Agenda

1. The Challenge: No “Real” Dynamic Safety Stock in MRP
2. The Solution: SCM Consulting Solution Dynamic Safety Stock Consideration
3. Details on DSS
Current Situation: Safety Stock in SAP ERP Materials Planning

Safety Stock in ERP Materials Planning follows a static concept, it cannot be maintained/considered on a time-varying basis.
The challenge: consider dynamic safety stock in MRP

- In current ERP resp. S/4HANA environment it is not possible to consider dynamic stock with “real” MRP elements, it is only possible to calculate order surplus quantity based on target ranges of coverages. This approach has several disadvantages in terms of transparency and planning flexibility. Many uses cases from daily business require the enablement of considering dynamic safety stocks.
- And for customers using IBP for Inventory: Using a set of stochastic mathematical algorithms, the inventory application determines the lowest stocking cost possible for locations across an entire supply chain and provide these stocking targets directly to planners at an item-location-time period level of granularity

Summary:
- SAP ERP applications (ECC / S/4HANA) cannot consider this level of granularity in materials planning
- Rules of thumbs like average, … need to be used if IBP for Inventory should feed safety stock into a materials planning process in SAP ERP (ECC / S/4HANA)
- This leads to the fact that one of the main benefits of dynamic safety stocks cannot be used in „real life“ materials planning

→ Idea: Provide a solution that enables SAP ERP systems [ECC (with or without embedded PP/DS) and S/4HANA] to consider time-varying safety stocks in materials planning
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The solution: SCM Consulting Solution Dynamic Safety Stock Consideration (DSS)

Questions and answers to SCM Consulting Solution DSS

■ What prerequisites must customer fulfil?
  - The use of SAP R/3 material management

■ What advantages offers DSS?
  - Usage of dynamic safety stock in ERP-MRP with real MRP elements

■ Is DSS a modification?
  - No. It is an ADD-on, no modification.

■ How time-consuming is the adoption?
  - The solution will be installed and available within one day.

■ What’s the whole amount of costs for the DSS?
  - Please send an inquiry to Marc Hoppe or Ferenc Gulyássy
Comparison of Static Safety Stock and Dynamic Safety Stock in MRP

- **Static Safety Stock**:
  - Safety Stock over time for all Planning Runs in October (monthly Safety Stock Calculation)
  - Safety Stock over time for all Planning Runs in September (monthly Safety Stock Calculation)
  - Safety Stock over time for all Planning Runs in August, (e.g., 1st of August) (monthly Safety Stock Calculation)

- **Dynamic Safety Stock**:
  - Dynamic Stock over time for one single Planning Run in August, (e.g., 1st of August)

> Currently not supported in ERP MRP with separate MRP elements for dynamic safety stock!!!

> The full set of IBP Inventory results cannot be handed over to execution and materials planning in ERP!!!
Agenda

1. The Challenge: No “Real” Dynamic Safety Stock in MRP
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Dynamic Safety Stock Consideration: Concept

ECC or S/4HANA

Manual Maintenance

DSS tables

/MAPOLM/X_Create_MRP_Elements
creates MRES

MRP tables

MRP creates requirement and receipt quantities that consider dynamic safety stock.

Stock Requirements List

IBP
**Dynamic Safety Stock Consideration: Idea**

Can be maintained on a weekly or monthly basis with data from

- manual maintenance
- IBP for Inventory
- …

<table>
<thead>
<tr>
<th>Material</th>
<th>Plant</th>
<th>MRP Area</th>
<th>Version Number</th>
<th>Version Name</th>
<th>Active</th>
<th>Period Indicator</th>
<th>Movement Type for</th>
<th>Movement Type for</th>
<th>Unit of Measure</th>
<th>Price per Unit of</th>
<th>Description</th>
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<th>05.2017</th>
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<td>922</td>
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<td>922</td>
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<td>Standard SB</td>
<td>x M</td>
<td>921</td>
<td>922</td>
<td>Pieces</td>
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<td>Safety Stock Quantity</td>
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<td>922</td>
<td>Euro</td>
<td>45</td>
<td>Safety Stock Value</td>
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<td>540</td>
<td>1215</td>
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</tbody>
</table>

- A report that is part of DSS package [SAPLOM/X_Create_MRP_Elements will create MRES elements that are fully integrated into other steps of SAP process like MRP, ATP check, …. .
- In Stock/Requirements List these elements are displayed as safety stock requirements and safety stock receipts
Example – Situation without DSS

<table>
<thead>
<tr>
<th></th>
<th>August</th>
<th>September</th>
<th>Ocotober</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
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<td>140</td>
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</tbody>
</table>

Without DSS rules of thumbs need to be incorporated like first month, max, average over x periods, ...

**Safety Stock**

Dynamic Stock over time for one single Planning Run in August, (e.g: 1st of August)

**Stock Requirements List**

<table>
<thead>
<tr>
<th>Date</th>
<th>MRP Element</th>
<th>Receipt/Requirement Qty</th>
<th>Available Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug, 1</td>
<td>Stock</td>
<td>+300</td>
<td>+300</td>
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<tr>
<td>Aug, 1</td>
<td>Safety Stock</td>
<td>-100</td>
<td>+200</td>
</tr>
<tr>
<td>Aug, 7</td>
<td>Sales Order</td>
<td>-160</td>
<td>+40</td>
</tr>
<tr>
<td>Aug, 8</td>
<td>Sales Order</td>
<td>-20</td>
<td>+20</td>
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<tr>
<td>Sep, 1</td>
<td>Planned Ind. Req.</td>
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<td>-80</td>
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<tr>
<td>Sep, 1</td>
<td>Planned Order</td>
<td>+80</td>
<td>0</td>
</tr>
</tbody>
</table>

The possible level of granularity of IBP Inventory will not be represented in ERP MRP!!!
## Example – Situation with DSS

<table>
<thead>
<tr>
<th>Month</th>
<th>August</th>
<th>September</th>
<th>Ocotober</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
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<td>-10</td>
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<td>+10</td>
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</tr>
</tbody>
</table>

**Dynamic safety stock increases → Safety Stock requirement is created**

Dynamic safety stock decreases → Safety Stock receipt is created

Dynamic Stockover time for one single Planning Run in August, (e.g. 1st of August)
# Dynamic Safety Stock in ERP MRP with DSS

<table>
<thead>
<tr>
<th>Safety Stock</th>
<th>August</th>
<th>September</th>
<th>Occtober</th>
<th>November</th>
<th>December</th>
<th>January</th>
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<table>
<thead>
<tr>
<th>MRP Element</th>
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<tbody>
<tr>
<td></td>
<td>+20</td>
<td>-30</td>
<td>+10</td>
<td>-40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Date | MRP Element | Receipt/Requirement Qty | Available Quantity
---|-------------|-------------------------|-------------------
Aug, 1 | Stock       | +300                    | +300              |
Aug, 1 | Safety Stock Requirement | -100                  | +200              |
Aug, 7 | Sales Order | -160                    | +40               |
Aug, 8 | Sales Order | -20                    | -20               |
Sep, 1 | Safety Stock Receipt | +20                    | +40               |
Sep, 1 | Planned Ind. Req. | -100                  | -60               |
Sep, 1 | Planned Order | +60                    | 0                 |
Nov, 1 | Safety Stock Requirement | -30                  | -30               |
Nov, 1 | Planned Order | +30                    | 0                 |
Jan, 1 | Safety Stock Receipt | +10                    | +10               |
Mar, 1 | Safety Stock Requirement | -40                  | -30               |
Mar, 1 | Planned Order | +30                    | 0                 |

With DSS the possible level of granularity of IBP Inventory can be considered in ERP MRP!!!
Dynamic Safety Stock in ERP MRP with DSS Standalone
Dynamic Safety Stock in ERP MRP with DSS: Embedded in SCM CS Simulation Safety Stock (SSS)
Dynamic Safety Stock in ERP MRP with DSS

MRP Element Texts can be maintained

Movement Types can be maintained for MRP elements
Dynamic Safety Stock in ERP MRP with DSS

Dynamic safety stock consideration - Results screen

Dynamic Safety Stock Values
# Dynamic Safety Stock in ERP MRP with DSS

## Stock/Requirements List as of 17:21 hrs

<table>
<thead>
<tr>
<th>Date</th>
<th>MRP element</th>
<th>MRP element data</th>
<th>Rescheduling date</th>
<th>E... Receipt/Reqmt</th>
<th>Available Qty</th>
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</thead>
<tbody>
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<td>50</td>
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<td>01.11.2017</td>
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<td>DSSRequirement(00)</td>
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<td>DSSRec</td>
<td>DSSReceipt(000010)</td>
<td>20</td>
<td>75</td>
<td>120</td>
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Where can I get more information on SCM CS?

Go to SAP service marketplace and search for note 1493943
Visit the SCM CS Overview on the SAP Help Portal
Visit our webpage: www.sap.de/inventoryoptimization

Or ask for more information:

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