Variant Configuration and MTS Production
A wish or reality?

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Configuration basics

Configuring a sales order line item results in
- Production: Make-to-Order
- Inventory: Customer specific stock

Configuring a production order always requires a relation to sales order stock / copy characteristics
Further Solution Discussion is part of DIMP

SAP ECC 6.0

Industry & Enterprise Extensions

EE EE EE IE IE IE

SAP ECC Core

Industry Extension DIMP

Mill Products
Automotive
Aerospace & Defense
Engineering & Construction
High Tech

Mill Products
Automotive

Former add-on has become Industry Extension

Functionality still available

Shipped as part of the ERP Core Component

Only one IE can be active

Industry Extension DIMP used across several industries

Functionality originally created with background of only one of the DIMP industries

Processes running in one industry segment supported

Processes across different DIMP industries not allowed

Individual check by SAP Custom Development possible

DIMP : Discrete Industry / Mill Products   IE: industry Extension

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Configuration in MTS – possible in three different scenarios

**Sales Order**

Different behavior in
- ERP
- ERP & external planning tool

**Production Order**

Possible with external planning tool e.g. APO
Configuration in MTS

**Sales Order**
- Material Variant (MTS variant)

**Different behavior in**
- ERP
- ERP & external planning tool

**Pre-requisite:**
- Material is batch managed
- Customizing requirement class

**Production Order**
- Any variant configuration material

**Only possible with external planning tool e.g. APO**

**Pre-requisite:**
- Material is batch managed
- Active integration model / MRP type external planning
Changing Characteristic Values of configured MTS Material Variants

Change in sales order – ERP only

Business Background

Direct sales (e.g. metal service center, lumber, ....) utilizes MTS material

Customer request is different from what is available in stock:
Available material / inventory: 10 feet tube
Customer request: 9 feet tube

Sales rep needs to change material master data in sales order from 10’ to 9’

No MTO segment / NO individual customer requirement should be created
No production order should / can be involved in cutting tube to length

Execution based e.g. on delivery documents (no capturing of cutting cost). See transaction MILL_CUT
Changing Characteristic Values of configured MTS Material Variants

Change in sales order – ERP only

Restrictions

- Changed values are only considered during batch determination, pricing, quantity conversion, and in sales documents.

- ERP MRP does not consider changed characteristic values. In case of insufficient material in stock, MRP will create replenishment order for 10 feet length.
Changing Characteristic Values of configured MTS Material Variants Example

Material Master
Tube 123

<table>
<thead>
<tr>
<th>Grade</th>
<th>1b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Diam.</td>
<td>150</td>
</tr>
<tr>
<td>Width</td>
<td>200</td>
</tr>
<tr>
<td>Length</td>
<td>8 – 10 feet</td>
</tr>
</tbody>
</table>

Sales Order
Tube 123

Specified in Sales Order

Length 9.5 feet

Batch Determination also used for:
- Pricing
- Print Sales Doc
- Quantity conversion

Only production relevant with external planning system

Tube 123
Batch 1

Length 8 feet

Weight ...

Tube 123
Batch 2

Length 9.5 feet

Weight ...

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Changing Characteristic Values of configured MTS Material Variants
(ERP&APO) -1-

Change in sales order – ERP & APO

Business Background

Same as before

Behavior of external planning tool e.g. APO

- APO planning run is able to plan on characteristic level (while ERP can only plan on material level), and thus transfers changed sales order characteristics to APO planned order
- APO pegging connects sales order with planned order based on characteristics
- APO orders transferred to ERP as a MTS production order with configuration of sales order
Motivation

Classical Make-to-Order has limitations in planning

- Planning run cannot access stock from other sales orders
- Inability to increase quantity of planned orders to e.g. utilize its quantity → lot size optimization not possible
- Sales order stock could only be moved into make-to-stock segment with material master price (not considering sales order configuration)

Use Make-to-Stock production with configurable materials

- Provide additional flexibility for supply chain planner in APO by modeling sales order driven make-to-stock (Best Practice Primary Steel concept)
Make-to-stock production with configurable materials (APO)

**Support configuration for MTS item in sales order and production**

<table>
<thead>
<tr>
<th>Sales Order</th>
<th>Planned Order</th>
<th>Production Order</th>
<th>Goods Receipt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configure MTS-item</td>
<td>APO MTS-item with own configuration</td>
<td>ERP MTS-item with own configuration</td>
<td>MTS item (batch)</td>
</tr>
</tbody>
</table>

- Customizing of requirement class; batch managed
- APO ensures that characteristic values are passed to planned order
- Characteristic values are passed on to production order in ERP without sales order reference

APO pegging connects sales order with planned order based on characteristics
Configuration in MTS

Sales Order
- Fully Configured Material Variant (MTS variant)

Different behavior in
- ERP
- ERP & external planning tool

Pre-requisite:
- Material is batch managed
- Customizing requirement class

Production Order
- Any variant configuration material

Possible with external planning tool e.g. APO

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Configuration in MTS Production Orders

Enable the production planner to generate a MTS production order with the header material configured to his needs

**Use Cases**

- The production planner has knowledge of future incoming demand and needs to be prepared with e.g. semi-finished or finished goods in inventory to quickly satisfy the demand
- Material produced is a trial version for internal or external usage
- Excess inventory (e.g. cancelled SO) / damaged / doesn’t meet original quality requirements / … needs to be processed to be sold at a later time
- …
Create Production Order – DIMP specific

1. Characteristic values can be edited
2. No sales order assignment required
Thank You!

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