

## Managing Materials Requirements Planning Course



# Introduction

- Instructor
- Welcome and Introductions
- Logistics
- Ground Rules
- Course Objectives
- Course Content



## Course Agenda

	Module Description
1	Introduction
2	MRP Overview
3	MRP Master Data
4	MRP Run
5	Planned Orders
	Summary

## Course Objectives

By the end of this Chapter, you will be able to:

- Describe the process, benefits and key terms of material requirements planning process
- Maintain master data relevant for MRP
- Perform MRP for single or all materials in the warehouse
- Run MRP reports

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## Key Terms and Definitions

### **ERP** (Enterprise Resource Planning)

- Business software designed to provide an integrated and systematic environment for a business to manage its daily activities
  - ECC stands for the ERP Central Component

### **Company Code**

- Represents a legal or logical entity.
- It is the smallest organizational unit for which complete, independent accounting can be carried out

### **Plant**

- An organizational unit for dividing a company according to procurement, maintenance and materials planning

## Key Terms and Definitions

### **Storage Location**

- Physical location at which a material is received and stored

### **Material**

- An item or commodity that is bought or sold, a material can also be a service, or a number identifying a material master record

### **Material Group (Product Category)**

- Allows you to categorize items for reporting and workload distribution among buyers and/or planners

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# Material Requirements Planning

## Materials Requirements Planning:

- Timely procurement of required materials
- Monitors stocks
- Ensures availability of all MRP materials and their components
- Creation and scheduling of planned orders based on lead times for all MRP materials/components
- Manages Inventory and Procurement



# Material Requirements Planning

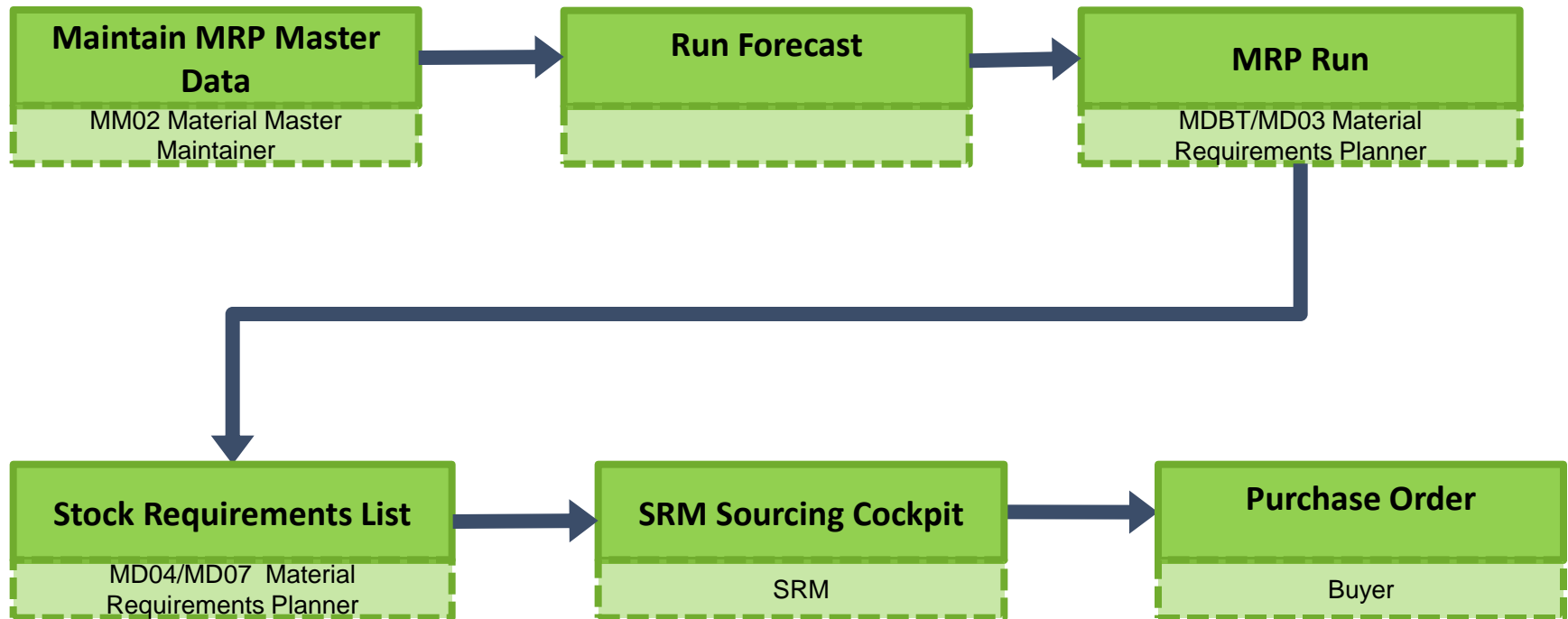
- MRP tries to strike the best possible balance between:
  - Ensuring materials are available as needed
  - Minimizing inventory levels
- MRP Controllers are responsible for:
  - Managing the replenishment of a large quantity of materials to cover demand from schools and offices

# Material Requirement Planning

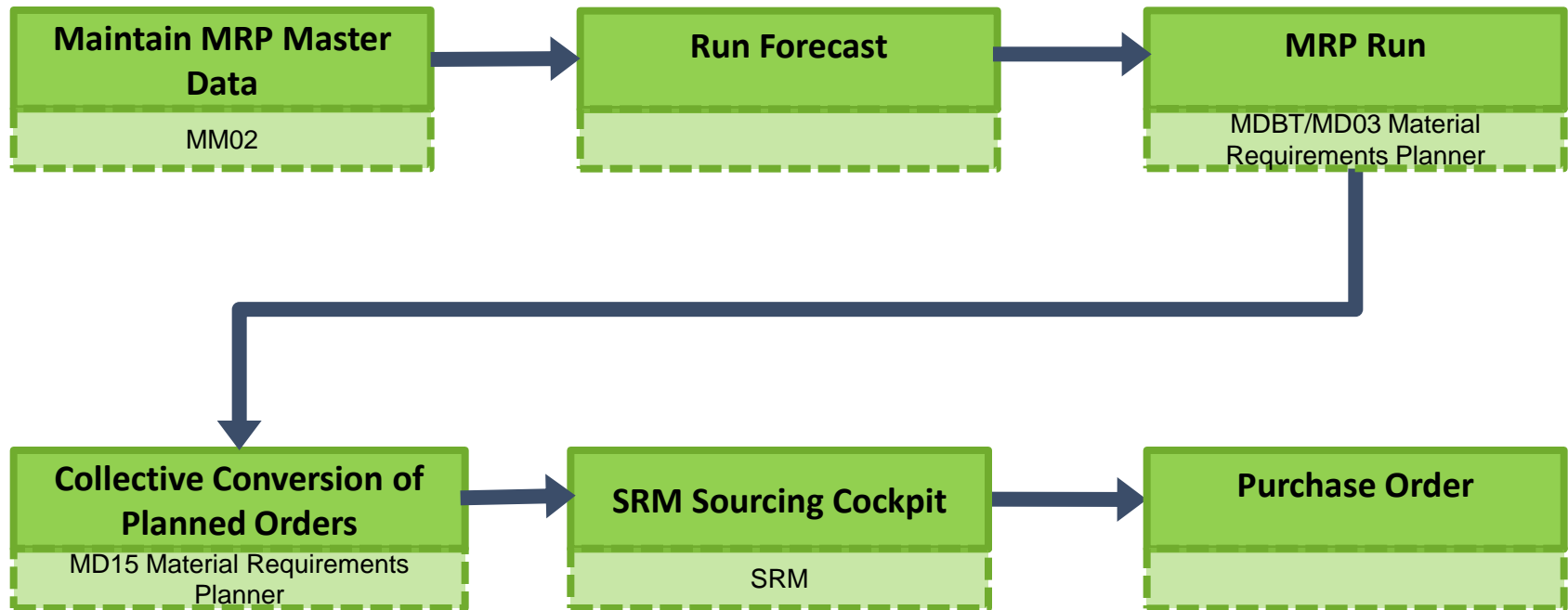
MRP depends on the following factors:

- Consumption History
- Forecast
  - Seasonal
- Transactional Data
  - STO's from schools, open purchase orders to the suppliers
- Master Data
  - Material master
    - Re-order point
    - Safety stock
    - Service Level (%)

## MRP - Overview



## MRP – Collective Access



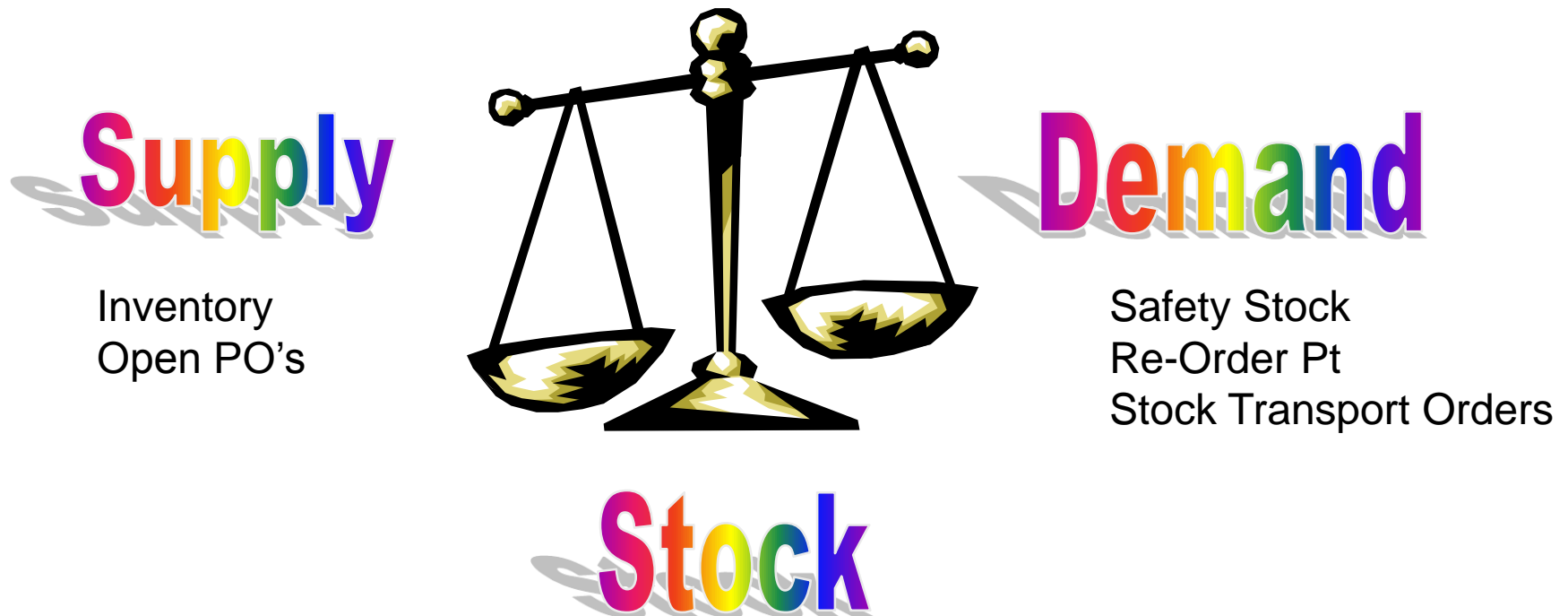
## MRP Process at LAUSD

- Materiel Management Branch staff have the ability to maintain and manage material master records in SAP
- Materiel Management Branch staff manage material master data by assigning materials to MRP control parameters such as MRP type, MRP controller, lead time
- During an MRP run, SAP evaluates the stock situation of the material and generates planned orders which will be converted to purchase requisitions
- Purchase requisitions are transferred to SRM as shopping carts. Buyers process shopping carts in the Sourcing cockpit to complete the procurement process
- The planning parameters in the material master control the proposed delivery dates and order quantities

## MRP Process at LAUSD

- The replenishment of issued materials can be accomplished by assigning the following parameters in the material master
  - MRP Type
  - MRP Controller
  - Safety stock (automatically populated by Forecast)
  - Re-order Point (automatically populated by Forecast)
  - Service Level (%)
- Additional factors which the system considers in calculating replenishment requests include:
  - Current inventory levels
  - Open purchase orders
  - Returns to warehouse

- MRP balances supply with demand for materials and resources within an organization
- It ensures that a business orders the right quantities of materials at the right time to satisfy requirements
- It manages inventory and procurement





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## Chapter 3 Objectives

By the end of this Chapter, you will be able to:

- Describe the process and benefits of managing material master data
- Identity the master data components involved in MRP process
- Assign MRP values to material master

## Key Terms and Definitions

### **MRP Type**

- Key that determines whether and how the material is planned

### **Reorder Point**

- The quantity at which MRP will create a planned order

### **MRP Controller**

- The person responsible for a group of materials in MRP in a plant

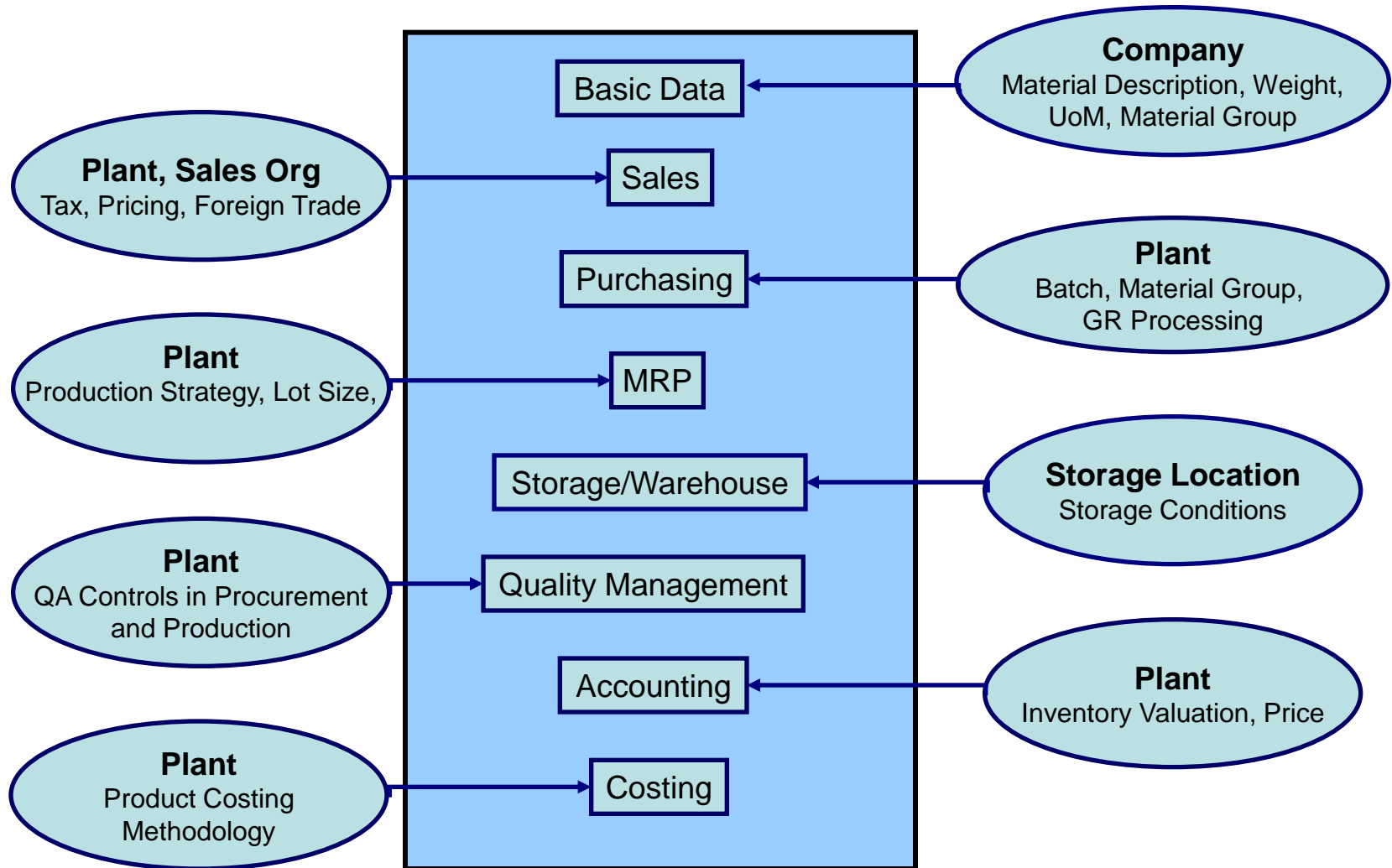
### **Service Level (%)**

- Percentage specifying what proportion of the requirement is to be covered by warehouse stock, system uses the service level to calculate safety stock

### **Safety Stock**

- Material quantity required to satisfy unexpectedly high demand, the purpose of safety stock is to prevent material shortages

# SAP Master Data Views



# MRP1 View

**Display Material 6452141170 (LAUSD Materials)**

Additional Data Org. Levels

Purchase order text **MRP 1** MRP 2 MRP 3 MRP 4 For...

Material 6452141170 Bond Paper 8.5 X 11  
Plant 2000 Stores Distribution

**General Data**

Base Unit of Measure	EA	each	MRP group	
Purchasing Group	002		ABC Indicator	
Plant-sp.matl status			Valid from	

**MRP procedure**

MRP Type	V2	Autom. reord.point w. ext.reqs
Reorder Point	100	Planning time fence
Planning cycle		MRP Controller

**Lot size data**

Lot size	EX	Lot-for-lot order quantity
Minimum Lot Size	0	Maximum Lot Size
Assembly scrap (%)	0.00	Maximum stock level
Rounding Profile		Takt time
Unit of Measure Grp		Rounding value

MRP type indicates if a material is planned using MRP

MRP controller indicates who is responsible for planning the material

# MRP2 View

**Display Material 6452141170 (LAUSD Materials)**

Additional Data Org. Levels

MRP 1 MRP 2 MRP 3 MRP 4 Forecasting Plant data ...

Material 6452141170 Bond Paper 8.5 X 11  
Plant 2000 Stores Distribution

**Procurement**

Procurement type	F	Batch entry	<input type="checkbox"/>
Special procurement	<input type="checkbox"/>	Prod. stor. location	<input type="checkbox"/>
Quota arr. usage	<input type="checkbox"/>	Default supply area	<input type="checkbox"/>
Backflush	<input type="checkbox"/>	Storage loc. for EP	<input type="checkbox"/>
JIT delivery sched.	<input type="checkbox"/>	Stock det. grp	<input type="checkbox"/>
<input type="checkbox"/> Bulk Material			

**Scheduling**

GR Processing Time	1 days	Planned Deliv. Time	10 days
SchedMargin key	000	Planning calendar	<input type="checkbox"/>

**Net requirements calculation**

Safety Stock	100	Service level (%)	80.0
Min safety stock	100	Coverage profile	<input type="checkbox"/>
Safety time ind.	<input type="checkbox"/>	Safety time/act.cov.	5 days
STime period profile	<input type="checkbox"/>		

Safety stock indicates the minimum stock required to avoid material shortages

Service level helps determine the safety stock quantity, the higher the service level, the higher will be the safety stock

## MM03 Demonstration

### Walkthrough: Display MRP Views in Material Master



*This is a  
**demonstration** only.  
Watch as the  
instructor shows you  
how to complete the  
task in SAP.*

## MM03 Exercise

### Exercise: Display MRP Views in Material Master



*To complete this  
**exercise**  
follow the  
instructions listed  
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## Chapter 4 Objectives

By the end of this Chapter, you will be able to:

- Describe the MRP process run at LAUSD
- Run MRP at plant level
- Run reports to view planned orders and stock requirements

## Forecast

- The forecast must be run prior to the MRP Run. The forecast will:
  - Automatically determine the re-order point and the safety stock levels based on the consumption history for the material
  - The re-order point and the safety stock are found in the material master record
  - The seasonal forecast model has been selected due to the spike in demand each June

## LAUSD MRP Process

- MRP run results in the creation of planned orders that may be converted to purchase requisitions
- During MRP run, the system evaluates the stock situation of the material including:
  - Current stock
  - STO's from school within vendor lead time
  - Reorder point
- SAP calculates the net requirements if the stock falls below re-order level

- MRP Run can be executed for:
  - Plant, several plants or combination of these
- The following MRP run options are available:
  - Regular MRP run
  - MRP run as background job
- Planned orders are the output of an MRP run and can be converted into purchase requisitions
- MRP is run automatically once a week
  - Stores – every Sunday night
  - Foods – every Monday night
- MRP may be run by the MRP controller manually during the week one material at a time if need be.

## MD07 – Stock Requirements List (Collective)

- Each MRP controller may define traffic lights to highlight conditions that require their attention
  - Stock Day's Supply – Number of days until all stock is consumed (except for safety stock)
  - First Receipt DS – 'Stock day's supply' plus less reliable PO receipt data
  - Second Receipt DS – 'Stock day's supply' plus less reliable Purchase Requisition receipt data
- MD07 can be used to quickly identify exceptions and then drill down to MD04, the stock requirements list

## MD04 - Stock Requirements List

- Stock requirements list is available to evaluate all demand and supply elements for a single material
- Exception codes may be displayed for an element in the stock requirements list

**Stock/Requirements List as of 18:09 hrs**

Show Overview Tree

Material: 6452141170 PAPER BOND 8.5X11" WHITE 20# 10/CSE  
Plant: 2000 MRP type: V2 Material Type: ZLSD Unit: CSE

A	Date	MRP e	MRP element data	Rescheduli	E	Receipt/Reqmt	Available Qty	Sup	Stor
	05/14/2013	Stock					3,006		
	02/25/2013	POitem	4800000005/00020		07	880	3,886	2001	
	04/17/2013	Delvry	1000000129/000020/0...			1-	3,885	2001	
	04/17/2013	Delvry	1000000155/000010/0...			10-	3,875	2001	
	04/17/2013	Delvry	1000000156/000010/0...			1-	3,874	2001	
	04/17/2013	Delvry	1000000162/000010/0...			10-	3,864	2001	
	04/17/2013	Delvry	1000000180/000010/0...			1-	3,863	2001	
	04/17/2013	Delvry	1000000183/000010/0...			5-	3,858	2001	
	04/17/2013	Delvry	1000000184/000010/0...			10-	3,848	2001	
	04/18/2013	POitem	4800000047/00020		07	1	3,849	2001	
	04/25/2013	Ord.DS	4600000241/00010			10-	3,839	1000	8118
	04/26/2013	Ord.DS	5500000333/00010			10-	3,829	1000	
	05/15/2013	POitem	4800000060/00010			1	3,830	2001	
	05/29/2013	POitem	45000009409/00001			10	3,840	2001	
	05/29/2013	PurRqs	0010000290/00010 *		06	1,990	5,830	2001	
	07/01/2013	PldOrd	0000006857/STP0		05	170	6,000	2001	

## MD03 Demonstration

### Walkthrough: Process Single-Item Single-Material MRP



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Watch as the  
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## MD03 Exercise

### Exercise: Process Single-Item Single-Material MRP



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## Chapter 5 objectives

By the end of this Chapter, you will be able to:

- Display planned orders
- Create purchase requisitions

## Planned Orders

- Planned orders will be created during MRP run
- Planned orders are used to procure shortage quantity
- Planned orders can be changed, rescheduled or deleted at any time

## Planned Orders

- Planned order is generated from an MRP run for the procurement of a particular material at a determined time
- Planned order has the following characteristics:
  - It is a procurement proposal in MRP for requirements coverage
  - It can be changed or deleted at any time
- Planned orders will be converted into purchase requisitions for external procurement

## Purchase Requisitions

- MRP controllers are responsible for converting planned orders to purchase requisitions
- Transaction code MD04 is used to convert a single planned order to purchase requisition
- Transaction code MD15 is used to convert multiple planned orders to purchase requisitions

## MD04 Demonstration

### Walkthrough: Convert Planned Orders to Purchase Requisitions



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**demonstration** only.  
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instructor shows you  
how to complete the  
task in SAP.*

## MD04 Exercise

### Exercise: Convert Planned Orders to Purchase Requisitions



*To complete this  
**exercise**  
follow the  
instructions listed  
here.*



## MD15 Demonstration

### Walkthrough: Convert Planned Orders to Purchase Requisitions (Mass)



*This is a  
**demonstration** only.  
Watch as the  
instructor shows you  
how to complete the  
task in SAP.*

## MD15 Exercise

### Exercise: Convert Planned Orders to Purchase Requisitions (Mass)



*To complete this  
**exercise**  
follow the  
instructions listed  
here.*

**You have just completed the course.**

**Thank you for attending!**

