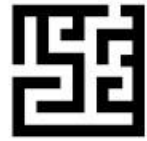# Material Requirements Planning (MRP)

SAP S/4HANA Sourcing and Procurement (Configuration and End-User)

Business Scenario

- The Company wants to perform material requirements planning for Trading goods (i.e., Drill Machines), Raw Materials (i.e., Steel Sheet), and Finished products (i.e., Hammer) based on their demand

- It requires that the system checks the available stocks in various storage locations and decide when to procure Raw Materials and Trading goods externally and when to procure Finished products inhouse

Material Requirements Planning (MRP)

- MRP is about to give guarantee for material availability when there is no stock or low stock and gives procurement proposal or production proposal as per the settings

- MRP is required to procure or produce the required quantities on time for internal purpose or for Sales

- In SAP, MRP helps businesses calculate the material requirements planning based on the actual demand or forecast demand and helps to create the requirements in the form of purchase requisitions, delivery schedule line, planned order, or stock transport orders etc.

- The following are the MRP procedures available in SAP:
    - MRP (Material Requirements Planning)
    - MPS (Master Production Schedule)
    - CBP (Consumption Based Planning)

Material Requirements Planning (MRP) - CBP (Consumption Based Planning)

- **It is available for external procured materials such as Raw material, and Trading goods**

- It uses the past consumption data to calculate the future requirements

- Unlike MPS , CBP procedures are nothing but simple planning procedures

- It has no relation with the independent or dependent requirement instead it is triggered when the stock falls below the reorder point or by forecast requirements

- They are used to plan material requirements based on historical data, forecast procedures, and set targets

- Therefore, CBP is used in the production plants area and in areas without in-house production to plan for operating supplies and planning

- It has three types of MRP planning procedures:
  - Re-order point planning
  - Forecast based planning
  - Time phased planning

Consumption Based Planning (CBP) - Re-order Point Planning

- **Re-order Point Planning** can be carried out **manually** or **automatically**:
- The system performs the following tasks during Re-order point planning
  - Recalculate the **replenishment lead time** for materials with automatic reorder point planning
  - Carry out a **net requirement calculation** for every material included in the planning run
  - Carry out a **lot-size calculation** for every material with net requirements
  - Check the **safety stock level** that is defined by past consumption data, vendor/production delivery timelines, service level, and forecast error
- During reorder point planning, the following time elements are taken into account in the forward scheduling procedure when calculating the availability date
  - **Planned delivery time**
  - **Purchasing department processing time**
  - **Goods receipt processing time**

Consumption Based Planning (CBP) - Re-order Point Planning

- The following parameters should be considered when calculating the **Re-order point** for a material
  - Lot-sizing procedure
  - Safety stock
  - Replenishment lead time
- The following **Lot-sizing procedures** are suitable for reorder point planning
  - Lot-for-lot order quantity
  - Replenish to maximum stock level
  - Fixed order quantity

MRP Run for Trading Goods with Reorder Point Planning, Lot-for-lot Order Quantity, and Minimum Lot Size

SAP S/4HANA Sourcing and Procurement (End-User)

MRP Run for Trading Goods
with
Reorder Point Planning,
Lot-for-lot Order Quantity, Minimum Lot Size,
and Safety Stock

SAP S/4HANA Sourcing and Procurement (End-User)

MRP Run for Trading Goods
with
Reorder Point Planning,
Lot-for-lot Order Quantity,
No Minimum Lot Size,
and Safety Stock

SAP S/4HANA Sourcing and Procurement (End-User)

MRP Run for Raw Materials
with
Reorder Point Planning, Replenish to Maximum Stock Level (Lot Sizing Procedure), and Safety Stock

SAP S/4HANA Sourcing and Procurement (End-User)

MRP Run for Raw Materials with Reorder Point Planning, Fixed Order Quantity (Lot Sizing Procedure), and Safety Stock

SAP S/4HANA Sourcing and Procurement (End-User)

MRP Run for Raw Materials with
Reorder Point Planning, Fixed Order Quantity (Lot Sizing Procedure), Safety Stock and Scheduling Agreement

SAP S/4HANA Sourcing and Procurement (End-User)

MRP Run for Trading Goods with Reorder Point Planning, Lot-for-lot Order Quantity, and Scheduling Agreement

SAP S/4HANA Sourcing and Procurement (End-User)

MRP Run for Finished Product
with
Reorder Point Planning, Replenish to Maximum Stock Level (Lot Sizing Procedure), and Safety Stock

SAP S/4HANA Sourcing and Procurement (End-User)