.
Each multi-task activity consists of several tasks.
Each task consists of a single-task activity (function or method) or a multi-task activity.
 - Each rule now contains only one activity instead of two procedures (TRUE procedure and FALSE procedure).
 - Each rule contains only one condition.
You can join together several conditions in a condition set.
- o Extended number of standard activities provided by SAP.
- o Rule sets have internal rule processing parameters (SET_ACTIVITY_PARAM, CHECK_PARAM_VALUE) that you can use to transfer data from one rule to another.
They are only available during rule processing.

Effects on Customizing

- o If you want to use the function for display rule sets, you must use either the icon in the IMG activity define rule sets or the transaction in the SAP menu for Event Management.
- o If you want to use the new rule activities, you must use the appropriate activities in the IMG activity define rule sets.
- o If you want to use the function for defining rule processing parameters, you must define control, info, and rule processing parameters.

See also

For more information on the extended number of standard activities provided by SAP, see Event Management Service Functions (Enhanced).

1.3.2.8 Structural Changes in the SAP EM Implementation Guide (IMG)

Use

As of *SAP SCM 4.0*, the structure of the *SAP EM Implementation Guide (IMG)* has changed. You must regenerate the project IMGs to adopt these changes in the project IMGs.

Deleted IMG activities

- o The IMG activity *Business Add-In for Processing Event Messages* under *General Settings -> General Settings in SAP Event Management* was deleted.
- o The IMG activity *Business Add-In for Creating Event Handlers via Event Messages* under *General Settings -> General Settings in SAP Event Management* was deleted.
- o The IMG activity *Define Activities for Event Handlers* under *Event Handlers and Event Handler Data -> Event Handlers* was deleted.
- o The IMG node *Rules* was deleted.
 - The IMG activity *Define Rule Conditions* under *Rules* was deleted.
 - The IMG activity *Define Activities for Rules* under *Rules* was deleted.
 - The IMG activity *Rule Procedures* under *Rules* was deleted.

New IMG activities

- o *Business Add-In for Changing Web Configuration Profiles* under *General Settings -> General Settings in SAP Event Management*
- o *External Service Provider Interfaces* under *Event Management*
- o Under *Event Management* the area *Solutions and Scenarios*
 - *Assign Event Handler Types, Rule Sets, and Extension Tables* under *Solutions and Scenarios*
 - *Assign Profiles and Internal Event Codes* under *Solutions and Scenarios*
 - *Assign Parameters and Conditions* under *Solutions and Scenarios*
 - *Assign Functions* under *Solutions and Scenarios*
 - *Assign Activities* under *Solutions and Scenarios*
 - *Assign WCL Transactions* under *Solutions and Scenarios*
- o *Define Code Set Customizing* under *Codes*
- o *Define Location Codes and How They Are Mapped* under *Event Handlers and Event Handler Data -> Codes -> Location Codes and Partner Codes*
- o *Define Partner Codes and How They Are Mapped* under *Event Handlers and Event Handler Data -> Codes -> Location Codes and Partner Codes*

- o *Define Event Statuses* under *Event Messages and Status Queries*
- o *Displaying Original Documents from an SAP System* under *Event Messages and Status Queries*
- o *URL Templates for Tracking ID Providers* under *Event Messages and Status Queries*
- o *Assign Filter Profiles to Roles* under *Authorizations and Filters*
- o *Define Event Message Senders* under *Authorizations and Filters*
- o *Define Tracking Service Provider Profiles* under *External Service Provider Interfaces*

Renamed IMG activities

- o The IMG title *SAP Event Manager* is now called *Event Management*.
- o The component name *SAP Event Manager* has been changed in all IMG activities to the application name *SAP Event Management*.
- o *Single-task activities* replace *functions* that were used within procedures (for rules, updating event handlers and expected events).
- o *Multi-task activities* replace *procedures*
Each multi-task activity consists of several tasks.
Each task consists of either a single-task (function or method) or a multi-task activity.
- o The IMG node *General Settings* is now called *General Settings in SAP Event Management*.
 - The IMG node *Business Add-Ins for Supply Chain Event Management* is now called *Business Add-Ins for SAP Event Management*.
 - The IMG node *Functions, Conditions, and Procedures in SAP Event Manager* is now called *Functions, Conditions, and Procedures in SAP Event Management*.
The IMG activity *Define Functions for SAP Event Manager Activities* is now called *Define Functions for SAP Event Management*.
The IMG activity *Define Conditions for SAP Event Manager Activities* is now called *Define Conditions for SAP Event Management*.
The IMG activity *Define Procedures* is now called *Define Activities for SAP Event Management*.
- o The IMG node *Archiving* is now called *Archive or Delete Event Handlers and Event Messages*.
 - The IMG activity *Define Residence Times* is now called *Define Residence Times for Archiving or Deleting*.
- o Area *Event Handlers and Event Handler Data -> Event Handlers*: The IMG activity *Define Profiles for Event Handler Sets* is now called *Define Event Handler Set Profiles*.
- o Area *Event Handlers and Event Handler Data -> Event Handlers*: The IMG activity *Define Procedures for Updating Event Handlers* is now called *Define Activities for Updating Event Handlers*.
- o Area *Event Handlers and Event Handler Data -> Codes*: The IMG activity *Define External Event Codes and External Event Code Groups* is now called *Define External Event Codes and How They Are Mapped*.
- o Area *Event Handlers and Event Handler Data -> Expected Events*: The IMG activity *Define*

Activities for Expected Events is now called *Define Functions for Expected Events*.

- o Area *<Event Handlers and Event Handler Data -> Expected Events*: The IMG activity *Define Procedures for Expected Events* is now called *Define Activities for the Expected Event Monitor*.
- o Area *Event Handlers and Event Handler Data -> Parameters*: The IMG activity *Define Control and Info Parameters* is now called *Define Control, Info, and Rule Processing Parameters*.
- o Area *Event Handlers and Event Handler Data -> Parameters*: The IMG activity *Define Activities for Parameter Mapping* is now called *Define Functions for Parameter Mapping*.
- o Area *Event Messages and Status Queries -> Web Interface*: The IMG activity *Assign User Profiles to Users* is now called *Assign User Profiles and WCL Transactions to Users*.
- o Area *Authorizations and Filters*: The IMG activity *Define Activities for Filter Profiles* is now called *Define Functions for Filter Profiles*.
- o Area *SAP Business Information Warehouse Interface*: The IMG activity *Define Activities for SAP BW Interface* is now called *Define Functions for SAP BW Interface*.

Relocated IMG activities

- o You can now find the IMG activities for *Event Codes* under *Codes*. In previous releases, these activities were found directly under *Event Handlers and Event Handler Data*.
- o You can now find the IMG activity *Define Rule Sets* directly under *Reactions to Event Messages*. In previous releases, this activity was found under *Rules*.

1.3.2.9 Web Interface Enhancements (Enhanced)

Use

As of release 4.0, the following enhancements to the Web interface are available:

- o Personalizing the Web screens
 - You can join together event handlers and event handler sets from your search results list to create a favorites list. In this way, you can observe objects and processes over a long period of time, without having to remember your search criteria.
 - You can specify the start page for the Web interface in the SAP menu for SAP Event Management (SAP EM).
When the Web server is set up using the system administrator page of the Web interface, the system automatically sends the corresponding URLs to SAP EM. You do not need to maintain the URLs in a table on the SAP EM side.
 - You can automatically update the event handler data on the "My List" page, if your system administrator has set up this function. Updated data is highlighted with an icon and tooltip.
 - You can change the number of table rows displayed on both the list page and detail page that are predefined by your system administrator.
- o Reporting and displaying events

- You can use the fast entry function to report events directly, without having to call the corresponding event handler or event handler set.
 - You can configure your own icons for displaying the status of expected and consolidated events. In this way you can maintain different displays for different scenarios, for example.
 - You can use measurement data (for example, temperature) from event messages as well as the measurement history, both of which are displayed as additional data for an object or process that you are monitoring, to track changes to measurements.
 - You can display the original document from an SAP system for an object or process that you are monitoring. In this way, you have an additional means of tracking an exceptional situation more closely, for example.
 - You can add attachments, for example, a digital signature or photographs of a road accident, to an event message, if your system administrator permits this function.
 - You can send event messages not only for one or more event handlers, but also for one or more event handler sets.
- o The Web interface print function has been enhanced. You now get an HTML print version of the Web pages and can also create other print versions.
 - o You can use Single Sign-On, as with an SAP R/3 system, so that you do not have to explicitly enter your user information for authorization purposes within the Web interface.
 - o Enhancements that users with system administrator authorization can execute
 - Use the Layout Editor to change the layout of the Web pages
SAP delivers the Web interface with a standard layout.
The authorized user can choose between predefined and self-defined layouts.
 - Add a logo to the Web page header (for example, company logo)
 - Configure a Web server with the Web interface for several SAP EM systems/clients

Effects on Customizing

- o If you want to use the function for configuring status icons for displaying events, you must define status icons.
- o If you want to use the function for displaying original documents from an SAP system, you must display original documents from an SAP system.
You can specify for which application object type you can display original documents from an SAP system.
- o If you want to use the function for displaying measurements and the measurement history, you must configure fields for user profiles.

1.3.2.10 SAP Exchange Infrastructure Integration (New)

Use

As of release 4.0, interfaces are available with which to connect SAP Event Management (SAP EM) to SAP Exchange Infrastructure (XI).

You can use the new XI-enabled interfaces to execute the following processes, including in XML format

- o Send event messages to SAP EM
- o Make queries to SAP EM
- o Create event handlers in SAP EM

The possibility to communicate with partners is a central element of SAP EM. Since partners can send event messages in a variety of formats, a mapping process is required. The mapping process is responsible for processing partner messages (for example, RosettaNet) and mapping them onto standard formats.

As of release 4.0, the following standard event messages will be mapped for an inbound scenario - Event Message Input:

- o RosettaNet Version 2: 3B3 (Distribute Shipment Status)