



# **Working in Enterprise Resource Planning System**

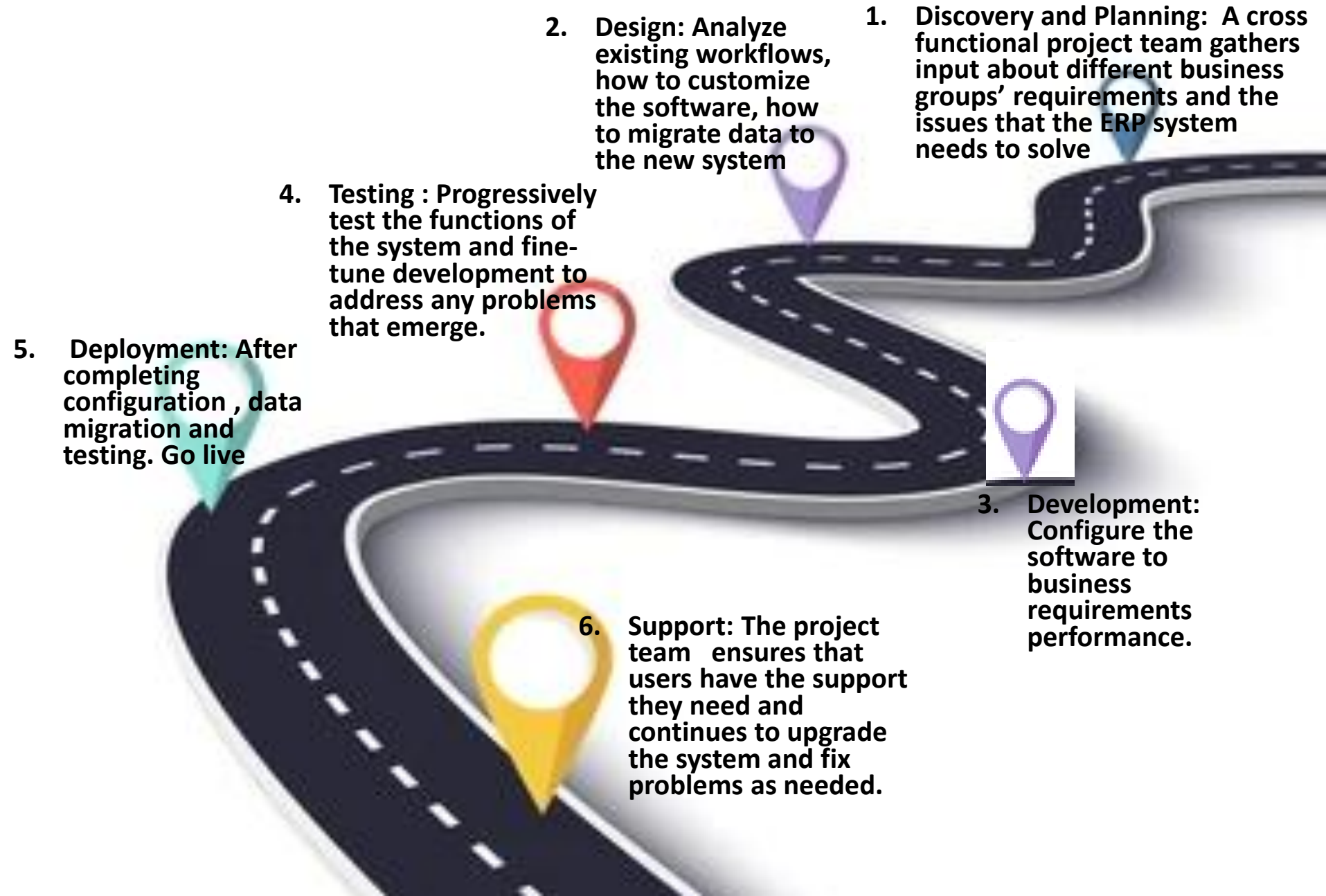
**03rd International Training Programme on “Audit of Extractive Industries”**

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**Working Group on Audit of EI (WGEI) under International Organisation of Supreme Audit Institutions (INTOSAI)**

# Road map for ERP Implementation



# **ERP implementation : Challenges**

- 1. Choosing the right ERP system**
- 2. Tenacity and Commitment From Top Management**
- 3. Integration process**
- 4. Employee training and development programs**
- 5. Discipline**
- 6. Data quality**
- 7. Flexibility**
- 8. Cost**
- 9. Employee retention**
- 10. Implementation Time Frame**
- 11. Project planning & Management**
- 12. Testing**

# **Benefits of Employee training program**

**Employee training program is the back bone of successful ERP implementation**

- 1. Increased employee productivity**
- 2. Makes the workforce more cost- efficient**
- 3. Makes the workforce more time - effective**
- 4. Reduces the risk potential.**
- 5. Helps retain the existing workforce .**



## Login and Navigation in ERP System

# Navigation Topics

- ☐ Logging On
- ☐ SAP Window components
- ☐ Using the Navigation Area
- ☐ Transaction Codes
- ☐ Role Based Menu
- ☐ Standard Tool Bar
- ☐ SAP Easy Access Settings
- ☐ User Settings
- ☐ Messages
- ☐ Online Help use

# Logging on

The image shows the SAP R/3 login interface. At the top is a blue header bar with the SAP logo and menu items: User, System, Help. Below this is a status bar with a green checkmark icon and a document icon. The main title is 'SAP R/3'. Below the title is a button labeled 'New password'. The login form consists of four input fields: 'Client' with the value '200', 'User' with a yellow highlight, 'Password' with asterisks, and 'Language' with a small white box. At the bottom is a status bar with a play button icon, the text 'RD1 (1) (000)', a document icon, 'r3dev', and 'OVR'.

Client 200

User

Password \*\*\*\*\*

Language

RD1 (1) (000) r3dev OVR

## Required Fields

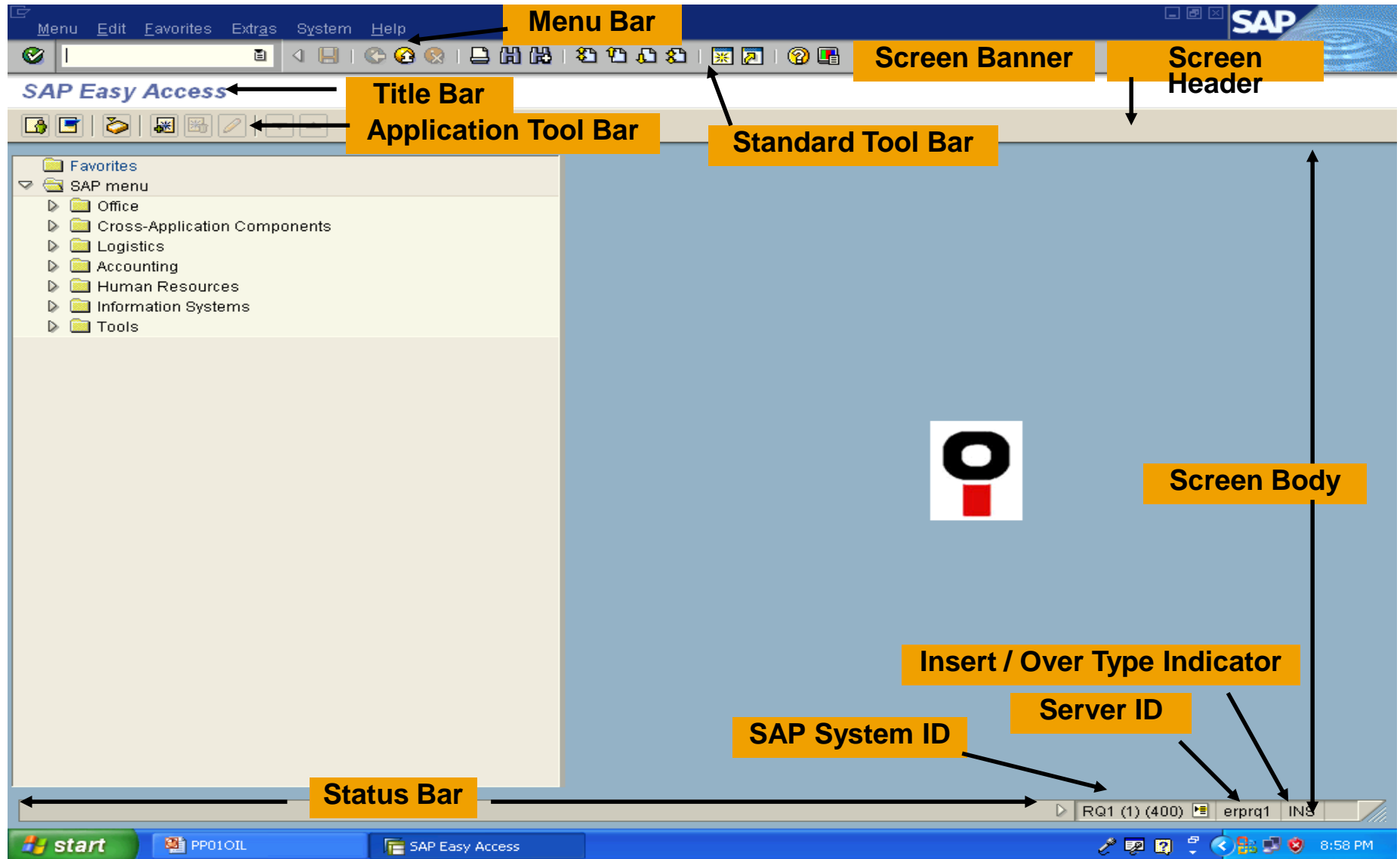
Client (500 in production)

User ID

Password

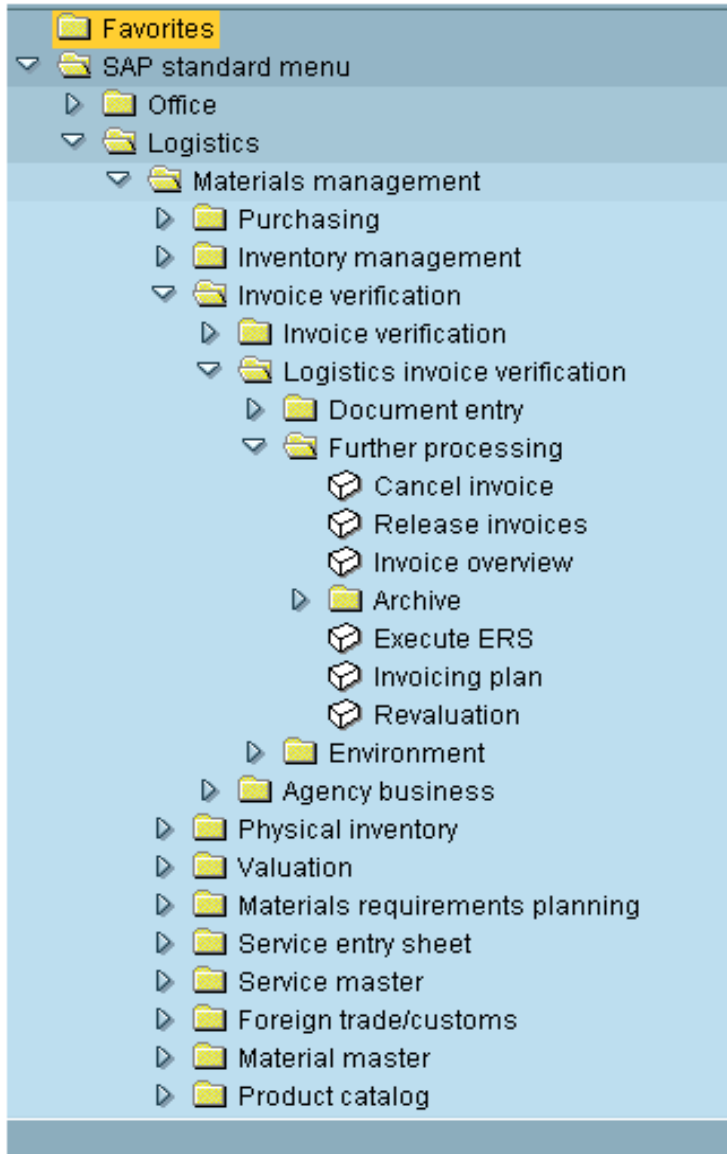
Language

# The SAP Window





# Using the Navigation Area



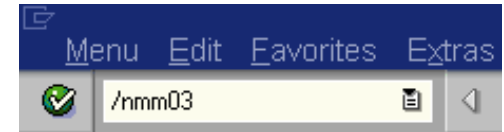
□ The menus can be expanded and collapsed in the navigation area by choosing the dropdown arrows to the left of the menu items, as in the example below

□ To open an application in the navigation area Double-click its node

# Transaction Codes

- ❑ A transaction code can be entered in the Command field.

- ❑ Precede the transaction code with /n then the transaction is the next screen opened in the current session.



- ❑ Precede the transaction code with /o then a new session is opened for the transaction. This means you then have multiple sessions.



- ❑ To start a transaction in SAP 4.6 and above, there are 4 options:

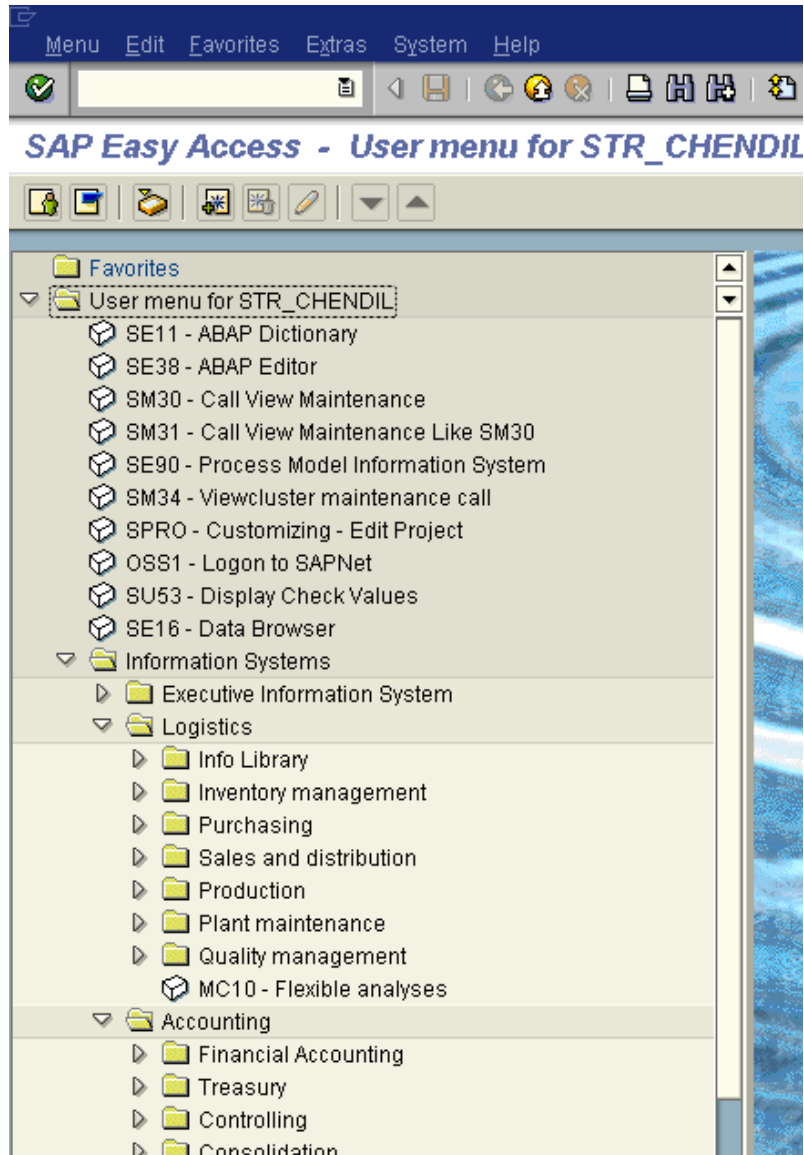
- ❑ Position the cursor on the required transaction in the tree structure and press enter

- ❑ Double-click on the required transaction in the tree structure

- ❑ Position the cursor on the required transaction in the tree structure and select Edit → Execute (or press F2)

- ❑ Expand the command field and enter the transaction code

















# Role-based Menu



- ☐ The SAP Easy Access user menu is a user-specific point of entry. The new role-based menu replaces the old SAP menu structure.
- ☐ Every user works with his or her own role-based menu
- ☐ Each Role e.g. Stores In charge is automatically integrated into SAP's authorization concept
- ☐ All users administrate their own favorites in the menu

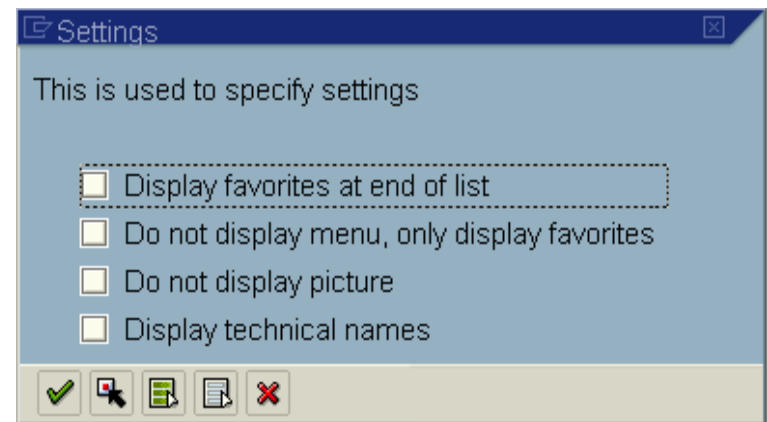
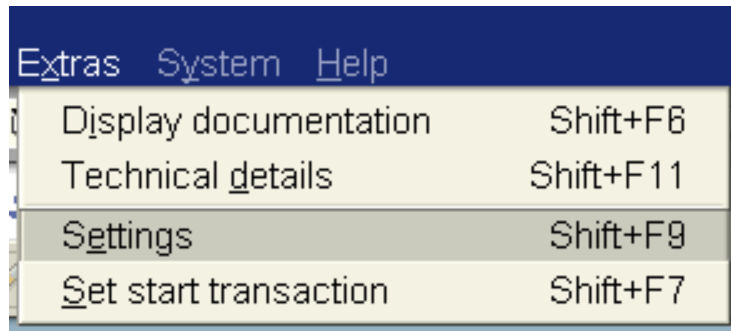
# Standard Toolbar

- ❑ The Standard Toolbar contains the Command field and the standard SAP Toolbar buttons.
- ❑ **Command Field:** The Command field is used to enter transaction codes that take you directly to a system task without using menus.

Button	Keyboard Shortcut	Description	Button	Keyboard Shortcut	Description
	Enter Key	Enter/Continue		Ctrl + Page Up	First page
	Ctrl + S	Save to database		Page Up	Previous page
	F3	Back		Page Down	Next page
	Shift + F3	Exit System Task		Ctrl + Page Down	Last page
	F12	Cancel		None	Create New session
	Ctrl + P	Print		None	Create shortcut on Desktop
	Ctrl + F	Find		F1	F1 Help
	Ctrl + G	Find next		Alt + F12	Customize Local Layout

# SAP Easy Access Settings

- ☐ The Menu can be displayed in SAP by choosing Extras → Settings.
  - ☐ The users' favorites should appear before or after the menu
  - ☐ Only User's favorites, and not the menu, should appear
  - ☐ The SAP Easy Access graphic should appear on the right-hand side of the screen.
  - ☐ Technical names of menu options should appear in the navigation area



# User Settings

❑ Users can maintain their own settings by choosing System → User Profile →

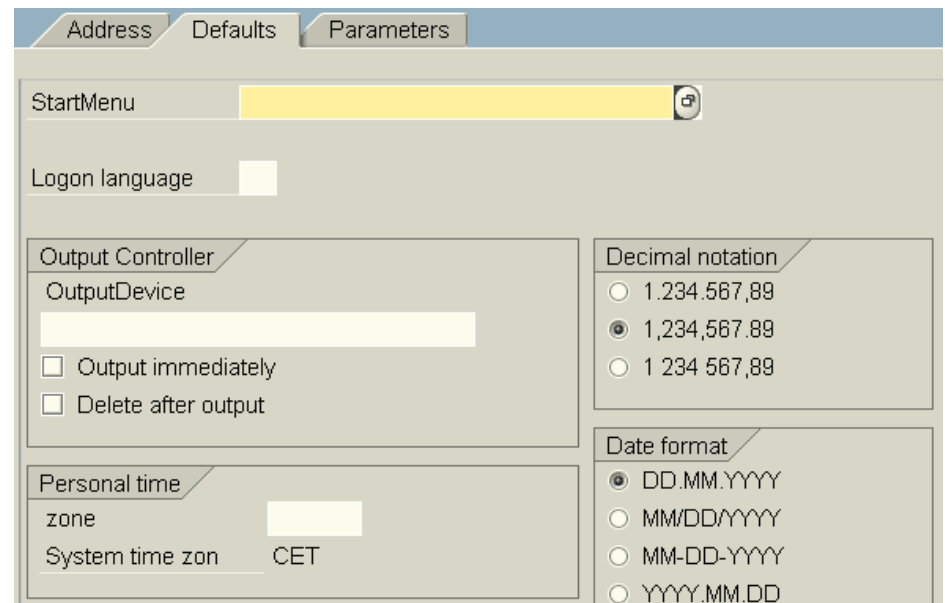
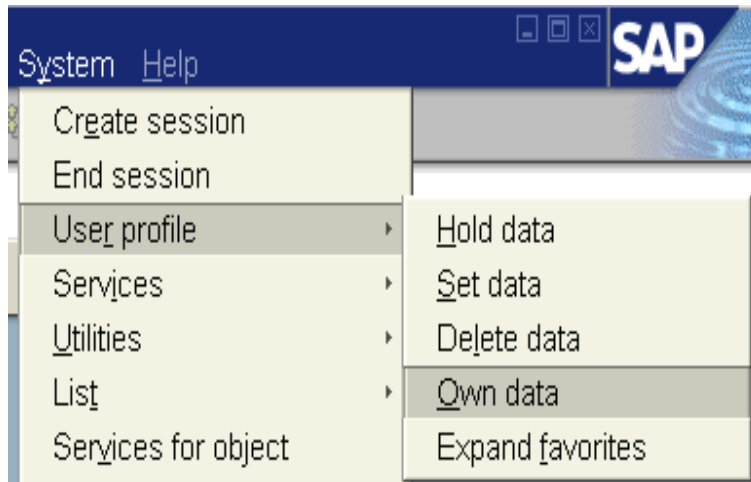
Own Data

❑ Defaults

✓ Change default printer, language, and date and decimal display formats.

❑ Parameters

✓ Allow user to create default information for frequently used fields.



# Messages

- ☐ Messages appear either in the status bar or in a pop-up window, depending on user settings

- ☐ Messages starting with:



- ☐ “E” indicate an Error message



- ☐ “W” indicate a Warning message




- ☐ Messages not beginning with an “E” or a “W” are simply Information messages

- ☐ Required fields are denoted by a check mark

# Using Online Help




- ❑ Field Level Help
  - ❑ Used to describe what a currently selected field is designed to do.
  - ❑ Click on the Help icon or 'F1'.

Example:

- ❑ Find definition of Material number
  - ❑ Click Material field
  - ❑ Click Help button or press F1 key
  - ❑ Click Cancel button  to return to the screen

**Create Material (Initial Screen)**

Select view(s)   Organizational levels   Data

Material	<input type="text"/>	
Industry sector	<input type="text"/>	
Material type	<input type="text"/>	

**Performance Assistant**

**Material number**

Alphanumeric key uniquely identifying the **material**.

**Procedure**

In create mode, you can either choose a number yourself or have a consecutive number assigned for you by the system, depending on the method preferred by your company,

- If you leave the field blank, the system will assign a number automatically.
- If you enter a number, it must be within the corresponding number range.



# Modules Within SAP System

**FI:**

**Financial Accounting**

**AM:**

**Asset Management**

**TR-CM:**

**Cash Management**

**CO:**

**Controlling**

**IM:**

**Investment Management**

**MM:**

**Materials Management**

**PP:**

**Production Planning**

**PS:**

**Project System**

# Modules Within SAP System

**HR:**

**Human Resource**

**SD:**

**Sales & Distribution**

**PM:**

**Plant Maintenance**

**QM:**

**Quality Management**

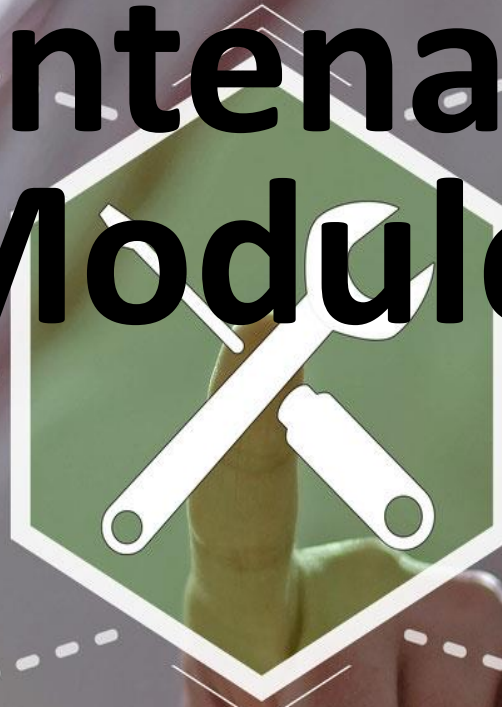
**DMS:**

**Document Management System**

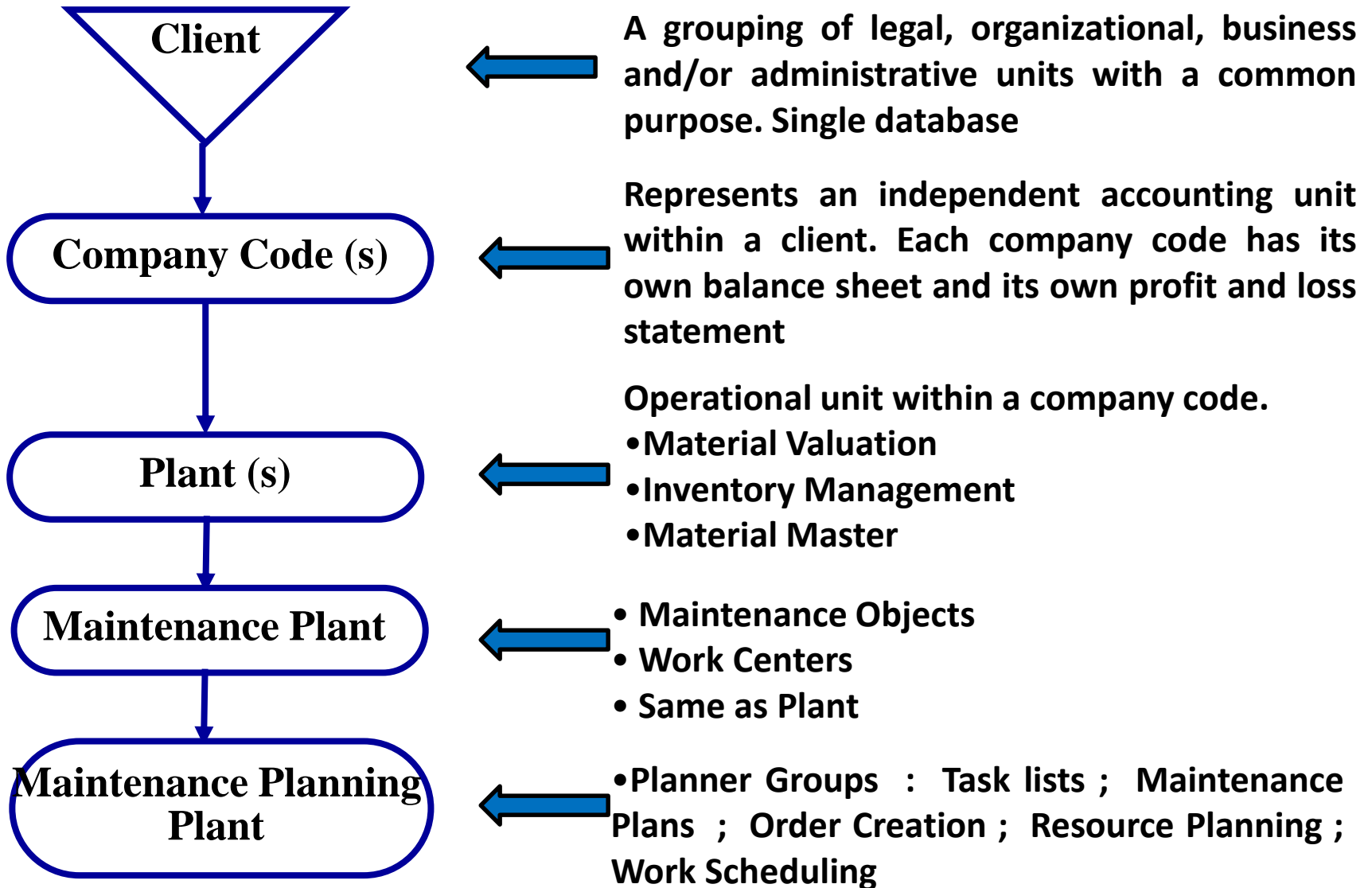
**CIN:**

**India Localization Enhancement**

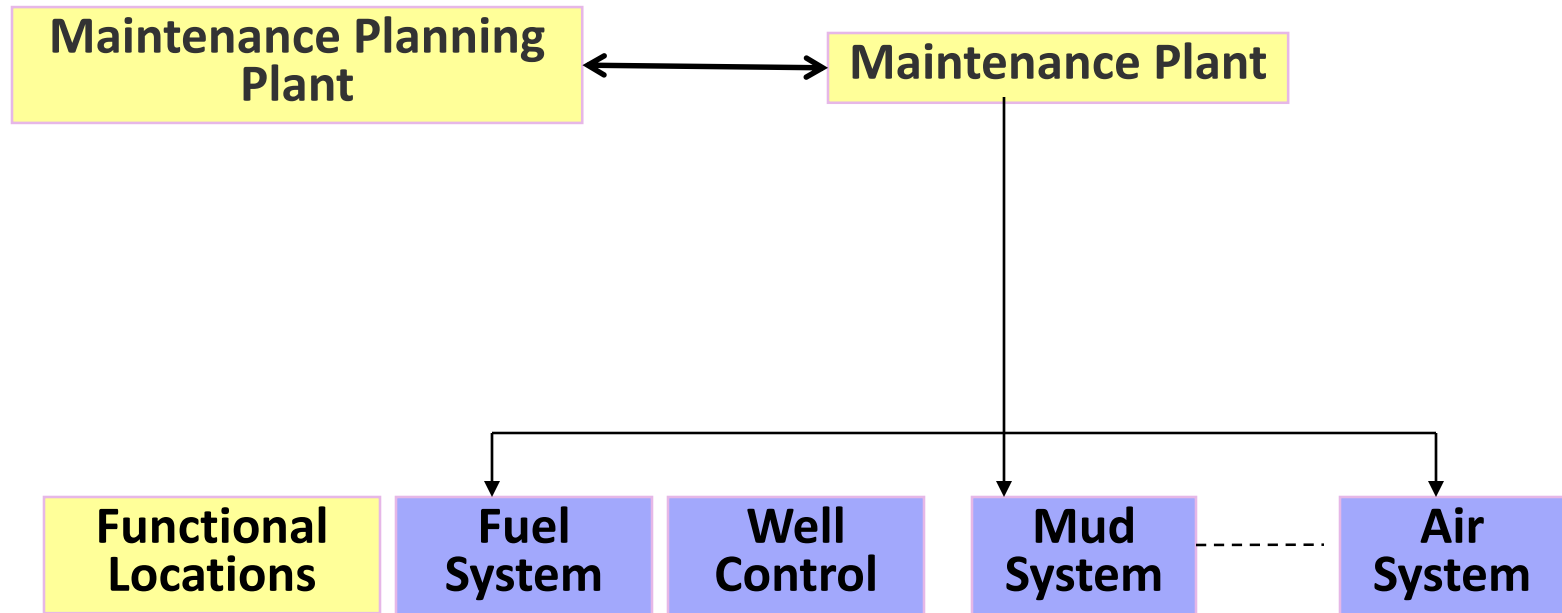
# Plant Maintenance Module



# Organization Structuring



# Organization Structure



# OVERVIEW

- ☐ Designed for Planned Maintenance and Unplanned maintenance
- ☐ Planned Maintenance may be either Performance based or Time based
- ☐ List of functional locations, equipments, assemblies along with their BOM, Task List and Resource requirements for Maintenance
- ☐ Recording of cost of spares, consumables, external services and internal activity, either directly or on allocation basis
- ☐ Work and Safety Permit – Issue and Controls

# Plant Maintenance

- ❑ Refurbishment of Equipments by Workshops and External Vendors
- ❑ Maintenance History and Analysis such as:
  - ❑ Usage history
  - ❑ Movement history
  - ❑ Event history
  - ❑ Cost history
  - ❑ MTTR / MTBR
  - ❑ Failure and downtime history

# Plant Structure

## General Organizational Units in Logistics

Client

Company code

Plant

## Location-Based Organizational Units

Maintenance plant

Location

Maintenance Work  
Centers

For example, site,  
building,

For example: mechanics

## Planning-Based Organizational Units

Maintenance  
planning plant

Maintenance planner  
groups

For example: master,  
work scheduling



# PM 01 Master Data

## PM 01-01 Functional Location

**Functional location = multi-level, hierarchical structure, organized according to ...**



**Spatial**



**Technical**

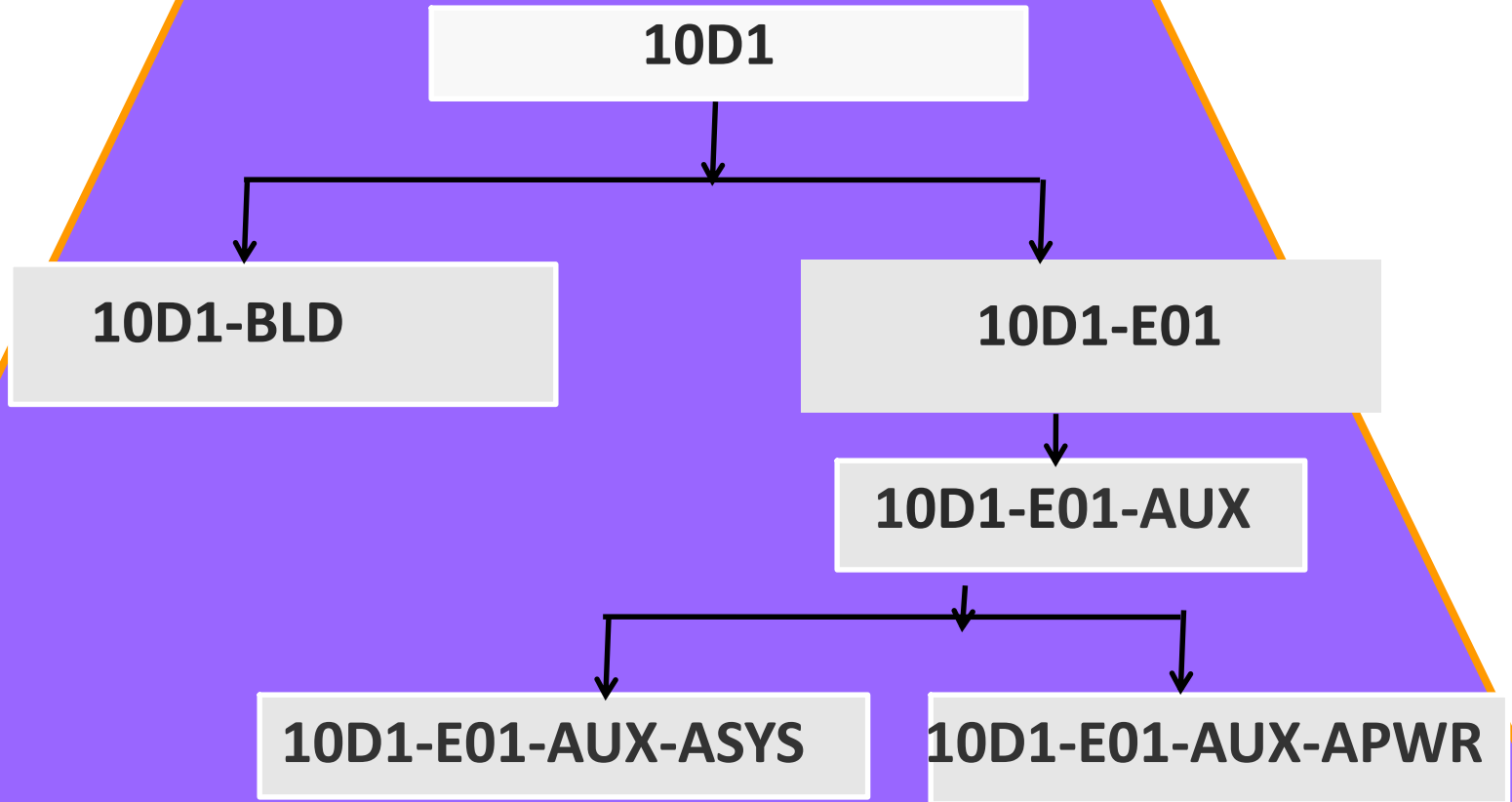


**Functional**

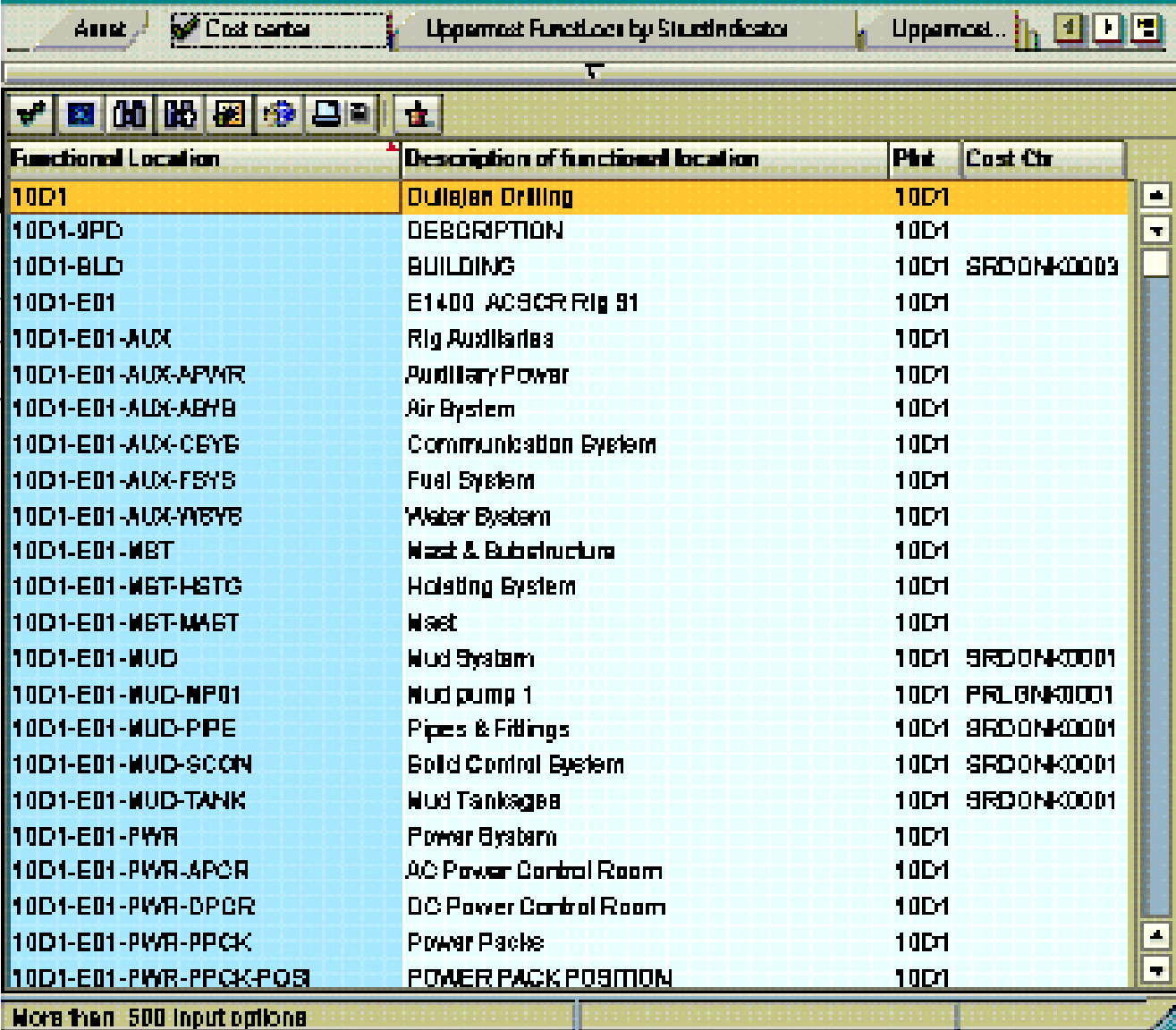
**Criteria**

# PM Functional Location

A functional location is an element in a technical structure, representing an area/spatial/functional of a Plant at which Equipment/s can be installed.



# PM Functional Location - Example...



Functional Location	Description of functional location	Plant	Cost Ctr
10D1	Drilling Drilling	10D1	
10D1-2PD	DESCRIPTION	10D1	
10D1-BLD	BUILDING	10D1	SRDON40003
10D1-ED1	E1400 ACSCF Rig 91	10D1	
10D1-ED1-AUX	Rig Auxiliaries	10D1	
10D1-ED1-AUX-APWR	Auxiliary Power	10D1	
10D1-ED1-AUX-ABYS	Air System	10D1	
10D1-ED1-AUX-CBYS	Communication System	10D1	
10D1-ED1-AUX-FSYS	Fuel System	10D1	
10D1-ED1-AUX-WBYS	Water System	10D1	
10D1-ED1-WBT	Wast & Substructure	10D1	
10D1-ED1-WBT-HSTG	Holding System	10D1	
10D1-ED1-WBT-MAST	Wast	10D1	
10D1-ED1-MUD	Mud System	10D1	SRDON40001
10D1-ED1-MUD-MP01	Mud pump 1	10D1	PRLOM40001
10D1-ED1-MUD-PIPE	Pipes & Fittings	10D1	SRDON40001
10D1-ED1-MUD-SCON	Solid Control System	10D1	SRDON40001
10D1-ED1-MUD-TANK	Mud Tankage	10D1	SRDON40001
10D1-ED1-PWR	Power System	10D1	
10D1-ED1-PWR-APCR	AC Power Control Room	10D1	
10D1-ED1-PWR-DPCR	DC Power Control Room	10D1	
10D1-ED1-PWR-PPCK	Power Packs	10D1	
10D1-ED1-PWR-PPCK-POS	POWER PACK POSITION	10D1	

More than 500 input options

# Maintenance Work Center



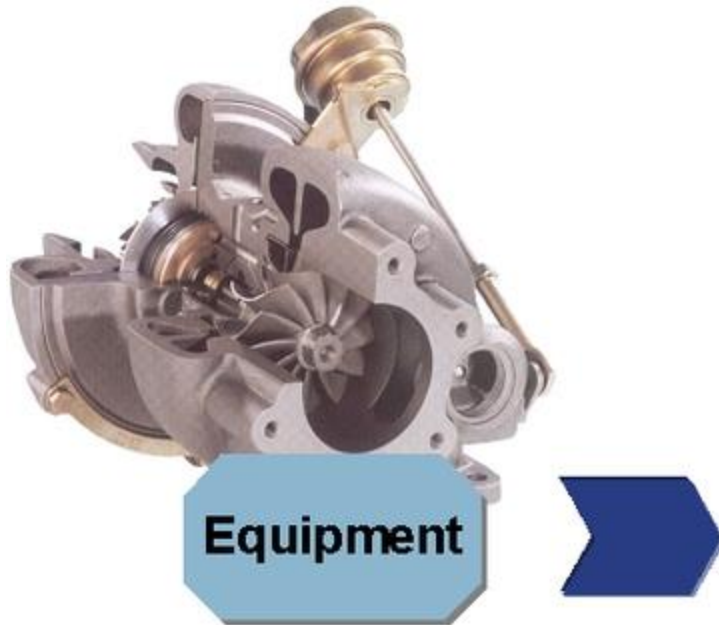
**Maintenance Work Centers**  
**For example:**  
**General Workshop**  
**Field Communication**  
**Electrical**  
**Civil**  
**Pipeline maintenance**



# PM Master Data

PM01-01 Master Data

PM01- 01- 02 – Equipment



Individual physical object to be maintained as an autonomous unit

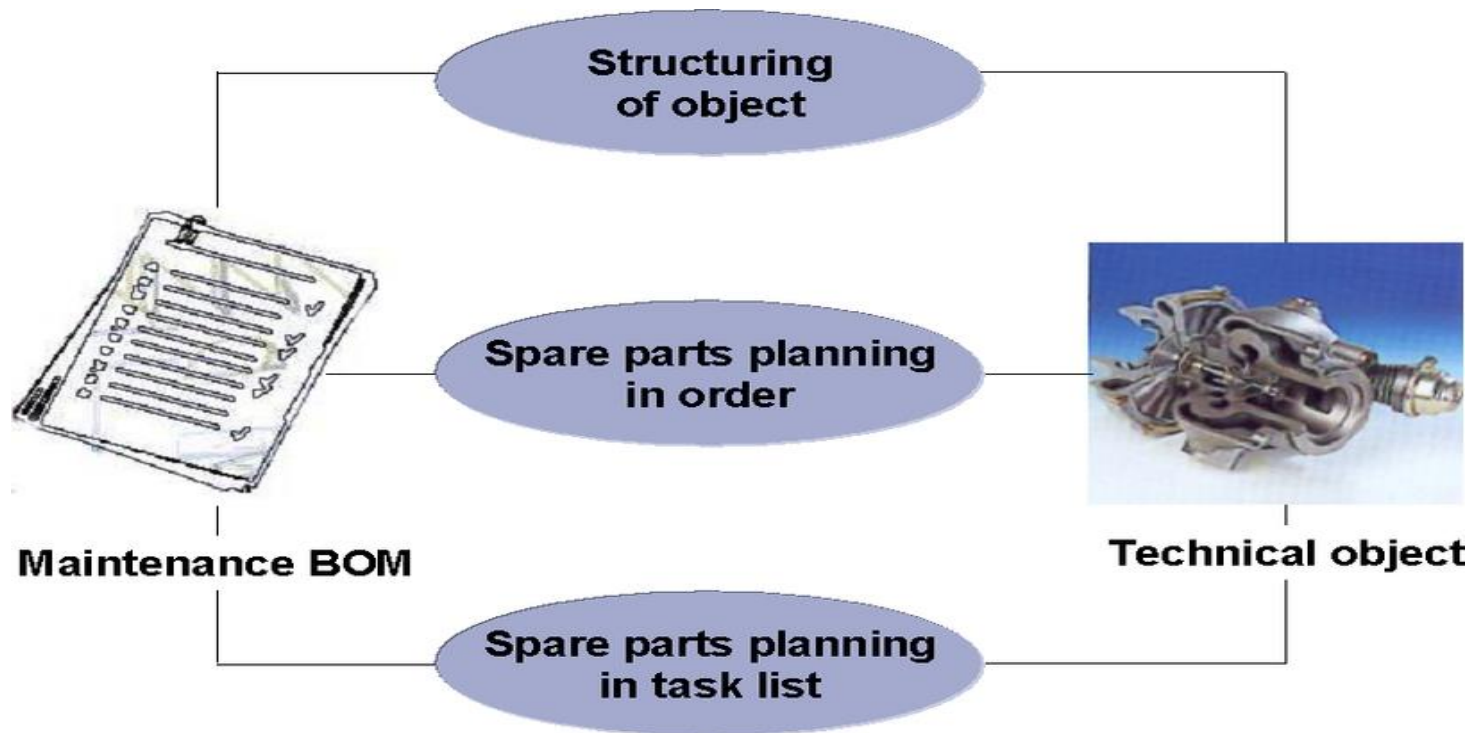
- Means of production
- Means of transport
- Test equipment
- Production resources/tools
- Customer devices
- Buildings, property
- Systems, system parts
- Vehicles

# PM Master Data

## PM01-01 Master Data

### PM01- 01- 03 – Measuring Points

### PM01- 01- 04 – Bill of Material (BOM)



# **PM Master Data**

**PM01-01 Master Data**

**PM01 – 01- 05 – Work center**

**PM01- 01- 06 – General task List**

**PM01 - 01- 07 – Catalogs**



# Plant Maintenance task list

SEQUENCE OF INDIVIDUAL MAINTENANCE TASKS WHICH  
REPEATEDLY HAVE TO BE PERFORMED ON A MACHINE OR AT  
A SPECIFIC AREA.

THESE TASKS ARE , FOR EXAMPLE :-

- INSPECTIONS - Determining the actual condition.
- MAINTENANCE - Maintaining the operating condition.
- REPAIRS - Restoring the operating condition.



# Catalogs

Catalog Selection

Task

Tasks

- \$\$\$OSS001
- \$\$\$OSS002
- \$\$\$OSS003
- \$\$\$OSS004
- CLM-01 Tasks for claim
- GN-00001 Tasks for general notification
  - 0010 Internal note
  - 0020 Confirmation of receipt
  - 0030 Telephone call
- PM1 Maintenance tasks
  - 1 Task 1
  - 2 Task 2
- QM-G1 General task for customer complaint
- QM-G2 General task for complaint to vendor
- QM-G3 General task for internal notification
- QM-G4
- QM-S1 Corrective task for customer problem
- QM-S2 Corr. task for probl. with vendor goods
- QM-S3 Corrective task for internal problem
- SAPISR Tasks for ISR

Catalog (1) 14 Entries Found

Restrictions

C	Short text for the cata...	Keyword
1	Characteristic attributes	Attribute
2	Tasks	Task
3	Usage decisions	Decision
4	Events	Event
5	Causes	Cause
6	Results of defects	Results(def)
8	Activities (QM)	Activity QM
9	Defect types	Defect type
A	Activities (PM)	Activity PM
B	Object parts	Object part
C	Overview of damage	Damage
D	Coding	Coding
E	Defect locations	Defect loc.
Y	Catalog for Oil India Ltd	OILCAT

# Catalogs

Catalog Selection	
Damage	Overview of damage
ELECT	ELECTRICAL
▶ ED01	SHORT CIRCUIT
▶ ED02	SINGLE PHASING
▶ ED03	OPEN CIRCUIT
▶ ED04	NO POWER/VOLTAGE
▶ ED05	FAULTY POWER/VOLTAGE
▶ ED06	EARTH FAULT
▶ ED07	OVERCURRENT
▶ ED08	FLASHOVER
▶ ED09	LOOSE CONTACT
INST	INSTRUMENTATION
MECH	MECHANICAL
▶ MD01	ACCIDENT
▶ MD02	BEND
▶ MD03	BLOWN
▶ MD04	BROKEN
▶ MD05	BURNT
▶ MD06	BURST
▶ MD07	CAME OFF
▶ MD08	CORRODED
▶ MD09	CRACK
▶ MD10	CUT

Catalog Selection	
Cause	Causes
PM/ASSY	Installation/assembly problems
PM/CTRL	Control system problems
PM/ENTRY	Foreign material entry
PM/LUB	Lubrication related
PM/MFG	Manufacturing defects
PM/OPN	Operational problem
PM/OTHSY	Due to other system/equipment defect
PM/PREM	Prev maint problem
PM/WEAR	Wear
▶ WR01	Worn out shell
▶ WR02	Worn out bottom bearing & shaft seal
▶ WR03	Worn out chain bushing
▶ WR04	Worn out liners
▶ WR05	Worn out impeller blades
▶ WR06	Worn out pump elements
▶ WR07	Fatigue failure
▶ WR08	Wear of rails
▶ WR09	Uneven wear
▶ WR10	Worn pulley lagging
▶ WR11	Worn idlers
▶ WR12	Rubbing/ High friction
▶ WR13	erosion
▶ WR14	corrosion
▶ WR15	worn & torn

# **Processing of Notification**

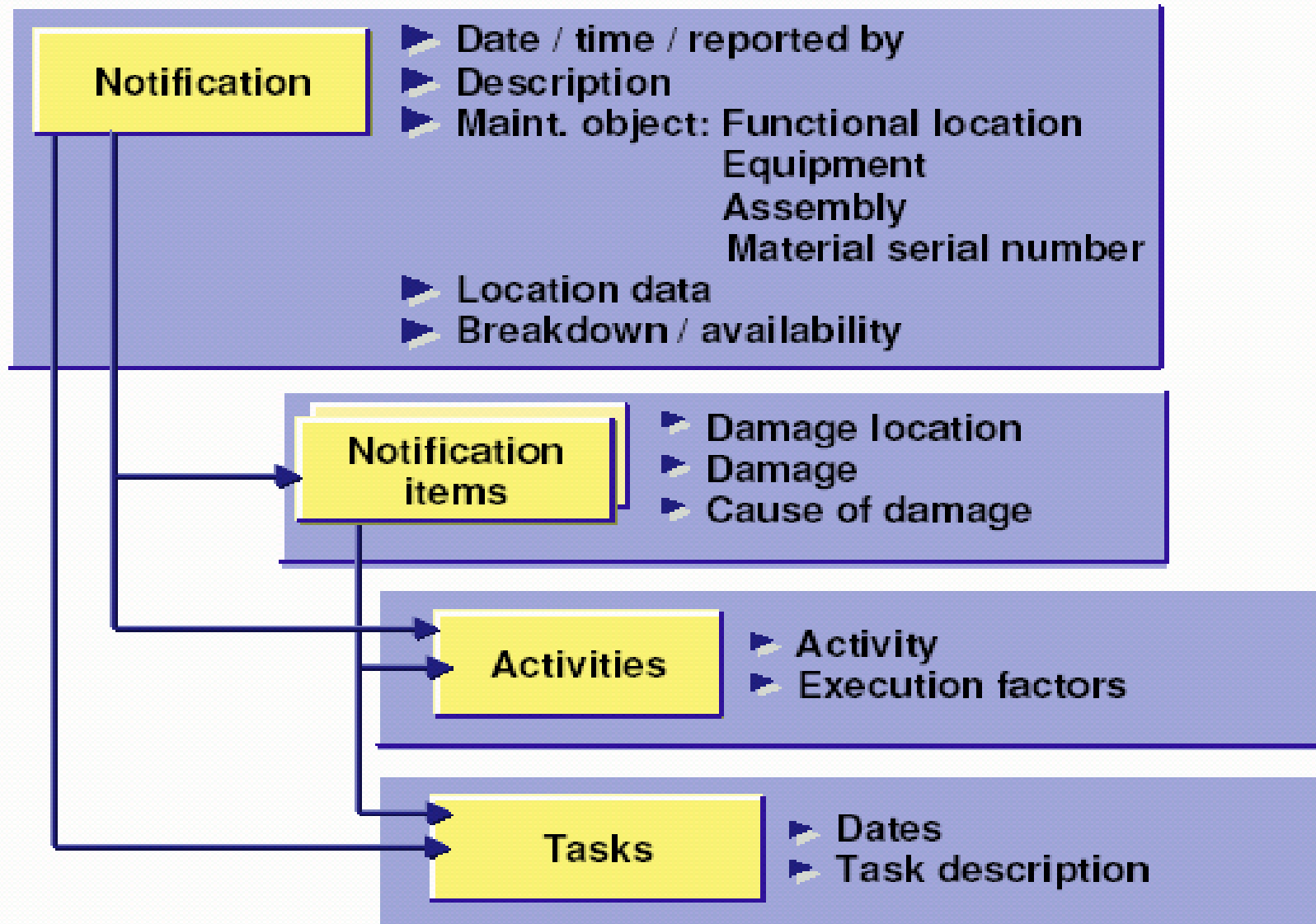
## **PM01-02 General Maintenance Processing**

### **PM01 – 02 - 01 – Maintenance Notification Processing**

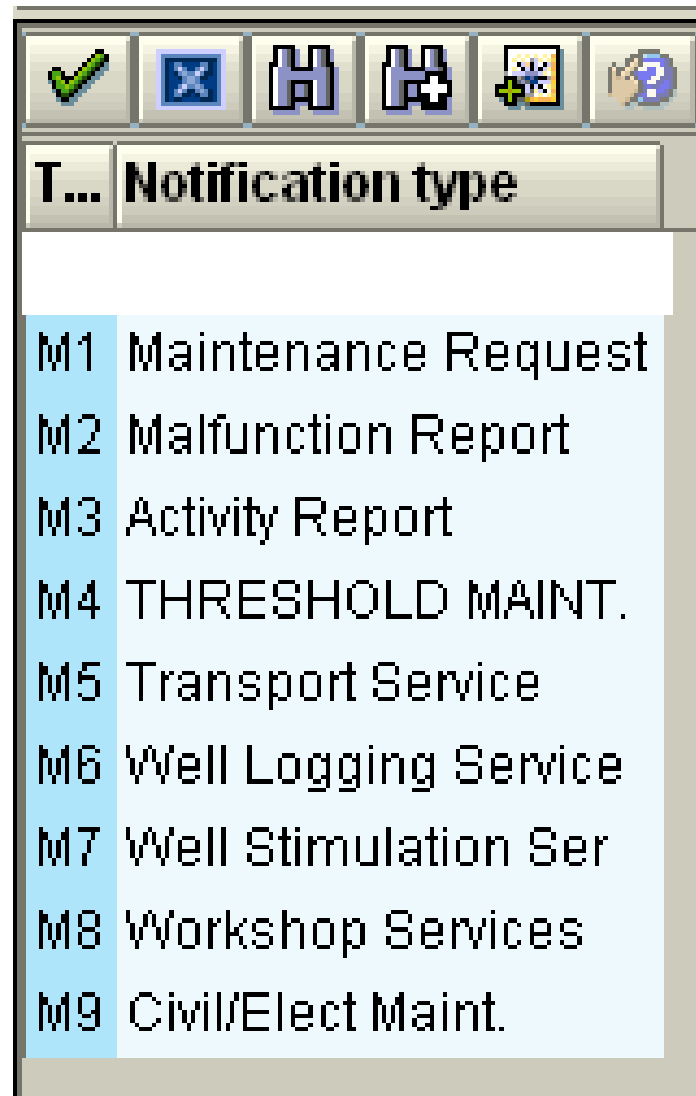
**Notifications are used in maintenance processing in the event of a malfunction or any other exceptional situation from the maintenance department. It will be used to :**

- Describe the exceptional technical condition of an object.**
- Request the maintenance dept., to perform a necessary task.**
- Document work that has to be performed.**
- Classify the incidents as per the location of the fault, nature of the fault, the cause as well as any further corrective action to be done.**
- Record the jobs that are outstanding and the jobs to be taken up in future.**

# Processing of Notification

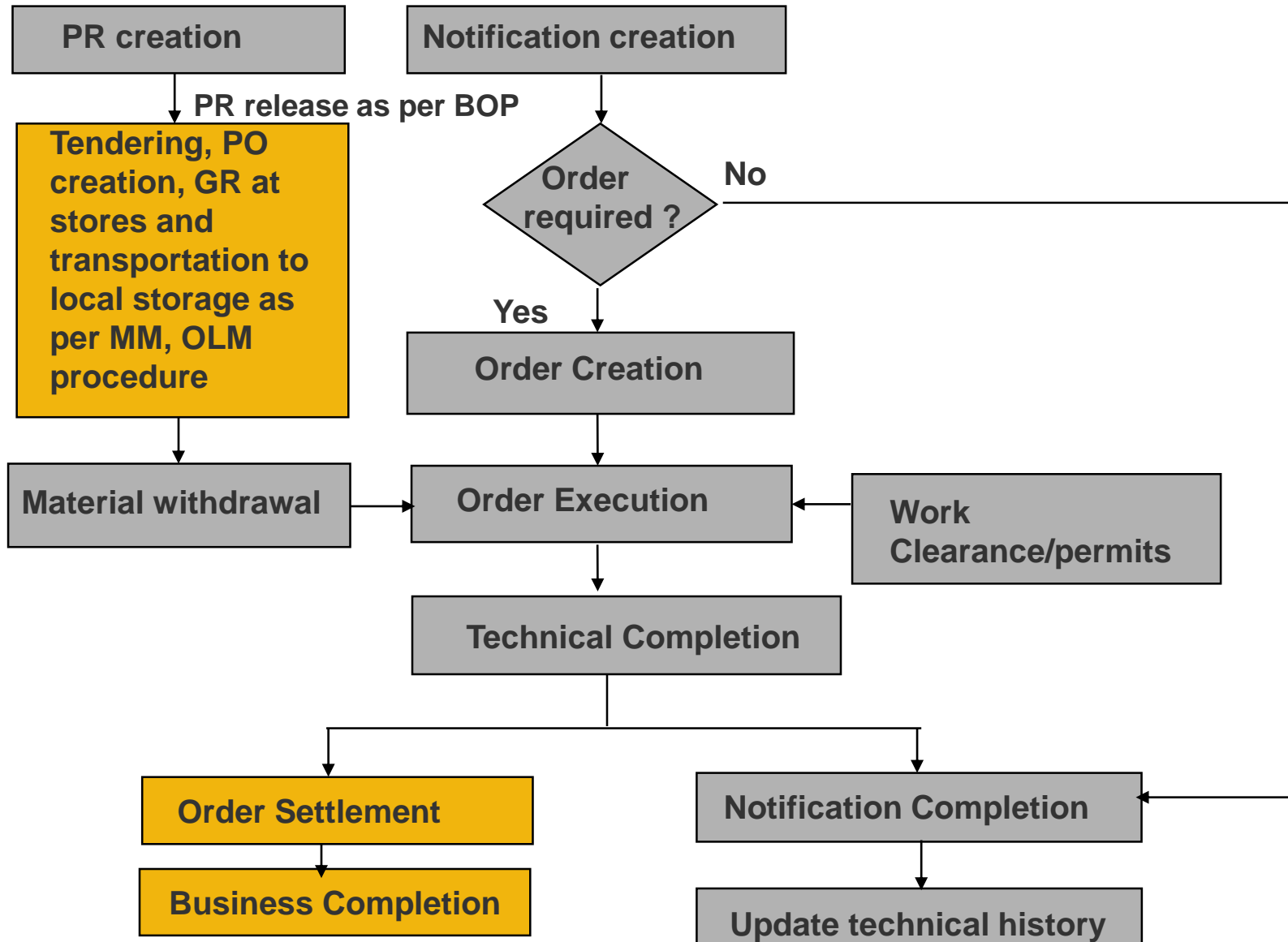


# Types of Notifications: Overview

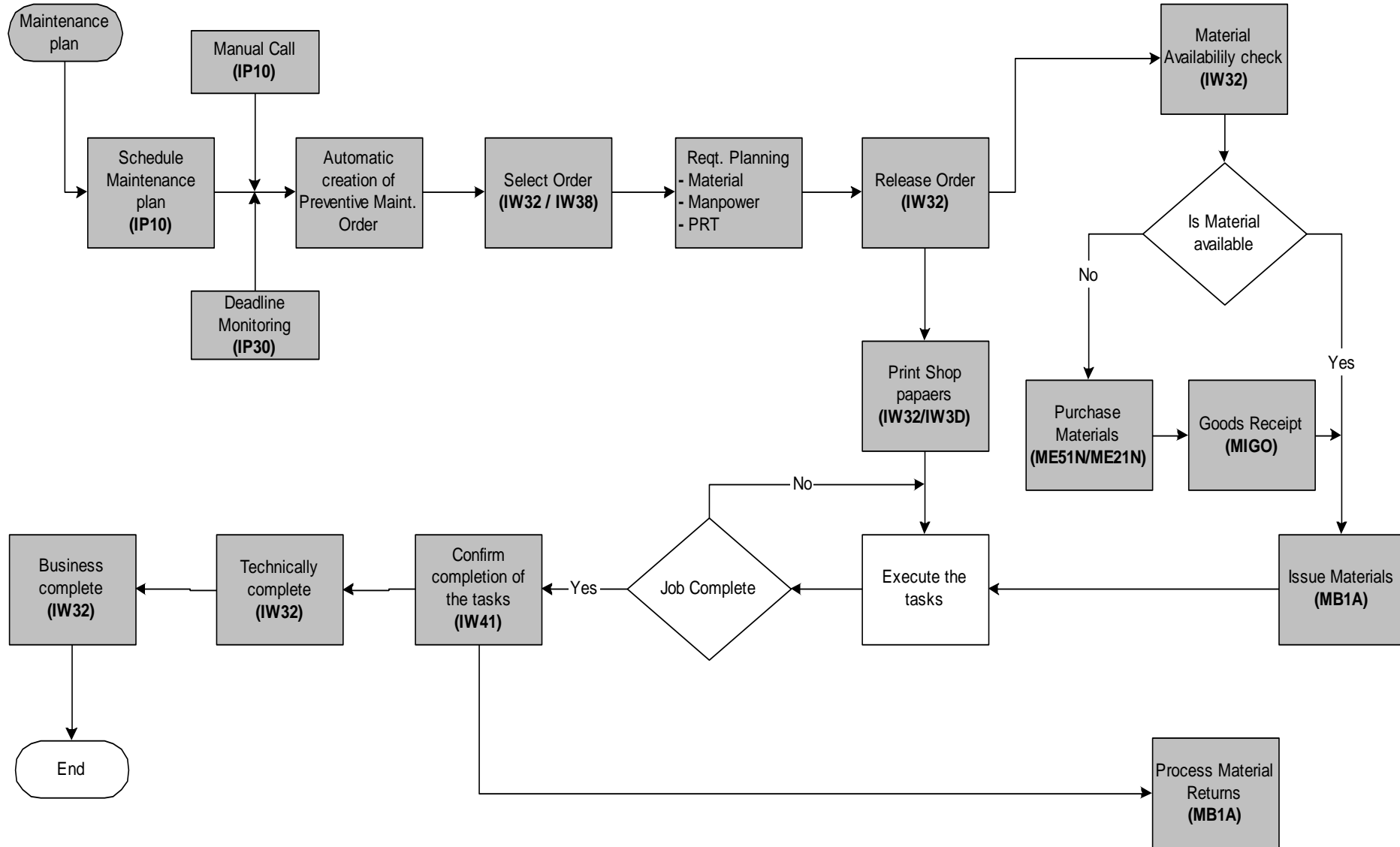


T...	Notification type
M1	Maintenance Request
M2	Malfunction Report
M3	Activity Report
M4	THRESHOLD MAINT.
M5	Transport Service
M6	Well Logging Service
M7	Well Stimulation Ser
M8	Workshop Services
M9	Civil/Elect Maint.

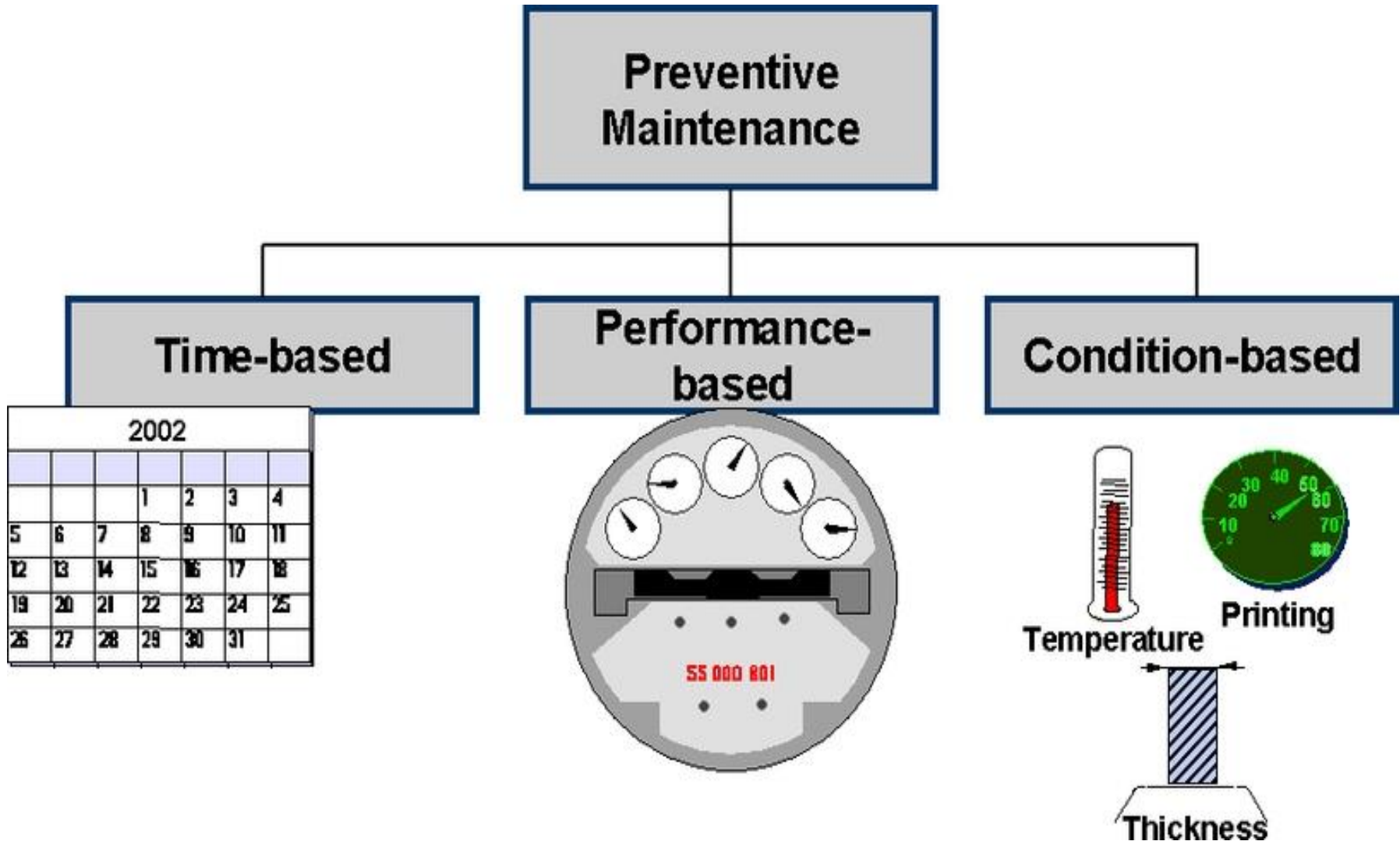
# Breakdown Maintenance



# Preventive Maintenance

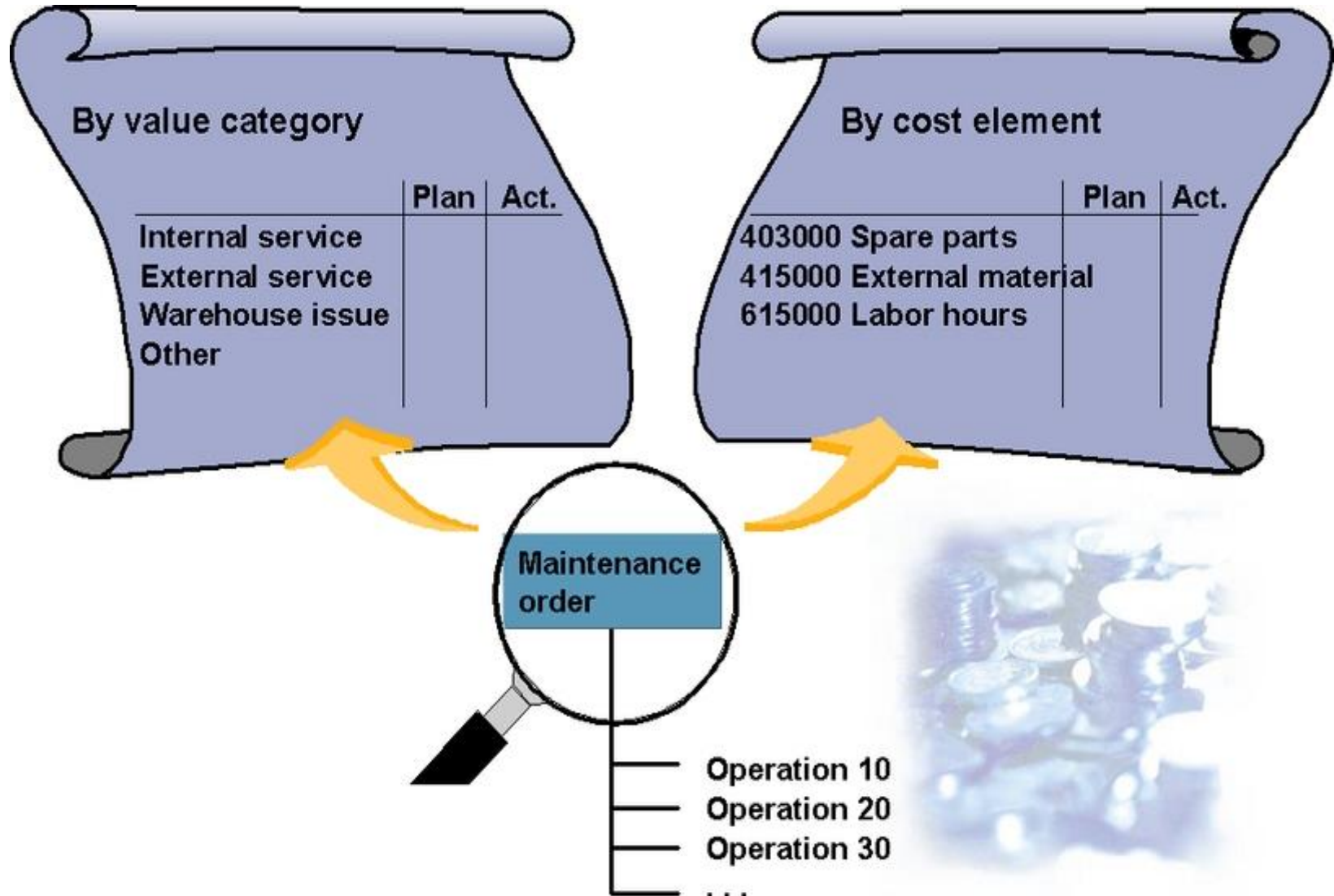


# Types of Preventive Maintenance





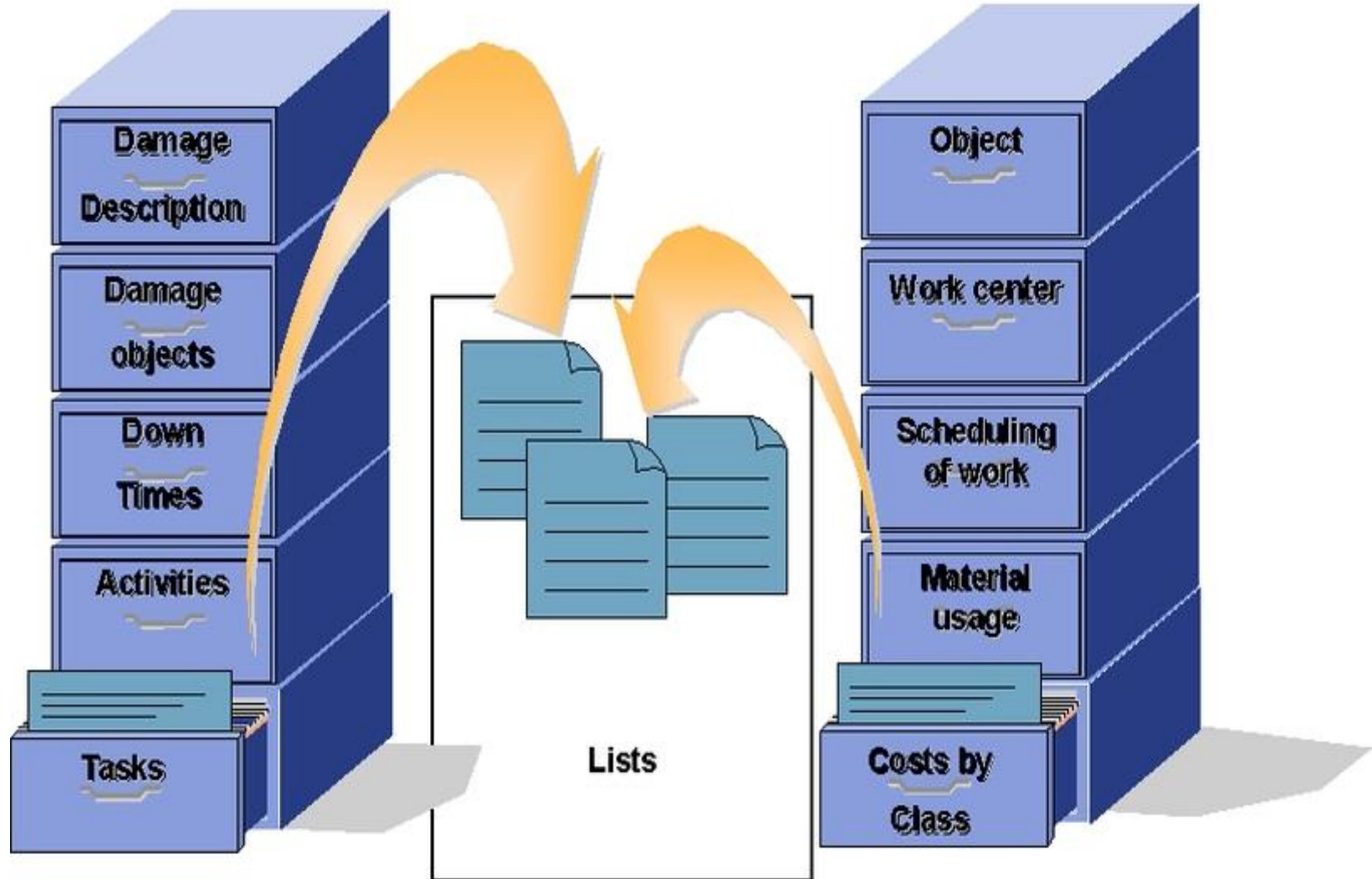
# Cost Analysis in Maintenance Order



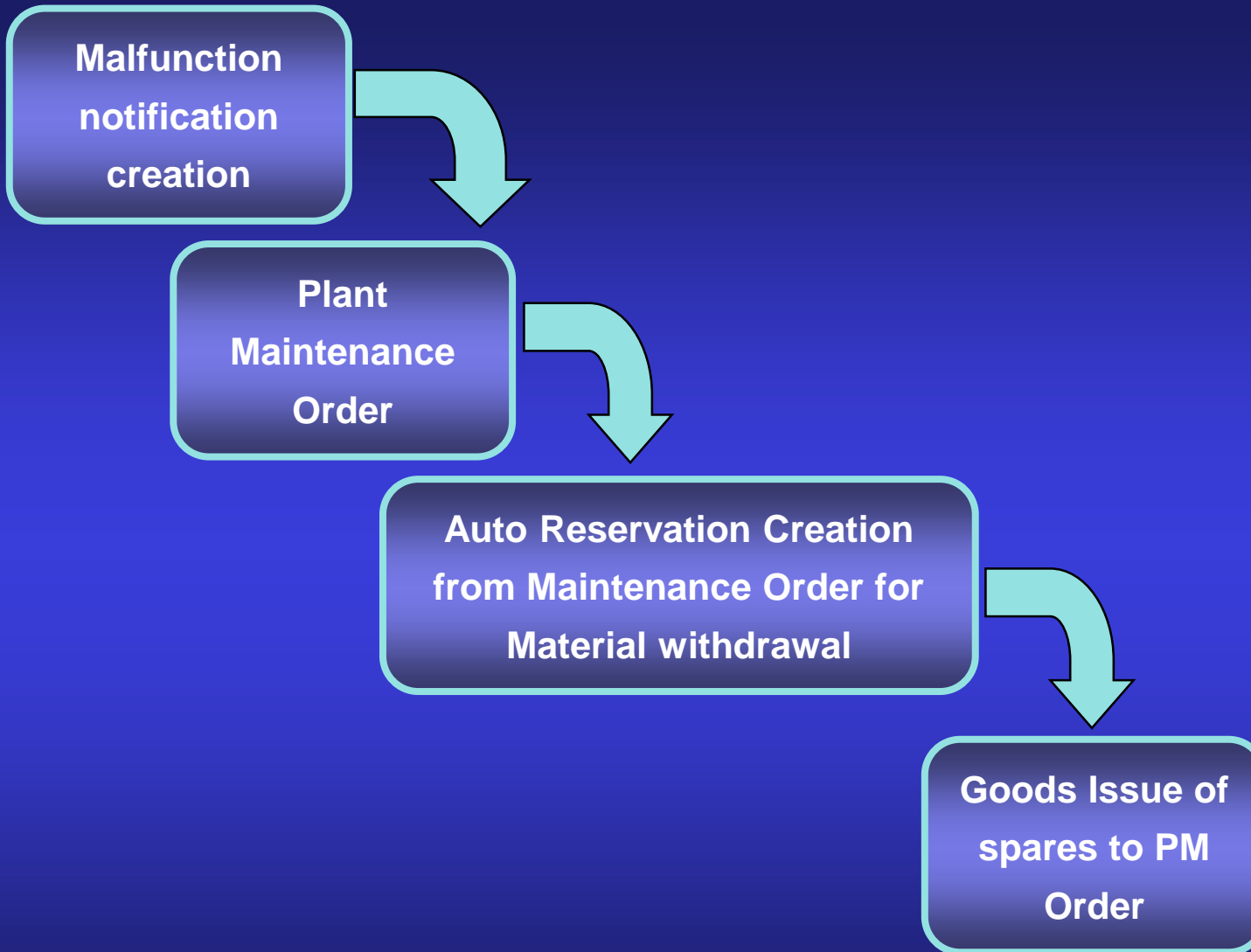
# Maintenance History

Completed  
Notifications

Completed  
Orders

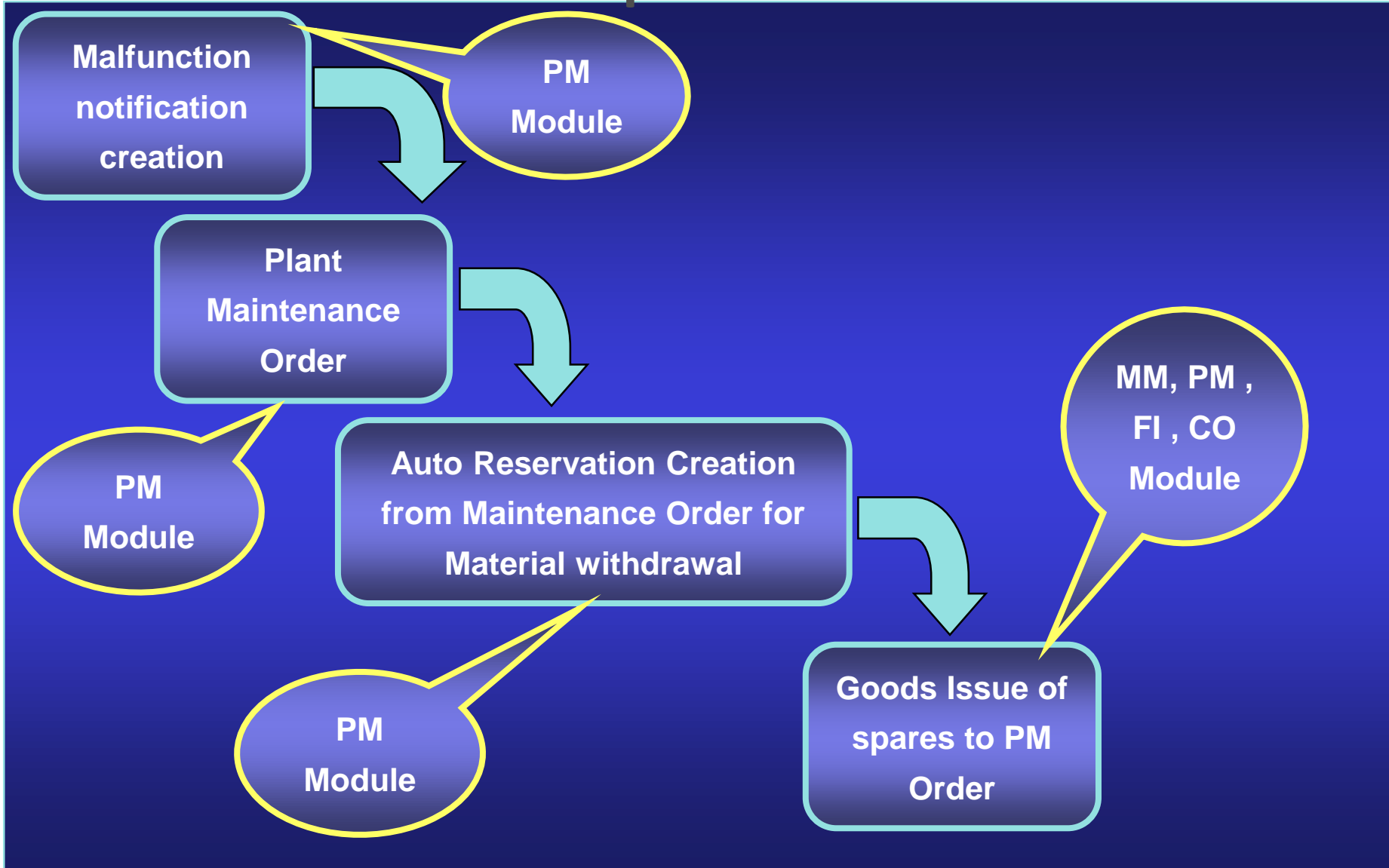


# Business Process Scenario - Breakdown Maintenance with spares



# Business Process Scenario - Breakdown

## Maintenance with spares



# Benefits

- It automates the process of fulfilling improvement and servicing operations for the plant. E.g., SAP documents the problems registered, progress and products are allocated, expenses are tracked, and costs are agreed upon.
- The background of the machinery is ONLINE. The information can access from any customer region at any time frame, which reduces the duration to get info and lowers the time to make a judgment on any vulnerable position.
- The BOM equipment/location will monitor in the software, which would make it easier for them to navigate the BOM smoothly at any point in time
- Early Alert Mechanism initiated manually after precautionary maintenance (with Strategy, Task List, Material, etc.).

# Benefits

- The machinery log sheet maintain online, such as the compressor's temperature viewing, etc. (in evaluation paperwork).
- Both repair procedures are online, along with routine plans for the whole year, all the whole business's infrastructure.
- SAP PM helps in quick failure, deterioration, and predictive monitoring.
- Interface with the Accuracy Module to track control of synchronization.
- An authorization will be there online rather than getting authorization on paper and wandering to the departments.
- Wear down operation, its sources, and term identified in the program.
- All repair knowledge is digital, and report can be made environment-friendly.

# Transaction code

Plant Maintenance		
S. No.	T. Code	Description
1	<a href="#">AC06</a>	Service List
2	<a href="#">CA80</a>	Use of Work Center in Task Lists
3	<a href="#">CA82</a>	Work center Where-Used Lists
4	<a href="#">CA85</a>	Replace Work Center in Task List
5	<a href="#">CJ2B</a>	Change Project Planning Board
6	<a href="#">CL02</a>	CLASSES
7	<a href="#">CL20N</a>	Assign Object to Classes
8	<a href="#">CL24N</a>	Allocate Objects/Classes to Class
9	<a href="#">CL30N</a>	Find Objects in Classes
10	<a href="#">CL6A</a>	Class List
11	<a href="#">CL6B</a>	Object List
12	<a href="#">CM01</a>	Capacity Planning: Work Center Load
13	<a href="#">CM02</a>	Capacity Planning: Work Center Orders
14	<a href="#">CM04</a>	Capacity Planning: Work Center BackLog
15	<a href="#">CM05</a>	Capacity Planning: Work Center OverLoad
16	<a href="#">CM24</a>	Cap. Leveling: Individual Capacity Tabular View
17	<a href="#">CM30</a>	Cap. Leveling: Individual Capacity Graphical View
18	<a href="#">CM33</a>	Cap. Leveling: PM Work Center Planning Graphical
19	<a href="#">CM34</a>	Cap. Leveling: PM Work Center Planning Tabular
20	<a href="#">CN41</a>	Project Structure Overview
21	<a href="#">CR05</a>	Display Of Work Center List
22	<a href="#">CR07</a>	Display Of Work Center Capacity
23	<a href="#">CS15</a>	Material Where-Used List
24	<a href="#">CT04</a>	Characteristics
25	<a href="#">CT10</a>	Characteristics List
26	<a href="#">CT11</a>	Characteristic Values List
27	<a href="#">IA01</a>	Creation Of Equipment Task List
28	<a href="#">IA02</a>	Change Of Equipment Task List

# Transaction code

29	<a href="#"><u>IA03</u></a>	Display Of Equipment Task List
30	<a href="#"><u>IA05</u></a>	Creation Of General Maintenance Task List
31	<a href="#"><u>IA06</u></a>	Change Of General Maintenance Task List
32	<a href="#"><u>IA07</u></a>	Display Of General Maintenance Task List
33	<a href="#"><u>IA08</u></a>	Change Of Task List Using List Editing Function
34	<a href="#"><u>IA09</u></a>	Display Task List Using List Editing
35	<a href="#"><u>IA10</u></a>	Display Task List Using List Editing Function
36	<a href="#"><u>IA11</u></a>	Creation Of Functional Location Task List
37	<a href="#"><u>IA12</u></a>	Change Of Functional Location Task List
38	<a href="#"><u>IA13</u></a>	Display Of Functional Location Task List
39	<a href="#"><u>IA16</u></a>	Maintenance Task List Costing
40	<a href="#"><u>IA17</u></a>	Print Maintenance Task List
41	<a href="#"><u>IB01</u></a>	Creation Of Equipment Bom
42	<a href="#"><u>IB02</u></a>	Change Of Equipment Bom
43	<a href="#"><u>IB03</u></a>	Dispaly Equipment Bom
44	<a href="#"><u>IB11</u></a>	Creation Of Functional Location Bom



# Transaction code

45	<a href="#">IB12</a>	Change Of Functional Location Bom
46	<a href="#">IB13</a>	Display Functional Location Bom
47	<a href="#">IE01</a>	Creation Of Equipment
48	<a href="#">IE02</a>	Change Of Equipment
49	<a href="#">IE03</a>	Display Of Equipment
50	<a href="#">IE05</a>	Change Of Equipment-List Editing
51	<a href="#">IE07</a>	Display Of Equipment Using Multi-Level List Editing
52	<a href="#">IE25</a>	Creation Of Production Resources/Tools
53	<a href="#">IH01</a>	Structural Display Of Functional Location
54	<a href="#">IH03</a>	Structural Display Of Equipment
55	<a href="#">IH04</a>	Structural Display Of Equipment Bom
56	<a href="#">IH06</a>	Display Of Functional Location Using List Editing
57	<a href="#">IH08</a>	Display Of Equipment Using List Editing
58	<a href="#">IK01</a>	Creation Of Measuring Point
59	<a href="#">IK02</a>	Change Of Measuring Point
60	<a href="#">IK03</a>	Display Of Measuring Point
61	<a href="#">IK07</a>	Display Measuring Points Using List Editing Function
62	<a href="#">IK08</a>	Change Of Measuring Points Using List Editing Function
63	<a href="#">IK11</a>	Creation Of Measurement Document
64	<a href="#">IK12</a>	Measurement Document
65	<a href="#">IK13</a>	Display Of Measurement Document
66	<a href="#">IK14</a>	Collective Entry Measurement Documents
67	<a href="#">IK16</a>	Collective Entry Of Measurements
68	<a href="#">IK17</a>	Display measurement documents using list editing function
69	<a href="#">IK18</a>	Change Measurement Documents
70	<a href="#">IK21</a>	Collective Entry Of Measurement Document For Functional Location
71	<a href="#">IK22</a>	Collective Entry Of Measurement Document For Equipment
72	<a href="#">IK31</a>	Creation Of Measurement Reading Entry List
73	<a href="#">IK32</a>	Change Of Measurement Reading Entry List
74	<a href="#">IK33</a>	Display Of Measurement Reading Entry List

# Transaction code

76	<a href="#">IL01</a>	Creation Of Functional Location
77	<a href="#">IL02</a>	Change Of Functional Location
78	<a href="#">IL03</a>	Display Functional Location
79	<a href="#">IL05</a>	Change Of Functional Location Using List Editing
80	<a href="#">IL07</a>	Display Of Functional Location (Multi-Level) - List Editing
81	<a href="#">IP02</a>	Change Of Maintenance Plan
82	<a href="#">IP03</a>	Display Of Maintenance Plan
83	<a href="#">IP04</a>	Creation Of Maintenance Item
84	<a href="#">IP05</a>	Change Of Maintenance Item
85	<a href="#">IP06</a>	Display Of Maintenance Item
86	<a href="#">IP10</a>	Scheduling Of Maintenance Plan
87	<a href="#">IP11</a>	Change Of Maintenance Strategies
88	<a href="#">IP11Z</a>	Change Of Cycle Sets
89	<a href="#">IP12</a>	Display Of Maintenance Strategies
90	<a href="#">IP12Z</a>	Display Of Cycle Sets
91	<a href="#">IP13</a>	Display Of Maintenance Package Sequence
92	<a href="#">IP14</a>	Maintenance Strategy Where-Used List
93	<a href="#">IP15</a>	Change Of Maintenance Plan
94	<a href="#">IP16</a>	Display Of Maintenance Plan

# Transaction code

95	<a href="#">IP17</a>	Change Of Maintenance Items Using List Editing Function
96	<a href="#">IP18</a>	Display Of Maintenance Items Using List Editing Function
97	<a href="#">IP19</a>	Maint. Plan Scheduling Graphical Overview
98	<a href="#">IP24</a>	Maintenance Plan Scheduling Overview List
99	<a href="#">IP25</a>	CREATION OF STRATEGY PLAN
100	<a href="#">IP25</a>	Creation Of Strategy Plan
101	<a href="#">IP30</a>	Maintenance Schedule Date Monitoring
102	<a href="#">IP31</a>	Display Of Maintenance Plan Cost
103	<a href="#">IP41</a>	Creation Of Single Cycle Maintenance Plan
104	<a href="#">IP42</a>	Creation Of Maintenance Strategy Plan
105	<a href="#">IP43</a>	Creation Of Multiple Counter Plan
106	<a href="#">IP62</a>	Material Where-Used List By Using Task Lists
107	<a href="#">IPM2</a>	Change Of Permit List
108	<a href="#">IPM3</a>	Display Of Permit List
109	<a href="#">IPMD</a>	Display Of Maintain Permits
110	<a href="#">IR01</a>	Creation Of Work Center
111	<a href="#">IR02</a>	Change Of Work Center
112	<a href="#">IR03</a>	Display Of Work Center
113	<a href="#">IW13</a>	Material Where-Used List
114	<a href="#">IW21</a>	Creation Of Notification
115	<a href="#">IW22</a>	Change Of Notification
116	<a href="#">IW23</a>	Display Of Notification
117	<a href="#">IW24</a>	Creation Of Malfunction Report
118	<a href="#">IW25</a>	Create Activity Report
119	<a href="#">IW26</a>	Creation Of Maintenance Request
120	<a href="#">IW27</a>	Set Deletion Flag For PM Notification
121	<a href="#">IW28</a>	Change Of Notifications Using List Editing Function
122	<a href="#">IW29</a>	Display Of Notification Using List Editing Function

## Transaction code

123	<a href="#"><u>IW30</u></a>	Display Of Notification (Multi-Level) List Using List Editing
124	<a href="#"><u>IW31</u></a>	Creation Of Maintenance Order
125	<a href="#"><u>IW32</u></a>	Change Of Maintenance Order
126	<a href="#"><u>IW33</u></a>	Display Of Maintenance Order
127	<a href="#"><u>IW34</u></a>	Pm Order For Pm Notification
128	<a href="#"><u>IW37</u></a>	Change Of Operations
129	<a href="#"><u>IW38</u></a>	Change Of Maintenance Order Using Order List Function
130	<a href="#"><u>IW39</u></a>	Display Of Pm Orders Using Order List Function
131	<a href="#"><u>IW3D</u></a>	Print Of Order
132	<a href="#"><u>IW3K</u></a>	Change Of Order Component List
133	<a href="#"><u>IW40</u></a>	Display Of Orders (Multi-Level)
134	<a href="#"><u>IW41</u></a>	Pm Order Individual Time Confirmation
135	<a href="#"><u>IW42</u></a>	Pm Order Overall Completion Confirmation
136	<a href="#"><u>IW43</u></a>	Display Of Pm Order Confirmation
137	<a href="#"><u>IW44</u></a>	Pm Order Collective Confirmation
138	<a href="#"><u>IW45</u></a>	Cancel Pm Order Confirmation
139	<a href="#"><u>IW47</u></a>	Display Of Pm Order Confirmation List
140	<a href="#"><u>IW48</u></a>	Pm Order Collective Confirmation
141	<a href="#"><u>IW49</u></a>	Display Pm Order Operation List
142	<a href="#"><u>IW64</u></a>	Change Activities
143	<a href="#"><u>IW65</u></a>	Display Activities
144	<a href="#"><u>IW66</u></a>	Change Tasks

# Transaction code

145	<a href="#">IW67</a>	Display Tasks
146	<a href="#">IW68</a>	Change Notification Items
147	<a href="#">IW69</a>	Display Notification Items
148	<a href="#">IW70</a>	Scheduling Of Pm Order Overall Network
149	<a href="#">KO88</a>	Actual Settlement Of Order
150	<a href="#">MB03</a>	Display Material Document
151	<a href="#">MB1A</a>	Goods Issue
152	<a href="#">MB23</a>	Display Material Reservation
153	<a href="#">MB25</a>	Reservation by Account Assignment
154	<a href="#">MB5T</a>	Stock in Transit CC
155	<a href="#">MBST</a>	Cancel Material Document
156	<a href="#">MC13</a>	Pmis: Location Analysis
157	<a href="#">MCI1</a>	PMIS: Object Class Analysis
158	<a href="#">MCI2</a>	PMIS: Manufacturer Analysis
159	<a href="#">MCI4</a>	Pmis: Planner Group Analysis
160	<a href="#">MCI5</a>	PMIS: DAMAGE ANALYSIS
161	<a href="#">MCI6</a>	PMIS:Object Statistics Analysis
162	<a href="#">MCI7</a>	PMIS: BREAKDOWN ANALYSIS
163	<a href="#">MCI8</a>	PMIS: COST ANALYSIS
164	<a href="#">MCJB</a>	PMIS: OBJECT STATISTICS ANALYSIS
165	<a href="#">MCJC</a>	MEAN TIME BETWEEN REPAIR IN FUNCTIONAL LOCATION
166	<a href="#">MCYK</a>	PMIS: Exception Analysis
167	<a href="#">ME51N</a>	Create Purchase Requisition
168	<a href="#">ME52N</a>	Change Purchase Requisition
169	<a href="#">ME53N</a>	Display Purchase Requisition
170	<a href="#">ME54N</a>	Release Purchase Requisition
171	<a href="#">MIGO</a>	Goods Movement
172	<a href="#">ML81N</a>	Creation of Service Entry Sheet
173	<a href="#">MM03</a>	Display of Material
174	<a href="#">MMBE</a>	Material Stock Overview

# Transaction code

175	<a href="#">QA11</a>	Record usage decision
176	<a href="#">QA32</a>	Change data for inspection lot
177	<a href="#">QDV1</a>	Sampling Procedure
178	<a href="#">QE01</a>	Record characteristic results
179	<a href="#">QE51</a>	Results recording worklist
180	<a href="#">QE51N</a>	Results Recording Worklist
181	<a href="#">QE71</a>	Tabular res. recording for insp. pts
182	<a href="#">QGA3</a>	Print inspection results
183	<a href="#">QGP1</a>	Results history for task list charac
184	<a href="#">QGP2</a>	Calibration Results
185	<a href="#">QS41</a>	Maintain catalog
186	<a href="#">QS51</a>	Selected Set
187	<a href="#">SARA</a>	Archive Administration
188	<a href="#">WCL3</a>	WCM: Change Operational WC Document (List Editing)
189	<a href="#">WCL4</a>	WCM: Display Operational WC Document (List Editing)
190	<a href="#">WCL5</a>	WCM: Change of WC Application (List Editing)
191	<a href="#">WCL6</a>	WCM: Display Operational WCA - List Editing
192	<a href="#">WCLB</a>	WCM: Display Operational WC Document (Multi-Level)
193	<a href="#">WCLE</a>	WCM: Change Operational WC Document (Multi-Level)
194	<a href="#">WCT6</a>	WCM: Creation of Operational WC Document

# Transaction code

195	<a href="#"><u>WCT7</u></a>	WCM: Change of Operational WC Document
196	<a href="#"><u>WCT8</u></a>	WCM: Display of Operational WC Document
197	<a href="#"><u>WCTK</u></a>	WCM: Creation of WC Application
198	<a href="#"><u>WCTL</u></a>	WCM: Change of WC Application
199	<a href="#"><u>WCTM</u></a>	WCM: Display of WC Application

# Examples

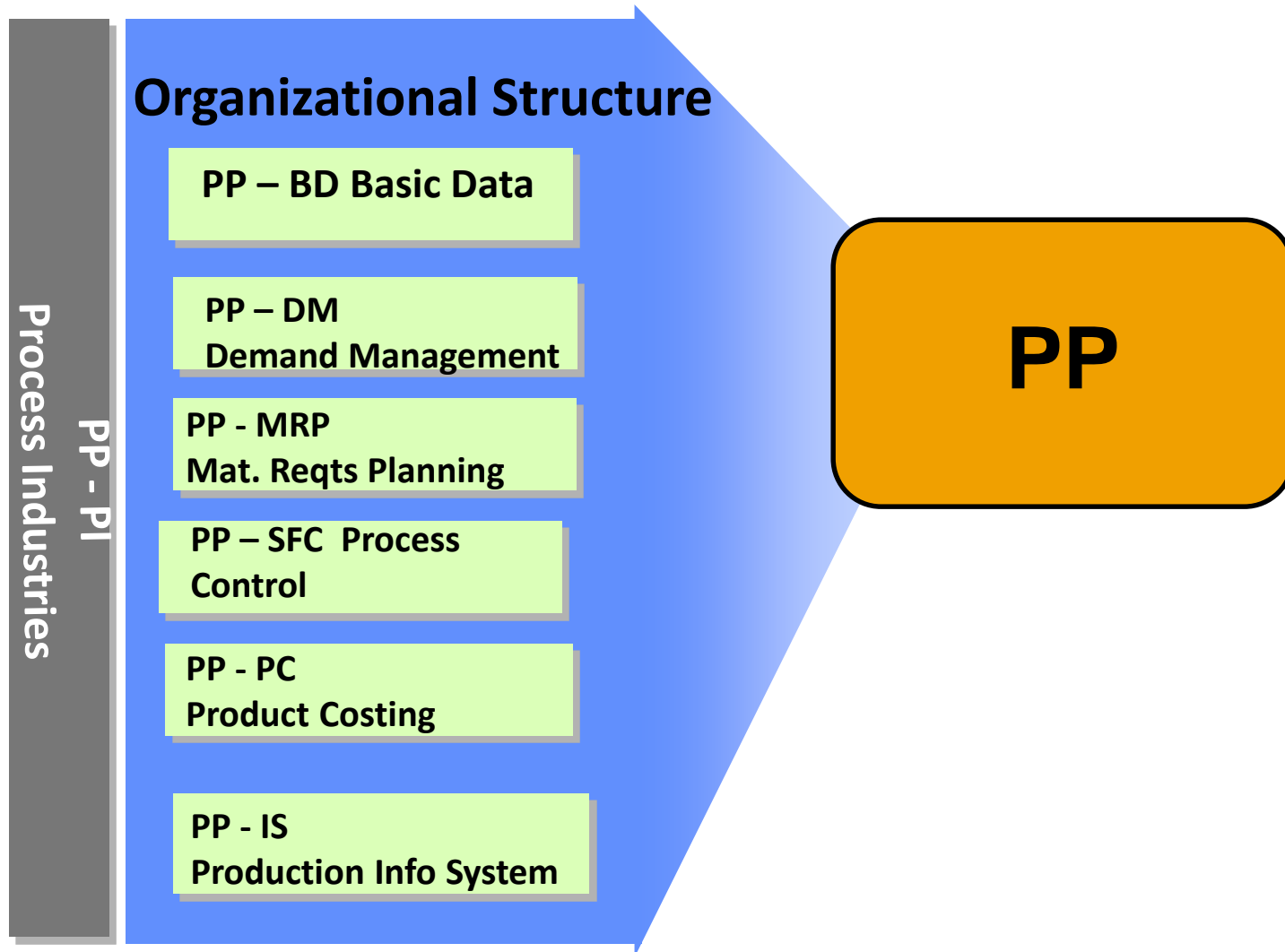
SI No	T Code	Description
1.	AC06	<u>SERVICE LIST</u>
2.	IA09	<u>DISPLAY TASK LIST USING LIST EDITING</u>
3.	IP02	<u>CHANGE OF MAINTENANCE PLAN</u>
4.	IW30	<u>DISPLAY OF NOTIFICATION (MULTI-LEVEL) LIST USING LIST EDITING</u>
5.	MIGO	<u>GOODS MOVEMENT</u>
6.	WCL3	<u>WCM: CHANGE OPERATIONAL WC DOCUMENT (LIST EDITING)</u>



# Production Planning Module



# PP-PI Functionality in SAP



# Objective - Production Planning

- To capture online, all inputs and outputs required for Process & Product Cost estimation on real time basis.
- Standardization of all the Business Processes across the organization.
- Realistic Measurement of Productivity, Cost and Efficiency.
- Optimization of Inventory and lead times through MRP procedures

# **Business Process Configured**

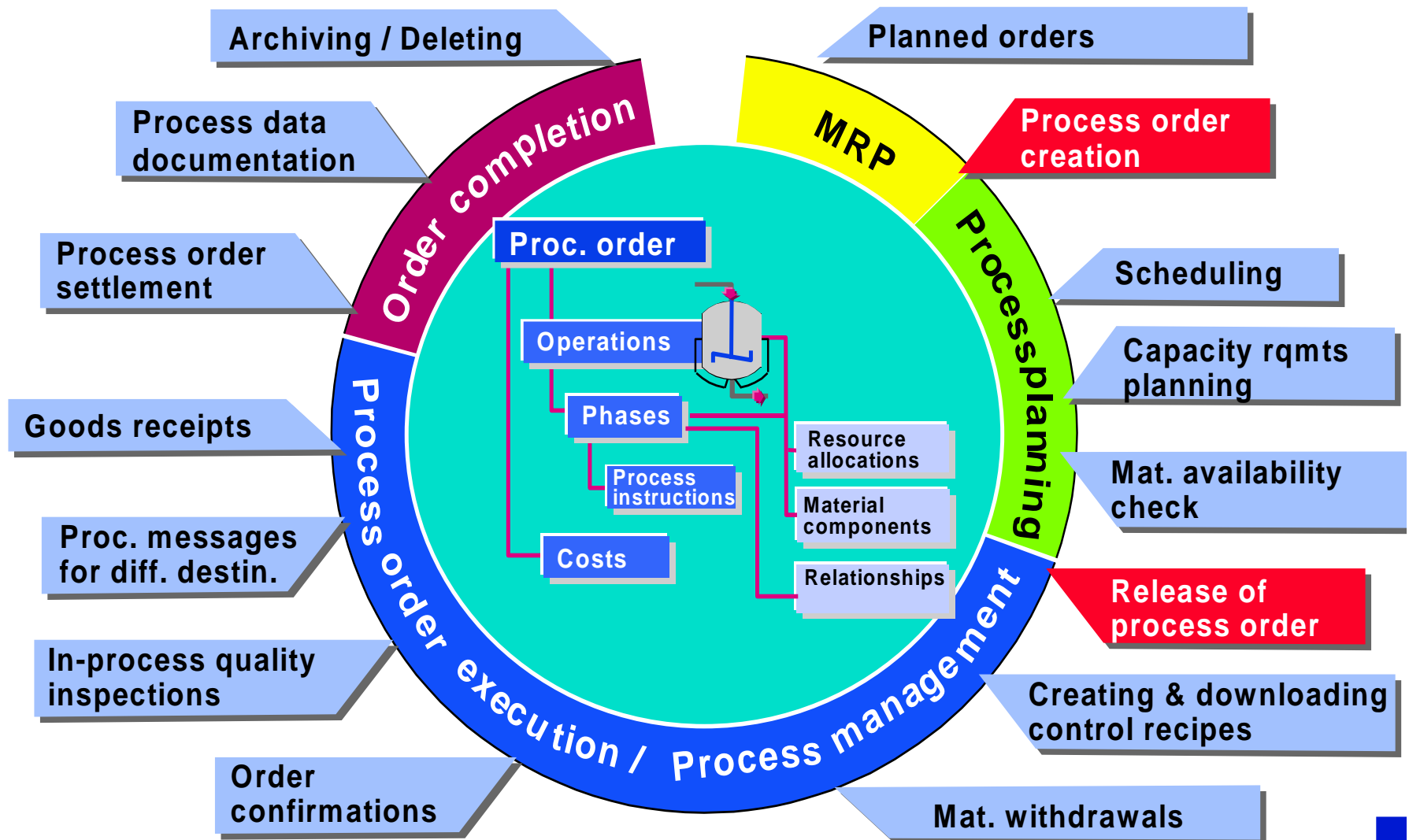
**Example:**

- **Planning for production of LPG in Plants**
- **Process orders for LPG – Creation, Release, Confirmation and Technical Completion**
- **Stock Transfer of LPG between Plant & Storage Location**

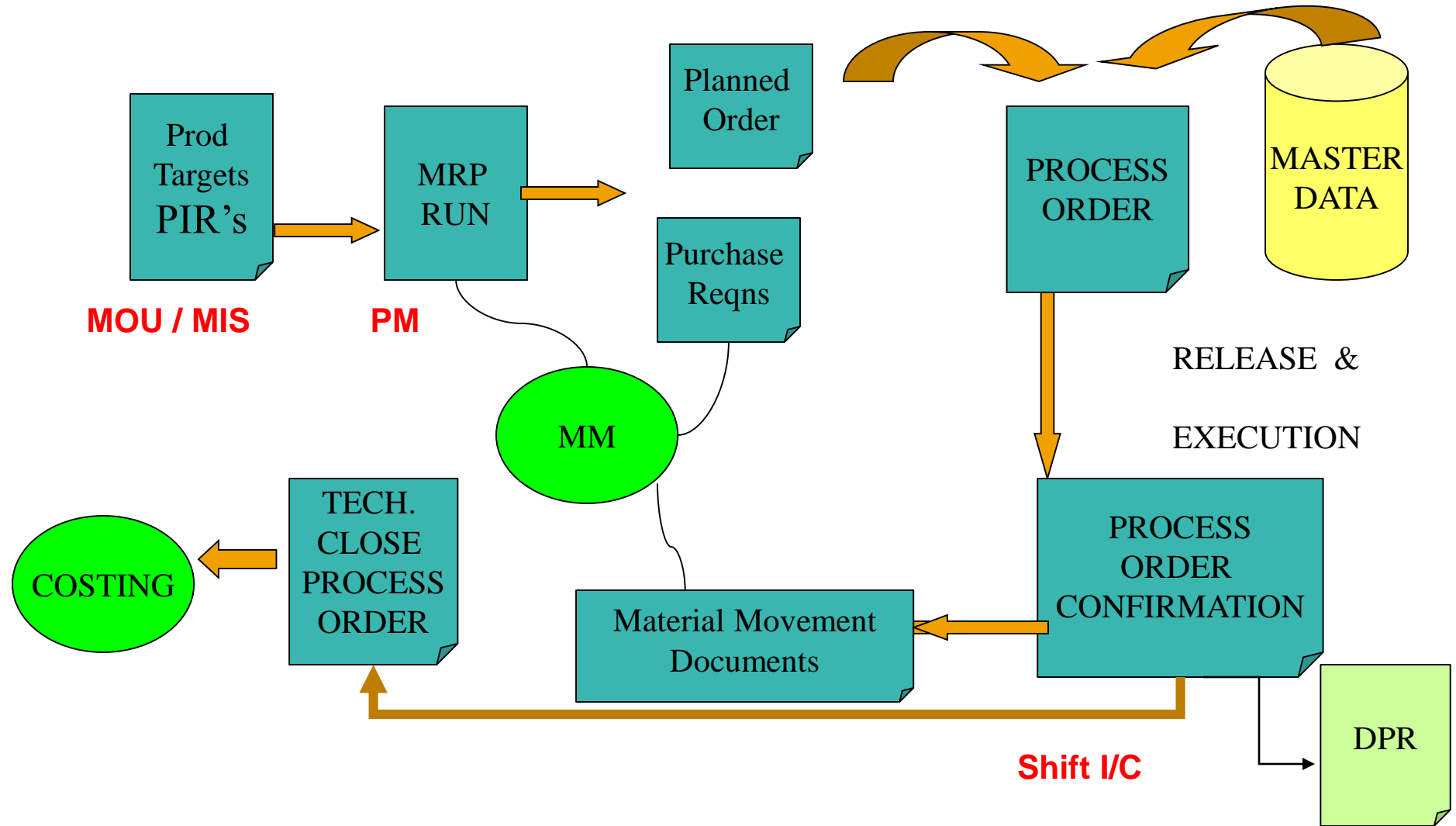
# **Production Planning in any organisation**

- **Maintenance of Master data like Material Master, BOM, Resources and Master recipes required for Production**
- **Make Production plans for products.**
- **Material requirement planning**
- **Process Order Creation, Release, Confirmation and Closing**
- **Daily Production Recording and Reporting**
- **Creation and maintenance of Semi Finished and Finished product Inventory**
- **Issue of materials to Process Orders**

# Production Planning Process Overview



# Summary of PP - PI process flow



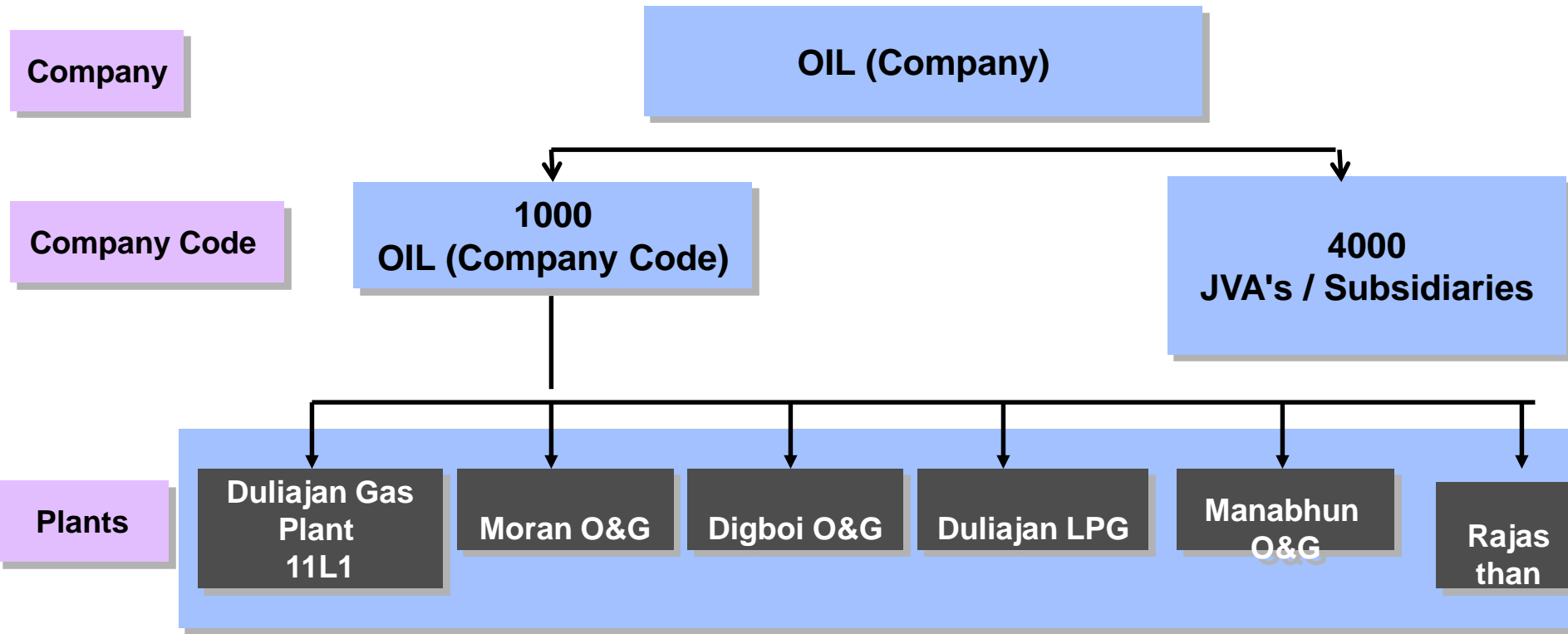
# Organization Entities as in SAP

<b>Entities EX</b>	<b>In SAP</b>
<b>OIL</b>	<b>Company Code</b>
<b>Dulaijan /Moran/ Digboi / Manabhum</b>	<b>Plant</b>
<b>OCS/CTF's</b>	<b>Storage Location</b>
<b>LPG Process Unit</b>	<b>Resource</b>

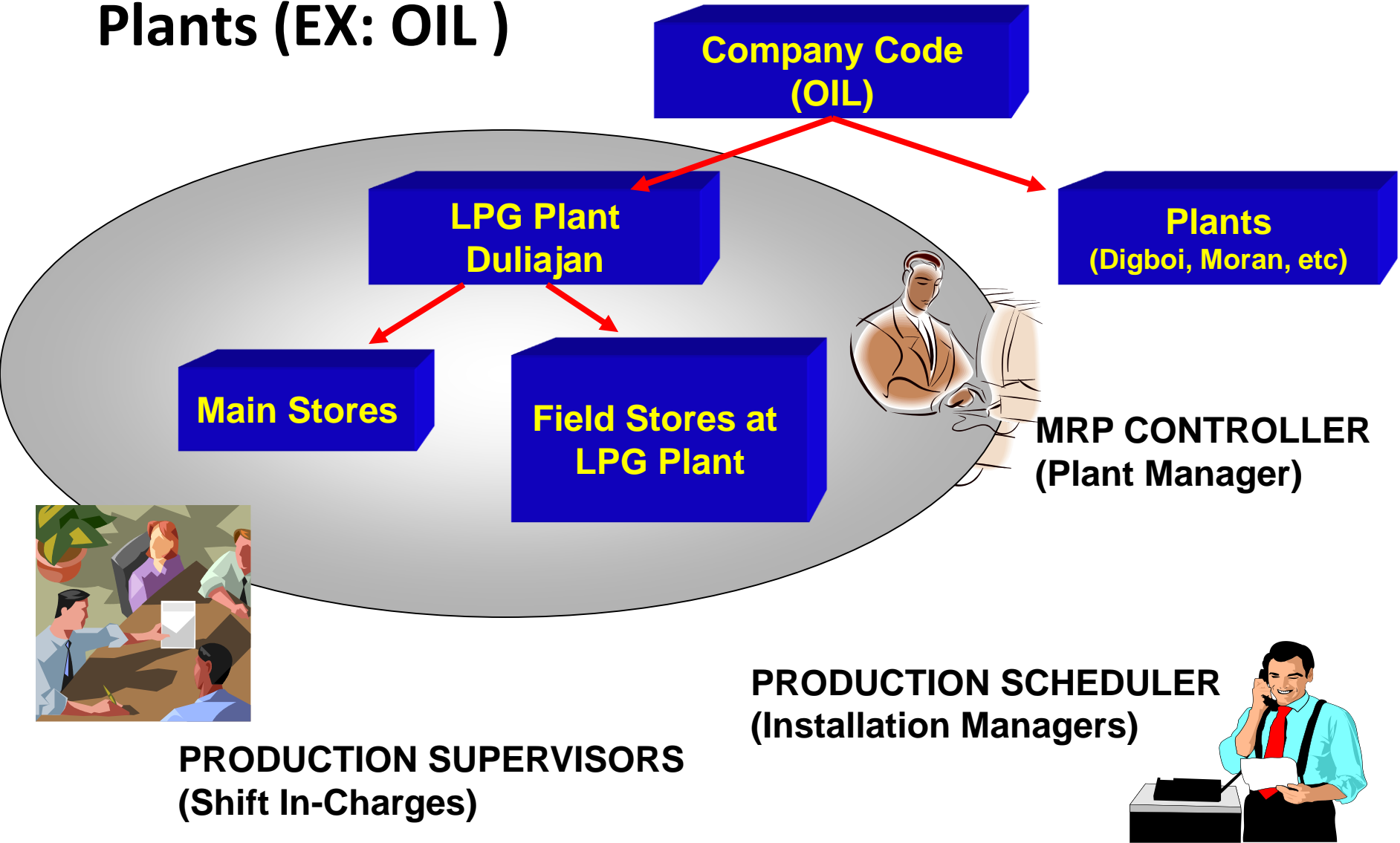


# Organizational Elements - Production Planning

## Plants in any organisation (ex:OIL)



# Production Planning - Organization Elements: Plants (EX: OIL )



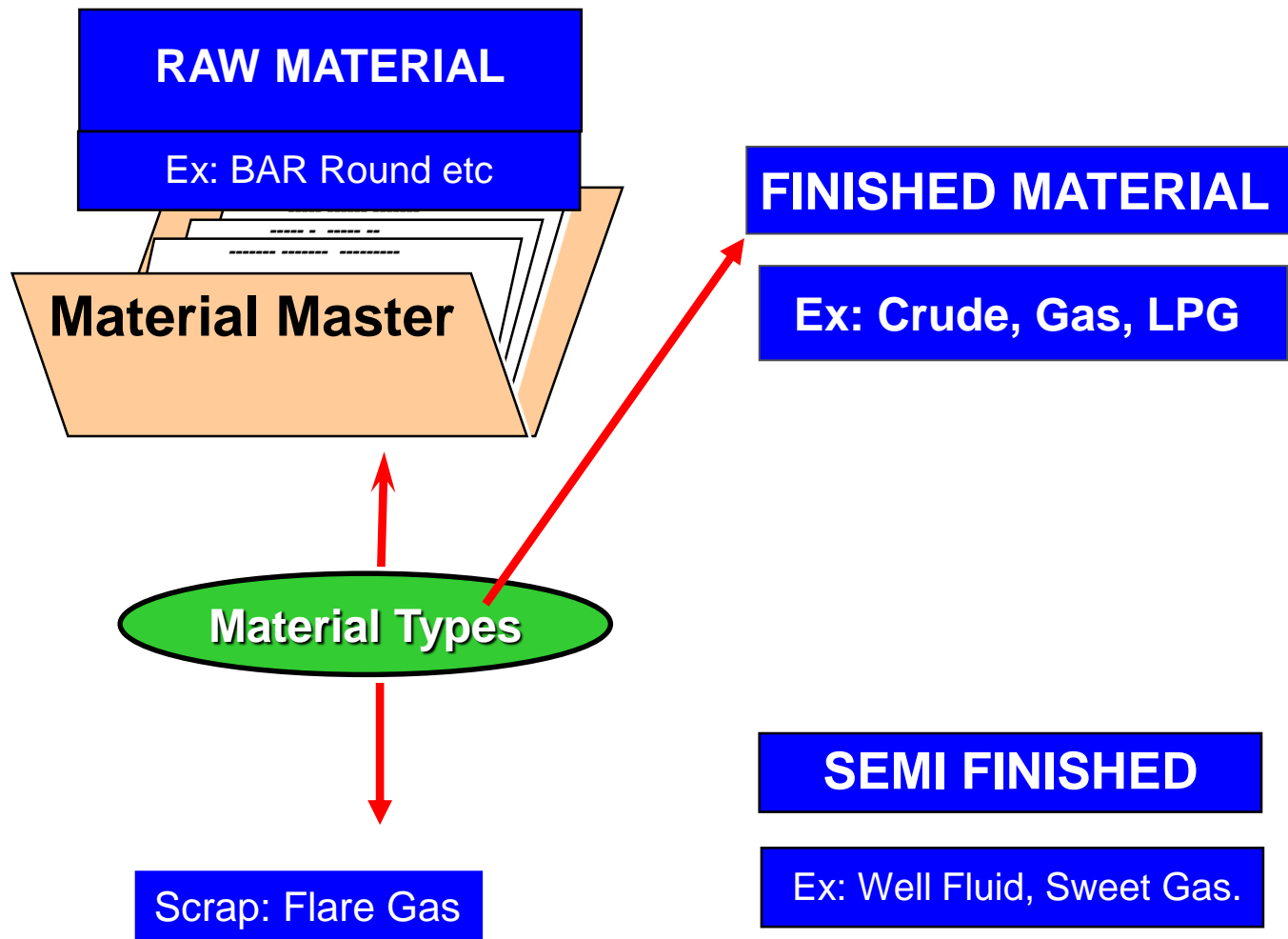
# **UNIT : PP-PI 01-01**

## **PP-PI Master Data**

- **PP-PI 01-01-01 Material Master**
- **PP-PI 01-01-02 Bills of Material**
- **PP-PI 01-01-03 Resources**
- **PP-PI 01-01-04 Master Recipe**

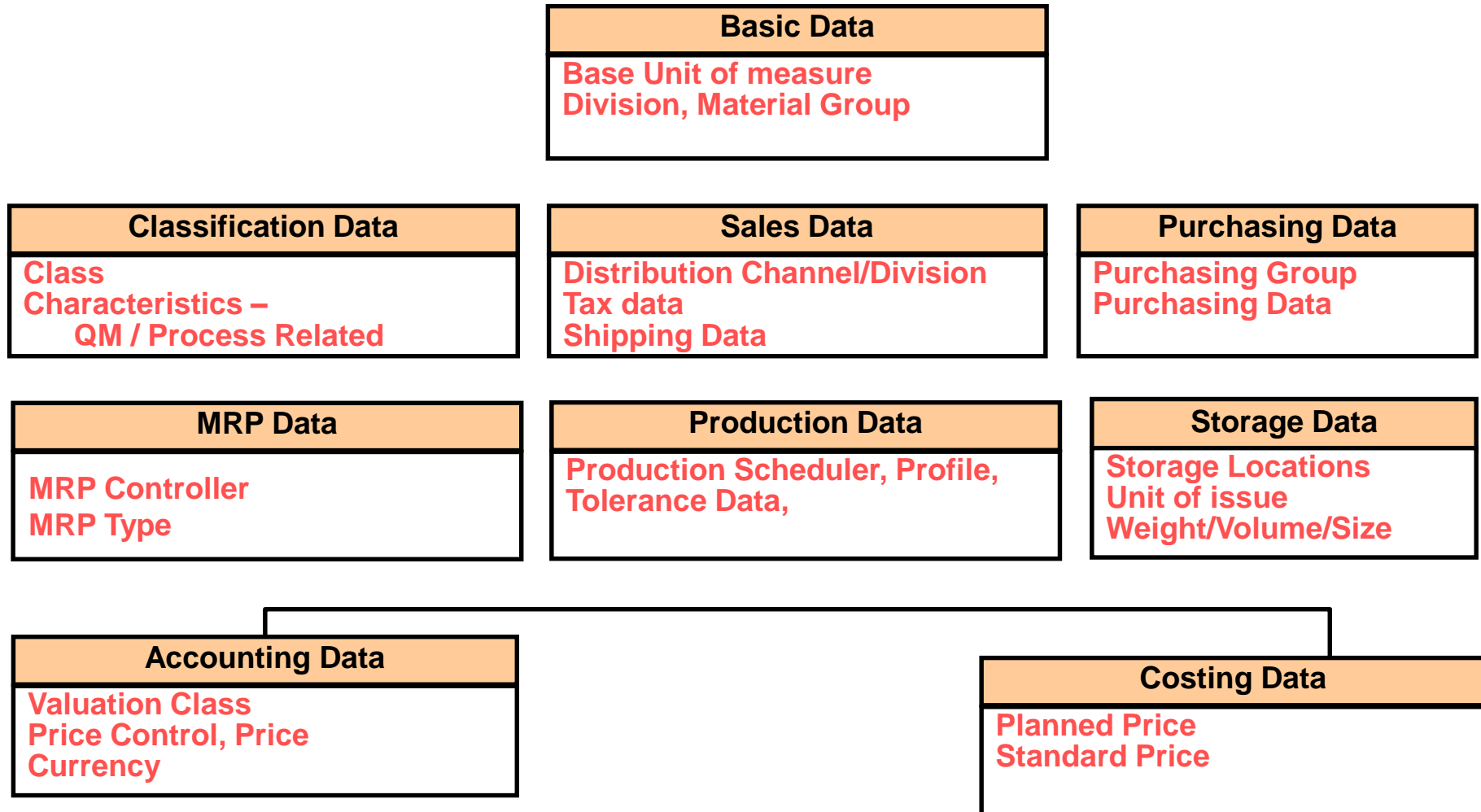
# Material Master

All Finished, Semi-finished, Raw & By product materials are codified.



# Master Data Views- Material

Information related to the Material is captured in various Data Views maintained in Material Master



# Material example

Plant	Plant Code	Material	Material Type
Dulaijan	11L1	99900003 LPG Cylinder (Empty)	Returnable Packaging
Dulaijan	11G1	85030102 Ethyl Mercaptan	Stock Materials
Moran	12G1	ZCRUDE1	Finished Goods
Pipeline	14P2	ONGCRUDE	Non-Valuated Material

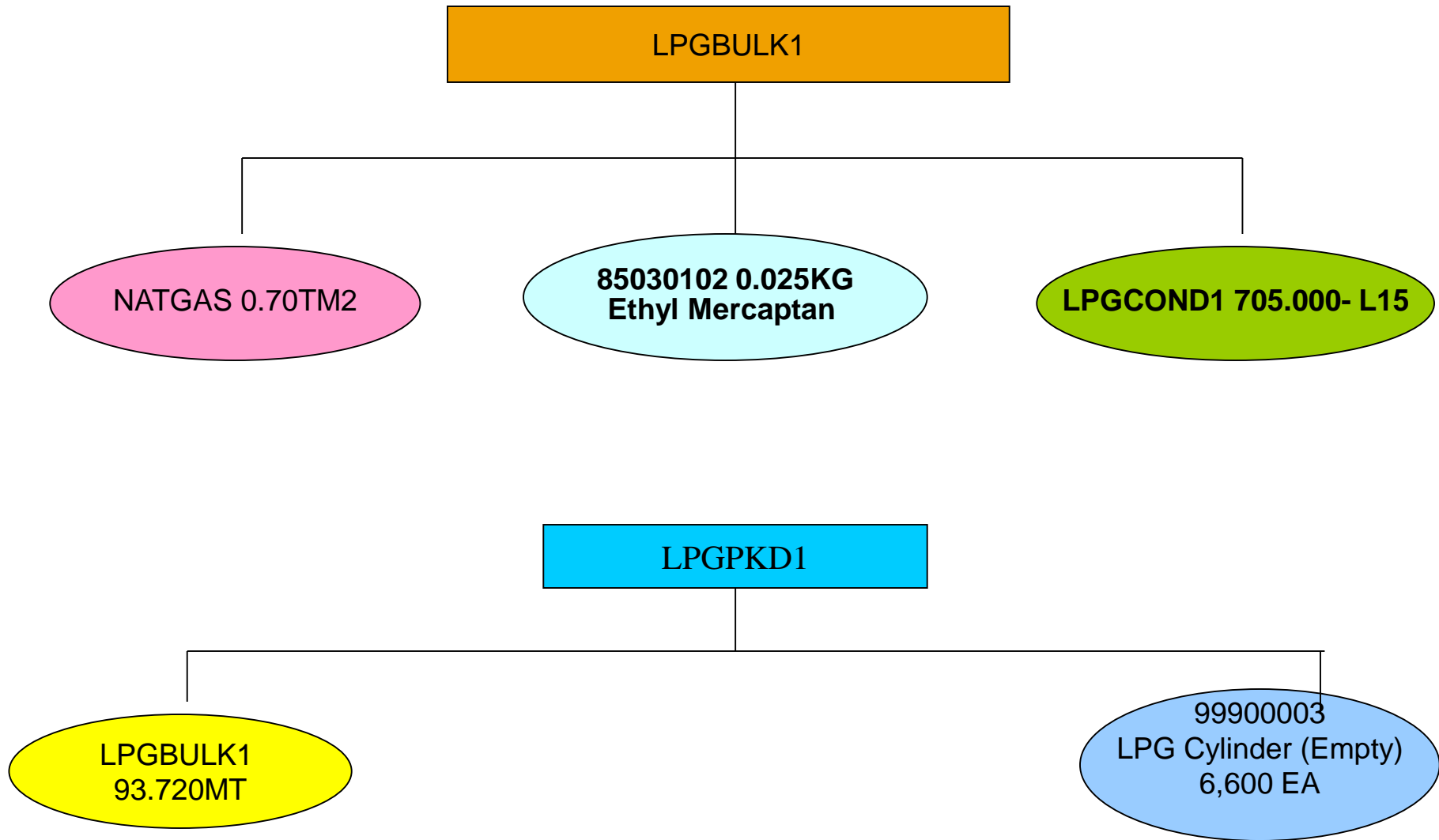
# Transaction Code

## PP-PI 01-01-01 Maintenance and Display of Material Master

- Create of Material using T - code MM01
- Change of Material using T - code MM02
- Display of Material using T - code MM03

# Bill of Material (BOM)

Quantities of various materials required to produce a fixed quantity of semi-finished / finished material.





# BOM Item Categories

- **Stock item – L**
- **Non stock item – N**
- **PM Structure elements – I**
- **Variable size item - R**
- **Intra Material - M**
- **Document item - D**
- **Class item - k**
- **Text item - T**

# BOM Reporting

- **BOM Explosion**
  - ✓ **Multi level BOM**
  - ✓ **Single level BOM**
  - ✓ **Summarized BOM**
- **Where used list**
- **BOM Comparison**

# Transaction Code

## PP-PI 01-01-02 Change and Display of Bills of Material

➤ Change of BOM using Tcode CS02

➤ Display of BOM using Tcode CS03

(However, BOM creation / Modification will normally be done through the Master Recipes only.)

# Resource Categories

Resource category groups resources according to their characteristics and use. The following categories defined in the system

Machine – 0001

Machine group – 0002

Labor – 0003

Labor group – 0004

Production line – 0007

Processing unit – 0008

Storage Resource - 0014

Plant	Plant Code	Resource	Resource Code
Duliajan - LPG Prod. Plant	11L1	LPG Unit	LPGUNIT
Duliajan - LPG Prod. Plant	11L1	LPG Bottling Unit	LPGBOTT

# Transaction Code

## PP-PI 01-01-03 Creation and Maintenance of Resources

- Create Resource using T code CRC1
- Change Resource using T code CRC2
- Display Resource using T code CRC3
- Display Resource list using T code CR05

# Master recipe example

<b>Recipe Header Group</b>	<b>LPG</b>
<b>Recipe Number</b>	<b>1</b>
<b>Operation / Phase</b>	<b>LPG Bulk Production Process</b>
<b>Resource</b>	<b>LPGUNIT, LPGLOG1</b>
<b>Material</b>	<b>NATGAS, LPGCOND,185030102</b>
<b>Plant</b>	<b>11L1</b>

# Transaction Code

## ➤ PP-PI 01-01-04 Creation and Maintenance of Master Recipe

➤ Crete Master Recipe using T code C201

➤ Change Master Recipe using T code C202

➤ Display Master Recipe using T code C203

# Business Process – Demand Management

## Function:

- Determines Requirement of Product quantities and Delivery Dates of Finished products.
- Defines planning strategy for a product.

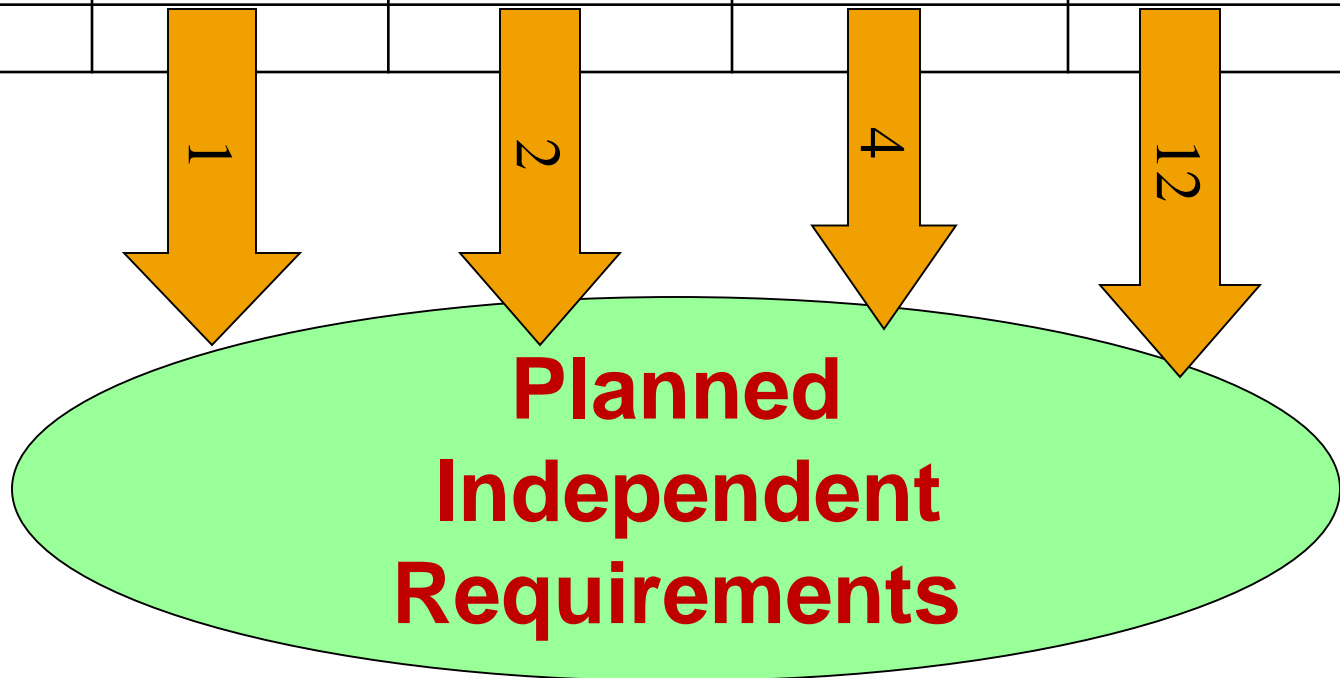
It is planned to create PIRs manually, based on the Annual targets of OIL.





# Business Process – Demand Management

Targets	Annual	Half Yearly	Quarterly	Monthly
LPG (MT)	52500	26250	13125	4375



# Business Process – MRP Run

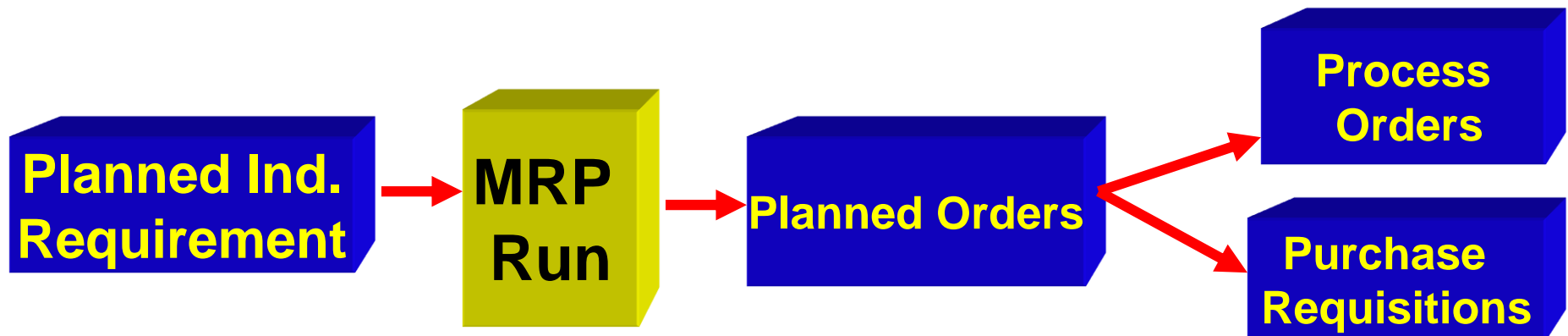
MRP is the Process for determining the Quantity of Semi-finished and Raw materials needed to produce a Finished Material.

Function: To guarantee Material Availability

MRP Run will be done by MRP Controller, like Plant Manager

MRP Run will be carried out once a month

MRP Run Creates Planned Orders for Production items (LPG) and Purchase requisitions for bought out items (Mercapton)



# Transaction Code

## Creation and Conversion of Planning order :

- Create Manual Planned order using Tcode [MD11](#)
- Change Planned order using Tcode [MD12](#)
- Display of Planned order using Tcode [MD13](#)
- Collective display of Planned order using Tcode [MD16](#)
- Ind.conv. of Planned order to Process order using Tcode [COR7](#)

# **UNIT : PP-PI 01-03**

## **Process Execution**

**Covers all aspects of creation of Process Order to  
Closure of a Process Order**

- **Process Planning**
- **Process Order Execution/ Process management**
- **Process Order Closing**

# Process Manufacturing

## Process Planning

- Order Creation / Conversion
- Scheduling
- Capacity Requirement Planning

## Process Order Execution

- Withdrawal of Material Component
- Confirmation on Order Processing Status
- In-process Quality Inspection
- Good Receipt from Production
- Sending of Process Data for Documentation and
- Evaluation

## Process Order Closing

- Technical Completion of Process Orders
- Process Order Settlement (Transfer of costs)
- Process order Documentation
- Reorganization of Process Order (Archiving/ Deletion)

# Transaction code

## Creation of Process Order

- Creation of Process Order using Tcode [COR1](#)
- Create Process Order by Converting a Planned Order using Tcode: [COR7](#)
- Create Process Orders by Collective Conversion of Planned Orders in [COR8](#)

# **PP-PI- 01-03: Process Order Confirmation**

**Once we confirm the production, System automatically performs the following activities :**

- Reduction in the capacity load on the Resource**
- Update of costs, based on confirmed data**
- Update of order data, such as times or order status**
- Withdrawal postings for back flushed components**
- Automatic goods receipt**
- MRP relevant update of the expected yield in the order**

# Transaction code

## PP-02-02-01 Process Order

- Order information system using T Code COIO
- Display Process order using T Code COR3
- Order confirmation by process order & operation/phase COR6
- Order confirmation display using T Code CORT
- Order confirmation cancellation using T Code CORS
- Goods Movement for Co-Product using T Code MIGO
- Goods Movement Reworking using T Code CO1P
- Goods Movement Reworking using T Code COGI



# **Technical completion of Process order**

**Technical completion is the completion of a process order from logistics point of view.**

**This is mandatory for subjecting the Process Order to a Costing Cycle.**

**TECO status can be revoked for a Process order, if required.....Authority lies with Production Scheduler.**

**We can also use this function**

**When we want to terminate execution of an order prematurely**

- If the order was not properly executed and want to delete open requirements(reservations, capacity requirements)**

# **Goods Issue**

**Goods issue (GI) is a goods movement with which a material withdrawal or material issue, a material consumption, or a shipment of goods to a customer is posted. A goods issue leads to a reduction in warehouse stock.**

- 261 – Issue of Empty Gas Cylinders to Plant**
- 262 – Reversal of 261 movement**
- 201 – Goods Issue to Cost center ( Bottled LPG)**
- 202 – Reversal of 201 movement**
- 935 – Issue of Rejected Cylinder to Customer**

# **Goods Receipt**

**Goods receipt (GR) is a goods movement with which the receipt of goods from a vendor or from production is posted. A goods receipt leads to an increase in warehouse stock.**

- 101 - GR for order in to warehouse (LPG, LPG Condensate)**
- 102 - GR for order in to warehouse reversal**
- 531 - GR for By product**
- 532 - Reversal**
- 933 - Receipt of Empty Cylinder from customer to Plant**
- 934 - Reversal**

# **Stock Transfer**

**Stock Transfer is the removal of material from one storage location and its transfer to another storage location. Stock transfers can occur either within the same plant or between two plants.**

**Stock transfers can occur at two different levels:**

- Stock transfer from plant to plant**
- From storage location to storage location (in the plant)**
- 301 - Plant to plant ( N.GAS to LPG Plant)**
- 302 - Reversal**

# Transfer posting

**Transfer posting is a general term for stock transfers and changes in stock type or stock category of a material. It is irrelevant whether the posting occurs in conjunction with a physical movement or not.**

**Examples of transfer postings are:**

- Transfer postings from material to material**
- Release from Blocked Stock to Unrestricted Stock**
- Transfer of consignment material into company's own stock**

# Transaction code

- **Stock overview using T code : MMBE**
- **Stock transfer using T Code : MB1B**
- **Transfer posting using T Code : MB1B**
- **Goods Receipt using T Code : MIGO**
- **Goods Issue using T Code : MIGO**
- **Display Material document using T Code MB03**
- **Material document list display using T Code : MB51**
- **Display stock on a particular date using T Code : MB5B**
- **Cancel material document using T Code : MBST**

# Benefits

- **Reduction of Inventory**
- **Reduction of order lead time**
- **Enhanced on time delivery**
- **Reduction in the average of date conflicts**
- **Reduction of urgent order**
- **Increase of capacity utilization**

# Transaction code

Production Planing		
SL.No.	Tcodes	Descriptions
1	<a href="#">C201</a>	Create Master Recipe
2	<a href="#">C202</a>	Change Master Recipe
3	<a href="#">C203</a>	Master Recipe
4	<a href="#">C223</a>	Create Production Version
5	<a href="#">COIO</a>	Order Information System
6	<a href="#">COR1</a>	Manual Creation of Process Order
7	<a href="#">COR2</a>	Change Process Order
8	<a href="#">COR3</a>	Display Process Order
9	<a href="#">COR6</a>	Process Order Confirmation - By Phase
10	<a href="#">COR7</a>	Individual Conversion of Planned Order to Process Order
11	<a href="#">CORS</a>	Cancel Process Order Confirmation
12	<a href="#">CORT</a>	Display the Confirmation
13	<a href="#">CRC1</a>	Create Resource
14	<a href="#">CRC2</a>	Change Resource
15	<a href="#">CRC3</a>	Display Resource
16	<a href="#">CS01</a>	Create Material BOM
17	<a href="#">CS02</a>	Change Bill of Material
18	<a href="#">CS03</a>	Display Bill of Material
19	<a href="#">MB1A</a>	Issue of Required Components to Process Order
20	<a href="#">MBST</a>	Cancel Material Document
21	<a href="#">MD01</a>	MRP Run
22	<a href="#">MD02</a>	MRP - Single-item, Multi-level -
23	<a href="#">MD04</a>	Display Stock/Requirements Situation
24	<a href="#">MD05</a>	Individual Display Of MRP List
25	<a href="#">MD06</a>	Collective Display Of MRP List
26	<a href="#">MD11</a>	Creation of Planned Order Manually
27	<a href="#">MD12</a>	Change Planned Order
28	<a href="#">MD13</a>	Individual Display of Planned Order



# Transaction code

29	<a href="#"><u>MD16</u></a>	Collective display of Planned Orders
30	<a href="#"><u>MD21</u></a>	Display Planning File Entry
31	<a href="#"><u>MD61</u></a>	Create Planned Independent Requirement
32	<a href="#"><u>MD62</u></a>	Change PIR
33	<a href="#"><u>MD63</u></a>	Display Planned Independent Requirement
34	<a href="#"><u>MIGO-101</u></a>	Goods Receipt for Process Order
35	<a href="#"><u>MIGO-344</u></a>	Goods Transfer - Defective Cylinders
36	<a href="#"><u>MIGO-933</u></a>	Goods Receipt for Process Order (Empty Cylinders)
37	<a href="#"><u>MM01</u></a>	Create Material master
38	<a href="#"><u>MM02</u></a>	Change Material Master
39	<a href="#"><u>MM03</u></a>	Display material master
40	<a href="#"><u>MMBE</u></a>	Stock Overview

# Examples

Sl No	T Code	Description
1.	C 201	<a href="#"><u>Create Master Recipe</u></a>
1.	COR1	<a href="#"><u>Manual Creation of Process Order</u></a>
2.	CORT	<a href="#"><u>Display the Confirmation</u></a>
3.	MB1A	<a href="#"><u>Issue of Required Components to Process Order</u></a>
4.	MM03	<a href="#"><u>Display Material Master</u></a>
5.	MIGO- 344	<a href="#"><u>Transfer Posting Defective Cylinder</u></a>

# Sales Order Module



# **Sales and Order**

**Sales and Distribution is one of the key components of SAP ERP system and is used to manage shipping, billing, selling and transportation of products and services in an organization.**

**Sales and Distribution module is a part of SAP Logistics module that manages customer relationship starting from raising a quotation to sales order and billing of the product or service. This module is closely integrated with other modules like SAP Material Management and PP.**

# **Sales Order Processing**

**The employees of organization take order in writing and over the phone.**

**Standard orders normally contains :**

- Customer and material information**
- Price information for all financial statement items.**
- Information about delivery dates and delivery quantities, and delivery locations**
- Information about shipping process.**
- Information about billing.**

# Data Types

**Master data**

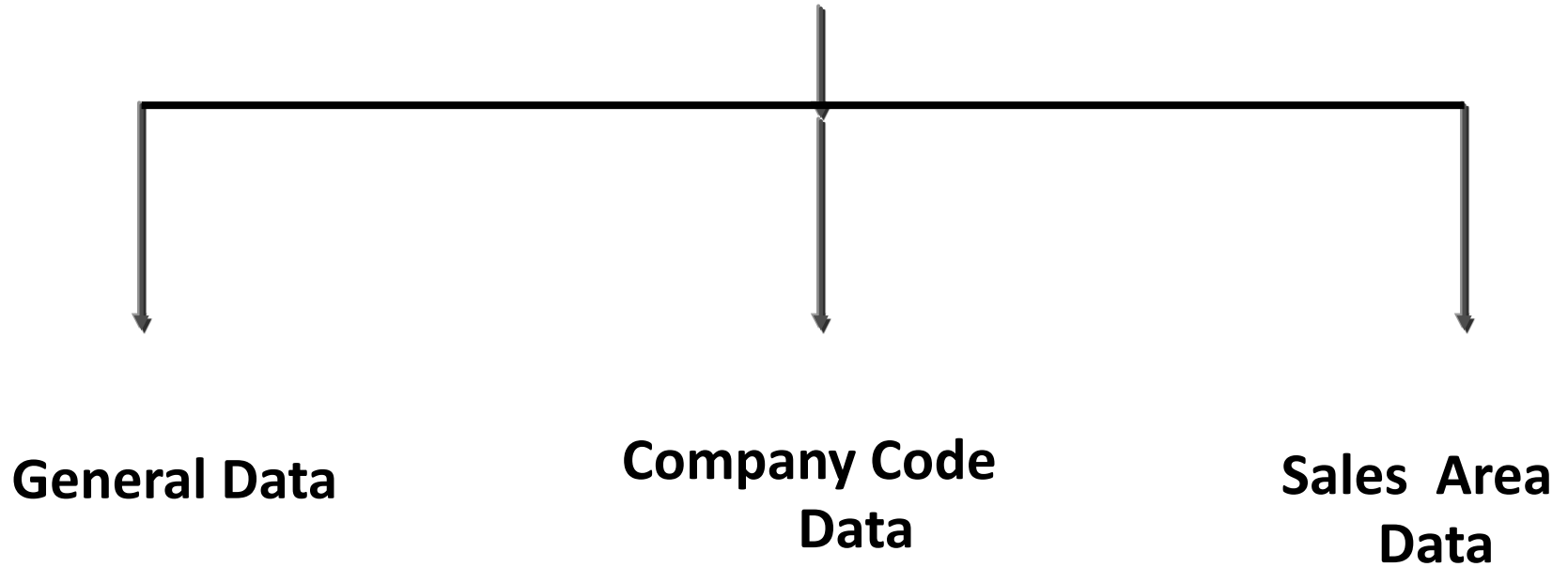
**Customer Master  
Material Master  
Condition Master**

**Transaction data**

**Sales Order  
Delivery Order  
Invoice**

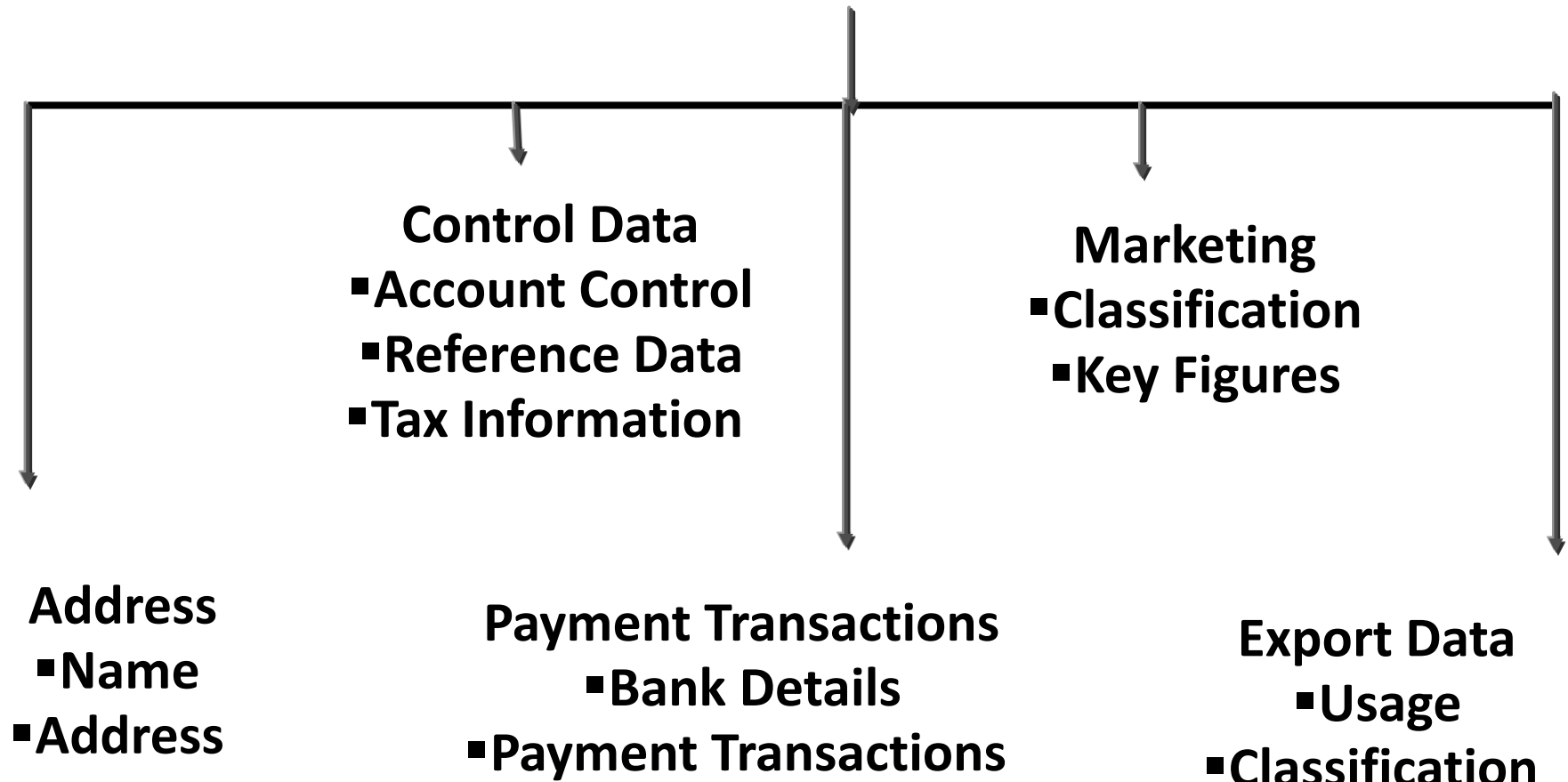
# Customer Master

Customer Master



# Customer Master

## General Data





# Customer Master-General Data

Customer Edit Goto Extras Environment System Help

Display Customer: General Data

General Data Company Code Data Sales Area Data Additional Data IS-OIL BDRP

Customer: 300022 IOCL - AOD - Duliajan Duliajan

Address Control data Payment transactions Marketing Export data

Preview

Name

Title

Name IOCL - AOD - Duliajan  
Assam Oil Division - Duliajan

Search terms

Search term 1/2 DULIAJAN DEALER DESTINATION

Street address

Street/House number

Postal code/City 786602 Duliajan

Country IN India Region ASM Assam

Time zone INDIA

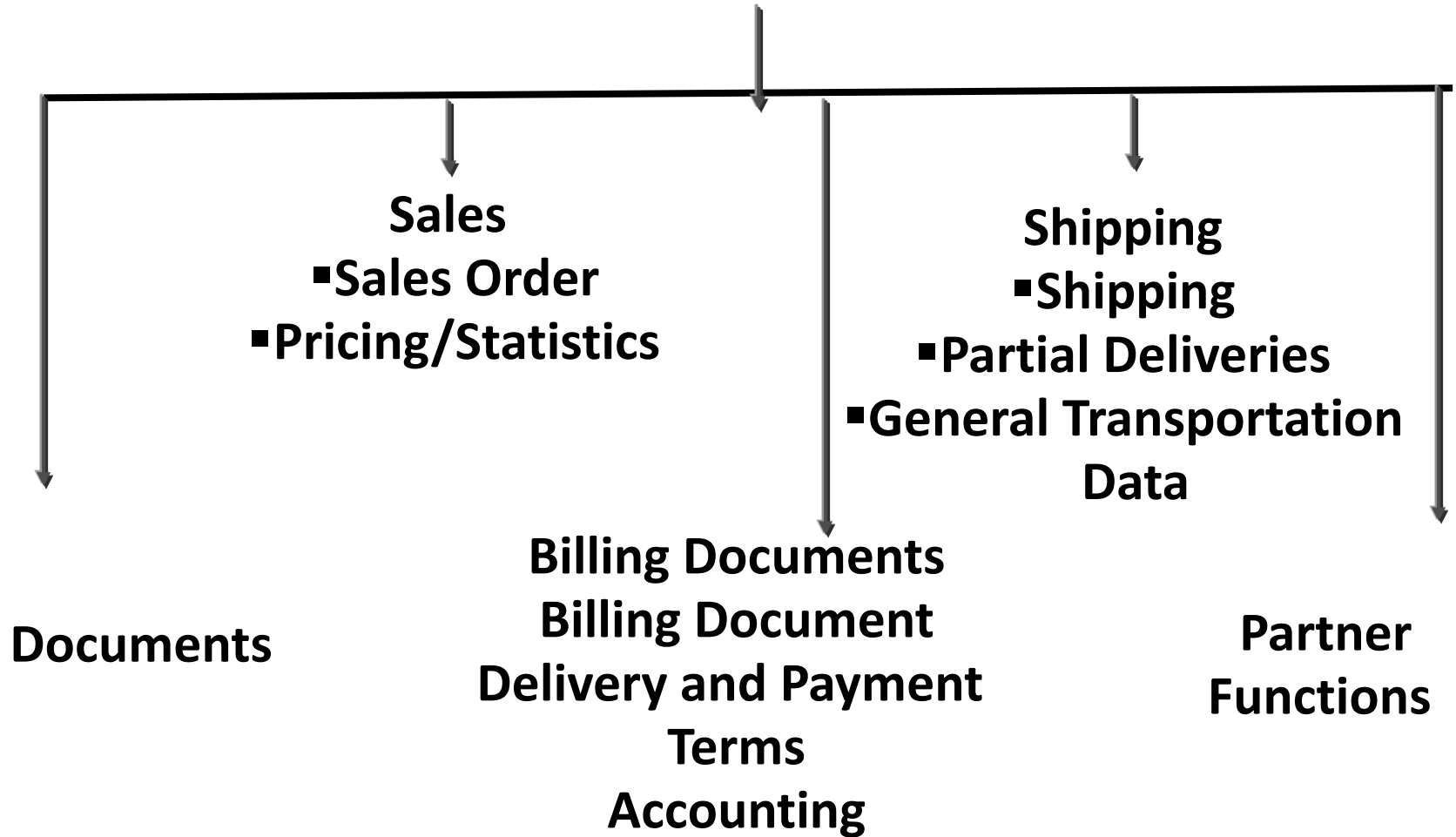
Transportation zone 0000000001 Common Tr Zone

PO box address

PO Box

# Customer Master

## Sales Area Data



# Customer Master-Sales Area Data

Customer Edit Goto Extras Environment System Help

SAP

Display Customer: Sales Area Data

General Data Company Code Data Sales Area Data Additional Data IS-OIL BDRP

Customer 300022 IOCL - AOD - Duliajan Duliajan

Sales Org. 0ILA OIL - Assam

Distr. Channel 0I OIL's Distr Chnl

Division LP LPG

Sales Shipping Billing document Partner functions

Delivering Plant 11L1 Duliajan - LPG Prod. Plant

☐ Relevant for POD

POD timeframe

Partial deliveries

☐ Complete delivery reqd by law

Partial delivery per item ☐ Partial delivery allowed

Max. partial deliveries 9

☐ Unlimited tol.

Underdel. tolerance 0.0

Overdeliv. tolerance 0.0

General transportation data

Transportation zone 0000000001 Common Tr Zone

IS-Oil Shipping Additions

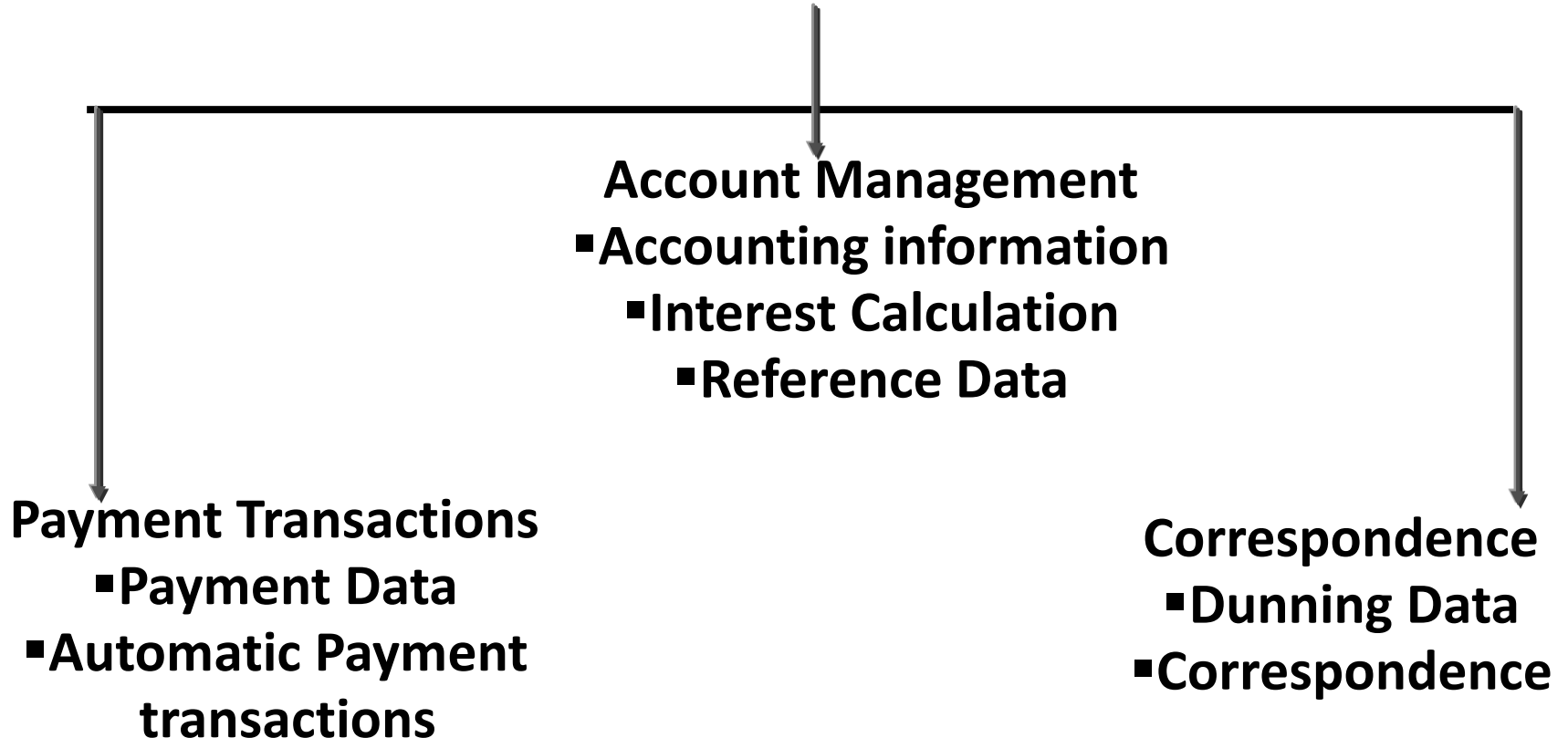
Cust.compat.group

Mode of transport

XD03 erprq1 OVR

# Customer Master

Company Code Data



# Customer Master-Company Code Data

Customer Edit Goto Extras Environment System Help

Display Customer: Company Code Data

General Data Company Code Data Sales Area Data Additional Data IS-OIL BDRP

Customer 300022 IOCL - AOD - Duliajan Duliajan  
Company Code OIL OIL INDIA LIMITED

Account management Payment transactions Correspondence Insurance Withholding tax

Accounting information

Rec. Account	510005	Sort key	
Head office	3		
Authorization		Cash mgmt group	
		Value adjustment	

Interest calculation

Interest indic.		Last key date	
Interest cycle	0	Last interest run	

Reference data

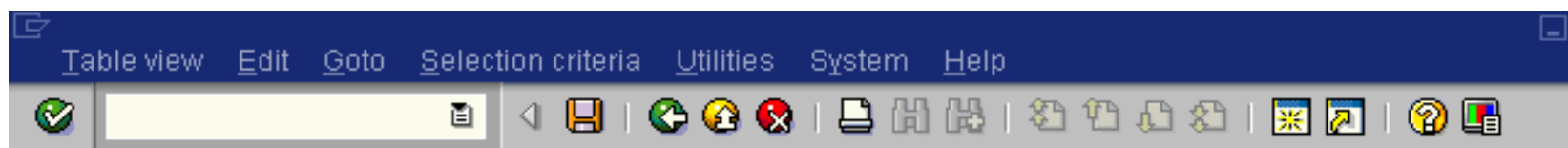
Prev.acct no.		Personnel number	0
Buying Group			

# Transaction code

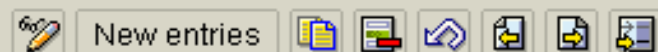
- Display of Customer Master (S&D) using Tcode VD03
- Display of Customer Master (Complete) using Tcode XD03
- Display of Customer Master using Tcode FD03
- Display of Material Master using Tcode MM03

# Master Data

- ☐ Chapter Id and Excise Tax Rate
- ☐ Material and Chapter Id Combination
- ☐ Customer Excise Details
- ☐ Every material has a Chapter Id as per Central Excise.
- ☐ One has to create a master for Chapter Id in the System.



**Change View "View of Chapter ID and text": Details**



Chapter ID 2711.19

[illegible]



## Material & Chapter Id Combination

[illegible]

## Customer Excise Details

**Customer's Excise Registration Particulars and Sales Tax Registration Particulars has to be maintained here.**

[illegible]

## Create Sales Order

[Sales document](#)
[Edit](#)
[Goto](#)
[Environment](#)
[System](#)
[Help](#)

## Create Sales Order: Initial Screen

[Create with Reference](#)
[IS-Oil](#)
[Sales](#)
[Item overview](#)
[Ordering party](#)

Order Type:




































Organizational data	
Sales Organization	<input type="text" value="OILA"/>
Distribution Channel	<input type="text" value="OI"/>
Division	<input type="text" value="CR"/>
Sales office	<input type="text" value="DULJ"/>
Sales group	<input type="text" value=""/>

# Create Sales Order



[illegible]


# Display Sales Order

Sales document   Edit   Goto   Environment   System   Help

✓                                    


**Display Sales Order: Initial Screen**

Sales   Item overview   Ordering party   Orders    

Order  

Search Criteria

Purchase Order No.	<input type="text"/>
Sold-to party	<input type="text"/>
Delivery	<input type="text"/>
Billing Document	<input type="text"/>
WBS Element	<input type="text"/>

 Search

## Display Sales Order

[illegible]

# Display Sales Order

Sales document Edit Goto Extras Environment System Help

Display Standard Order 83: Item Data

Sales Document Item 10 Item category ZCRD Crude - Std Item

Material CRUDEOIL OIL Crude

Sales A Sales B Shipping Billing Excise duty Tax Exemption License Conditions Account assignment Schedule lines

Qty 1,000.000 KL5 Net 17,082,607.30 INR Tax 0.00

CnTy	Description	Amount	Crcy	per	U...	G/N	Condition value	Curr.	NumC...	OUUn	CConDe	Un	Condition value
ZGRP	Gros Price OIL Crude	17,000.00	INR		1KL5		17,000,000.00	INR	1	KL5	1	KL5	0
ZTRC	Transptn Charges	85.67	INR		1MT		74,961.25	INR	1,000	KL5	875	MT	0
ZSER	Service Tax %	10.000	%				7,496.13	INR	0		0		0
ZEDC	Education Cess %	2.000	%				149.92	INR	0		0		0
	Total	17,082.61	INR		1KL5		17,082,607.30	INR	0	KL5	0	KL5	0
YGRP	Gros Price Statistic	17,000.00	INR		1KL5		17,000,000.00	INR	1	KL5	1	KL5	0
ZTRN	Transptn Statistical	85.67	INR		1MT		74,961.25	INR	1,000	KL5	875	MT	0
	Sales Value (Gross -	16,925.04	INR		1KL5		16,925,038.75	INR	1	KL5	1	KL5	0
YLST	Caluclated LST-Crude	3.846	%				650,963.03	INR	0		0		0
ZRV1	Reversal of LST-Crud	100.000	%				650,963.03	INR	0		0		0
ZRV2	Reversal of CST-Crud	100.000	%				0.00	INR	0		0		0
ZCES	CESS on Crude	1,800.00	INR		1MT		1,575,000.00	INR	1,000	KL5	875	MT	0
ZRV3	Reversal of CESS	100.000	%				1,575,000.00	INR	0		0		0
YEDC	Educt Cess on CESS %	2.000	%				31,500.00	INR	0		0		0

Condition rec. Analysis Update F&A

## Schedule lines

[illegible]



# Document Flow

Select Environment → Document flow.

The screenshot shows the 'Document Flow' application window. The title bar includes a menu bar with 'Document flow', 'Edit', 'Goto', 'Environment', 'System', and 'Help'. Below the menu bar is a toolbar with various icons for navigation and document management. The main content area has a sub-header 'Document Flow' and a navigation bar with buttons: 'Status overview', 'Display document', 'Service documents', and 'Additional links'. The main display shows the following information:

Standard Order 242  
Business partner 100005 Indian Oil Corporation Ltd.

Doc.	Date	Overall Process. Status
Standard Order 242	07.10.05	Open

## Display Sales Order

SAP

Sales document Edit Goto Extras Environment System Help

Display Standard Order 242: Item Data

Navigation icons

Sales Document Item: 10    Item category: ZCRD    Crude - Std Item  
Material: CRUDEIL    OIL Crude


Tabs: Shipping Billing Excise duty Tax Exemption License Conditions Account assignment Schedule lines Partners Texts



























Display Range: PARALL All partners

	Partn.funct.	Partner	Name	Street	Postal c...	Loc	Partner definitn
<input checked="" type="checkbox"/>	AG Sold-to party	100005	<input checked="" type="checkbox"/> Indian Oil Corporation Ltd.	Noonmati	781001	Guwahati	
<input type="checkbox"/>	RE Bill-to party	100005	<input type="checkbox"/> Indian Oil Corporation Ltd.	Noonmati	781001	Guwahati	
<input type="checkbox"/>	RG Payer	100005	<input type="checkbox"/> Indian Oil Corporation Ltd.	Noonmati	781001	Guwahati	
<input type="checkbox"/>	WE Ship-to party	100005	<input type="checkbox"/> Indian Oil Corporation Ltd.	Noonmati	781001	Guwahati	
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				
<input type="checkbox"/>			<input type="checkbox"/>				


Status bar: Navigation icons

# List of Sales Orders

 List Edit Goto Settings Environment System Help

## List of Sales Orders

 Disp.variants Further Selection Criteria... Organizational data Partner function...

Sold-to party100005

Material

Purchase order no.

Sales order data

Document date01.11.2005To30.11.2005

Selection criteria

☐ Open sales orders☐ My orders

☒ All orders

# List of Sales Orders

List of Sales Orders														
Sold-to party 0000100005 Indian Oil Corporation Ltd. Guwahati														
Doc. date 01.08.2005 To 30.09.2005														
Document	Item	SLNo	S	Descript.	SaTy	Doc. Date	ConfirmQty	Pur. Order	PO number	Batch	Valid fr...	Valid to	Div. date	Created by
139	10	1		OIL Crude	ZOR	13.09.2005	10.000	Test3	Test3			31.12.9999	13.09.2...	SD_CR_SALES
138	10	1		OIL Crude	ZOR	13.09.2005	0.000	Test2	Test2			31.12.9999	16.08.2...	SD_CR_SALES
138	10	2		OIL Crude	ZOR	13.09.2005	10.000	Test2	Test2			31.12.9999	13.09.2...	SD_CR_SALES
137	10	1		OIL Crude	ZOR	13.09.2005	0.000	Test1	Test1			31.12.9999	08.08.2...	SD_CR_SALES
137	10	2		OIL Crude	ZOR	13.09.2005	10.000	Test1	Test1			31.12.9999	13.09.2...	SD_CR_SALES
116	10	1		OIL Crude	ZOR	10.09.2005	2.000	Test	Test			31.12.9999	12.09.2...	SD_CR_SALES
193	10	2		OIL Crude	ZOR	05.09.2005	25.000	W4	W4			31.12.9999	23.09.2...	SSD_SARAF
193	10	1		OIL Crude	ZOR	05.09.2005	0.000	W4	W4			31.12.9999	05.09.2...	SSD_SARAF
83	10	1		OIL Crude	ZOR	05.09.2005	1,000.000	Test1	Test1			31.12.9999	05.09.2...	SSD_SARAF
74	10	1		OIL Crude	ZOR	02.09.2005	0.000	1	1			31.12.9999	01.09.2...	SFI_RAJENDRA
74	10	2		OIL Crude	ZOR	02.09.2005	1,000.000	1	1			31.12.9999	02.09.2...	SFI_RAJENDRA
69	10	1		OIL Crude	ZOR	01.09.2005	1,000.000	test	test			31.12.9999	01.09.2...	CSD_JAYANTAH
60000004	10			Crude Oil	CR	22.08.2005	64,575.254	Test	Test			31.12.9999		SSD_SARAF
192	10	1		OIL Crude	ZOR	22.08.2005	20.000	W3	W3			31.12.9999	23.09.2...	SSD_SARAF
191	10	2		OIL Crude	ZOR	15.08.2005	15.000	W2	W2			31.12.9999	23.09.2...	SSD_SARAF
191	10	1		OIL Crude	ZOR	15.08.2005	0.000	W2	W2			31.12.9999	15.08.2...	SSD_SARAF
90	10	1		OIL Crude	ZOR	09.08.2005	20.000	Test2	Test2			31.12.9999	06.09.2...	SSD_SARAF
186	10	2		OIL Crude	ZOR	08.08.2005	10.000	W1	W1			31.12.9999	23.09.2...	SSD_SARAF
186	10	1		OIL Crude	ZOR	08.08.2005	0.000	W1	W1			31.12.9999	08.08.2...	SSD_SARAF
89	10	1		OIL Crude	ZOR	02.08.2005	10.000	Test1	Test1			31.12.9999	06.09.2...	SSD_SARAF

# Transaction Codes

## Sales Order Processing

- Creation of Sales Order using Tcode VA01
- Change of Sales Order using Tcode VA02
- Display of Sales Order using Tcode VA03

## Closing of Sales Order

- Change Sales Order using Tcode VA02

## List Processing, Reports, Sales Info System and Sales Order

## Monitoring

- List of Sales Orders using Tcode VA05

# **Stock Transport Order – Sales Route**

**There are two types of Stock Transport Order (STO):**

- Transfer of Stock between different company codes**
- Transfer of Stocks within same company code but from different plants**
  - One Plant to another Plant (TD)**
  - Within One storage location to another**

# Create Purchase Order

[illegible]

# Transaction code

## Stock Transport Order – Sales Route

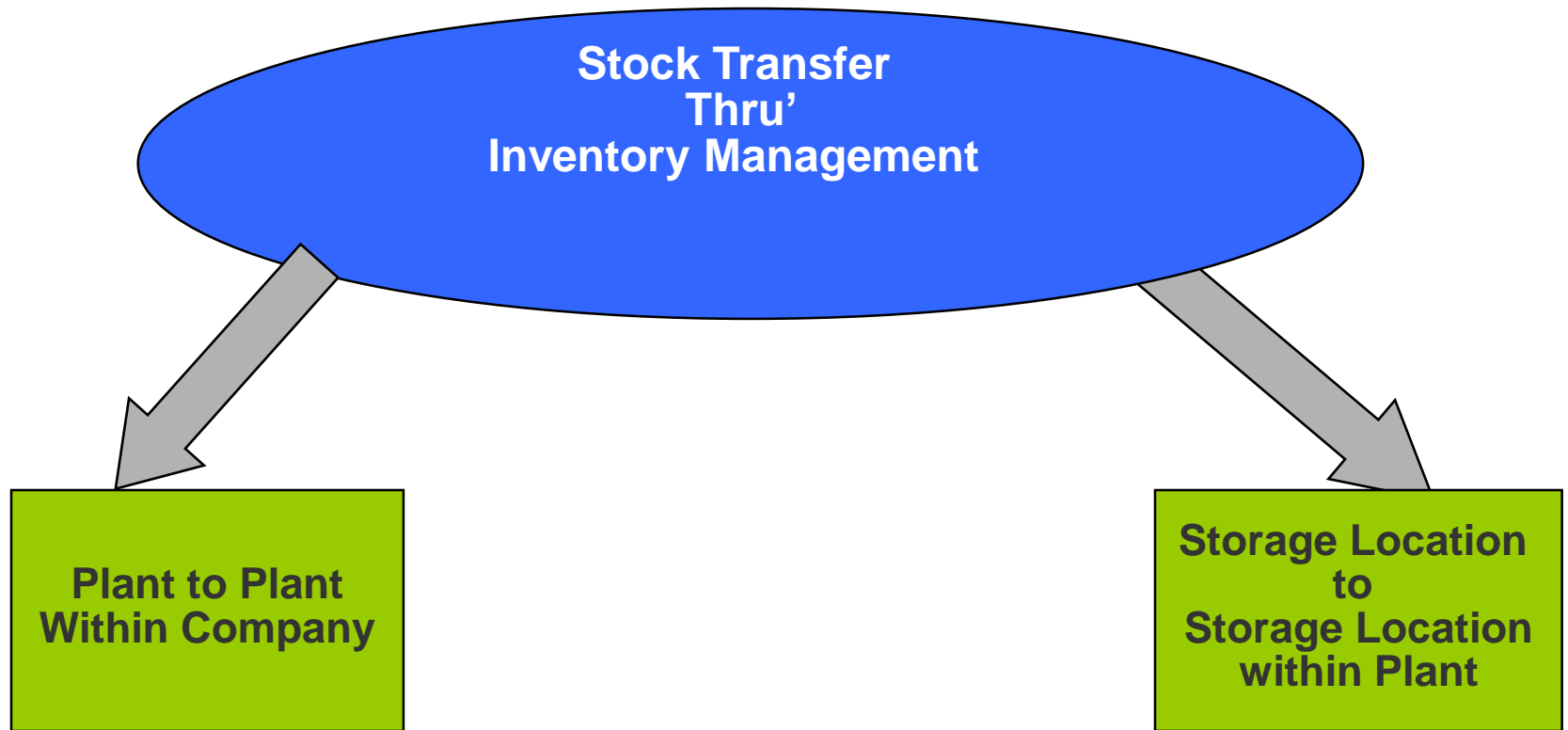
- Create Purchase Order using Tcode ME21N
- Change Purchase order using Tcode ME22N
- Display Purchase order using Tcode ME23N

## Inventory Monitoring

- Plant Stock Availability using Tcode MB53
- Stock On Posting Date using Tcode MB5B
- Stock Overview using Tcode MMBE



# Stock Transfer



# Transfer Posting

## Transfer Posting using Tcode MB1B

➤ The Transfer postings takes place with the help of movement types. The movement type has important control functions in Inventory management.

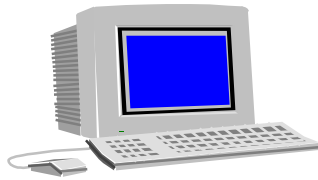
- Updating the quantity fields
- Updating the stock and consumption accounts
- Selection of the fields used for entering documents
- Goods receipt / Issue slips

# Transfer Posting

## Movement types used with Transaction code MB1B

- **301 : Transfer Posting Plant to plant**
- **302 : Transfer posting plant to plant - Reversal**
- **303 : Transfer Posting Plant to plant-Remove from Storage**
- **305 : Transfer Posting Plant to plant-Place in Storage**
- **311 : Transfer posting Storage Location**
- **312 : Transfer Posting Storage Location - Reversal**

# Document flow



## Document flow of an order

.Order

. . Delivery

. . . Invoice

**Create Outbound Delivery with Order Reference**

With Order Reference   W/o Order Reference  

Shipping point ☒ Pipeline Shipping Point

---

Sales order data

Selection date

Order ☒

From item

To item

---

Predefine delivery type

Delivery Type

With Order Reference

W/o Order Reference

Post goods issue

Shipping point

☒

Pipeline Shipping Point

Sales order data

Selection date

Order

☒

From item

To item

Predefine delivery type

Delivery Type

# Display Material Document: Overview

**SAP**

Material Document   Edit   Goto   Environment   System   Help

Display Material Document 4905001604 : Overview

Details fm Item   Material   Accounting Documents...

Posting Date   07.10.2005   Mat. Slip   0080000274   Name   TR\_ASHISH

Item	Quantity	EUn	Material	Plnt	SLoc	Batch	Re MvT	S S
		BUn	Material Description			Reserv.No.	Itm	FIs
1	100.000	KL	CRUDEOIL	14P2	G901		601	-
	98.794	KL5	OIL Crude					

MB03   erprq1   OVR

# Process Delivery Due List

Delivery Edit Goto Settings Environment System Help

SAP

**Sales Orders/Purchase Orders Worklist: Choice**

Individual delivery New selection List levels

Shipping point 14P2 Basic list  
Pipeline Shipping Point

Sold-to	Ship-to	Name	Route	Carrier					
SOrg	DC	Dv	GI Date	S	Gross weight	WUoM	Volume	VUoM	Itm
✓ 1		1		United Bank of India	0.000	KG	0.000		
0ILA	OI	NG	09.08.05						
✓ 1		1		United Bank of India	0.000	KG	0.000		
0ILA	OI	NG	05.08.05						
✓ 1		1		United Bank of India	0.000	KG	0.000		
0ILA	OI	NG	04.08.05						
✓ 2		2		Numaligarh Refinery Ltd.	0.000	KG	0.000	KL	
0ILA	OI	CR	30.09.05						
✓ 2		2		Numaligarh Refinery Ltd.	0.000	KG	0.000	KL	
0ILA	OI	CR	07.09.05						
✓ 2		2		Numaligarh Refinery Ltd.	0.000	KG	0.000		
0ILA	OI	CR	16.08.05						
✓ 2		2		Numaligarh Refinery Ltd.	0.000	KG	0.000		
0ILA	OI	CR	16.08.05						
✓ 2		2		Numaligarh Refinery Ltd.	0.000	KG	0.000		
0ILA	OI	CR	08.08.05						
✓ 2		2		Numaligarh Refinery Ltd.	0.000	KG	0.000		
0ILA	OI	CR	04.08.05						
✓ 100000		100000		North Eastern Elect. Power Corpn. L	0.000	KG	0.000		
0ILA	OI	NG	18.08.05						
✓ 100005		100005		Indian Oil Corporation Ltd.	0.000	KG	0.000	KL	
0ILA	OI	CR	30.09.05						
✓ 100005		100005		Indian Oil Corporation Ltd.	0.000	KG	0.000	KL	
0ILA	OI	CR	02.09.05						
✓ 100006		100006		Indian Oil Corporation Ltd. - Digbo	0.000	KG	0.000		
0ILA	OI	CR	12.09.05						

VL04 erprq1 OVR

# Transaction code

## Delivery Processing

- Create Outbound Delivery with reference to Sales Order using Tcode VL01N
- Change Delivery Document using Tcode VL02N
- Display of Delivery Document using Tcode VL03N

## Post Goods Issue

- Post Goods Issue using Tcode VL10A
- Post Goods Issue using T-code VL01N/VL02N

## List Processing

- Process Delivery Due List using Tcode VL04
- Create Delivery for STO using Tcode VL10B
- Outbound Delivery Monitor using Tcode VL06O



# Transaction Code

## Cancellation of Goods Issue/Delivery Documents

- Cancellation of Delivery Document/Reversal using Tcode VL09
- While canceling the Post Goods Issue the system uses the 602 movement type in the background

## SD-01 Reports and Sales Info system

- Process Delivery Due List using T code VL04
- Outbound Delivery Monitor using T code VL06O

# Loss/Gain Posting

➤ Posting of Crude for Loss/Gain using Tcode MB1A

➤ The movement types used :

925 : Loss posting for Crude / Gas

(Withdrawal for Scrapping w/o Cost center-Unrestricted)

926 : Gain posting for Crude / Gas

(Withdrawal for Scrapping- Reversal w/o Cost Center)

➤ Posting of Crude for Loss/Gain using Tcode MB1A

➤ The movement types used :

925 : Loss posting for Crude / Gas

(Withdrawal for Scrapping w/o Cost center-Unrestricted)

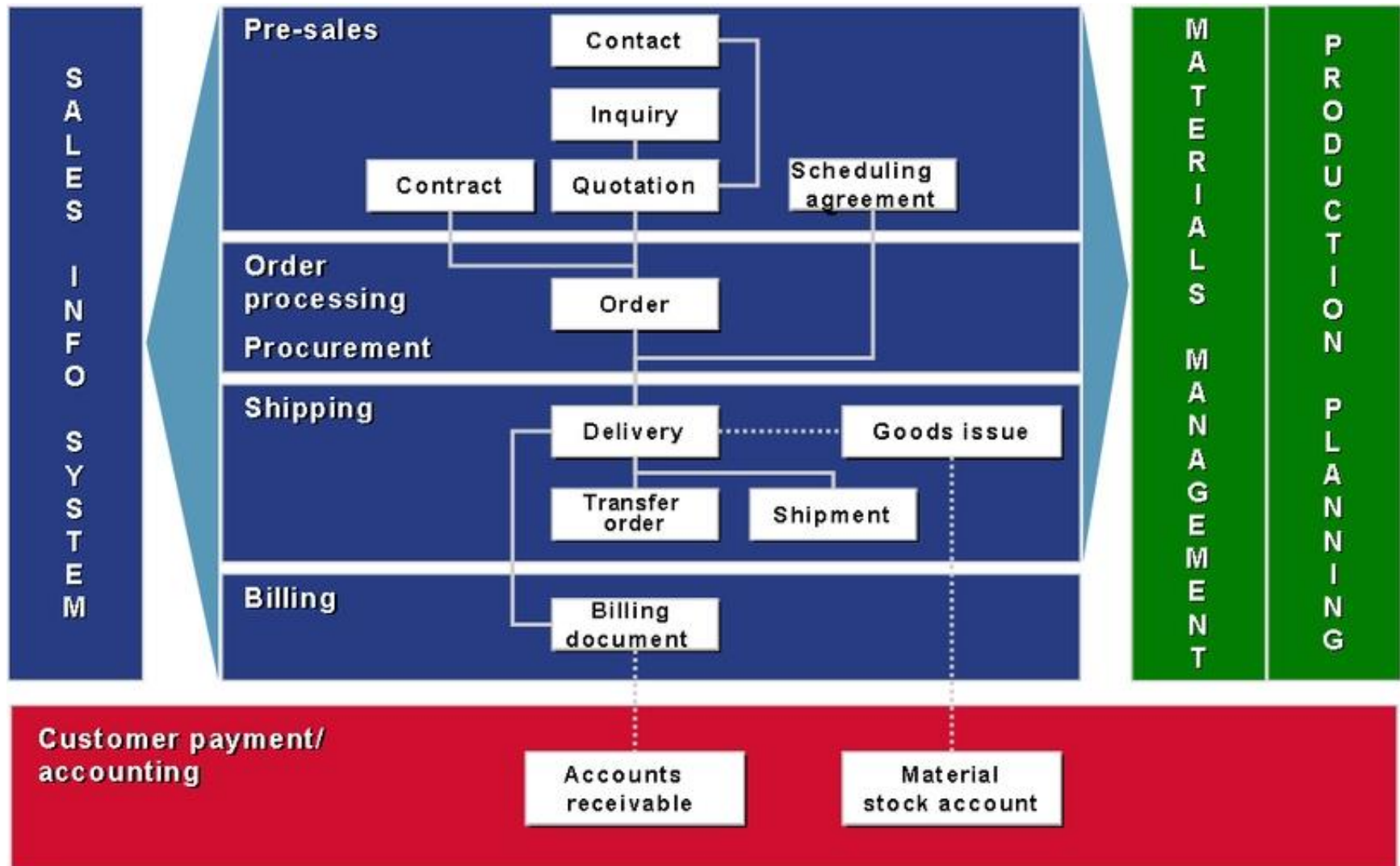
926 : Gain posting for Crude / Gas

(Withdrawal for Scrapping- Reversal w/o Cost Center)

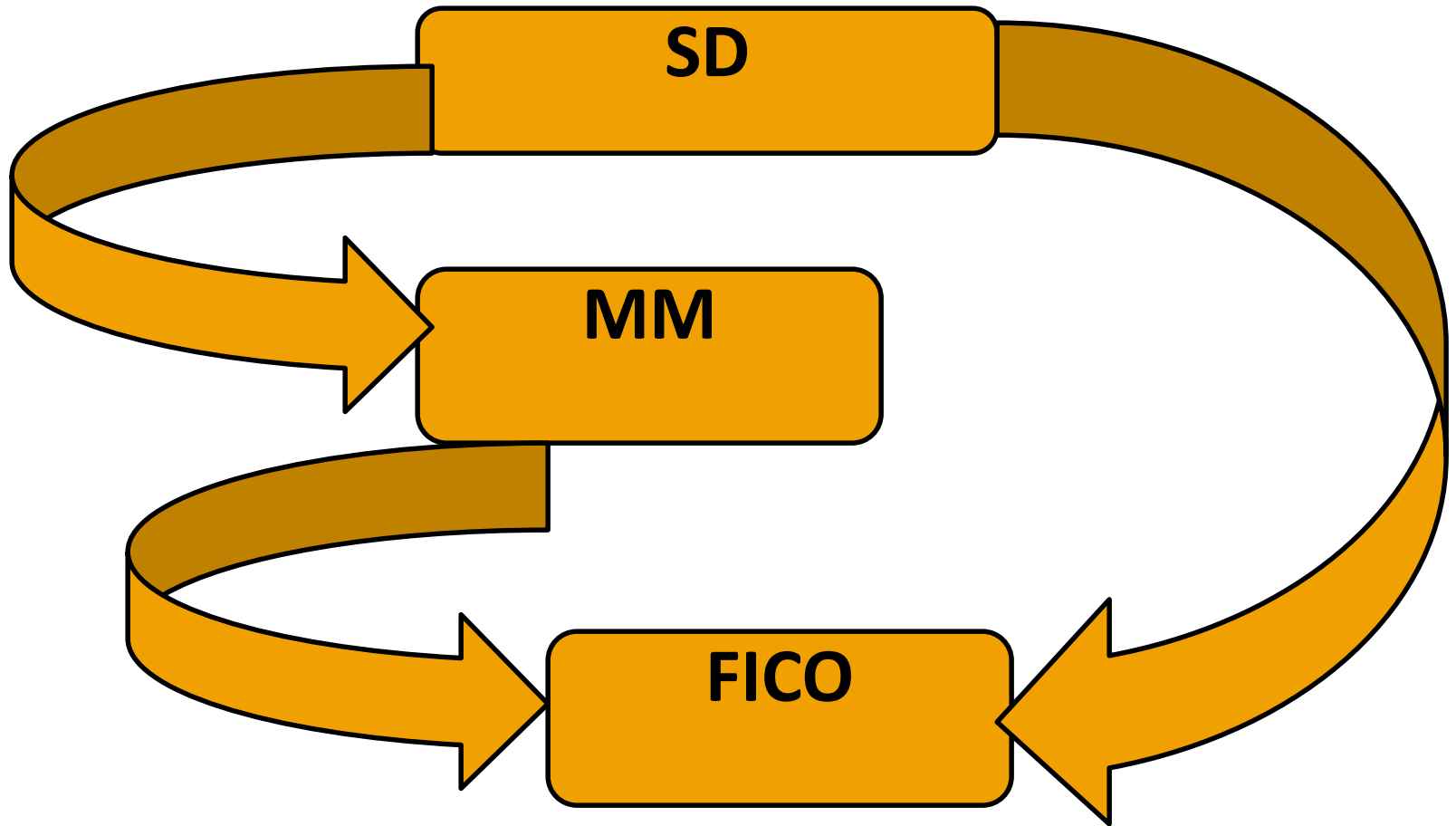
# Stocks Reconciliation

- Enter Count w/o referencing to document using Tcode MI09
- Movement Type used 702
- Post Inventory differences using Tcode MI07
- Movement Type used 702

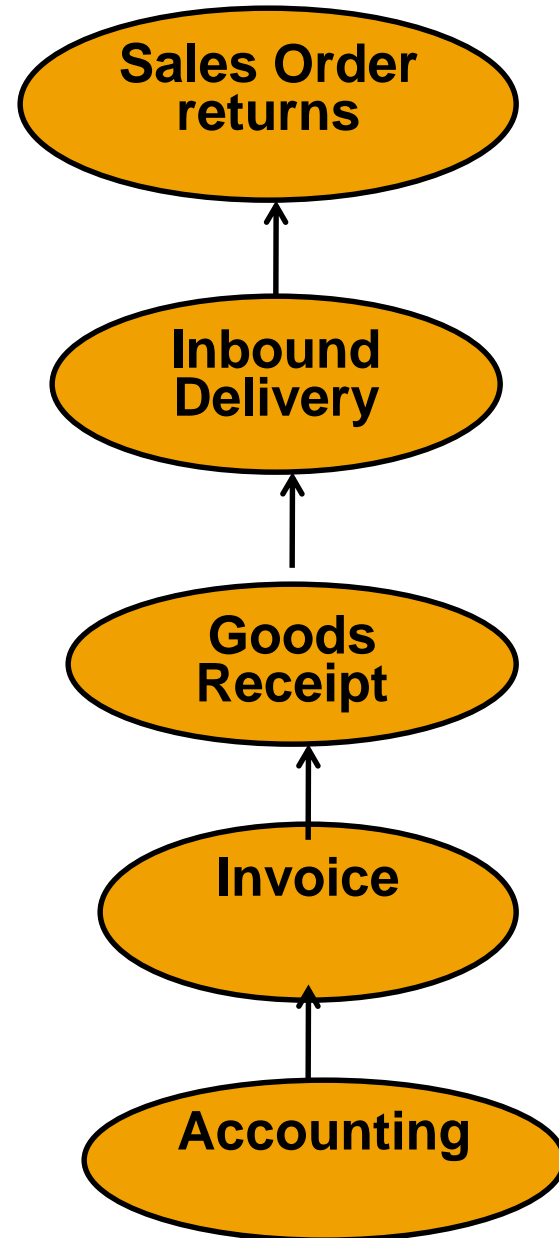
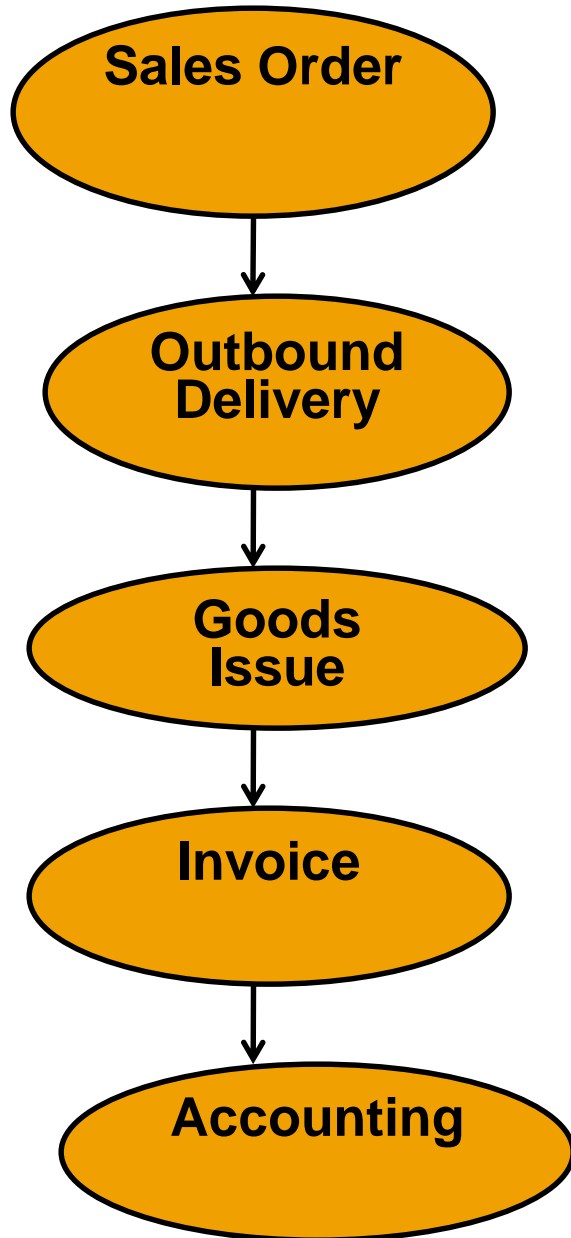
# Payment



# Interconnection



## End user action



# Process Chain

## Sales Order

Links Point	Module
Availability check	MM
Credit check	FI
Costing	CO/MM
Tax determination	FI
Transfer of requirements	PP/MM

## Billing

Integration Point	Module
Debit A/R	FI/CO
Credit revenue	FI/CO
Updates G/I (Tax, discounts,surcharges,etc)	FI/CO
Milestone Billing	PS

# Process Chain

## Goods Delivery and Issue of goods

Integration	Module
Availability check	MM
Credit check	FI
Reduces Stock	MM
Reduces Inventory	FI/CO
Reduces Eliminated	PP/MM



# Benefits

- Speed up and consolidate the process;
- Collect and distribute the right data automatically;
- Boost customer satisfaction;
- Increase visibility;
- Shorten DSO (Days Sales outstanding).

# Transaction Code

Sales & Distribution		
SL.No.	Tcodes	Descriptions
1	<a href="#">MM01</a>	Create Material
2	<a href="#">MM02</a>	Change Material
3	<a href="#">MM03</a>	Display Material
4	<a href="#">MM06</a>	Flag Material for Deletion
5	<a href="#">O4D1</a>	Create, Driver
6	<a href="#">O4D2</a>	Change, Driver
7	<a href="#">O4D3</a>	Display, Driver
8	<a href="#">O4D4</a>	Delete, Driver
9	<a href="#">O4V1</a>	Create, Vehicle
10	<a href="#">O4V2</a>	Change, Vehicle
11	<a href="#">O4V3</a>	Display, Vehicle
12	<a href="#">O4V4</a>	Delete, Vehicle
13	<a href="#">VA01</a>	Create Sales Order
14	<a href="#">VA02</a>	Change Sales Order
15	<a href="#">VA03</a>	Display Sales Order
16	<a href="#">VA05</a>	List of Sales Orders
17	<a href="#">VD01</a>	Create Customer (Sales)
18	<a href="#">VD02</a>	Change Customer (Sales)
19	<a href="#">VD03</a>	Display Customer (Sales)
20	<a href="#">VD04</a>	Customer Changes (SD)
21	<a href="#">VD05</a>	Block customer (sales)
22	<a href="#">VD06</a>	Mark customer for deletion (sales)
23	<a href="#">VF01</a>	Create Billing Document
24	<a href="#">VF02</a>	Change Billing Document
25	<a href="#">VF03</a>	Display Billing Document

# Transaction Code

26	<a href="#">VF04</a>	Process Billing Due List
27	<a href="#">VF05</a>	List billing documents
28	<a href="#">VF11</a>	Cancel Billing Document
29	<a href="#">VK11</a>	Condition Type_ ZGRP
30	<a href="#">VK11</a>	Condition Type_ YLST
31	<a href="#">VK11</a>	Condition Type_ ZASV
32	<a href="#">VK11</a>	Condition Type_ ZEXD
33	<a href="#">VK11</a>	Condition Type_ ZTRC
34	<a href="#">VK12</a>	Change Condition record
35	<a href="#">VK13</a>	Display Condition record
36	<a href="#">VL01N</a>	Create Outbound Dlv. with Order Ref.
37	<a href="#">VL02N</a>	Change Outbound Delivery
38	<a href="#">VL03N</a>	Display Outbound Delivery
39	<a href="#">VL09</a>	Cancel Goods Issue for Delivery Note
40	<a href="#">VL10A</a>	Sales Orders Due for Delivery
41	<a href="#">VV31</a>	Create Output : Billing
42	<a href="#">VV32</a>	Change output: Billing
43	<a href="#">VV33</a>	Display Output: Billing
44	<a href="#">XD01</a>	Create Customer (Centrally)

# Transaction Code

Accounts Receavables		
S. No.	T. Code	Discription
1	<a href="#">F.03</a>	Financial Accounting Comparative Analysis
2	<a href="#">F.07</a>	Balance Carryforward
3	<a href="#">F.20</a>	Account List
4	<a href="#">F.21</a>	Open Items
5	<a href="#">F.22</a>	Customer Evaluation with OI Sorted List
6	<a href="#">F.23</a>	Account balances
7	<a href="#">F-22</a>	Invoice - general
8	<a href="#">F-27</a>	Credit Memo General
9	<a href="#">F-29</a>	Down Payment
10	<a href="#">F-30</a>	Post With Clearing
11	<a href="#">F-31</a>	Outgoing Payment
12	<a href="#">F-32</a>	Clearing
13	<a href="#">F-39</a>	Clearing Down payment
14	<a href="#">F-49</a>	Noted Item
15	<a href="#">F-64</a>	Invoice Parking General
16	<a href="#">F-67</a>	Credit Memo-General
17	<a href="#">FB02</a>	Change Document
18	<a href="#">FB03</a>	Display Document
19	<a href="#">FB04</a>	Document Changes
20	<a href="#">FB08</a>	Reverse Document
21	<a href="#">FB09</a>	Change Line Items
22	<a href="#">FB70</a>	Invoice
23	<a href="#">FB75</a>	Credit Memo
24	<a href="#">FBD1</a>	Enter Recurring Entry
25	<a href="#">FBE1</a>	Payment Advice
26	<a href="#">FBE2</a>	Payment Advice Change
27	<a href="#">FBE3</a>	Display Payment Advice

# Transaction Code

28	<a href="#">FBE6</a>	Delete Payment Advice
29	<a href="#">FBL5N</a>	Display Line Items
30	<a href="#">FBRA</a>	Reset Cleared Items
31	<a href="#">FBV0</a>	Post Parked Document
32	<a href="#">FBV2</a>	Change Parked Document
33	<a href="#">FBV3</a>	Display Parked Document
34	<a href="#">FD01</a>	Create Customer
35	<a href="#">FD02</a>	Change Customer
36	<a href="#">FD03</a>	Display Customer
37	<a href="#">FD04</a>	Display Changes
38	<a href="#">FD05</a>	Block/unblock Customer
39	<a href="#">FD06</a>	Delete Customer
40	<a href="#">FD10N</a>	Display Customer Balances
41	<a href="#">FD11</a>	Customer Analysis
42	<a href="#">FINT</a>	Item Interest Calculation
43	<a href="#">FQUD</a>	Query
44	<a href="#">FV70</a>	Park OR Edit Invoice

45	<a href="#">FV75</a>	Park OR Edit Credit Memo
46	<a href="#">S_ALR_87012168</a>	Due Date Analysis for Open Items
47	<a href="#">S_ALR_87012169</a>	Transaction Figures-Account Balance
48	<a href="#">S_ALR_87012171</a>	Transaction Figures_Sales
49	<a href="#">S_ALR_87012172</a>	Customer Balances in Local Currency
50	<a href="#">S_ALR_87012173</a>	List of Customer Open Items for Printing
51	<a href="#">S_ALR_87012175</a>	Open Items-Customer Due Date Forecast
52	<a href="#">S_ALR_87012178</a>	Customer Open Item Analysis by Balance of Over Items
53	<a href="#">S_ALR_87012179</a>	Customer List
54	<a href="#">S_ALR_87012180</a>	Address List
55	<a href="#">S_ALR_87012182</a>	Display Changes to Customer
56	<a href="#">S_ALR_87012186</a>	Customer Sales
57	<a href="#">S_ALR_87012197</a>	List of Customers Line Item

## Transaction Code

Country India Version (Excise / Taxation)		
S. No.	T. Code	Discription
1	<a href="#">J1I5</a>	RG1 updation
2	<a href="#">J1I7</a>	List of Generated Documents
3	<a href="#">J1I7</a>	Excise Invoice Query
4	<a href="#">J1IH</a>	Excise JV
5	<a href="#">J1IIN</a>	Excise Invoice for Factory Sales
6	<a href="#">J1ILN</a>	India Localization Menu
7	<a href="#">J1IP</a>	Excise Invoice Print
8	<a href="#">J1IR</a>	Data Download
9	<a href="#">J2I5</a>	Extraction
10	<a href="#">J2I6</a>	Print Utility
11	<a href="#">J2IER1</a>	For ER1 register

# Examples

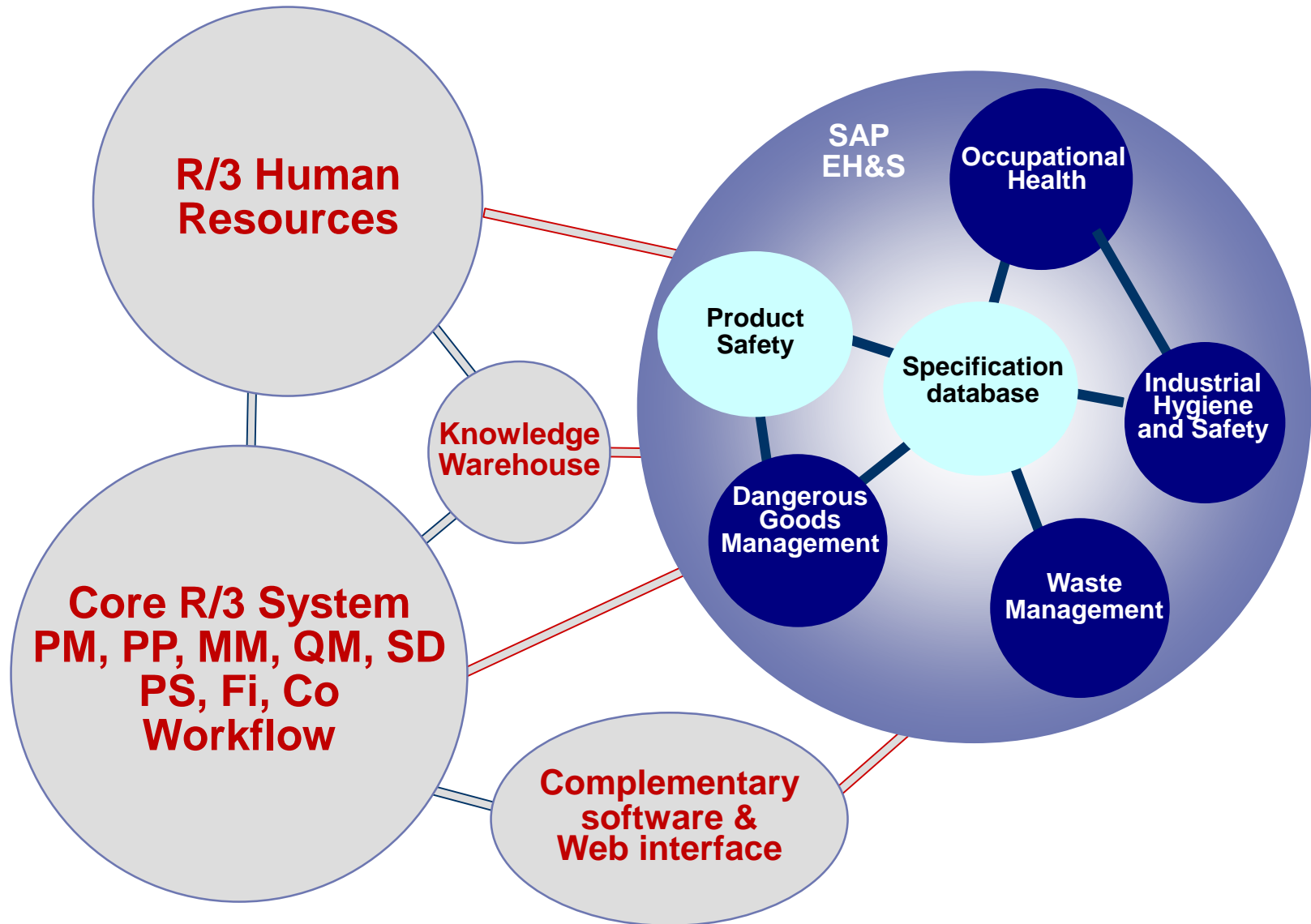
SI No	T Code	Description
1.	VA01	<u>CREATION OF SALES ORDER_SCRAP</u>
2.	VL01N	<u>CREATION OF OUTBOUND DELIVERY_CRUDE</u>
3.	J117	<u>Help for internally generated documents</u>
4.	S_ALR_87012168	<u>Due Date Analysis for Open Items</u>



**EHS- Environment Health & Safety module**



# SAP EHS Components



# **EHS : Occupational Health Overview**

- ☐ **General Overview of Occupational Health Module**
- ☐ **Master Data in Occupational Health**
- ☐ **Business Process**
- ☐ **Reports**

# Understanding the Occupational Health Master Data

The various Master data's are

- ☐ Health Centre
- ☐ Physician
- ☐ Employees
- ☐ Applicants
- ☐ Agents
- ☐ Medical Tests
- ☐ Medical Examinations
- ☐ Questionnaires
- ☐ Question Catalog
- ☐ Diagnosis keys
- ☐ Medical protocol.

# **Understanding the Occupational Health Master Data**

**Health Centers will be created for all geographic locations where OH activity takes Place.**

**The following Health centers will be created as Master Data in OH –**

- **OHC- LOC1**
- **OHC- LOC2**
- **OHC- LOC3**
- **OHC- LOC4**
- **OHC- LOC5**
- **OHC- LOC6**

# **Understanding the Occupational Health Master Data**

- **Physicians will be identified to enable assignment to medical services.**
- **Employees identified in SAP- HR module will be assigned to the Health Centers.**
- **Applicants will be identified in SAP- HR module.**
- **Agents are objects that have a definite or possible influence of physical, chemical, biological or other nature that can negatively affect the health and well being of employees.**

**The followings agents may be considered for triggering Occupational Health related medical services-**

- **Noise**
- **Ionizing Radiation**

# **Understanding the Occupational Health Master Data**

➤ **Medical Tests are measured physical values that is one of the set of results that make up the medical examination .**

➤ **Medical Tests can be of following types –**

➤ **Physical Tests**

➤ **Laboratory Tests**

➤ **Audiogram**

➤ **Lung Function Test**

➤ **Eye Test**

# **Occupational Health**

- **Employees are assigned to the Occupational Health Centre for availing the relevant Health Examination services .Assignment to the Health Centre will be done manually.**
- **Relevant Health Surveillance Protocols are assigned to the employees manually mentioning the date of last medical examination.**
- **List of employees due for Medical Service is available from system, based on the dates entered. The medical service for the employee can be scheduled from this list.**
- **During the Medical Examination, Questionnaires can be answered and the answers recorded on-line by the physician. Medical Examination and Test Results can be entered along with evaluations.**
- **Attending Physician can assign Diagnosis and set Work related restrictions as part of the Medical Examination.**

# **Occupational Health**

- **Physician attending the employee assigns follow up medical visits for the employee.**
- **Health Education given to the Employee can be documented against the Medical Service.**
- **Physician attending the employee closes the Medical Service after all test results are documented and follow up visits are complied with.**
- **Print Out of the Medical Service provided is generated.**
- **Details of work related Injury can be entered in the Injury /Illness Log.**
- **Injury/ Illness Log can be related to the corresponding Accident Entry.**
- **Pre-Employment Medical Examination details of Applicants can be entered.**



# Occupational Health

Employees are assigned to the Occupational Health Centre for availing the relevant Health Examination services .

➤ Assignment to the Health Centre will be done manually.

➤ Exercise: Health Centre Assignment.

➤ Menu Path : Select SAP menu ➔ Environment, Health and Safety ➔ Occupational Health ➔ Basic Data ➔ Health center Assignment ➔ Assign Persons – EHSPERSHC-1.

➤ T.Code : EHSPERSHC-1

➤ Mandatory Fields :

- 1. Select The Health Center& Enter the Validity Period for the Health Center.
- 2. Select the Employee / Employees to assign to Health Center.

# Occupational Health

Relevant Health Surveillance Protocols are assigned to the employees manually mentioning the date of last medical examination.

➤ **Step 1 Exercise: Assign Medical Protocol to Employee.**

➤ **Menu Path : Select SAP menu ➔ Environment, Health and Safety ➔ Occupational Health ➔ Schedule Planning ➔ Health Surveillance protocol Assignment ➔ Assign one Person – EHSASSIGN.**

➤ **T.Code : EHSASSIGN.**

➤ **Mandatory Fields : 1. Select the Employee ID to assign to Medical Protocol.**

➤ **2. Go to create mode.**

➤ **3. Select the desire date to select the Protocol.**

➤ **4. Select the Execution Status.**

➤ **5. Save the Data.**

# Occupational Health

Relevant Health Surveillance Protocols are assigned to the employees manually mentioning the date of last medical examination.

➤ **Step 2 Exercise: Select Person to Medical Service.**

➤ **Menu Path : Select SAP menu ➔ Environment, Health and Safety ➔ Occupational Health ➔ Schedule Planning ➔ Select persons for Medical Service ➔ EHSSERV01 .**

➤ **T.Code : EHSSERV01.**

- **Mandatory Fields :**
- 1. Select the Employee ID to Medical Service and enter.**
  - 2. Select the row contains Medical Service.**
  - 3. Go to Medical Service Tab & open it.**
  - 4. Save Medical Service.**

# Occupational Health

List of employees due for Medical Service is available from system, based on the dates entered. **The medical service for the employee can be scheduled from this list**

➤ Exercise: Schedule the Medical Service.

➤ Menu Path : Select SAP menu ➔ Environment, Health and Safety ➔ Occupational Health ➔ Schedule Planning ➔ Edit Schedules ➔ EHSTERM01 .

➤ T.Code : EHSTERM01.

➤ Mandatory Fields :

1. Enter with desired Health Center into initial Screen.
2. Select Set filter icon on extreme right top.
3. Enter the Employee ID.
4. Enter the desired Date & Time and Length of the duration in Minutes for Examination.
5. Save Medical Schedule.

# Occupational Health

**Medical Examination and Test Results** can be entered along with evaluation.

➤ **Exercise: ENTERING MEDICAL EXAMINATION & TEST RESULTS .**

➤ **Menu Path : Select SAP menu ➔ Environment, Health and Safety ➔ Occupational Health ➔ Medical Services ➔ Edit Medical Services ➔ EHSAMBTAET .**

➤ **T.Code : EHSAMBTAET.**

- **Mandatory Fields :**
- 1. Enter with Employee ID and press Enter.**
  - 2. Select the medical Service and go to Examinations tab on left top.**
  - 3. Enter the Examination Result & date.**
  - 4. You can lock the Examination results & Save the Data.**
  - 5. You cannot execute any modifications after locking the data & saving.**

# Occupational Health

Attending Physician can **assign Diagnosis and set Work related restrictions** as part of the Medical Examination.

➤ **Exercise: ASSIGNING OF DIAGNOSES** .

➤ **Menu Path : Select SAP menu ➔ Environment, Health and Safety ➔ Occupational Health ➔ Medical Services ➔ Edit Medical Services ➔ EHSAMBTAE** .

➤ **T.Code : EHSAMBTAE**.

- **Mandatory Fields :**
1. Enter with Employee ID and press Enter.
  2. Select the Medical Service and go to Diagnoses tab and go to insert row icon on extreme left bottom for new entry.
  3. Enter fields such as Catalog, Diagnosis code, Validation dates from & to diagnosis rating, Source, Cause Effect of the Disease & Comments of the Diagnosis..
  4. Save the Data & Go back to initial screen.

# Occupational Health

**Health Education** given to the Employee can be documented against the Medical Service.

➤ **Exercise: EMPLOYEE HEALTH EDUCATION** .

➤ **Menu Path : Select SAP menu ➔ Environment, Health and Safety ➔ Occupational Health ➔ Medical Services ➔ Edit Medical Services ➔ EHSAMBTAE** .

➤ **T.Code : EHSAMBTAE**.

➤ **Mandatory Fields : 1. Enter with Employee ID and press Enter.**

**2. Select the Medical Service and go to Consultation tab.**

**3. Select the desired consultation type by selecting entire row and click on text icon at extreme left bottom.**

**4. Enter the desired comment on each Consultation type & save the data.**

# Occupational Health

Physician attending the employee closes the Medical Service after all test results are documented and follow up visits are complied with.

➤ **Exercise: DOCUMENT PROTOCOL RESULTS & FOLLOW UP APPOINTMENTS.**

➤ **Menu Path : Select SAP menu ➔ Environment, Health and Safety ➔**

**Occupational Health ➔ Medical Services ➔ Edit Medical Services ➔**

**EHSAMBTAET .**

➤ **T.Code : EHSAMBTAET.**

➤ **Mandatory Fields : 1. Enter with Employee ID and press Enter.**

**2. Select the Medical Service and go to Protocol / General Examination tab.**

**3. Click on insert row icon and you can give the Reservation of Health by opening drop down menu and specify the time valid until & Date of next examination due.**

**4. Save the data.**



# Occupational Health

**Health Education** given to the Employee can be documented against the Medical Service.

**Print Out** of the Medical Service provided is generated.

**Exercise: CLOSING THE MEDICAL SERVICE.**

**Menu Path : Select SAP menu → Environment, Health and Safety → Occupational Health → Medical Services → Edit Medical Services → EHSAMBT AET .**

**T.Code : EHSAMBT AET.**

**Mandatory Fields : 1. Enter with Employee ID and press Enter.**

**2. Select the Medical Service and go to Close tab.**

**3. Enter the sign off date , Name of the Physician, check the data as Complete.**

**4. Save the data and you can take print out by selecting Print Icon on top menu bar.**

# Occupational Health - Reports

- ☐ List of Persons assigned to Health Centre
- ☐ List of Employees due for medical examination.
- ☐ List of Medical Services provided to Employees
- ☐ List of Restrictions assigned to Employees
- ☐ List of Diagnosis assigned to Employees
- ☐ Findings of Medical Examinations (Tests)

# Occupational Health - Authorization

<b>Activity</b>	<b>Assigned To</b>
Assignment of Person to Health Centre	Health Centre Assistant
Assignment of Protocol to Persons	Health Centre Assistant
Managing Question Catalog	Health Centre Assistant
Managing Questionnaire	Health Centre Assistant
Managing Diagnosis Keys	Health Centre Physician
Managing Proposal List	Health Centre Attendant
Managing Appointments	Health Centre Physician
Managing Medical Service	Health Centre Physician
Managing Examination Results	Health Centre Attendant
Managing Diagnosis in Medical Service	Health Centre Physician
Health Centre Physician Locking/ Unlocking Medical Examination & Results	Health Centre Physician
Re-opening Medical Service	Health Centre Physician
Injury/ Illness Log entry	Health Centre Physician
Reporting	Health Centre Physician

# Benefits

- **Easy and safe operations**
- **Consistence performance**
- **Risk management**
- **Managing the incidents**
- **Environmental emission management**
- **Maintenance safety and permit to work**

# Benefits

- **Environment, health, and safety compliance and risk management**
- **Proactively identify, analyze, and mitigate environmental, health, and safety risks.**
- **Management of change.**
- **Lower the frequency rates of the incidents, injuries, and illnesses.**
- **Decrease in the total cost of the environment, health, and safety compliance.**

# Transaction Code

S.No	T. Code	Description
1	<a href="#">EHSAMBTAET</a>	Answering Questionnaire
2	<a href="#">EHSAMBTAET</a>	Assigning Of Diagnoses
3	<a href="#">EHSAMBTAET</a>	Closing The Medical Service
4	<a href="#">EHSAMBTAET</a>	Create And Edit Injury & Illness Log
5	<a href="#">EHSAMBTAET</a>	Document Protocol Results & Follow Up Appointments.
6	<a href="#">EHSAMBTAET</a>	Employee Health Education
7	<a href="#">EHSAMBTAET</a>	Entering Medical Examination & Test Results.
8	<a href="#">EHSAMBTAET</a>	Set Restrictions
9	<a href="#">EHSASSIGN</a>	Assign Medical Protocol To Employee
10	<a href="#">EHSPERSHC-1</a>	Health Centre Assignment
11	<a href="#">EHSSERV01</a>	Select Person To Medical Service
12	<a href="#">EHSTERM01</a>	Schedule The Medical Service

# Examples

SI No	T Code	Description
1.	EHSAMBTAET	<u>Assigning Of Diagnoses</u>
2.	EHSAMBTAET	<u>Entering Medical Examination &amp; Test Results.</u>
3.	EHSASSIGN	<u>Assign Medical Protocol To Employee</u>



Quality

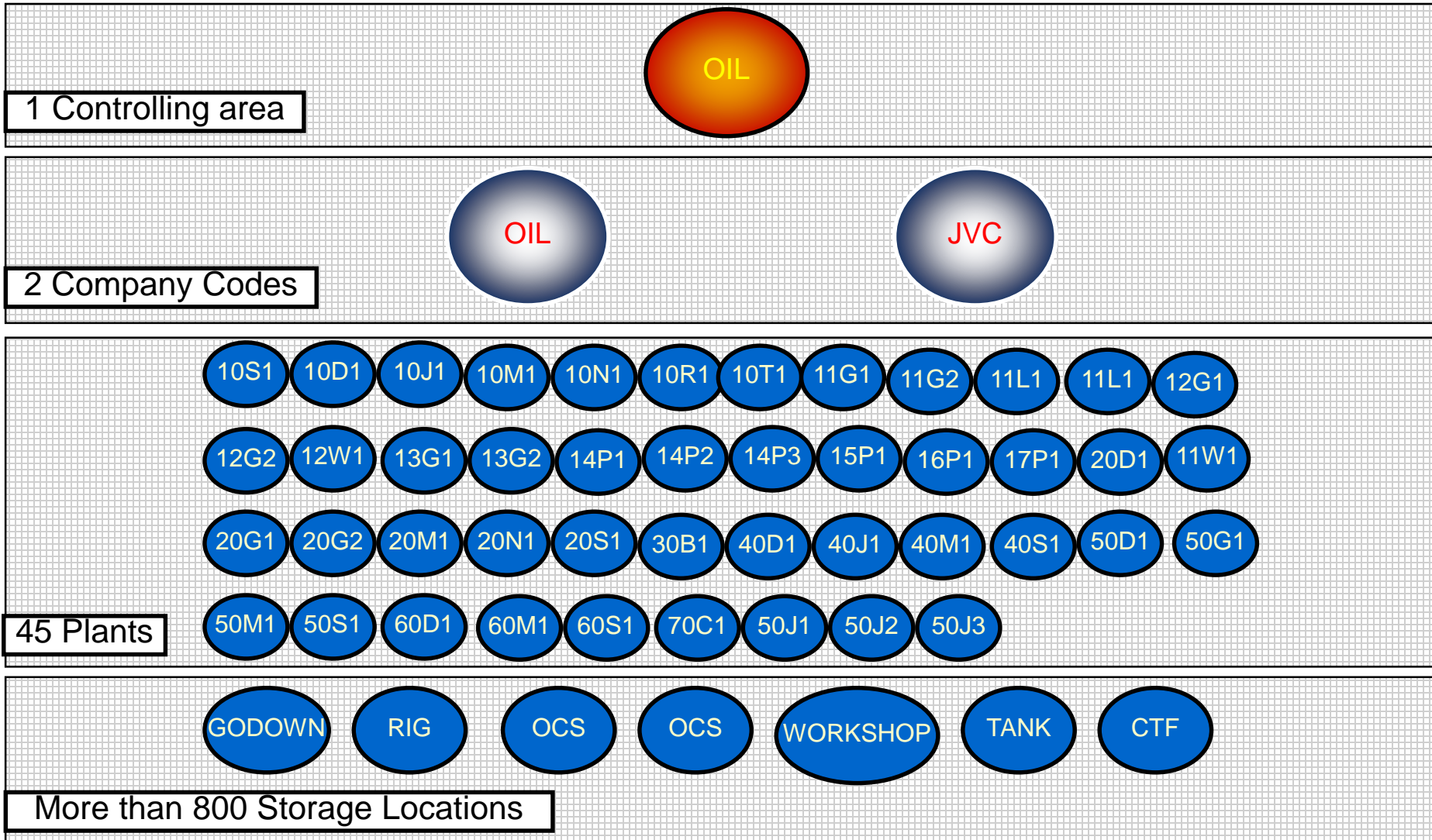
Management

# Quality Management Module





# Organizational - Granularity



# Purchasing Organization

## Purchasing Organization

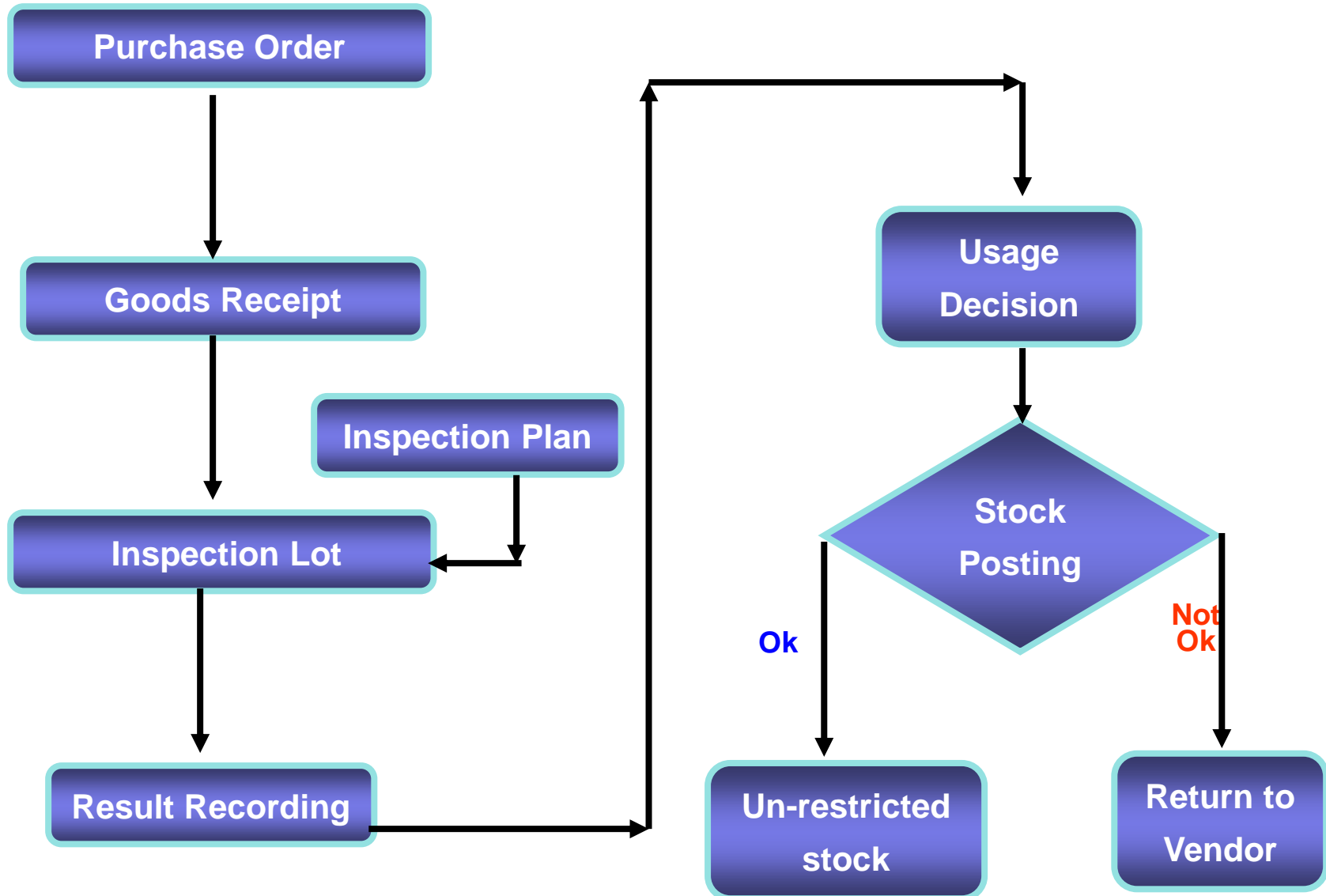
An organizational unit responsible for procuring materials or services for one or more plants and for negotiating general conditions of purchase with vendors. The purchasing organization assumes legal responsibility for all external purchase transactions.

- ❑ Four Purchasing Organisation for any organisation
  - ❑ Materials Purchase organization
  - ❑ Services Purchase organization
  - ❑ Developement Purchase organization
  - ❑ Stock Transport purchase organization

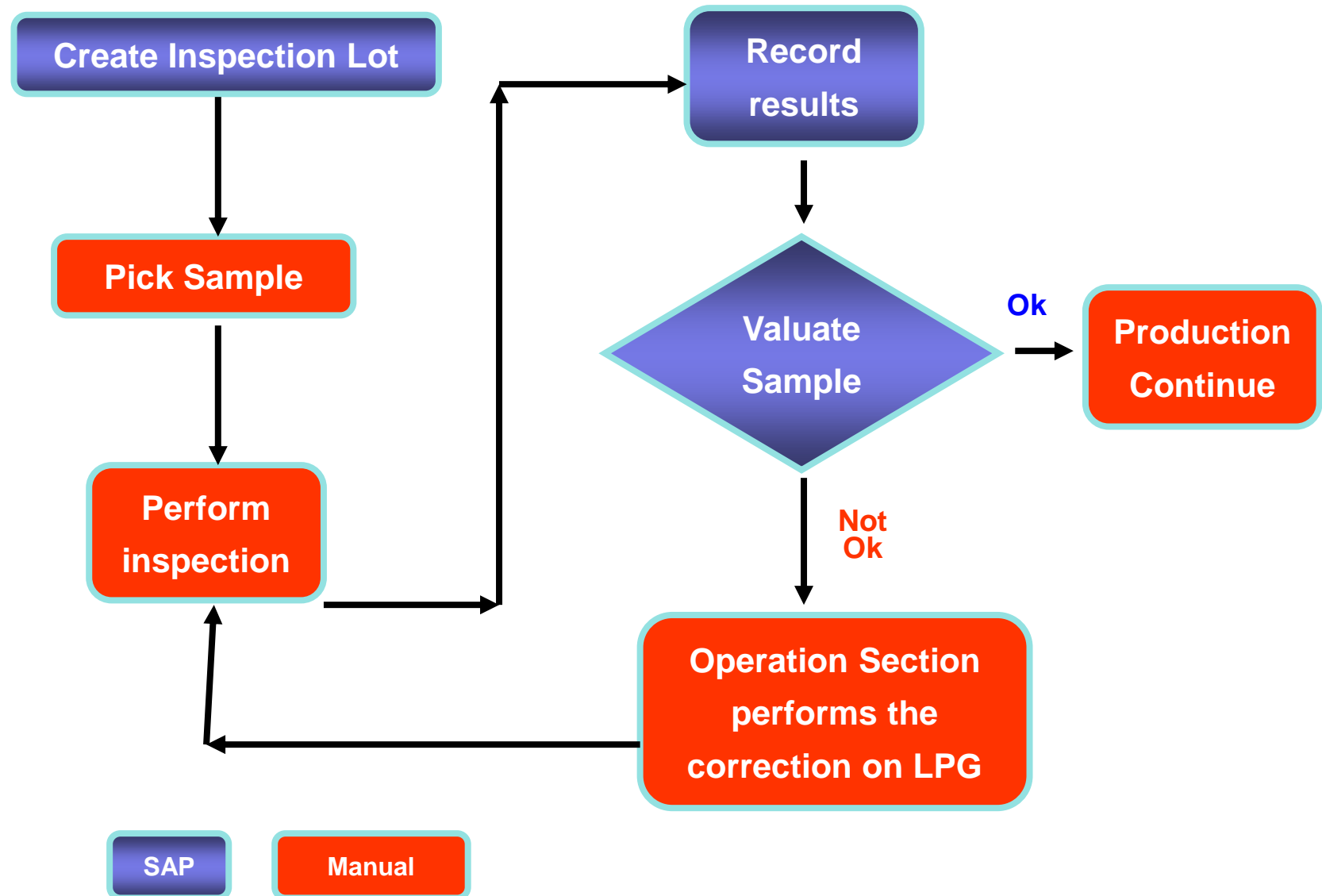
# Quality Management Module

- **QUALITY MANAGEMENT MODULE (QM)** deals with Quality-related activities and objectives like Quality Planning, Quality Inspection, Quality Control etc.
- The most important elements of a QM module. These functions are complemented by other integrated application components of the SAP system (such as MM, SD, PP).

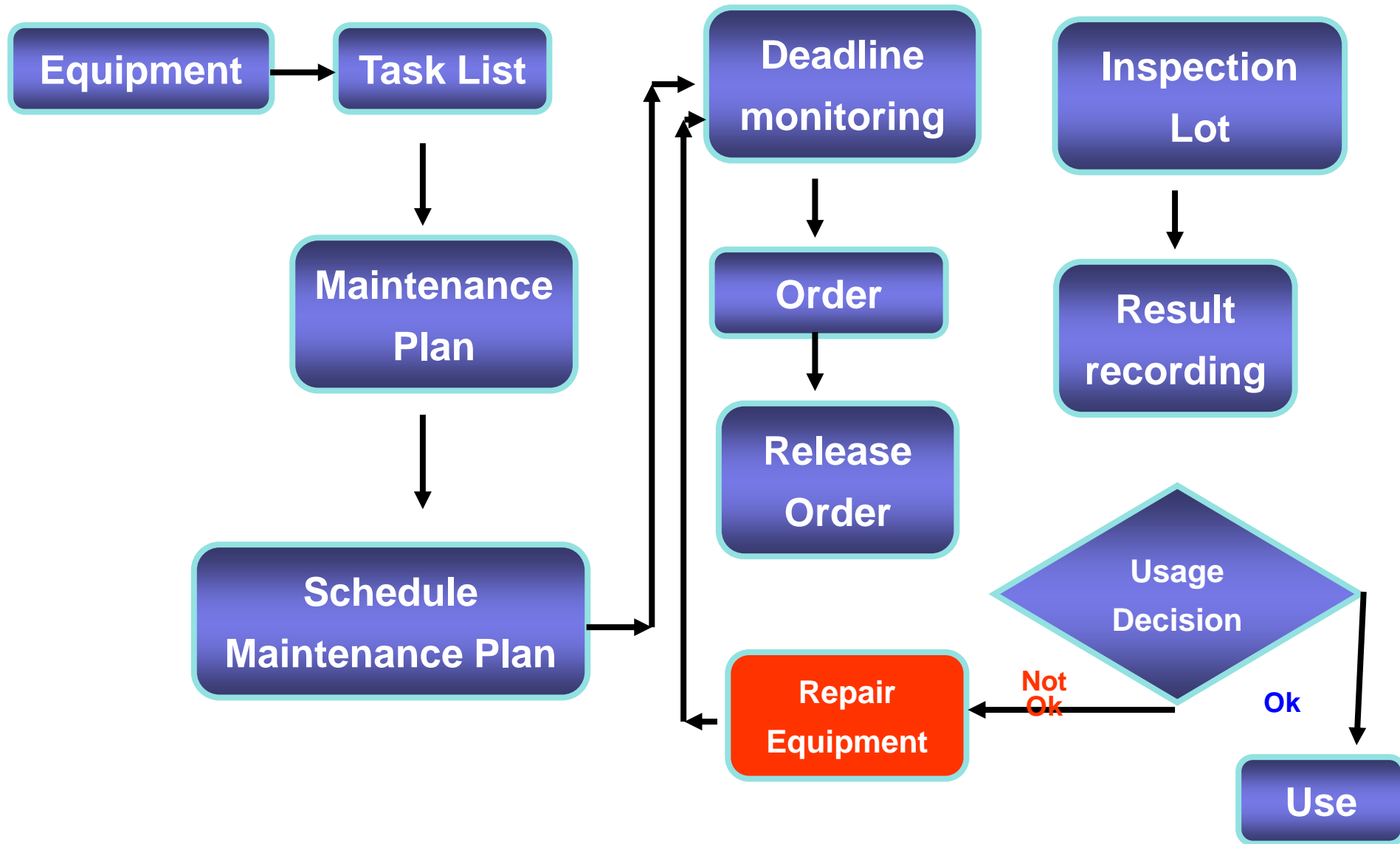
# Quality Management – Incoming Materials



# Quality Management – In-process Inspection LPG



# Quality Management - Calibration Inspection Process



# Quality Management - Terminology

**Inspection Lot** : A request to a plant to inspect a specific quantity of material.

**Result Recording** : Record and process results for inspection characteristics.

**Usage Decision** : For an inspection lot confirms that all samples have been valuated and the inspection has been completed. It also specifies whether the goods in the inspection lot have been accepted or rejected for use.

**Stock Posting** : Transfer of material from GR block stock to unrestricted stock or Return delivery

# **Quality Management - List of Business Process**

- **Source Inspection**
- **Third Party Inspection**
- **Destination Inspection**
- **NDT Inspection of Pipes**
- **RFQ Sample Inspection**



# **Quality Management - List of Business Process (example)**

- **In-process Inspection - LPG**
- **Storage Tank Inspection - LPG**
- **Component Inspection of Inlet / Residual Gas**
- **Storage Inspection – Crude Oil**
- **Refinery Inspection – Crude Oil**
- **Calibration Inspection**

# **SAP Terminology Used In QM MODULE**

- **INSPECTION LOT**
- **USAGE DECISION**
- **Q INFO RECORD**
- **RECORD RESULT**
- **DEFECT RECORD / REJECTIONS**
- **CATALOG**
- **INSPECTION CHARACTERISTIC**

# **SAP Terminology Used In QM MODULE - 2**

## **Purchase Order**

**A purchase order is a formal request or instruction from a purchasing organization to a vendor or a plant to supply or provide a certain quantity of goods or services at or by a certain point in time**

## **Material**

**The material master contains information on all the materials that a company procures or produces, stores, and sells. It is the company's central source for retrieving material-specific data. This information is stored in individual material master records.**

# **SAP Terminology Used In QM MODULE - 3**

## **Inspection Lot**

**Inspect a specific quantity of a material, an inspection lot must be created in the system**

## **Operation**

**Describes An Activity In A Work step In A Plan Or Work Order.**

## **Examples Of Operations Are:**

**Vapour Test, Volatile Test**

# **SAP Terminology Used IN QM MODULE - 4**

**Inspection Plan :You use the inspection planning function to define what material to be inspected, how the inspection is to take place, characteristics to be inspected and their tolerances.**

**Inspection Characteristic : You use master inspection characteristics in inspection plans, material specifications, and certificate profiles to simplify and standardize data entry.**

**Results Recording : In the Results Recording Component, You Record And Process Results For Inspection Characteristics. The Inspection Lot Is The Reference Object In Results Recording.**

# **SAP Terminology Used IN QM MODULE - 5**

**Usage Decision:-Decision On the usability of material under Inspection that is made on the Basis Of The Inspection Results.**

**Example:- Accepted, Rejected.**

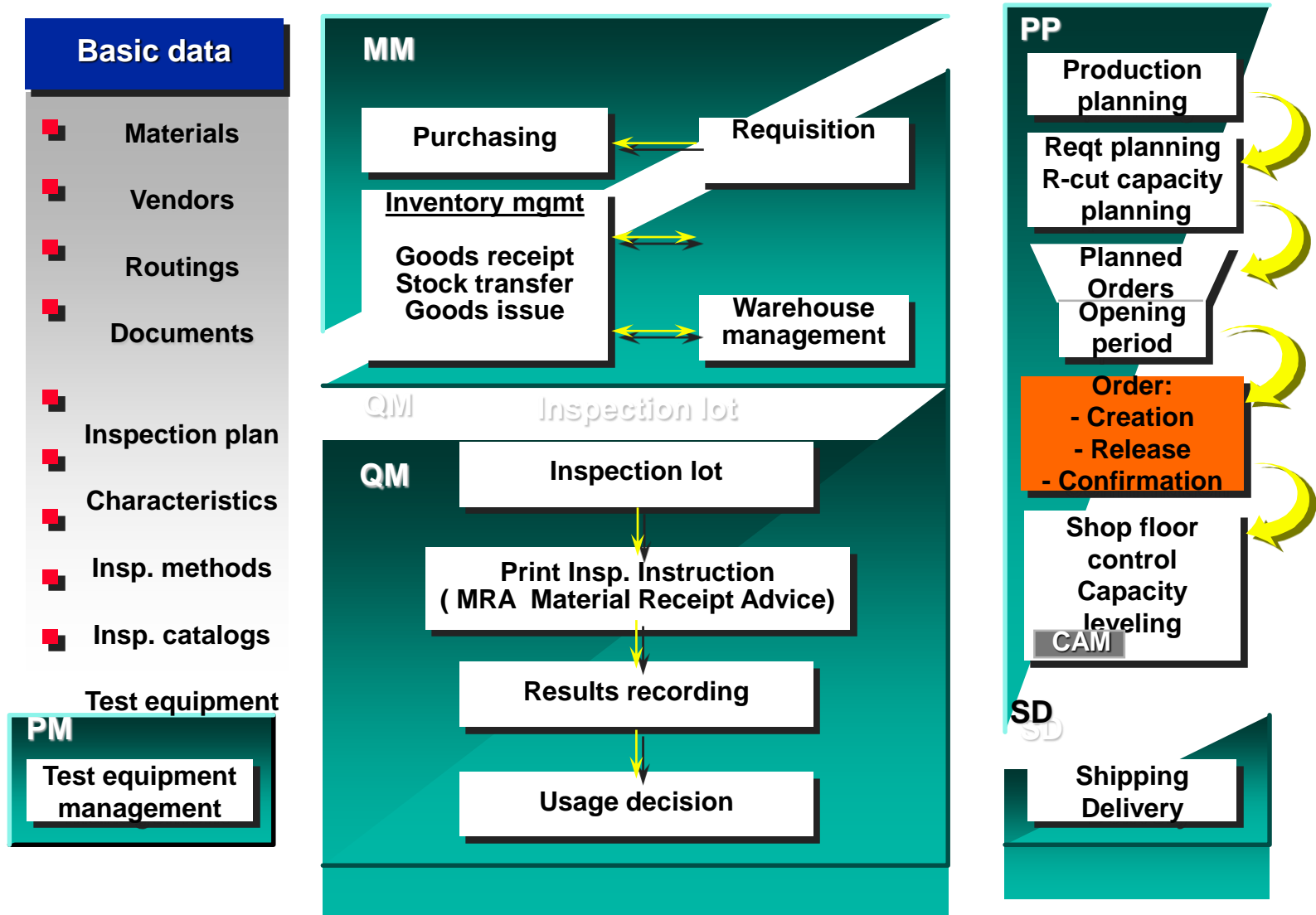
**Defects Recording : When you process an inspection lot, you can record the results for the inspection in the form of characteristic values or defects. A defect is any property or attribute of a material, product or process that does not meet the inspection characteristic specifications. You record the defects with the help of predefined defect codes maintained in the inspection catalogs**

# **SAP Terminology Used IN QM MODULE - 6**

## **Inspection Method**

- ❑ Describes the procedure for inspecting a characteristic.**
- ❑ The Inspection methods can be created as master records and assign them to master inspection characteristics, or inspection plans. Several inspection methods can be assigned to a master inspection characteristic.**

# Quality Management within Logistics Chain





# Quality Processing

*Q/Inspection*



*Inspection lot*



*Result recording*



*Defect recording*



*Usage decision*



**Quality Information  
Systems**

# Key Benefits

**RECEIPT OF P.O:** As soon as the P.O is released it is available electronically to the concerned Q.A unit as against manual dispatch in the current system.

**QUALITY PLANNING:** Clarifications regarding specs, technical requirement etc can be obtained at the purchase requisition stage as against currently done after placement of order. This process change saves time consumed in obtaining clarifications and amendments.

# Key Benefits

Inspection Master data is kept in place & maintained centrally  
this ensures:

- ❑ Data is maintained centrally and is available on-line
- ❑ Inspection plans are uniform across the org.
- ❑ Inspection plans get automatically attached to the material in P.O.

## QUALITY INSPECTION:

The quality data gets captured in the system and is later readily available for failure analysis/ vendor complaints etc.

# Inspection Lot

- **Inspection Lot is created for material which quality inspection to be done**
- **Inspection Lot is Created based on it's Origin**
- **Inspection Type for material is defined**
- **Inspection Lot Quantity is defined for each Lot**
- **Usage Type is defined for Inspection Lot**

# Recording Results

At Operation / Char. Level

Valuation

☐ Accepted

☐ Rejected

Closing / Locking

☐ Optional char.

☐ Mandatory char.

# Defect Recording

## Defect records Levels

- Inspection lot
- Inspection operation
- Inspection characteristic.

## Contents :

### Type of defect

- Location of defect
- Cause of defect
- Corrective action taken

### Defect valuation

- Pre-defined / Ad-hoc at inspection
- Created Automatically / Manually

# Usage Decision

- ☐ Usage Decision is recorded for giving approval of Inspected Items
- ☐ By assigning UD to a Material it allows us to do Stock Posting
- ☐ Stocks of the material is moved from Quality stock to Unrestricted Stock / Blocked Stock based on UD
- ☐ Stock Posting is done for Consumption or Rejection after UD

# Transaction Code

- ☐ QM-01-01 Display Material Master MM03
- ☐ QM-01-02 Display Purchase Order ME23N
- ☐ QM-01-03 Stock Overview MMBE
- ☐ QM-01-04 Goods Receipt of Material Display MIGO
- ☐ QM-01-05 Create Inspection Plan QP01
- ☐ QM-01-06 Change Inspection Plan QP02
- ☐ QM-01-07 Creation Of Inspection Lot QA01
- ☐ QM-01-08 Result Recording QE51N & QA32
- ☐ QM-01-09 Defects Recording QF01 & QF11
- ☐ QM-01-10 Usage Decision QA11
- ☐ QM-01-11 Print Out Of Inspection Results QGA3



# Benefits

- **Higher customer satisfaction through improved product quality**
- **Full integration in procurement and production provides continuous quality assurance**
- **Certificates of quality as part of the product documentation, confirming the quality of the products manufactured and technologies used.**
- **Monitoring of supplier and customer returns by implementing quality control measures in SAP QM quality notifications**
- **Quality certificate automation, printed at the time of delivery to the customer**
- **Audit-Management**
- **Next to the permanent process monitoring, constant, flexible, and adaptable quality assurance processes are created.**

# Benefits

- With failure analysis, risk minimization, stability studies, can help reduce failures and delays
- Activation of required corrective actions by SAP QM system's automatic quality notifications
- Total control of all business processes due to smooth integration of quality management methods and measures (SAP QM) into all other business areas and processes including R&D, HR, production and logistics, sales and marketing, finance and controlling, and others
- Providing support for the company's ongoing and continuous quality assurance by integrating the quality methods of individual areas and departments into an overall corporate QM system.

# Transaction Code

Quality Management		
SL.No.	Tcodes	Descriptions
1	<a href="#">CRQ1</a>	Quality Work Center
2	<a href="#">IA05</a>	Task list
3	<a href="#">IE01</a>	Equipment create
4	<a href="#">IP10</a>	Schedule maintenacne plan
5	<a href="#">IP30</a>	Deadline monitoring
6	<a href="#">IP41</a>	Maintenance plan
7	<a href="#">IW32</a>	Release maintenance order
8	<a href="#">MIGO</a>	Goods Movement 103 Type - For QM Inspection Lot Ref
9	<a href="#">MM01</a>	Material Master QM view
10	<a href="#">QA01</a>	CREATE INSPECTION LOT
11	<a href="#">QA11</a>	Usage Decision
12	<a href="#">QA32</a>	Quality Work List
13	<a href="#">QDP1</a>	
14	<a href="#">QDV1</a>	Quality Sampling Procedure
15	<a href="#">QE01</a>	Quality Result Recording For Operation
16	<a href="#">QE51</a>	Quality Result Recording Using Work List
17	<a href="#">QE71</a>	Work list
18	<a href="#">QGA3</a>	Print Quality Inspection Result
19	<a href="#">QGP1</a>	History For Inspection Characteristic
20	<a href="#">QGP2</a>	Calibration Results
21	<a href="#">QI01</a>	Quality info
22	<a href="#">QI07</a>	Source Inspection
23	<a href="#">QP01</a>	Quality Inspection Plan
24	<a href="#">QS41</a>	Code Group
25	<a href="#">QS51</a>	Selected Set

# Examples

SI No	T Code	Description
1.	IE01	<u>Create Equipment</u>
2.	IP41	<u>Create Maintenance Plan For Equipment Calibration</u>
3.	QA32	<u>Quality Work List</u>
4.	QGP2	<u>Calibration Results</u>

■ Thank You

