



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 (WGAI) under International Organisation of Supreme Audit Institutions (INTOSAI)

Road map for ERP Implementation

1. **Discovery and Planning:** A cross functional project team gathers input about different business groups' requirements and the issues that the ERP system needs to solve

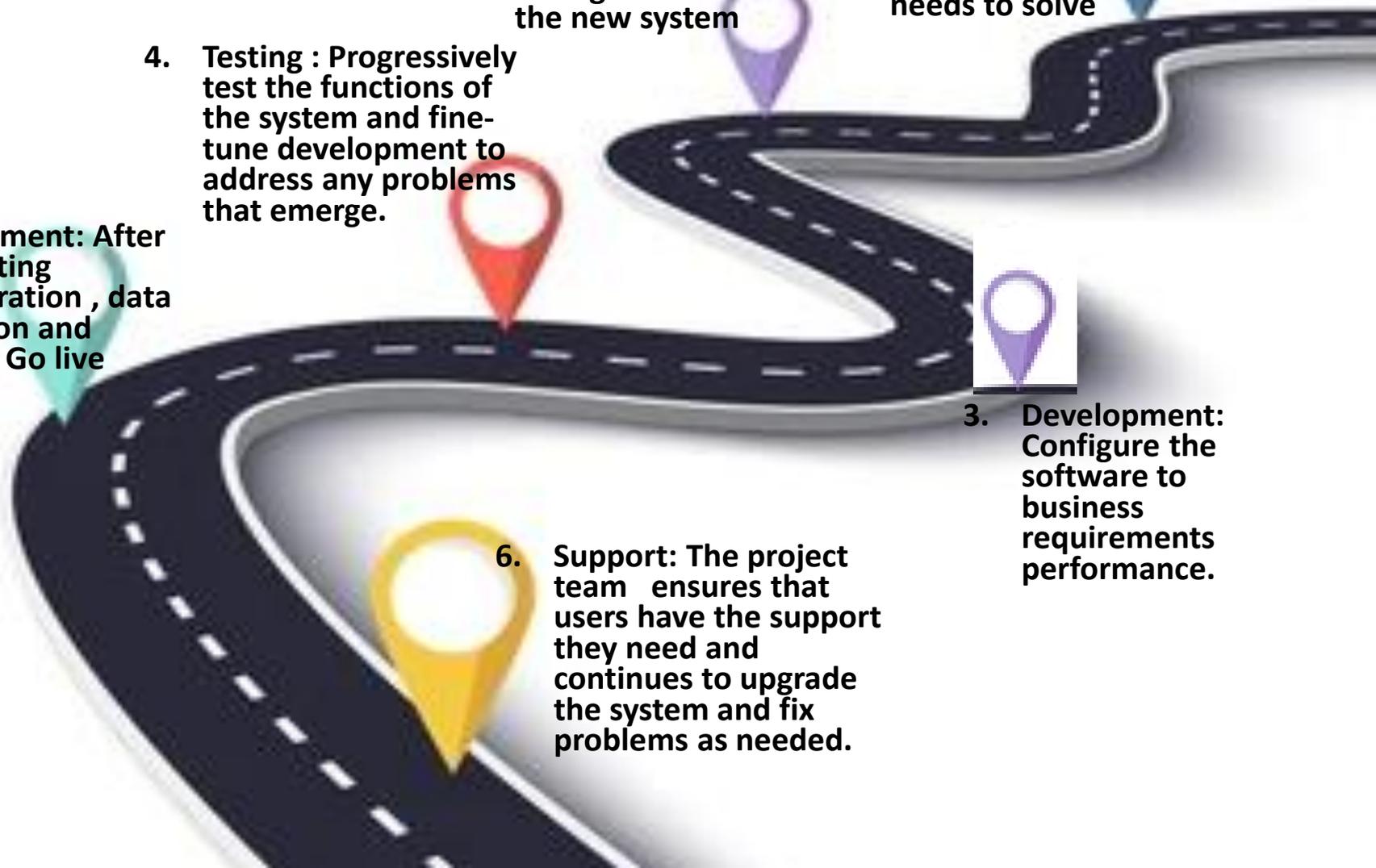
2. **Design:** Analyze existing workflows, how to customize the software, how to migrate data to the new system

4. **Testing :** Progressively test the functions of the system and fine-tune development to address any problems that emerge.

5. **Deployment:** After completing configuration , data migration and testing. Go live

3. **Development:** Configure the software to business requirements performance.

6. **Support:** The project team ensures that users have the support they need and continues to upgrade the system and fix problems as needed.



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 screenshot shows the SAP R/3 login interface. At the top, there is a menu bar with 'User', 'System', and 'Help'. Below the menu bar is a status bar with a green checkmark icon and a search icon. The main area is titled 'SAP R/3' and contains a 'New password' button. Below this, there are four input fields: 'Client' with the value '200', 'User' with a yellowed-out field, 'Password' with asterisks, and 'Language' with a dropdown menu. At the bottom, there is a status bar with a play button icon, the text 'RD1 (1) (000)', a list icon, 'r3dev', and 'OVR'.

Required Fields

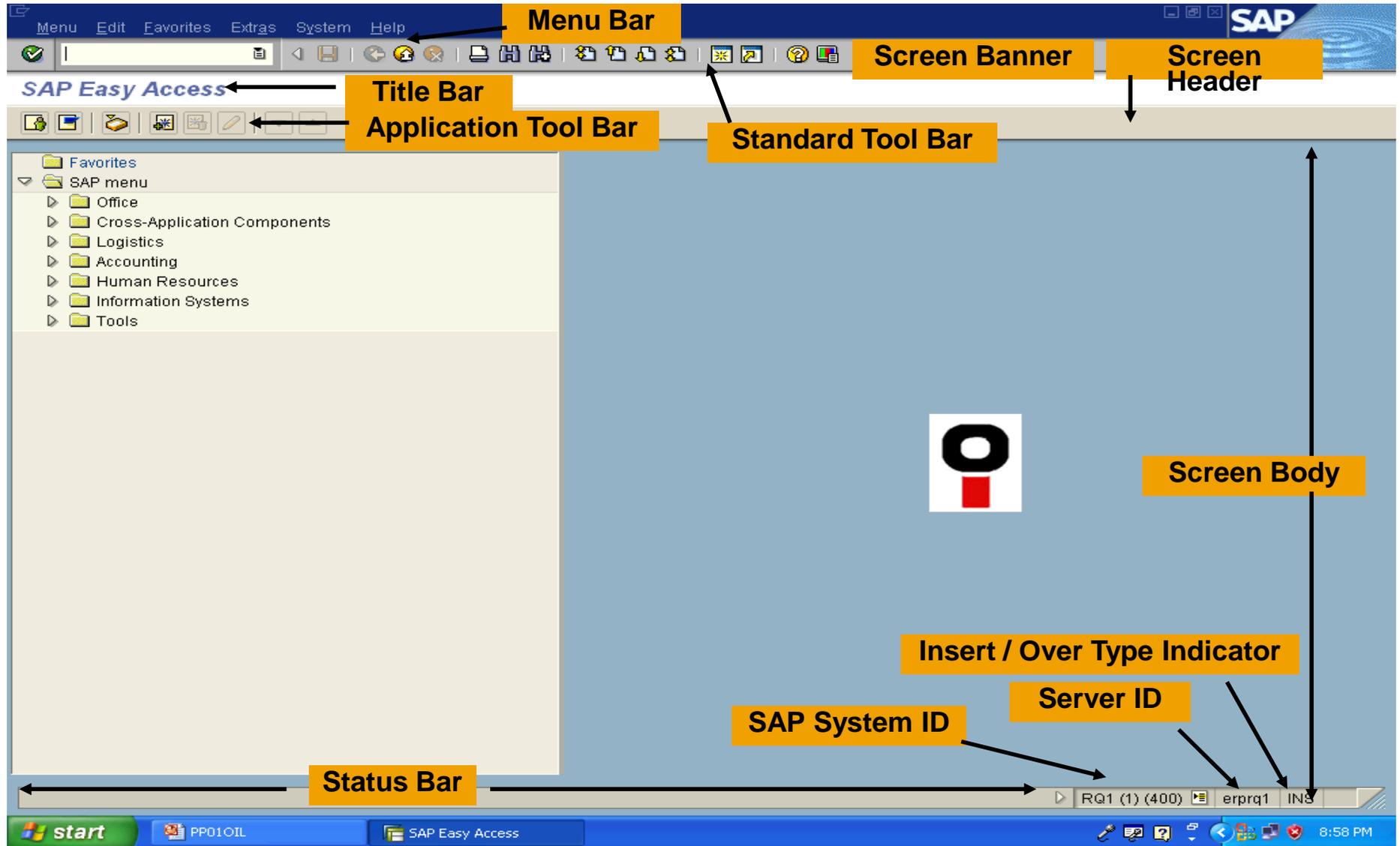
Client (500 in production)

User ID

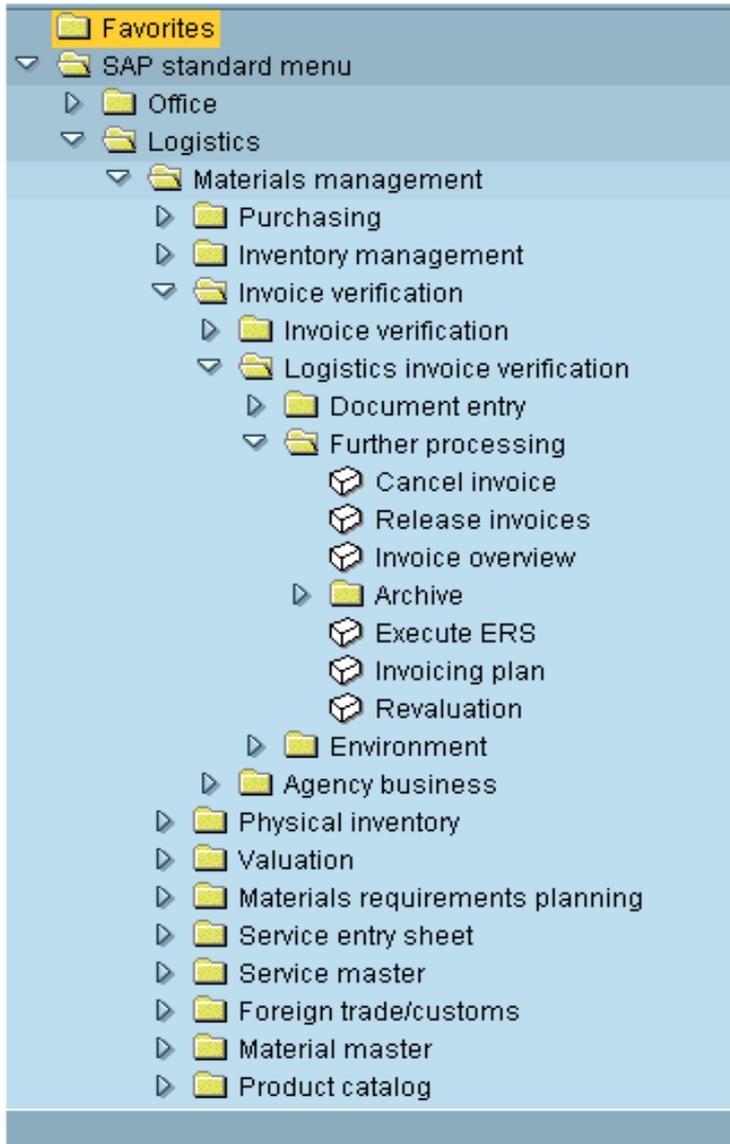
Password

Language

The SAP Window



Using the Navigation Area



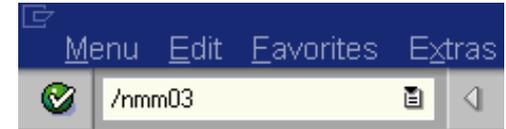
□ The menus can be expanded and collapsed in the navigation area by choosing the dropdown arrows to the left of the menu items, as in the example below

□ 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:

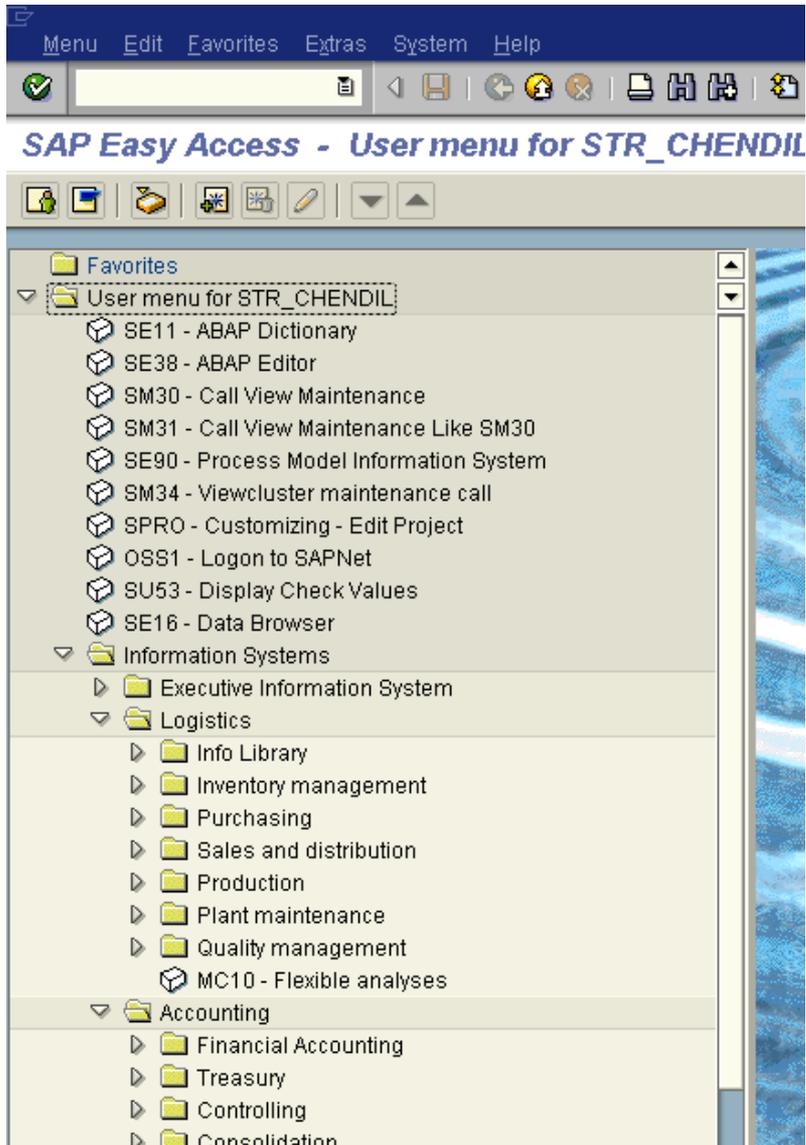
- ❑ Position the cursor on the required transaction in the tree structure and press enter

- ❑ 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

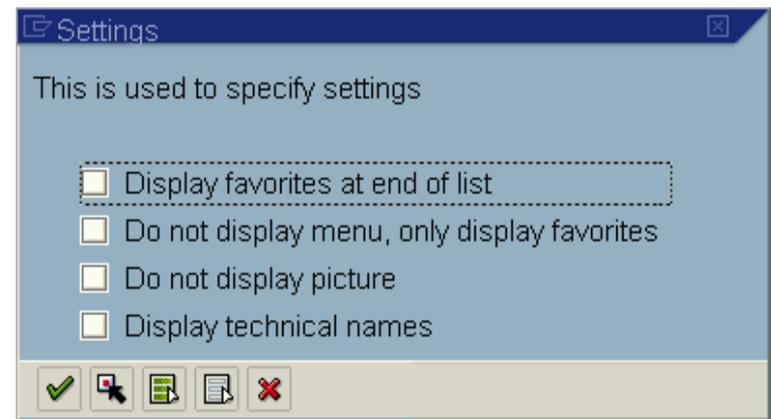
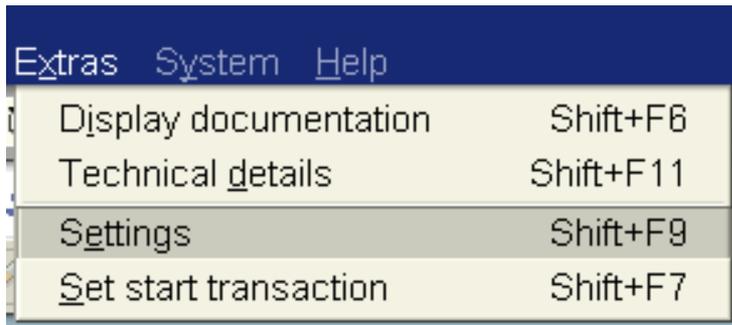
Standard Toolbar

- 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 →

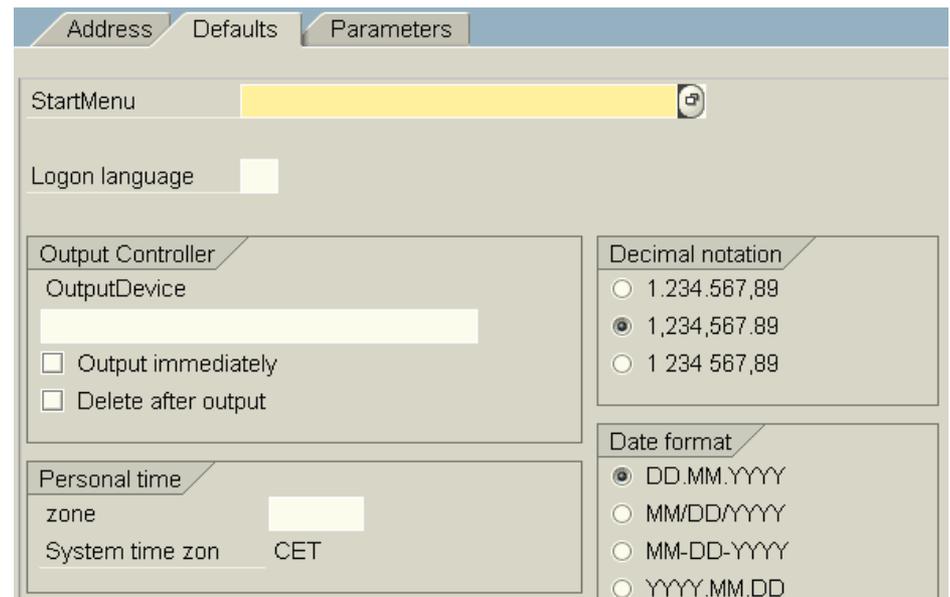
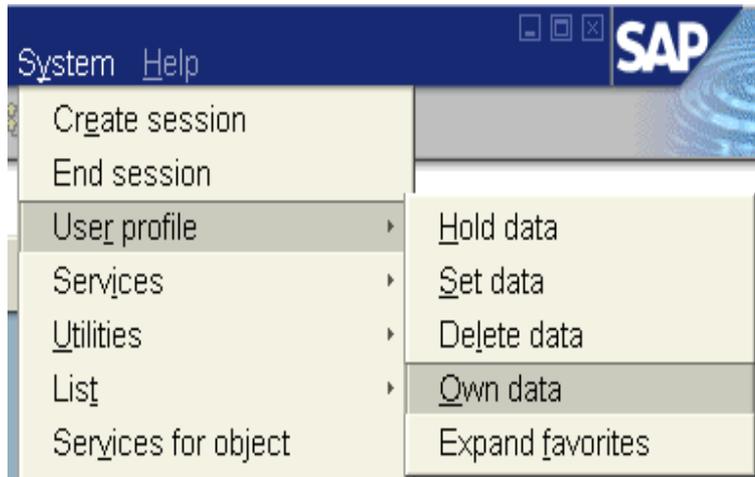
Own Data

❑ 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

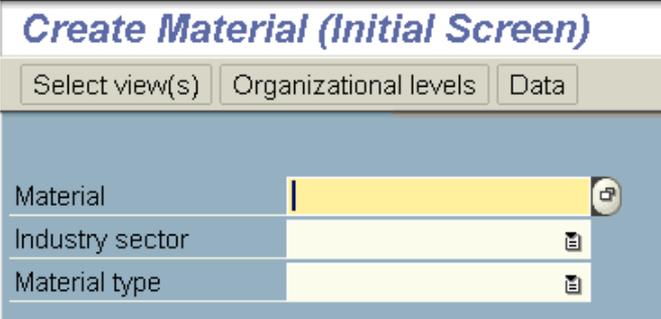
- Required fields are denoted by a check mark

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



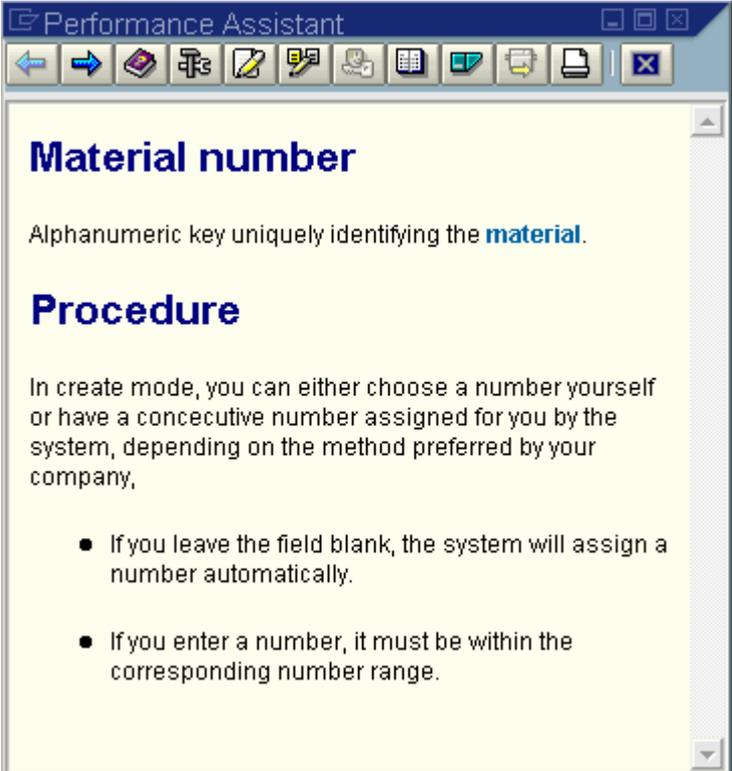
Create Material (Initial Screen)

Select view(s) Organizational levels Data

Material

Industry sector

Material type



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

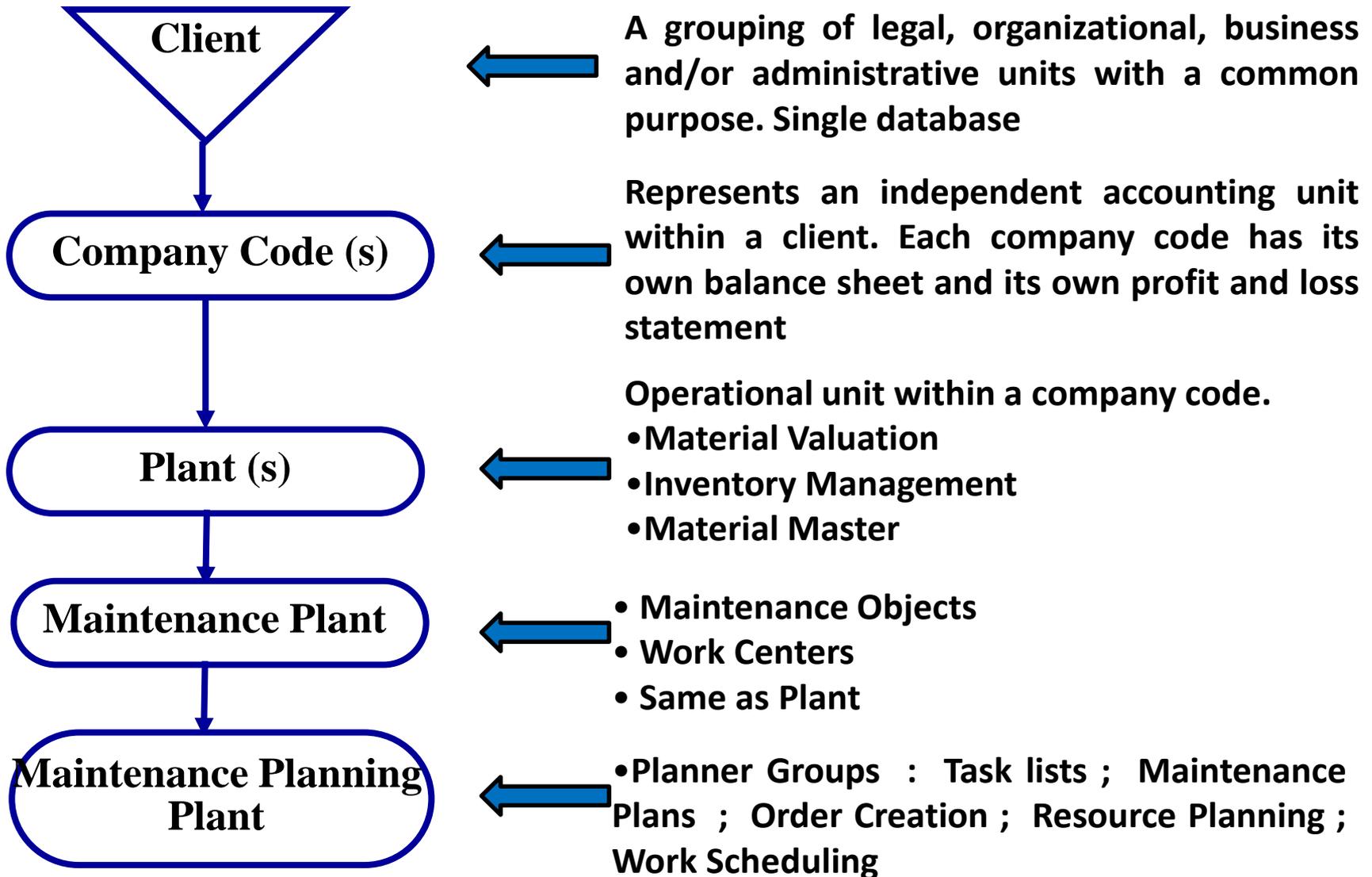
CIN:

India Localization Enhancement

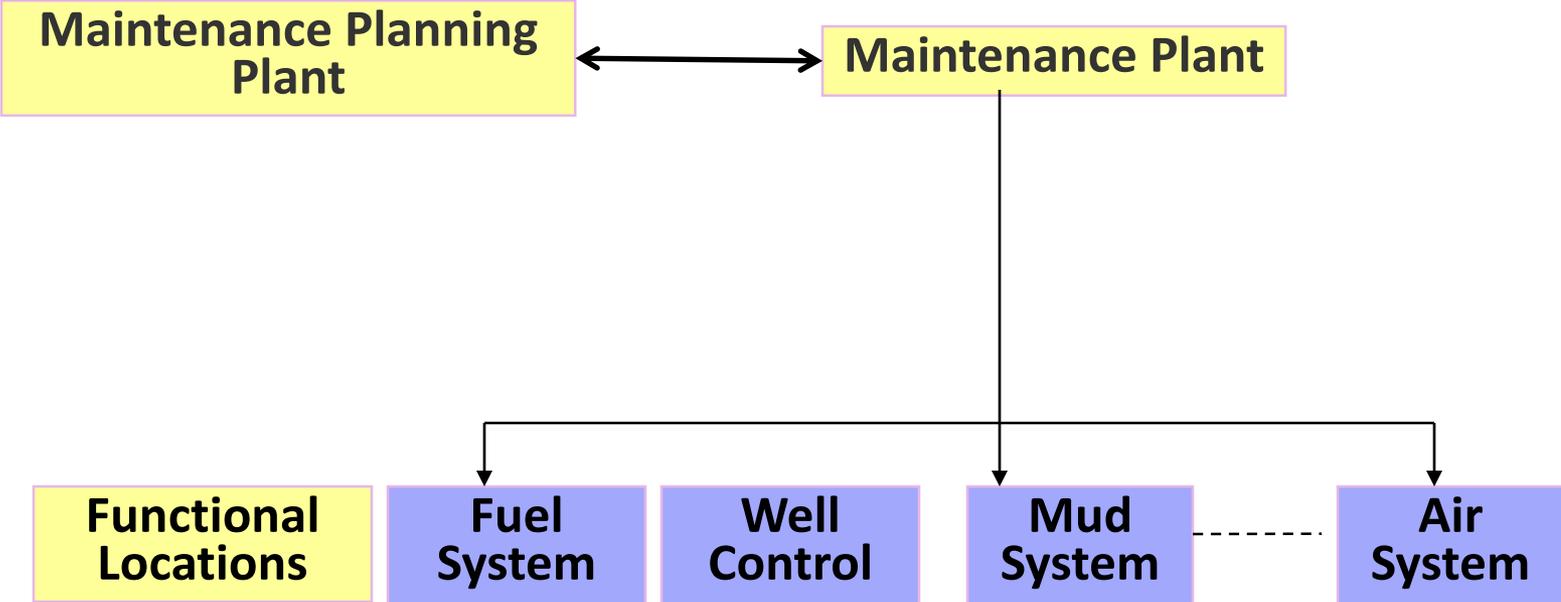
Plant Maintenance Module



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

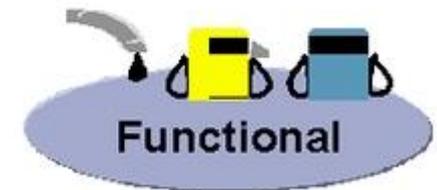
Maintenance planner
groups

For example: master,
work scheduling

PM 01 Master Data

PM 01-01 Functional Location

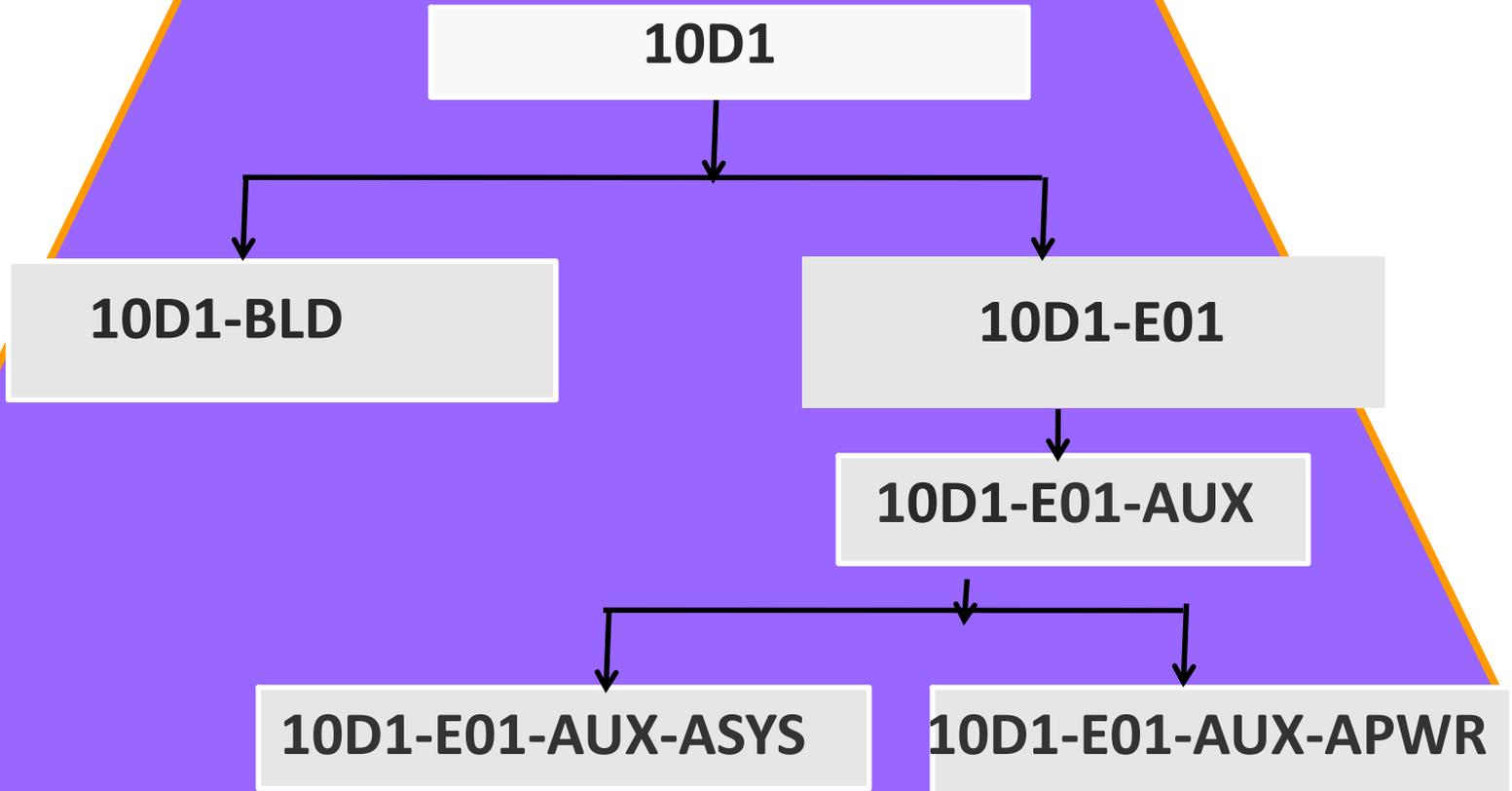
Functional location = multi-level, hierarchical structure, organized according to ...



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...

Annotation Cost Center Upstream Functional Location by Structure Indicator Upstream...

Functional Location	Description of functional location	Plant	Cost Ctr
10D1	Dulijan Drilling	10D1	
10D1-9PD	DESCRIPTION	10D1	
10D1-BLD	BUILDING	10D1	SRD0M-0003
10D1-ED1	E1400 AC/DCR 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	SRD0M-0001
10D1-ED1-MUD-MP01	Mud pump 1	10D1	PRLOM-0001
10D1-ED1-MUD-PIPE	Pipes & Fittings	10D1	SRD0M-0001
10D1-ED1-MUD-SCON	Solid Control System	10D1	SRD0M-0001
10D1-ED1-MUD-TANK	Mud Tankage	10D1	SRD0M-0001
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

Level - 1

Level - 2

Level - 3

Level - 4

Maintenance Work Center



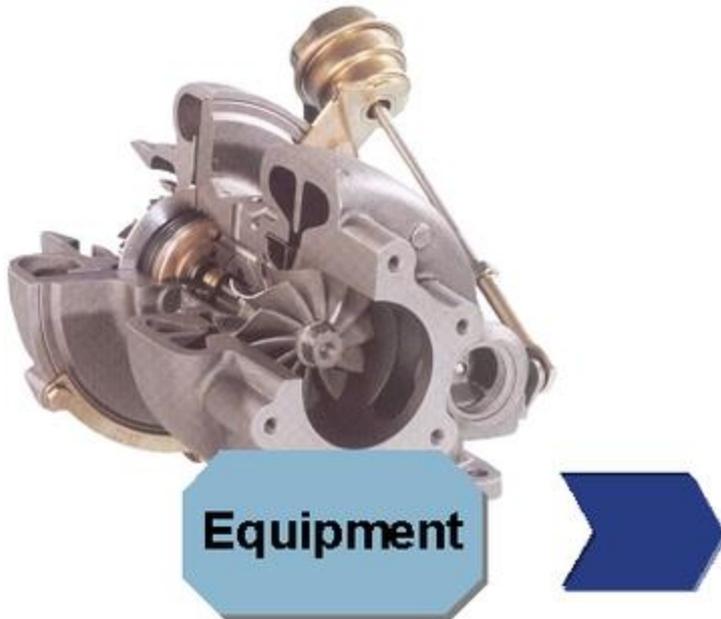
Maintenance Work Centers
For example:
General Workshop
Field Communication
Electrical
Civil
Pipeline maintenance



PM Master Data

PM01-01 Master Data

PM01- 01- 02 – Equipment



Individual physical object to be maintained as an autonomous unit

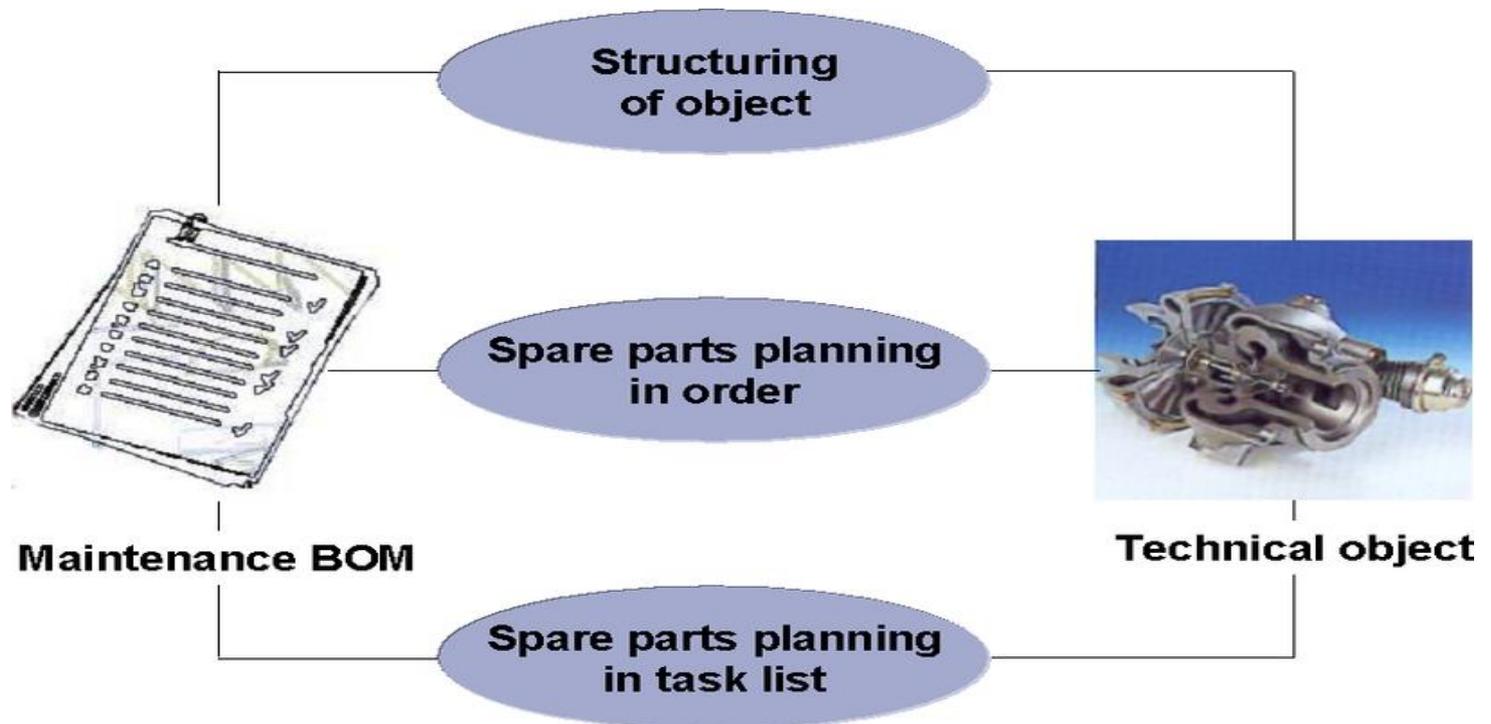
- Means of production
- Means of transport
- Test equipment
- Production resources/tools
- Customer devices
- Buildings, property
- Systems, system parts
- Vehicles

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-61 General task for customer complaint
 - QM-62 General task for complaint to vendor
 - QM-63 General task for internal notification
 - QM-64
 - 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

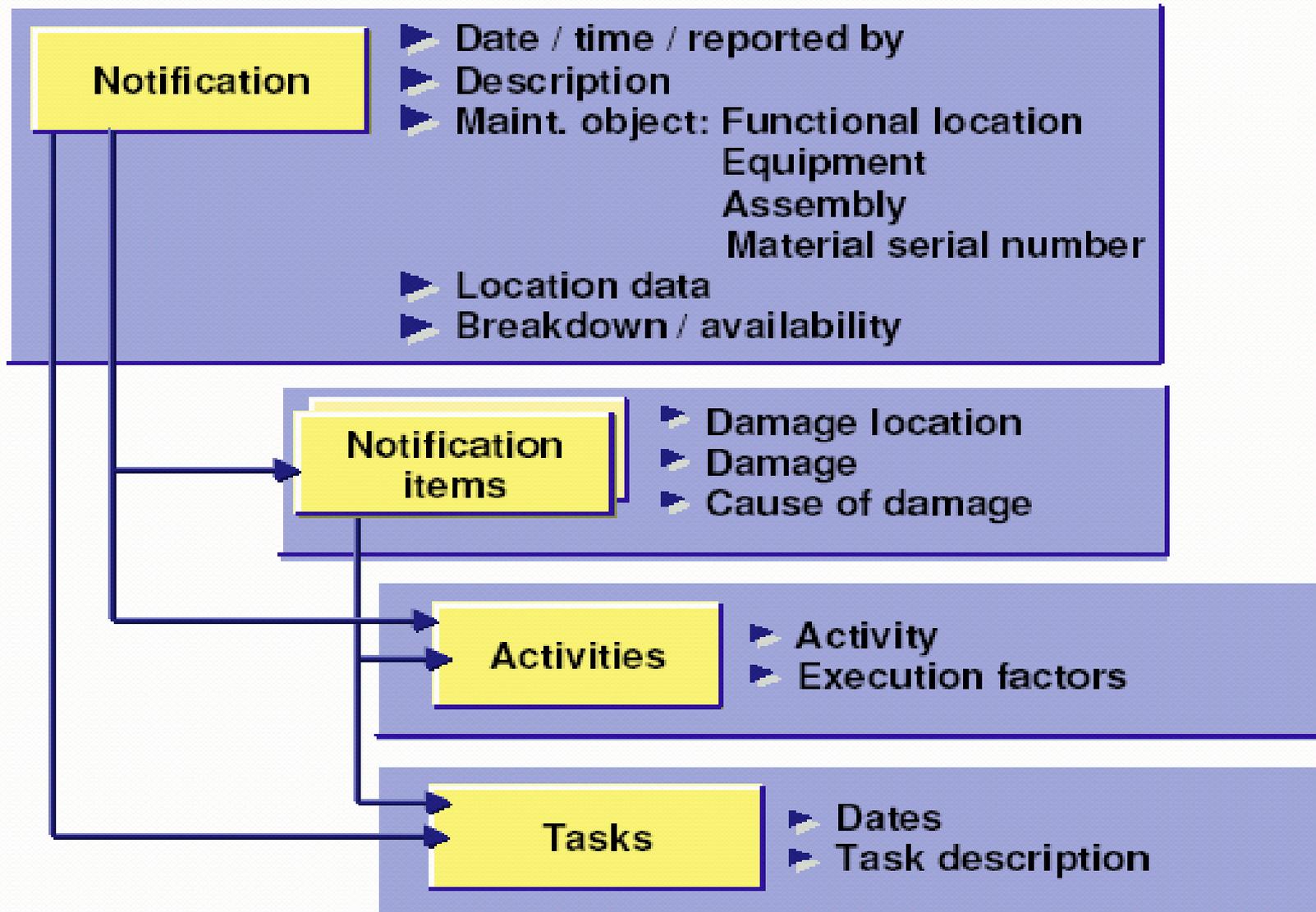
PM01-02 General Maintenance Processing

PM01 – 02 - 01 – Maintenance Notification Processing

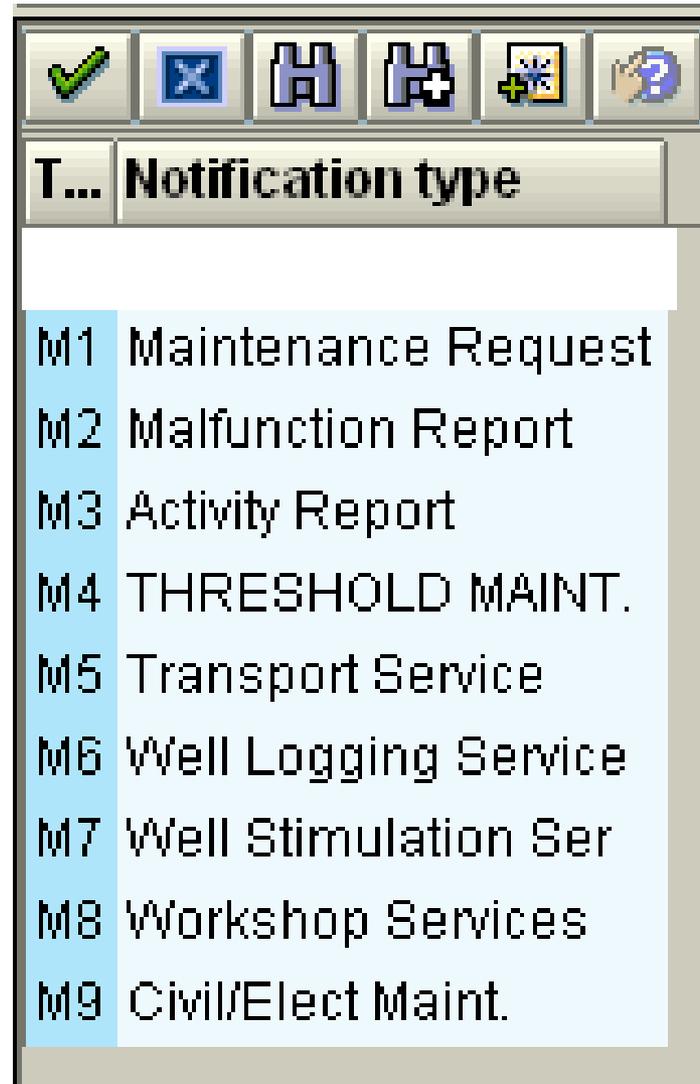
Notifications are used in maintenance processing in the event of a malfunction or any other exceptional situation from the maintenance department. It will be used to :

- 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

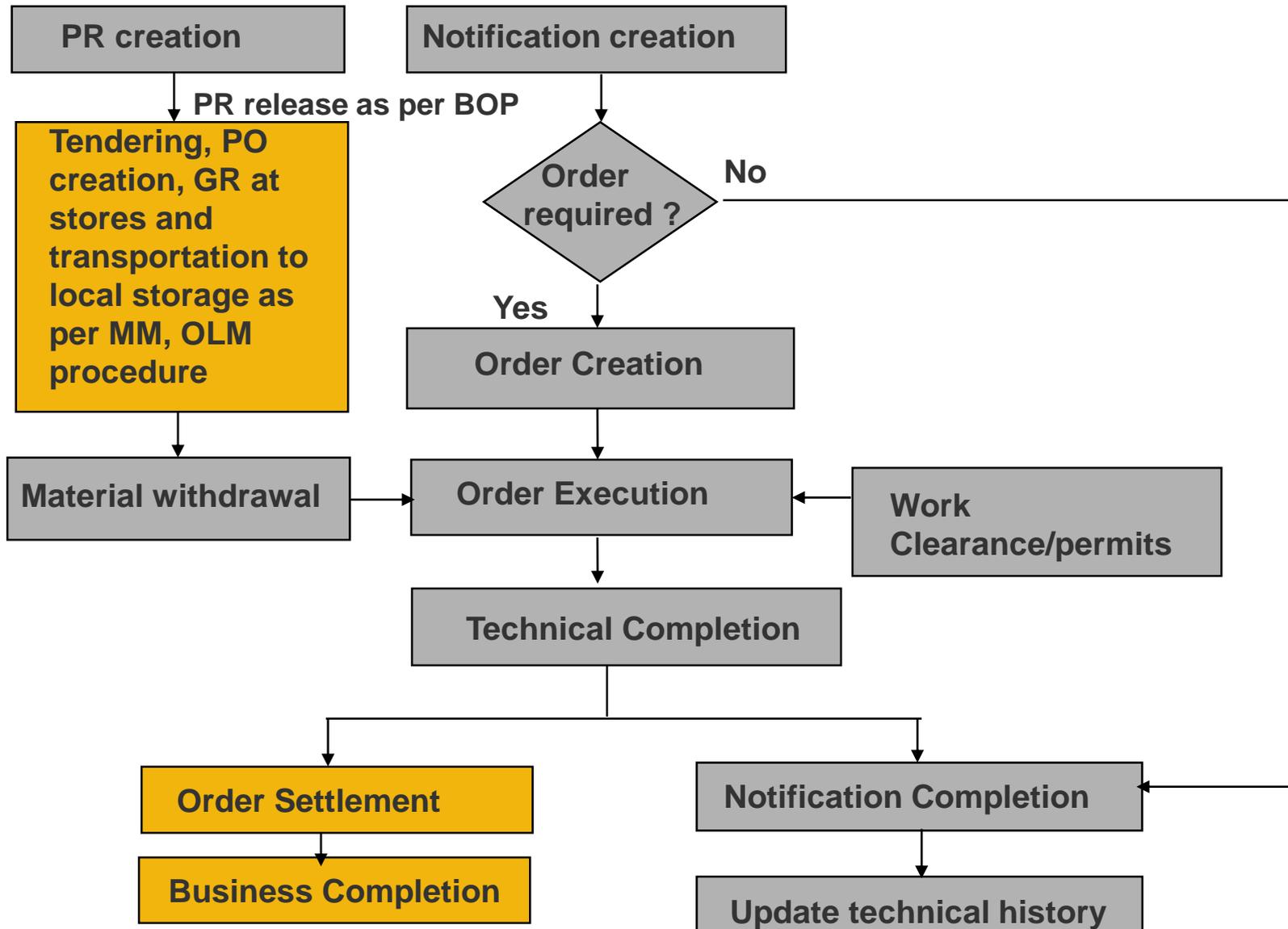


Types of Notifications: Overview

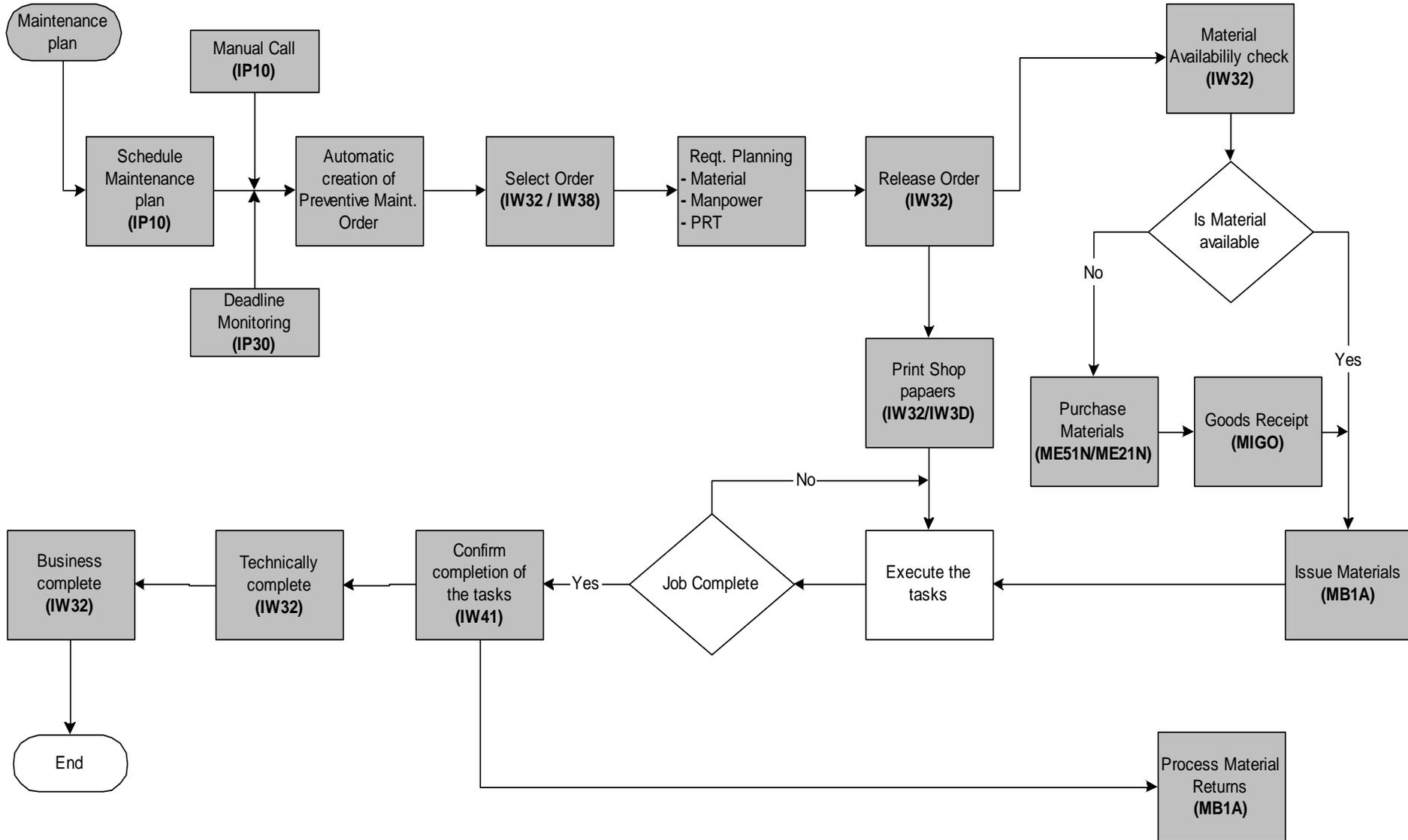


T...	Notification type
M1	Maintenance Request
M2	Malfunction Report
M3	Activity Report
M4	THRESHOLD MAINT.
M5	Transport Service
M6	Well Logging Service
M7	Well Stimulation Ser
M8	Workshop Services
M9	Civil/Elect Maint.

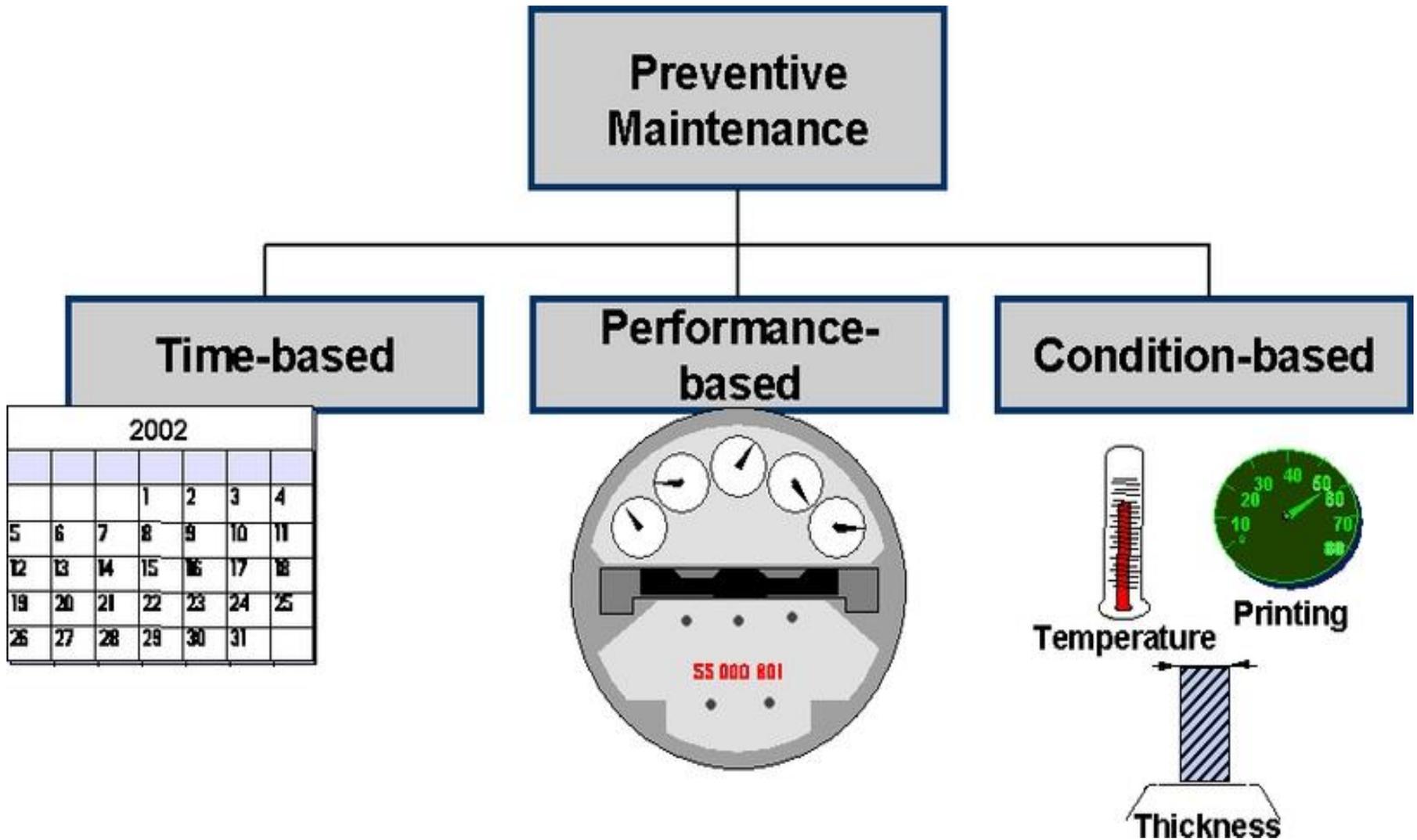
Breakdown Maintenance



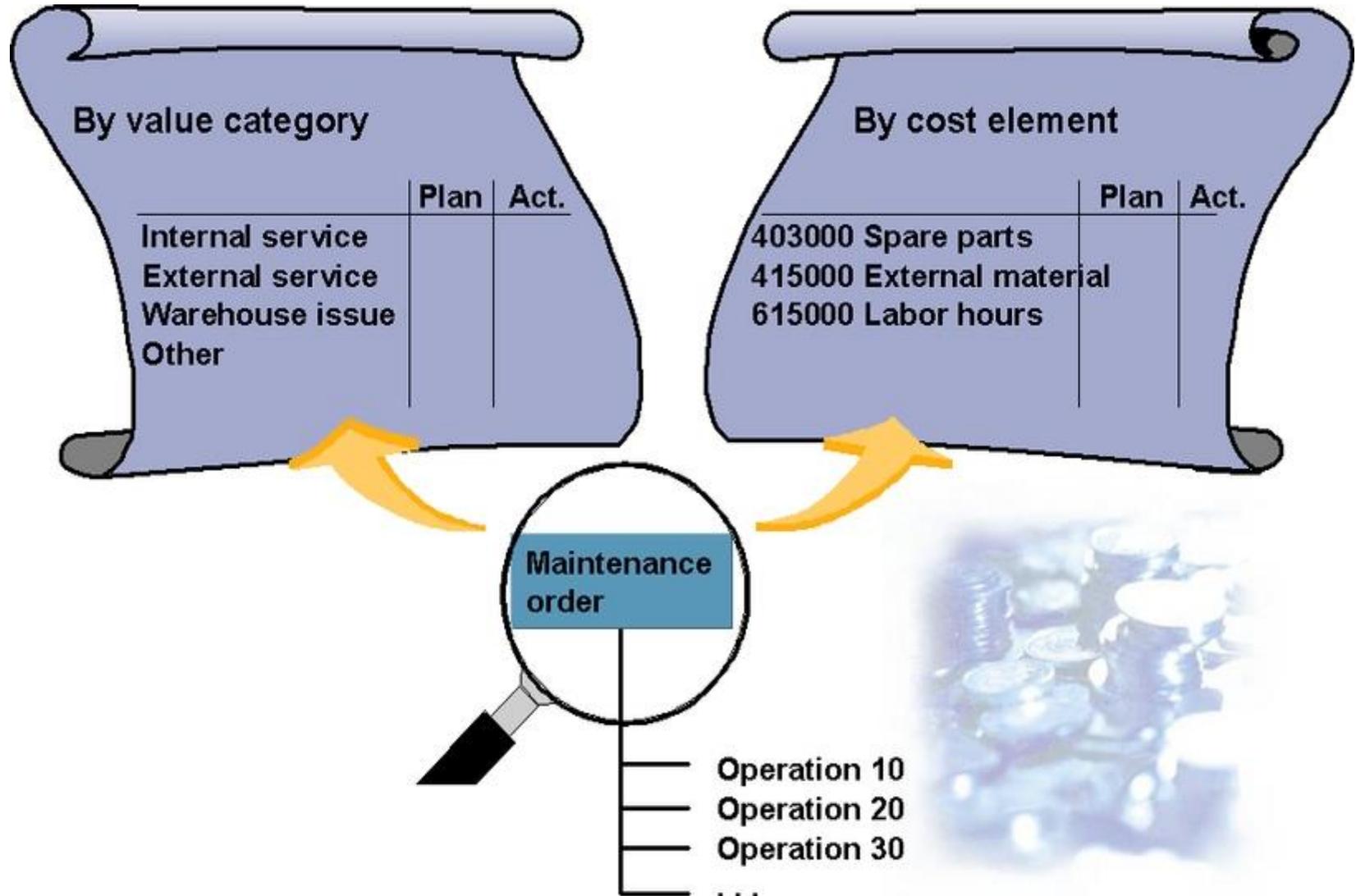
Preventive Maintenance



Types of Preventive Maintenance



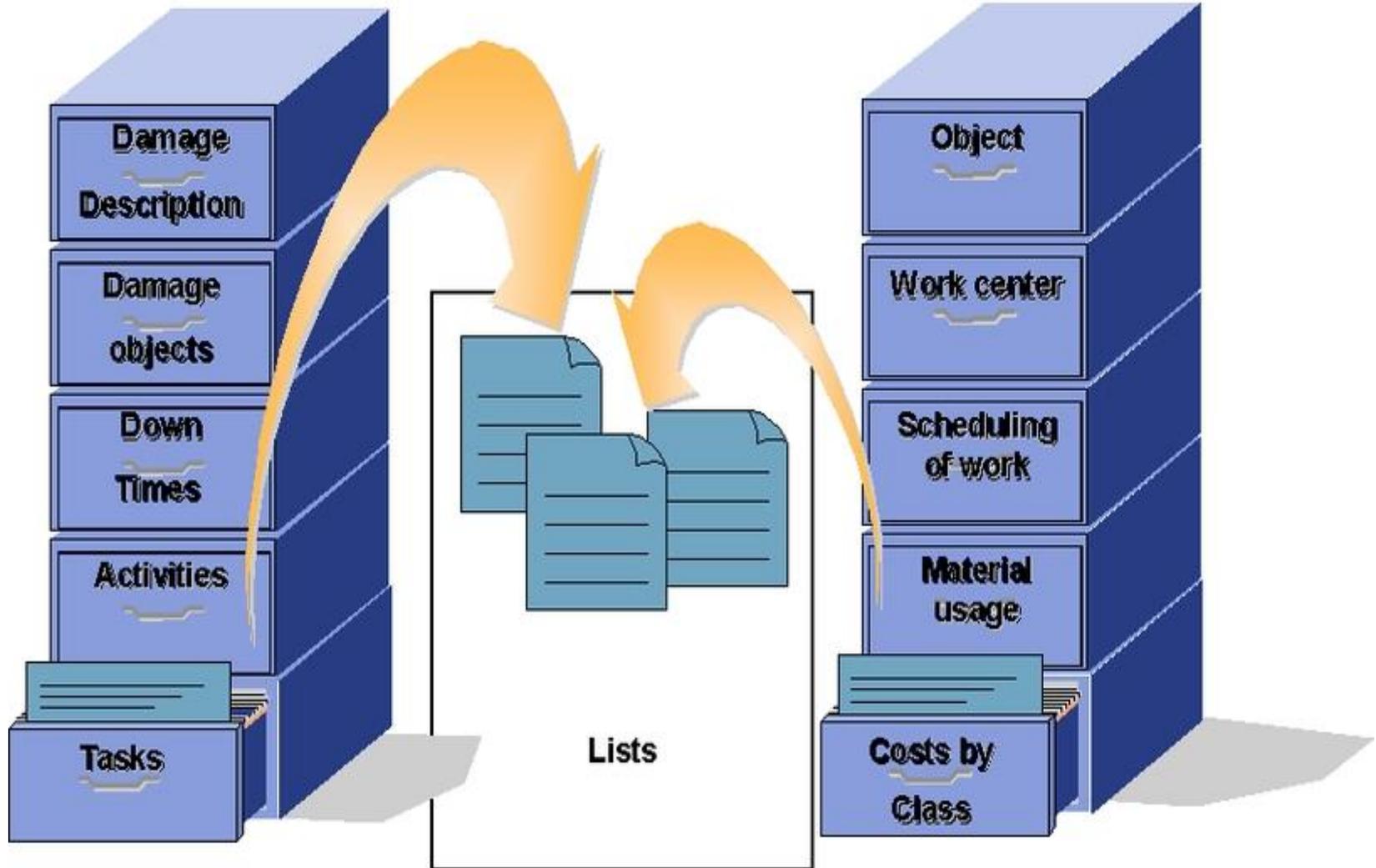
Cost Analysis in Maintenance Order



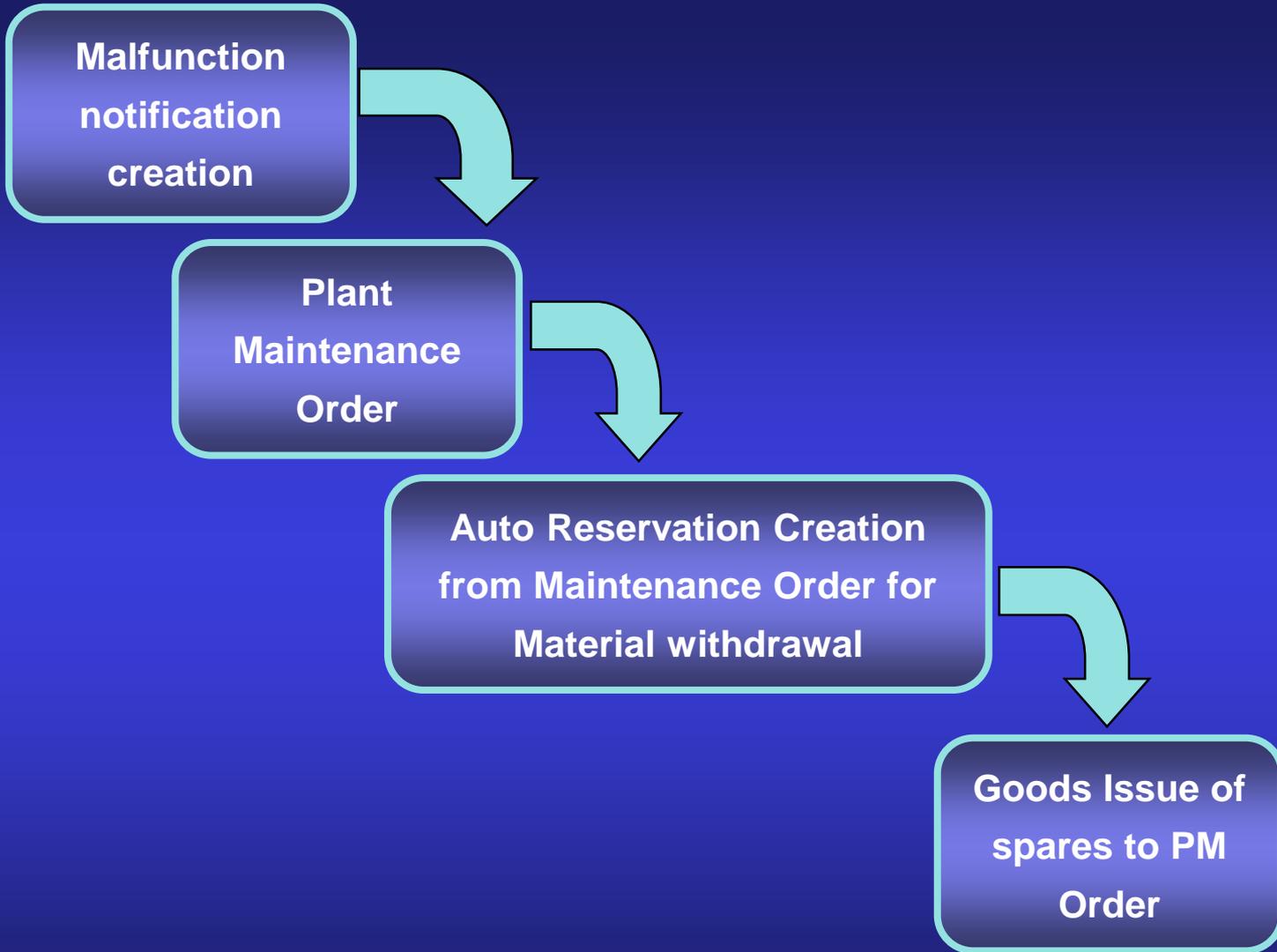
Maintenance History

Completed
Notifications

Completed
Orders

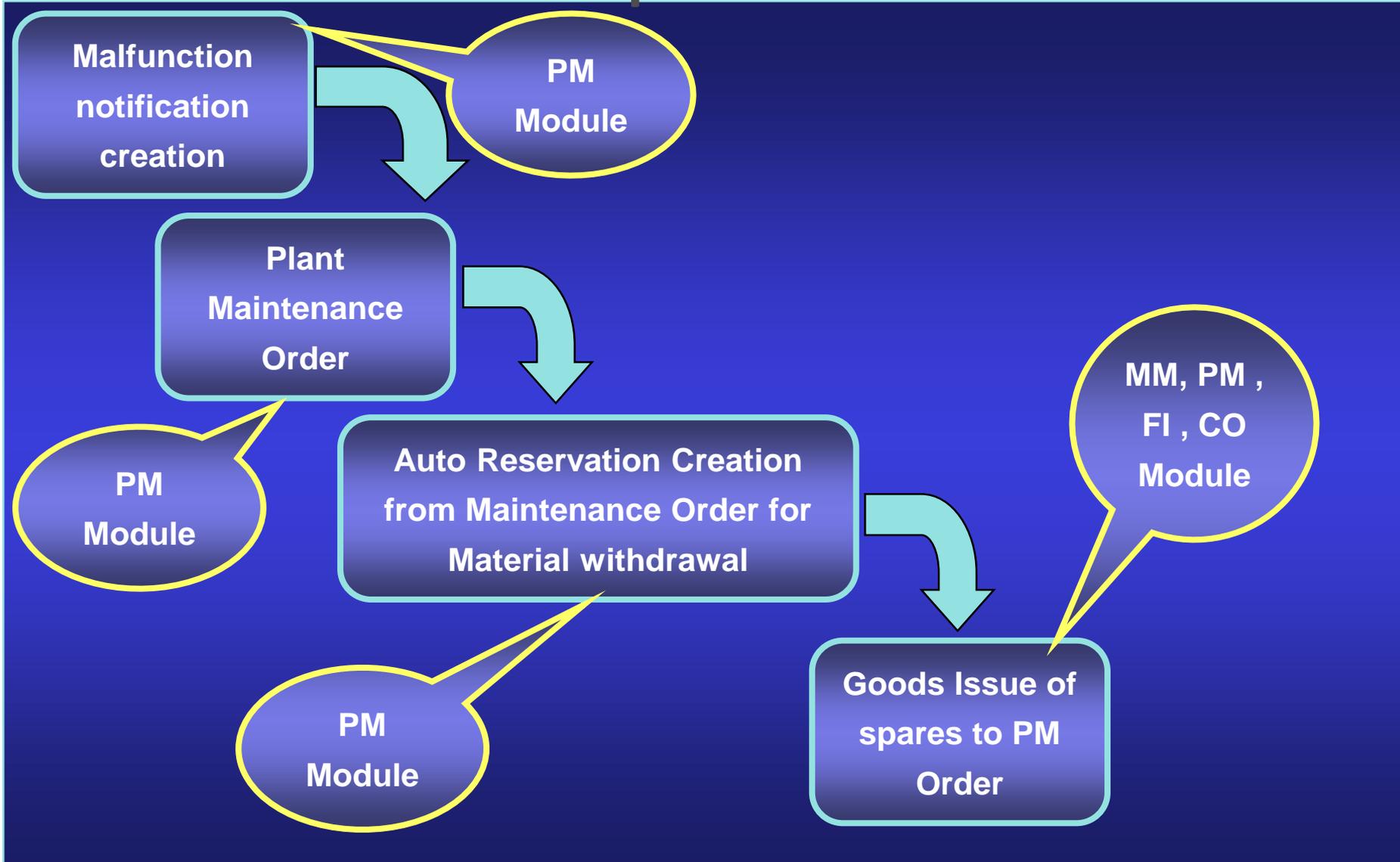


Business Process Scenario - Breakdown Maintenance with spares



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

Transaction code

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

Transaction code

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

Transaction code

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

Transaction code

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

Transaction code

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

Transaction code

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

Transaction code

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

Transaction code

195	WCT7	WCM: Change of Operational WC Document
196	WCT8	WCM: Display of Operational WC Document
197	WCTK	WCM: Creation of WC Application
198	WCTL	WCM: Change of WC Application
199	WCTM	WCM: Display of WC Application

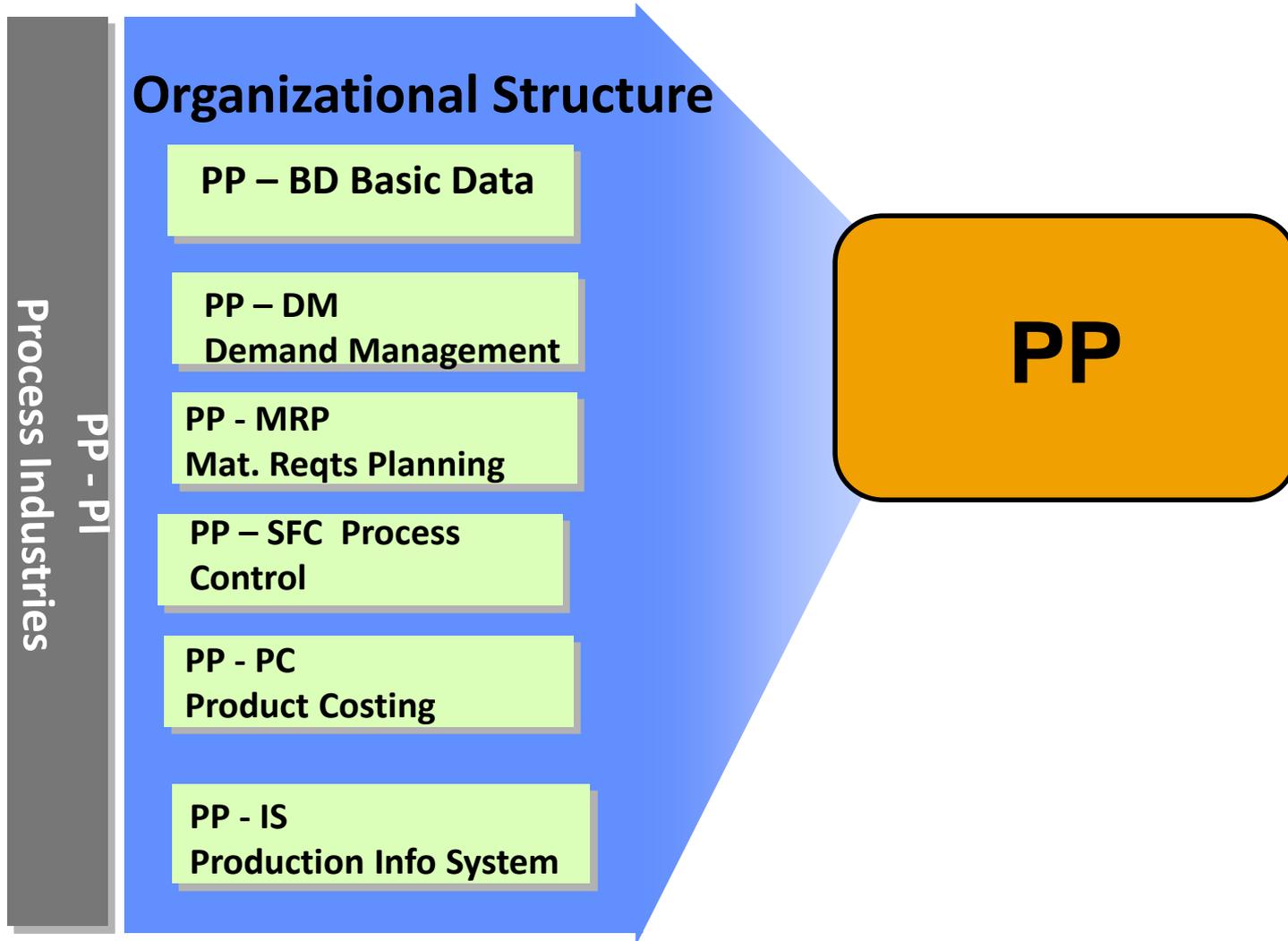
Examples

Sl 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

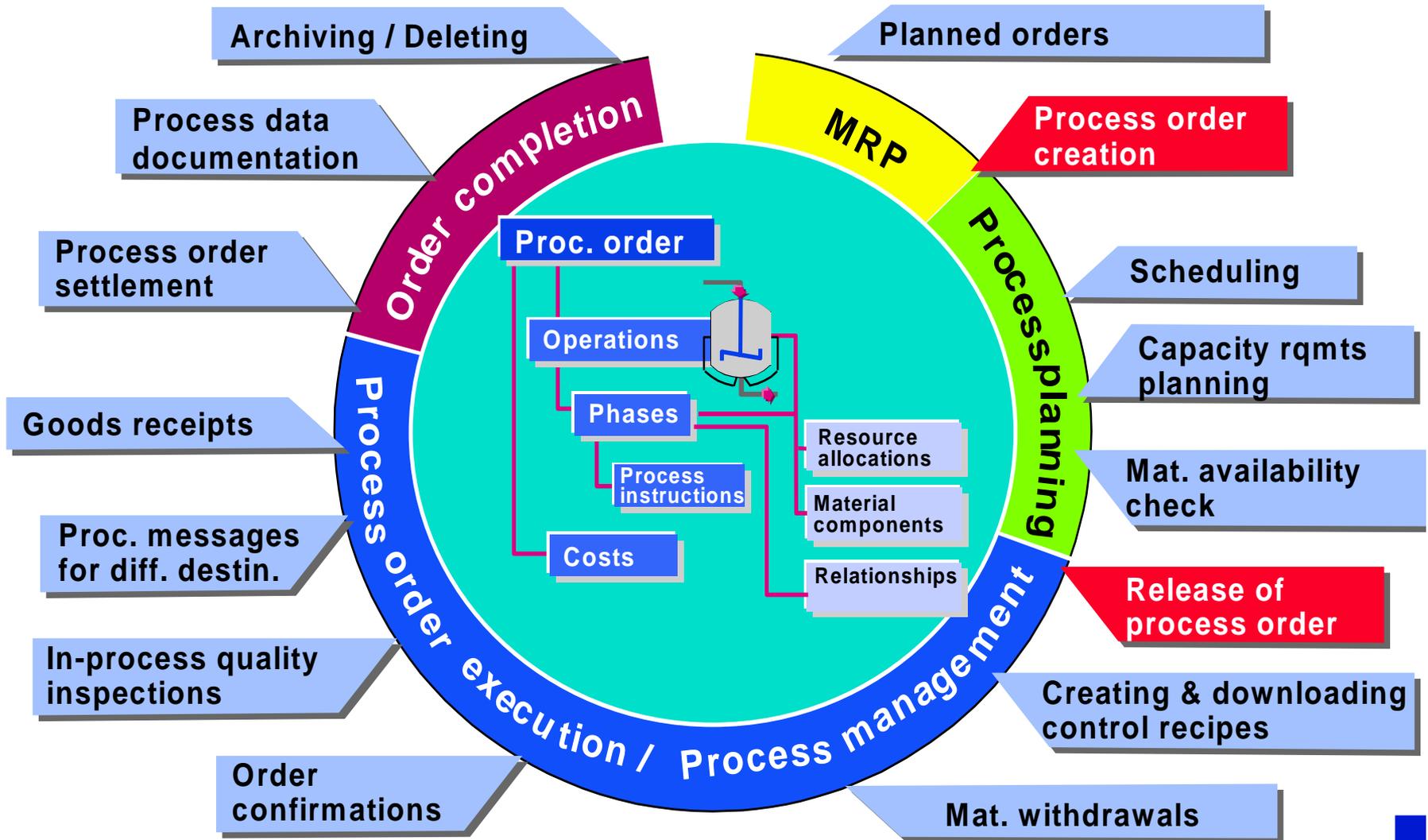
Example:

- **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**

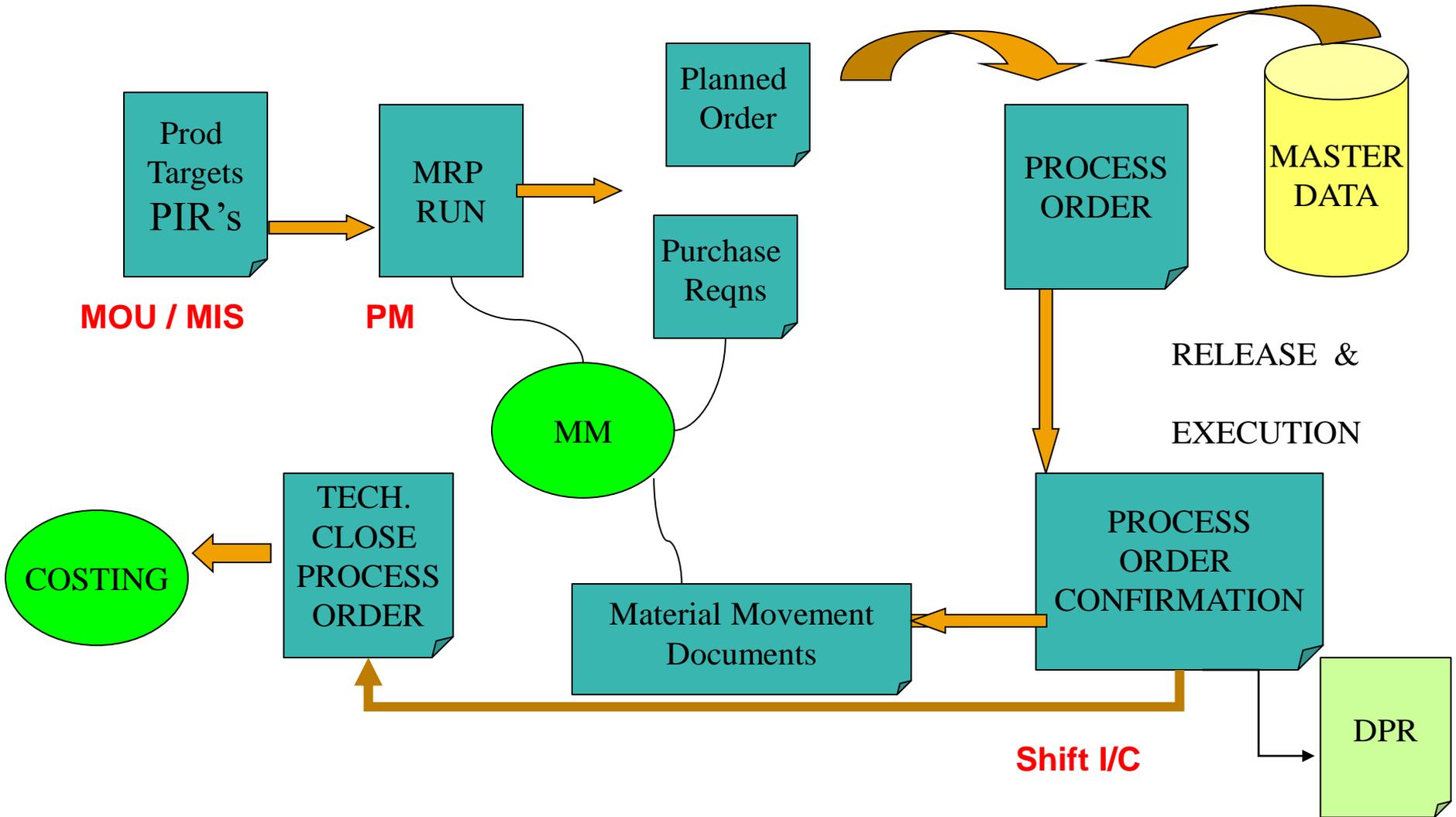
Production Planning in any organisation

- 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

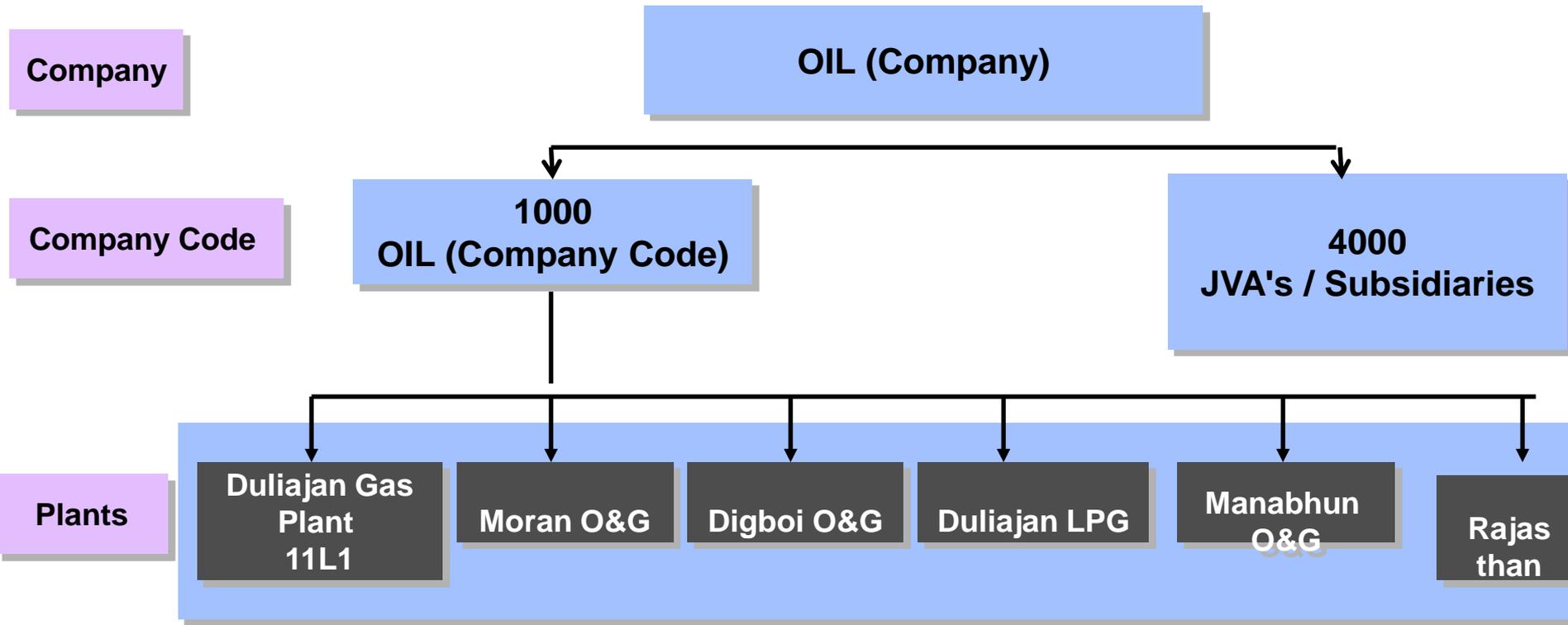


Organization Entities as in SAP

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

Organizational Elements - Production Planning

Plants in any organisation (ex:OIL)



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

**Company Code
(OIL)**

**LPG Plant
Duliajan**

**Plants
(Digboi, Moran, etc)**

Main Stores

**Field Stores at
LPG Plant**



**MRP CONTROLLER
(Plant Manager)**



**PRODUCTION SUPERVISORS
(Shift In-Charges)**

**PRODUCTION SCHEDULER
(Installation Managers)**



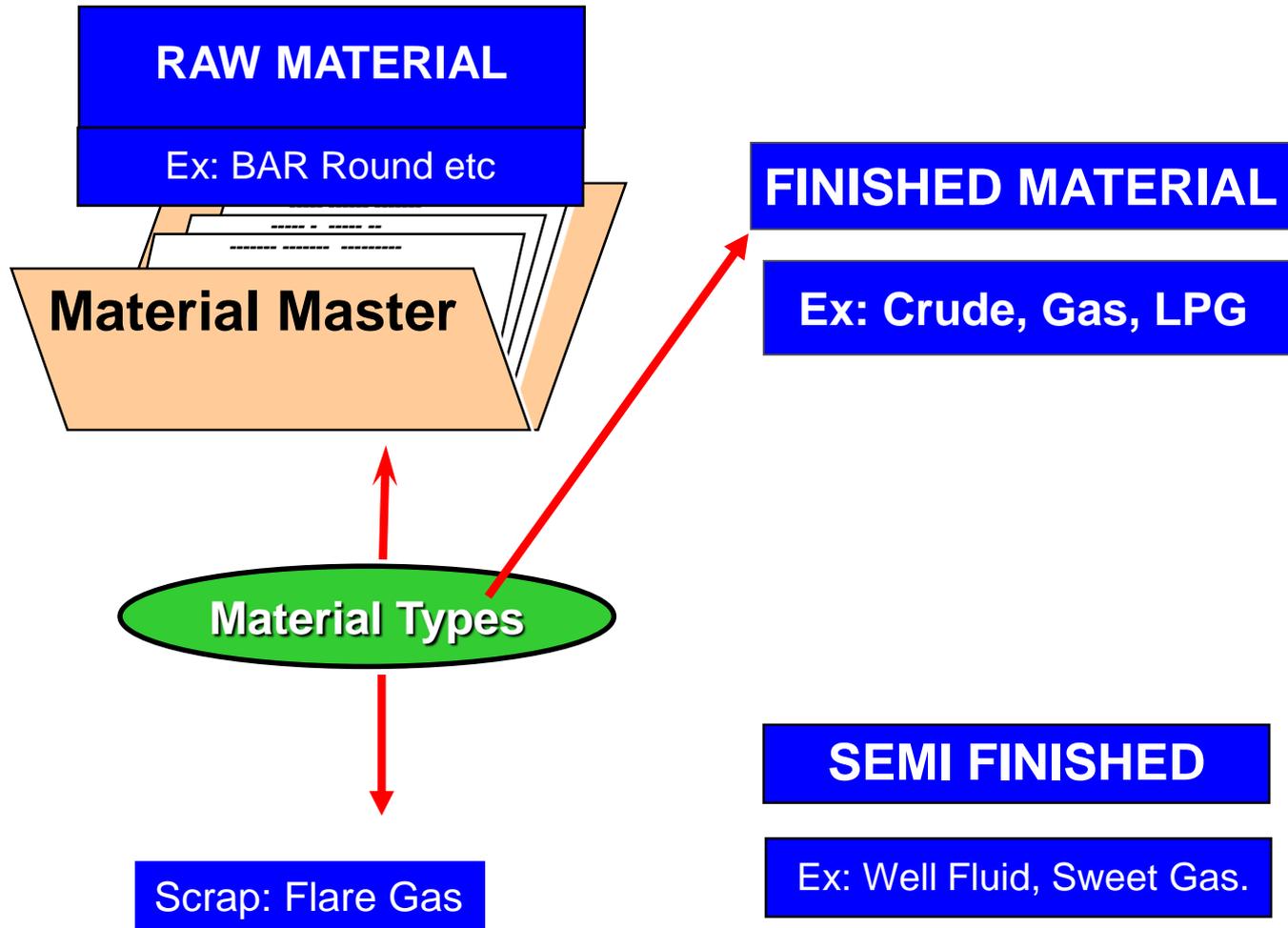
UNIT : PP-PI 01-01

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

Basic Data
Base Unit of measure Division, Material Group

Classification Data
Class Characteristics – QM / Process Related

Sales Data
Distribution Channel/Division Tax data Shipping Data

Purchasing Data
Purchasing Group Purchasing Data

MRP Data
MRP Controller MRP Type

Production Data
Production Scheduler, Profile, Tolerance Data,

Storage Data
Storage Locations Unit of issue Weight/Volume/Size

Accounting Data
Valuation Class Price Control, Price Currency

Costing Data
Planned Price Standard Price

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

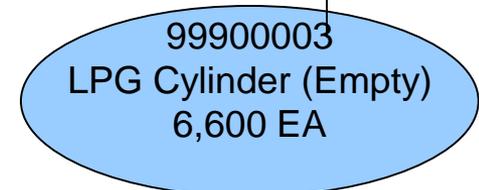
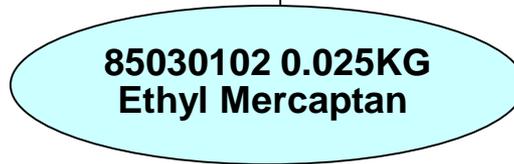
Transaction Code

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

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

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

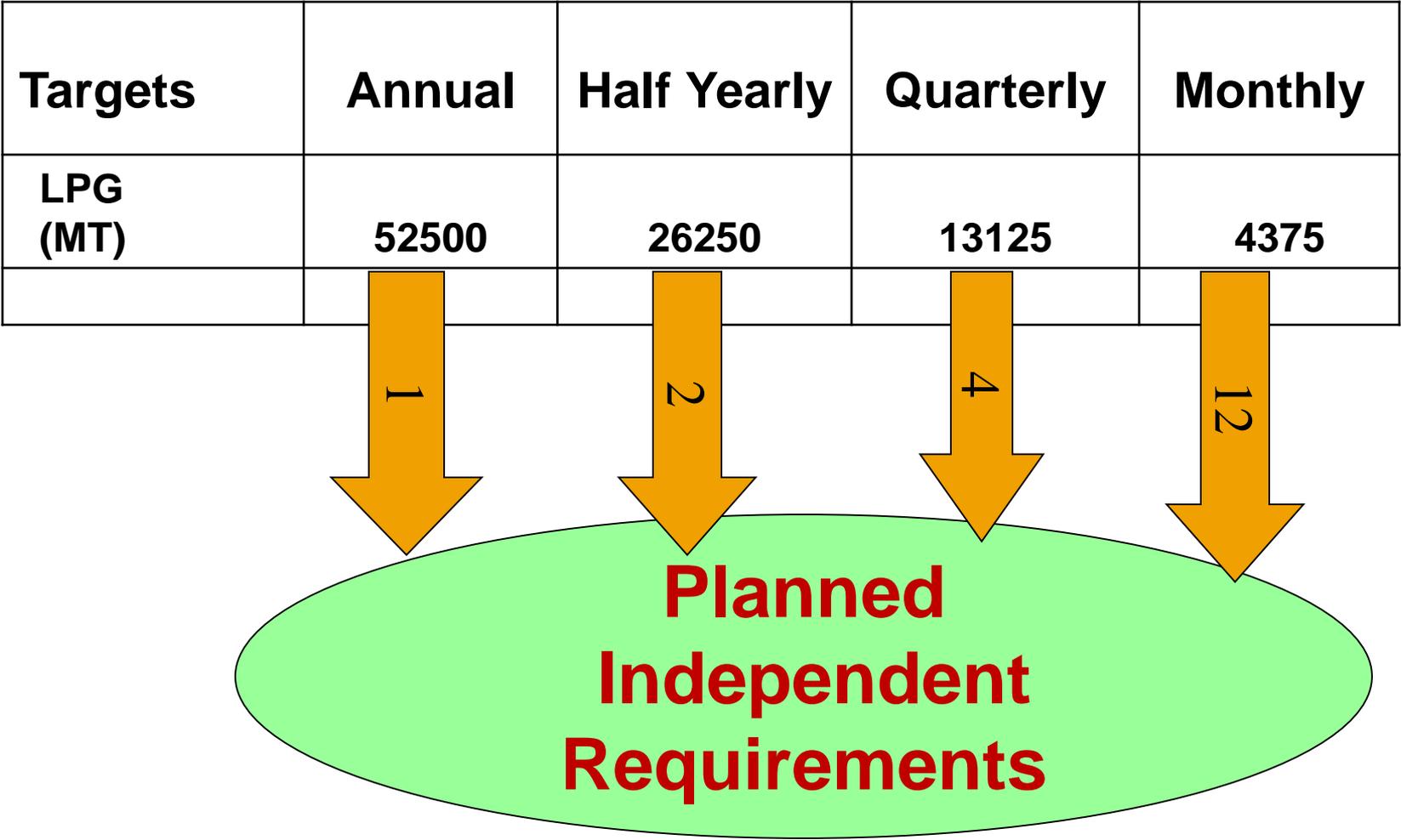
Function:

- 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



Business Process – MRP Run

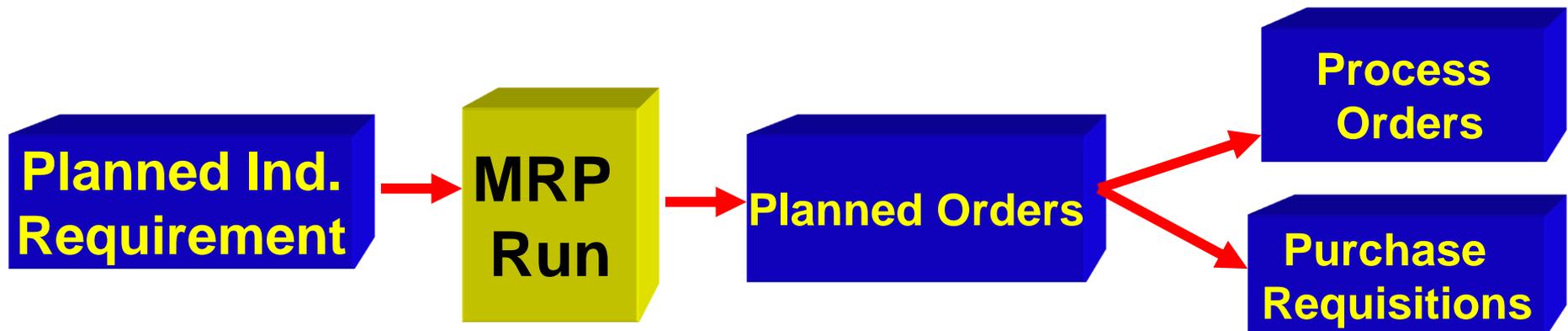
MRP is the Process for determining the Quantity of Semi-finished and Raw materials needed to produce a Finished Material.

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	C201	Create Master Recipe
2	C202	Change Master Recipe
3	C203	Master Recipe
4	C223	Create Production Version
5	COIO	Order Information System
6	COR1	Manual Creation of Process Order
7	COR2	Change Process Order
8	COR3	Display Process Order
9	COR6	Process Order Confirmation - By Phase
10	COR7	Individual Conversion of Planned Order to Process Order
11	CORS	Cancel Process Order Confirmation
12	CORT	Display the Confirmation
13	CRC1	Create Resource
14	CRC2	Change Resource
15	CRC3	Display Resource
16	CS01	Create Material BOM
17	CS02	Change Bill of Material
18	CS03	Display Bill of Material
19	MB1A	Issue of Required Components to Process Order
20	MBST	Cancel Material Document
21	MD01	MRP Run
22	MD02	MRP - Single-item, Multi-level -
23	MD04	Display Stock/Requirements Situation
24	MD05	Individual Display Of MRP List
25	MD06	Collective Display Of MRP List
26	MD11	Creation of Planned Order Manually
27	MD12	Change Planned Order
28	MD13	Individual Display of Planned Order

Transaction code

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

Examples

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

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

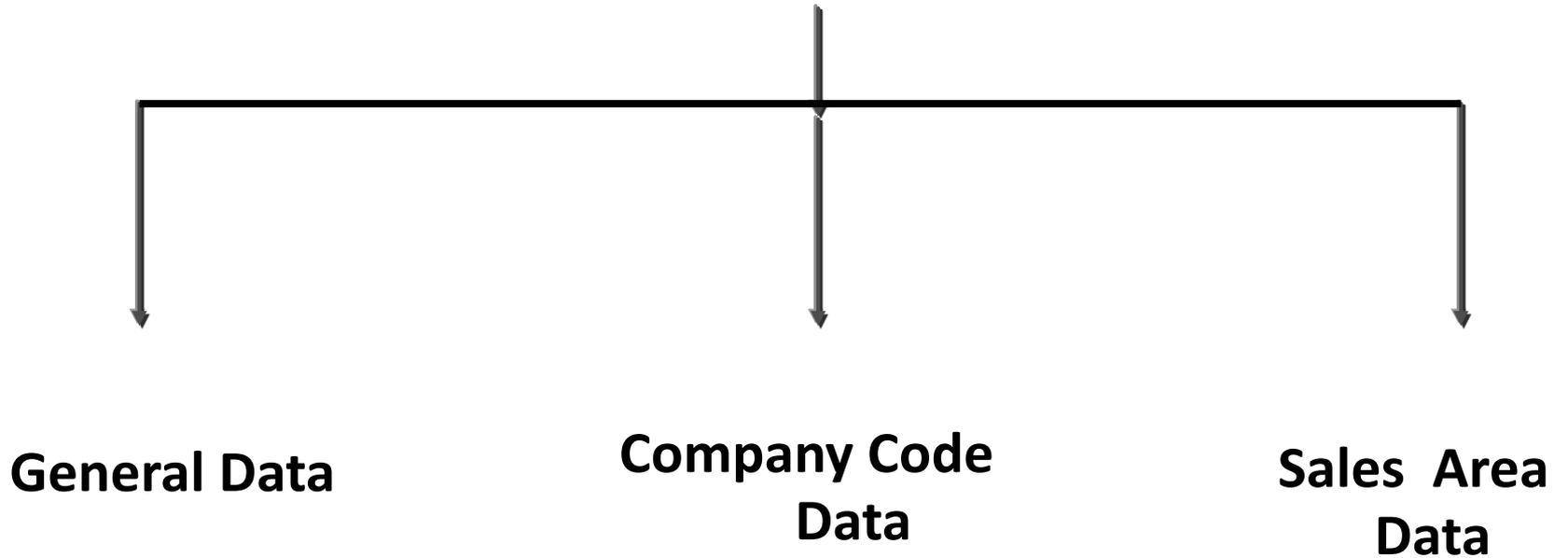
**Customer Master
Material Master
Condition Master**

Transaction data

**Sales Order
Delivery Order
Invoice**

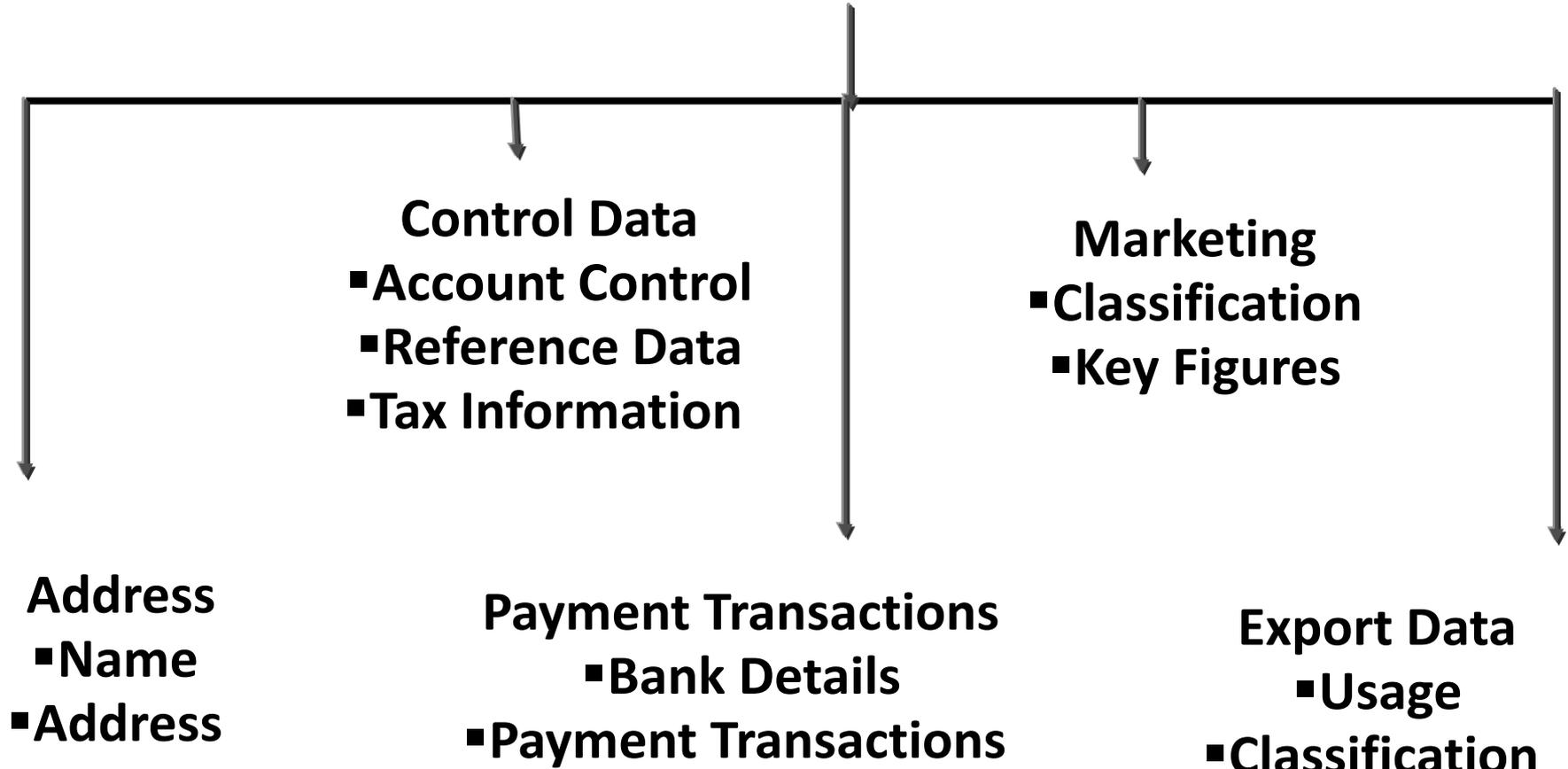
Customer Master

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

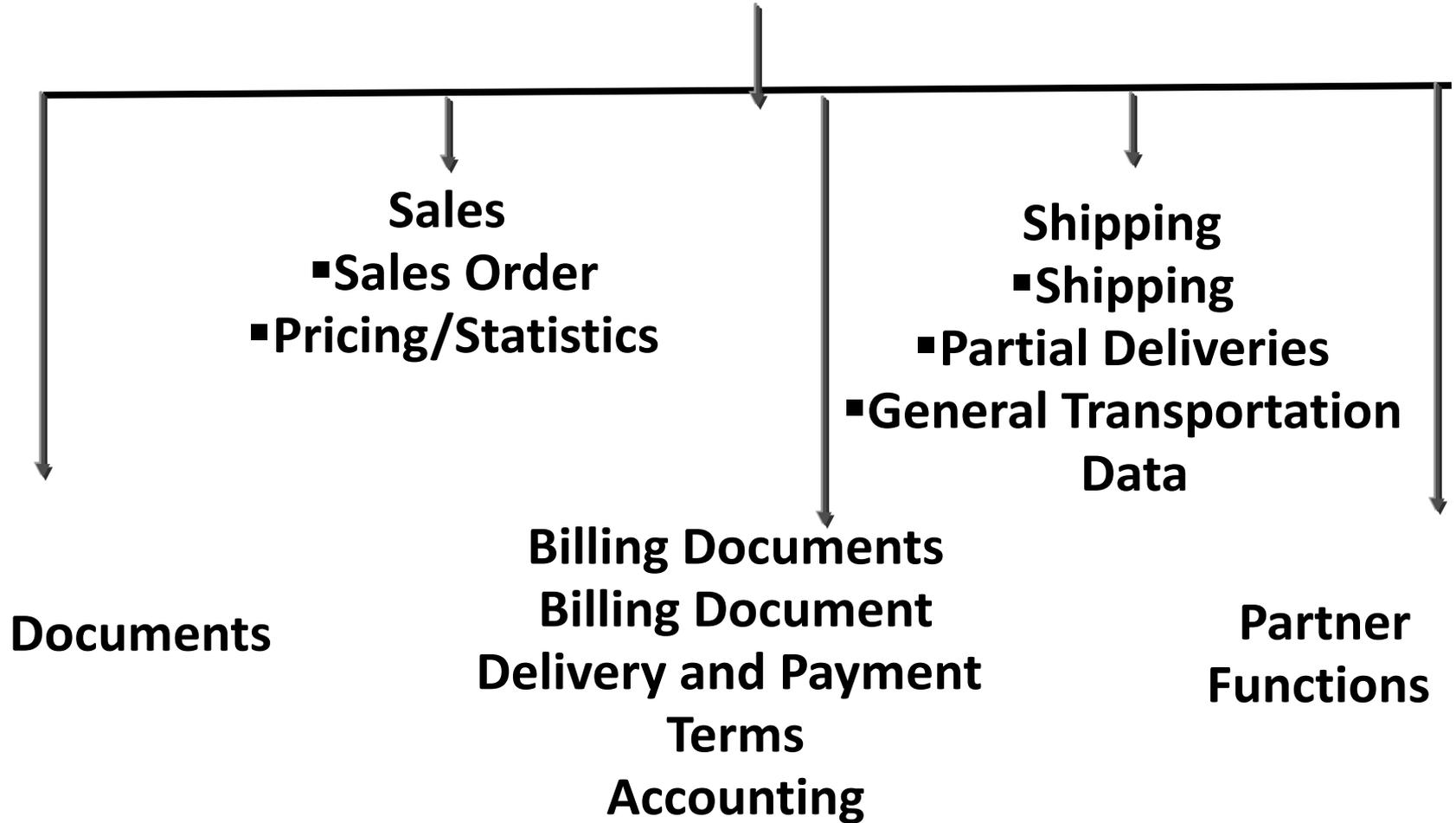
Search terms
Search term 1/2: DULIAJAN DEALER DESTINATION

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

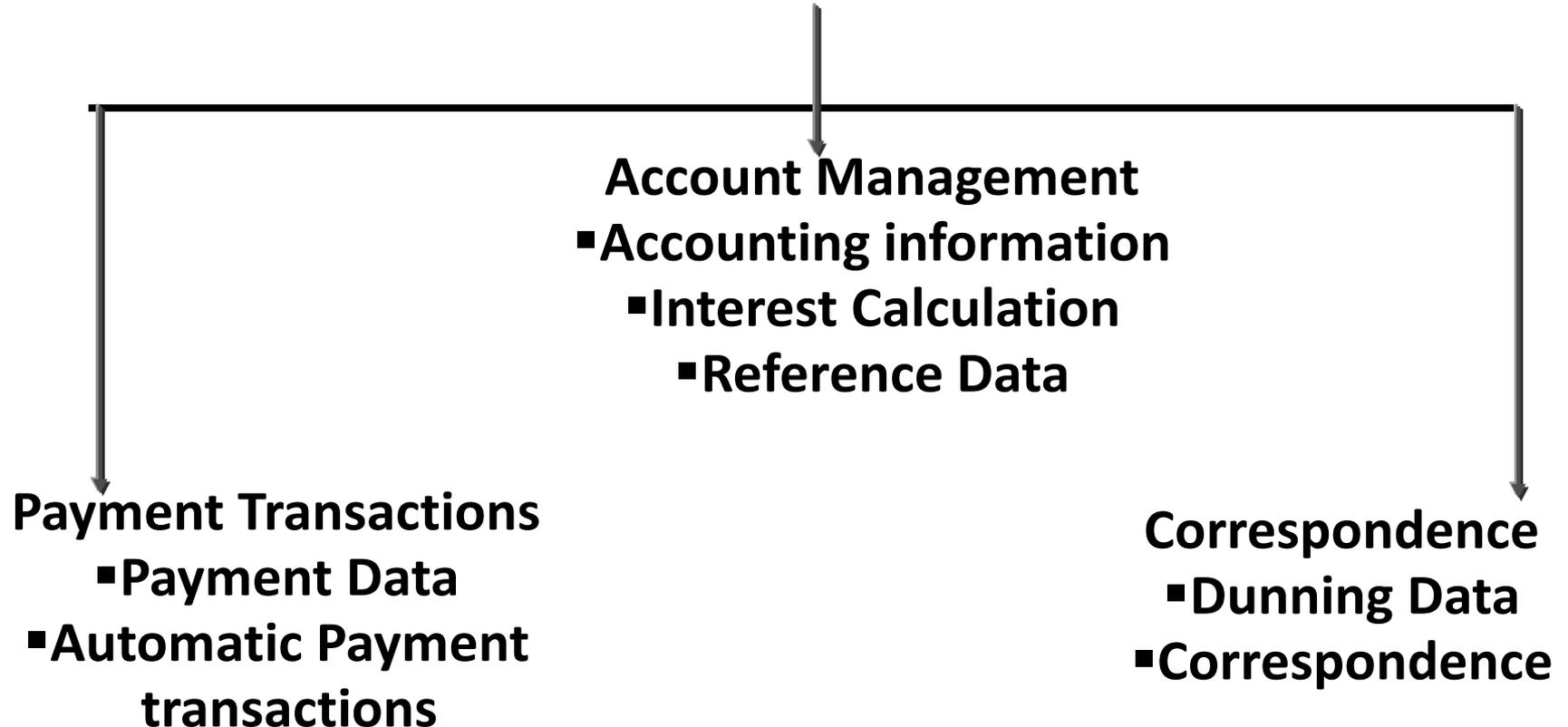
General transportation data
Transportation zone: 0000000001 Common Tr Zone

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.

Customer Excise Details

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

Table View Edit Goto Selection Utilities System Help

Change View "Customer Master Excise Additional Data": Overview

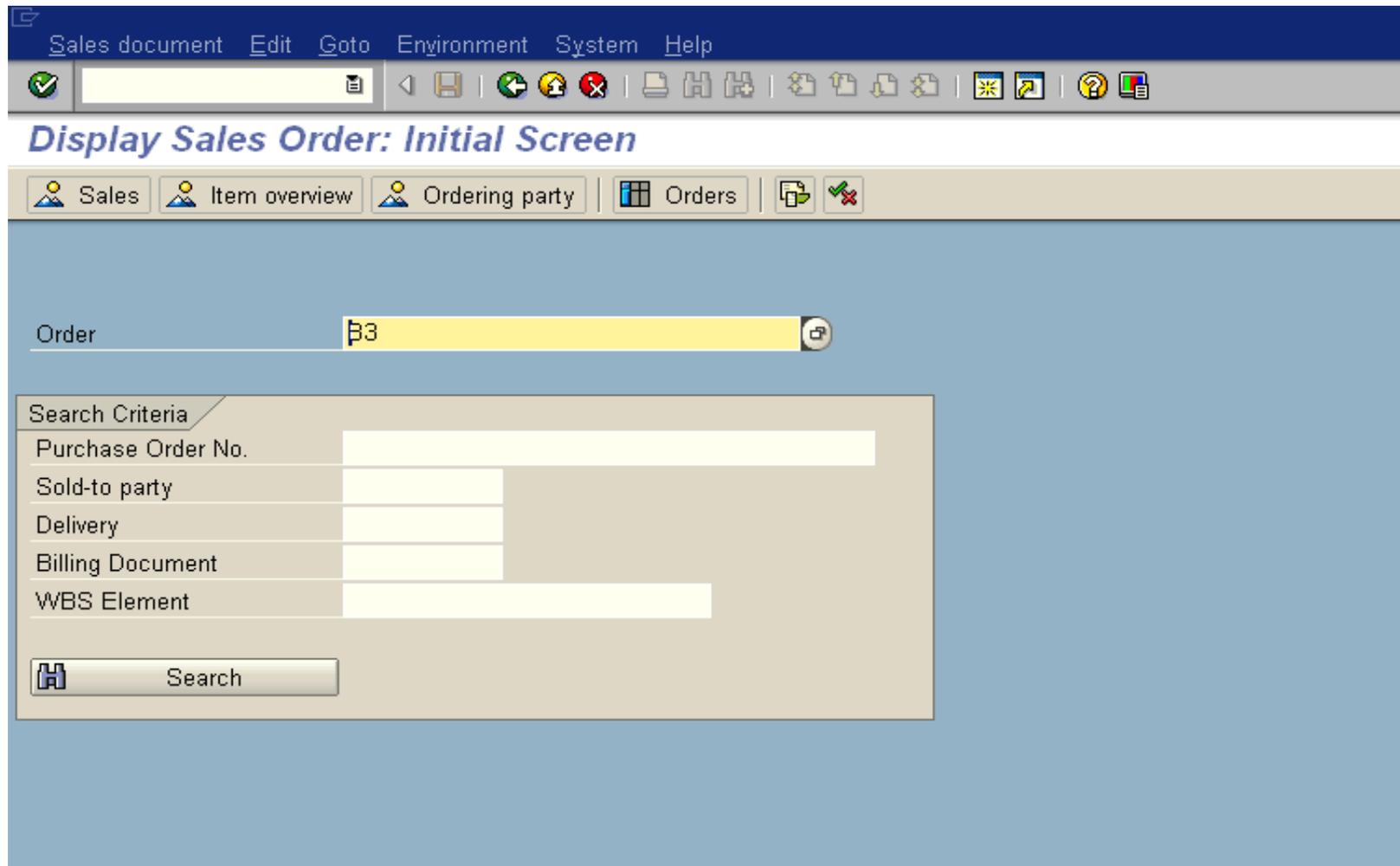
New Entries

Customer Master Excise Additional Data

Customer	Exc.code	Exc.reg.no
100017	AAAC02352CXM002	AAAC02352CXM002
300007	AAAC02352CXM002	AAAC02352CXM002
300009	AAAC02352CXM002	AAAC02352CXM002
300027	AAAC02352CXM002	AAAC02352CXM002
300029	AAAC02352CXM002	AAAC02352CXM002
300035	AAAC02352CXM002	AAAC02352CXM002

Position... Entry 1 of 6

Display Sales Order



The screenshot shows the SAP 'Display Sales Order: Initial Screen'. At the top, there is a menu bar with 'Sales document', 'Edit', 'Goto', 'Environment', 'System', and 'Help'. Below the menu is a toolbar with various icons for navigation and actions. The main area has a title bar with tabs for 'Sales', 'Item overview', 'Ordering party', and 'Orders'. The 'Orders' tab is active. Below the tabs, there is a search field labeled 'Order' containing the value '03'. Below this is a 'Search Criteria' section with a table of search fields:

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"/>

At the bottom of the search criteria section is a 'Search' button with a magnifying glass icon.

Display Sales Order

Sales document Edit Goto Extras Environment System Help

Display Standard Order 83: Overview

Standard Order 83 Net value 17,082,607.30 INR

Sold-to party 100005 Indian Oil Corporation Ltd. / Noonmati / 781001 Guwahati

Ship-to party 100005 Indian Oil Corporation Ltd. / Noonmati / 781001 Guwahati

PO Number Test1 PO date

Sales Item overview Item detail Ordering party Procurement Shipping Reason for rejection

Sales doc. type ZOR Standard Order

Req. deliv. date D 05.09.2005 Deliver.Plant

Complete dlv. Total Weight 0.000 KG

Delivery block Volume 0.000 KL

Billing block Pricing date 05.09.2005 16:58

Payment card Exp.date

Payment terms 0L08 Payable on 25th of t... Incoterms FH Free house

Order reason

All items

Item	Material	Order quantity	SU	ServiceableMat	Serv. m... S	Description	Item description
10	CRUDEOIL	1,000.000	KL			OIL Crude	

TAS Ext. Dtls

Display Sales Order

Sales document Edit Goto Extras Environment System Help 

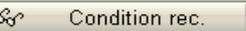
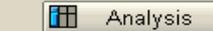
Display Standard Order 83: Item Data

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...	OUn	CConDe	Un	Condition value
ZGRP	Gros Price OIL Crude	17,000.00	INR		1 KL5		17,000,000.00	INR	1	KL5	1	KL5	0
ZTRC	Transptn Charges	85.67	INR		1 MT		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		1 KL5		17,082,607.30	INR	0	KL5	0	KL5	0
YGRP	Gros Price Statistic	17,000.00	INR		1 KL5		17,000,000.00	INR	1	KL5	1	KL5	0
ZTRN	Transptn Statistical	85.67	INR		1 MT		74,961.25	INR	1,000	KL5	875	MT	0
	Sales Value (Gross -	16,925.04	INR		1 KL5		16,925,038.75	INR	1	KL5	1	KL5	0
YLST	Calculated 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		1 MT		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

Document Flow

Select Environment → Document flow.

The screenshot shows the 'Document Flow' application interface. At the top is 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 is titled 'Document Flow' and contains a toolbar with 'Status overview', 'Display document', 'Service documents', and 'Additional links'. Below this toolbar, the following text is displayed:

Standard Order 242
Business partner 100005 Indian Oil Corporation Ltd.

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

List of Sales Orders

List Edit Goto Settings Environment System Help
 SAP

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**

Transaction code

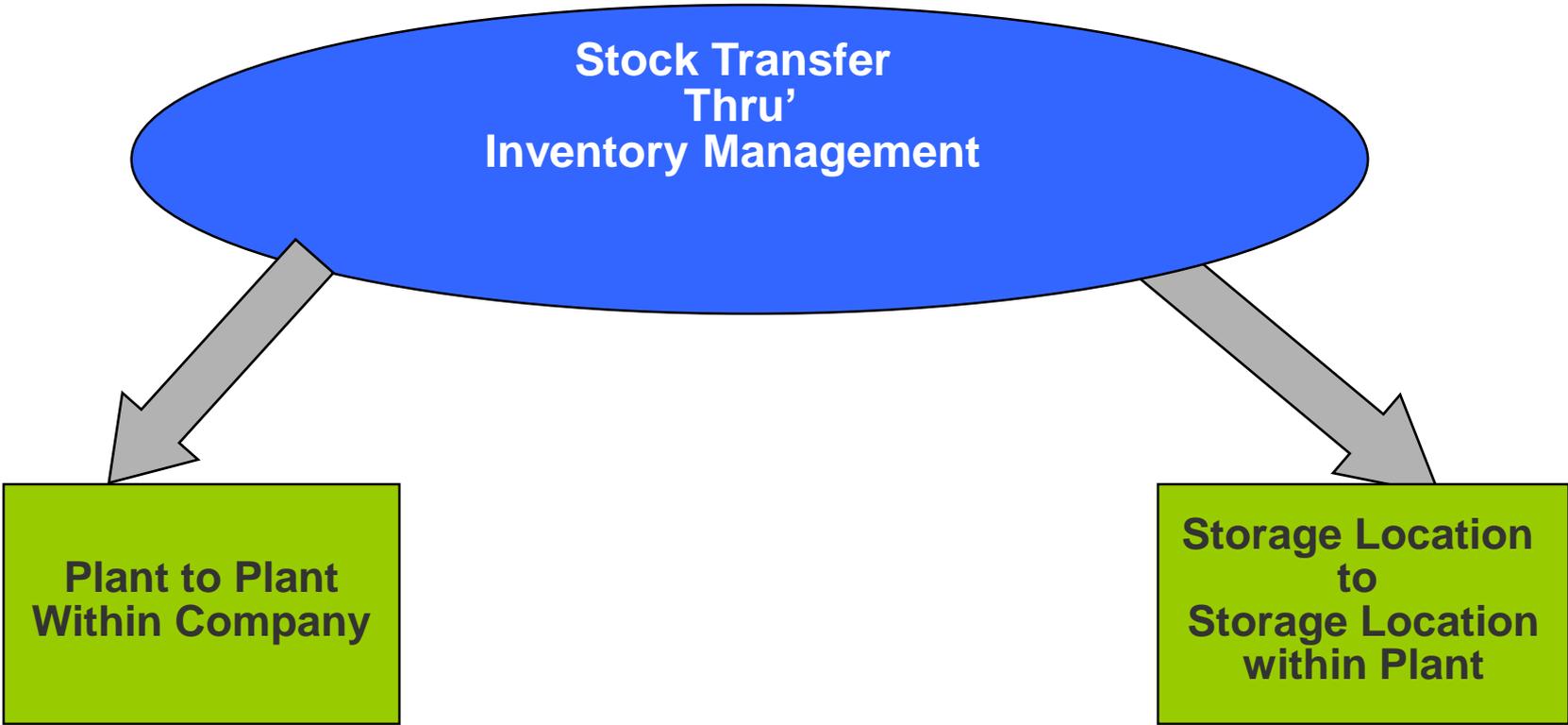
Stock Transport Order – Sales Route

- **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.

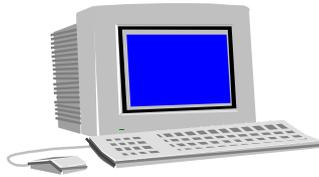
- Updating the quantity fields
- Updating the stock and consumption accounts
- Selection of the fields used for entering documents
- Goods receipt / Issue slips

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 Ref To SO

Outbound Delivery Edit Goto Extras Environment Subsequent Functions System Help

With Order Reference W/o Order Reference Post goods issue

Shipping point Pipeline Shipping Point

Sales order data

Selection date

Order

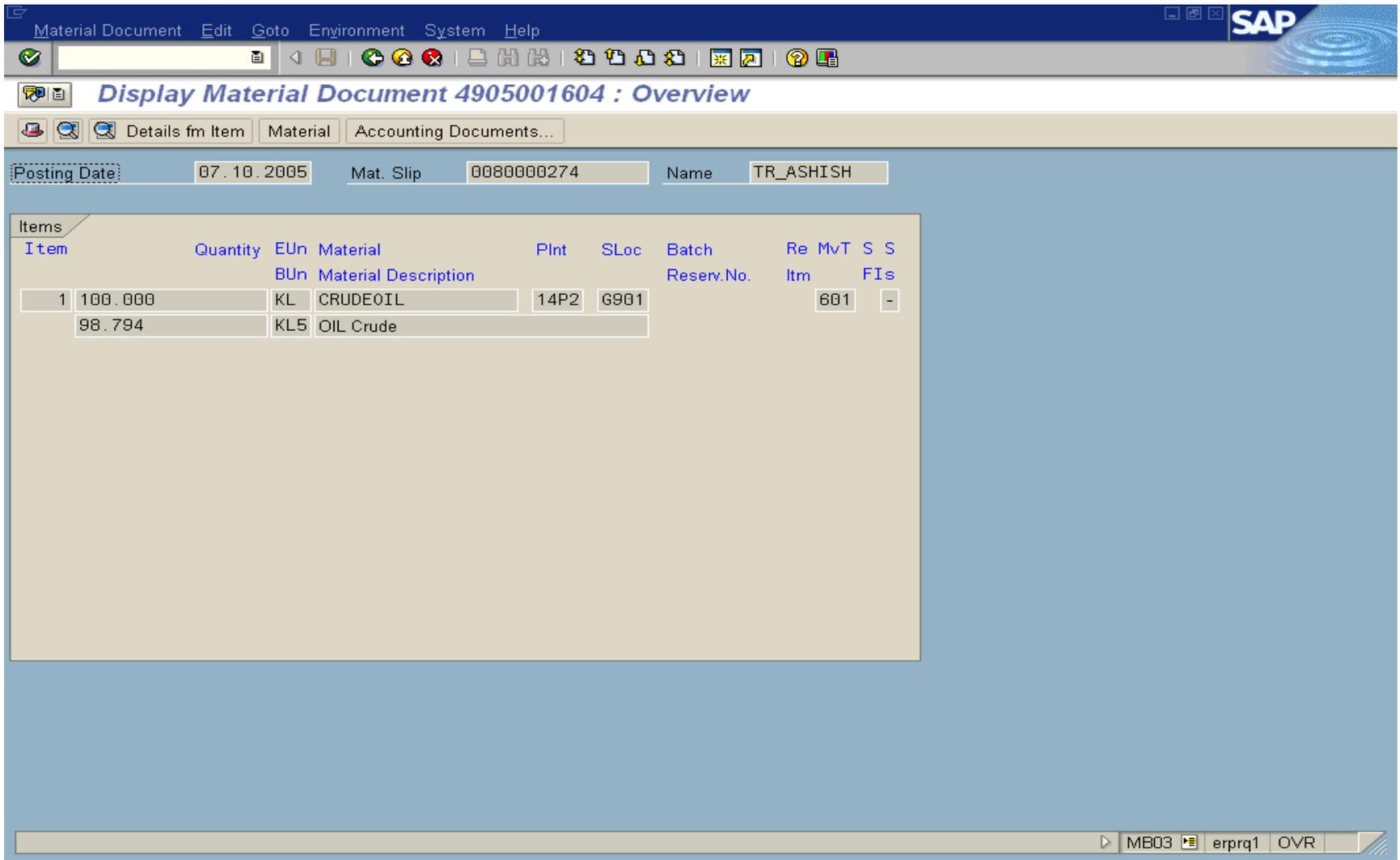
From item

To item

Predefine delivery type

Delivery Type

Display Material Document: Overview



The screenshot shows the SAP Material Document Overview screen. The title bar indicates the document is 'Material Document 4905001604 : Overview'. The main area displays the following data:

Posting Date: 07.10.2005 Mat. Slip: 0080000274 Name: TR_ASHISH

Items

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							

At the bottom right, the status bar shows: 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	
S0rg DC Dv	GI Date	S Gross weight WUoM	Volume	VUoM	Itm
<input checked="" type="checkbox"/> 1	1	United Bank of India			
OILA OI NG	09.08.05	0.000 KG	0.000		
<input checked="" type="checkbox"/> 1	1	United Bank of India			
OILA OI NG	05.08.05	0.000 KG	0.000		
<input checked="" type="checkbox"/> 1	1	United Bank of India			
OILA OI NG	04.08.05	0.000 KG	0.000		
<input checked="" type="checkbox"/> 2	2	Numaligarh Refinery Ltd.			
OILA OI CR	30.09.05	0.000 KG	0.000	KL	
<input checked="" type="checkbox"/> 2	2	Numaligarh Refinery Ltd.			
OILA OI CR	07.09.05	0.000 KG	0.000	KL	
<input checked="" type="checkbox"/> 2	2	Numaligarh Refinery Ltd.			
OILA OI CR	16.08.05	0.000 KG	0.000		
<input checked="" type="checkbox"/> 2	2	Numaligarh Refinery Ltd.			
OILA OI CR	16.08.05	0.000 KG	0.000		
<input checked="" type="checkbox"/> 2	2	Numaligarh Refinery Ltd.			
OILA OI CR	08.08.05	0.000 KG	0.000		
<input checked="" type="checkbox"/> 2	2	Numaligarh Refinery Ltd.			
OILA OI CR	04.08.05	0.000 KG	0.000		
<input checked="" type="checkbox"/> 100000	100000	North Eastern Elect. Power Corpn. L			
OILA OI NG	18.08.05	0.000 KG	0.000		
<input checked="" type="checkbox"/> 100005	100005	Indian Oil Corporation Ltd.			
OILA OI CR	30.09.05	0.000 KG	0.000	KL	
<input checked="" type="checkbox"/> 100005	100005	Indian Oil Corporation Ltd.			
OILA OI CR	02.09.05	0.000 KG	0.000	KL	
<input checked="" type="checkbox"/> 100006	100006	Indian Oil Corporation Ltd. - Digbo			
OILA OI CR	12.09.05	0.000 KG	0.000		

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 VL060

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

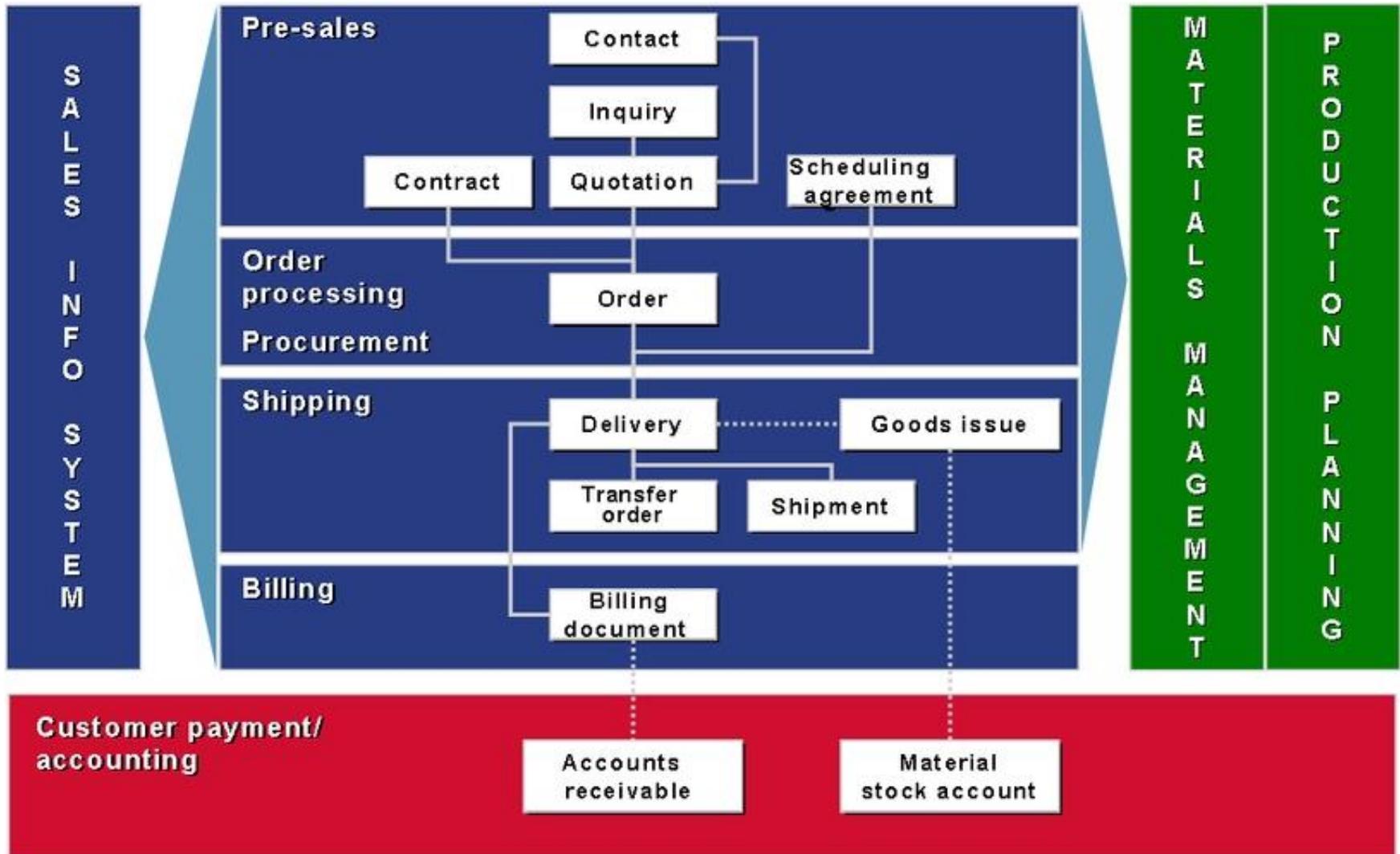
(Withdrawal for Scrapping- Reversal w/o Cost Center)

Stocks Reconciliation

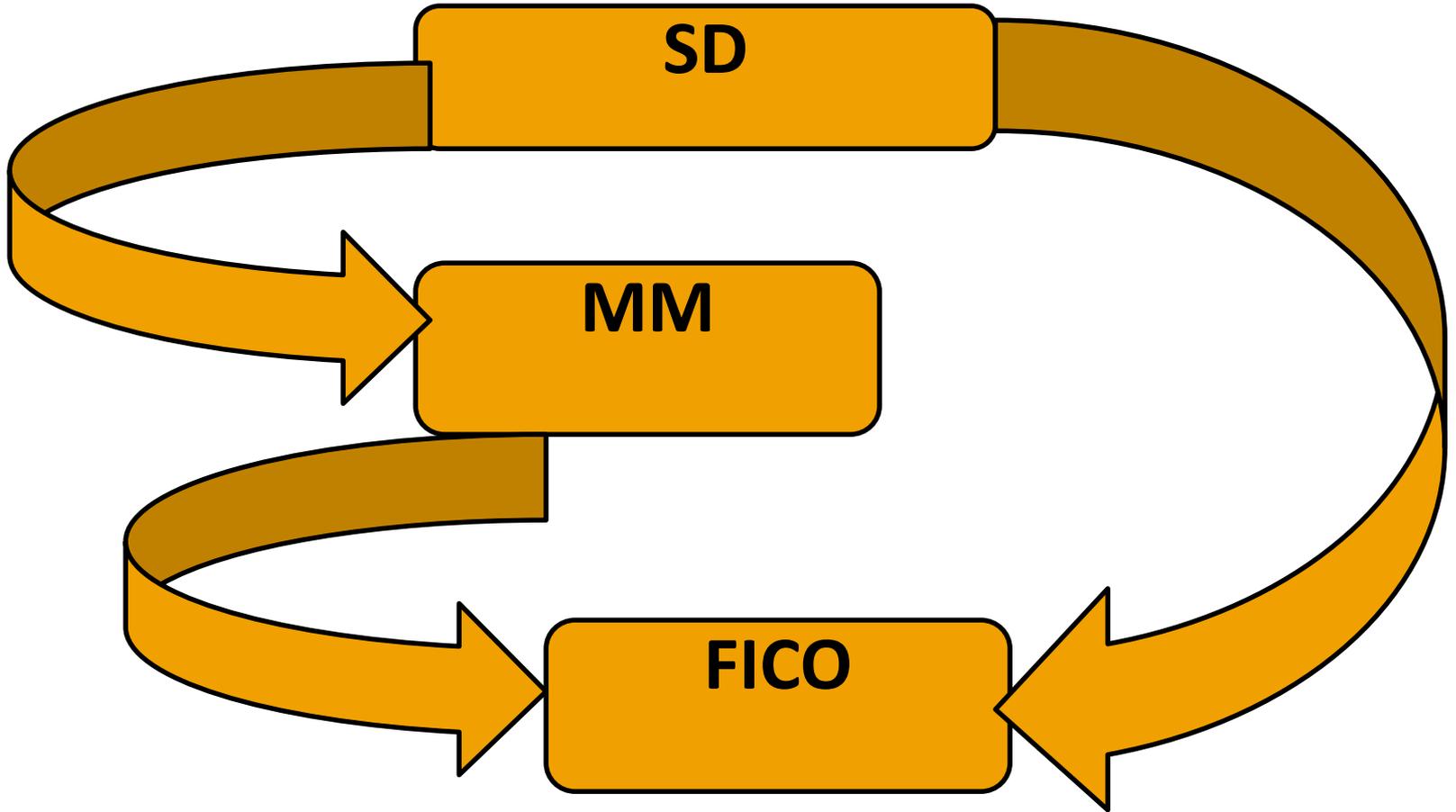
- Enter Count w/o referencing to document using Tcode MI09
- Movement Type used 702

- Post Inventory differences using Tcode MI07
- Movement Type used 702

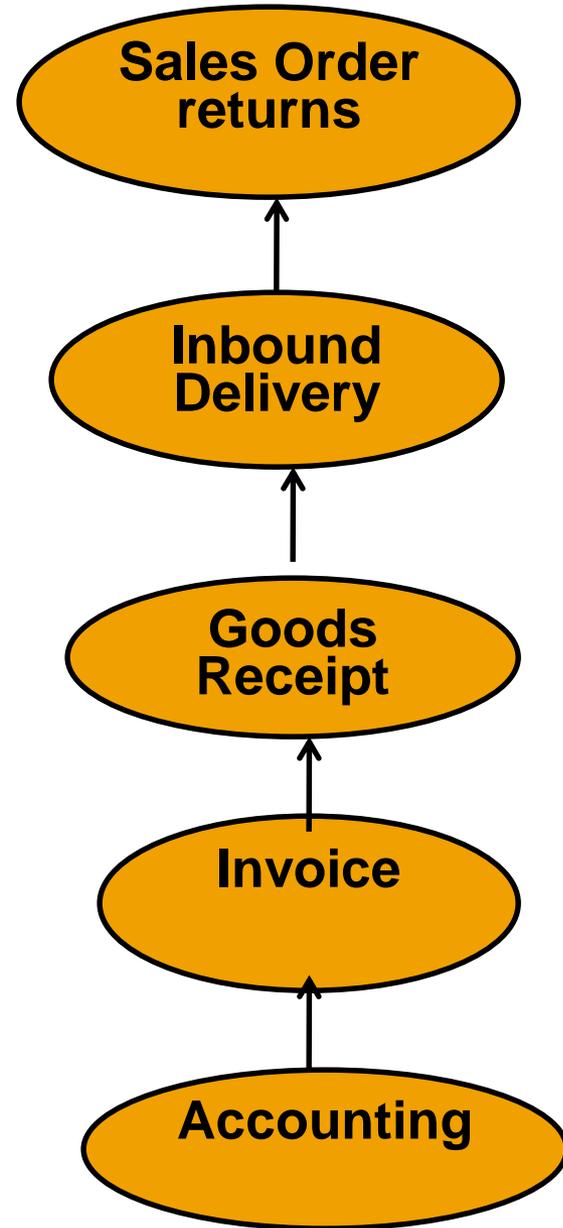
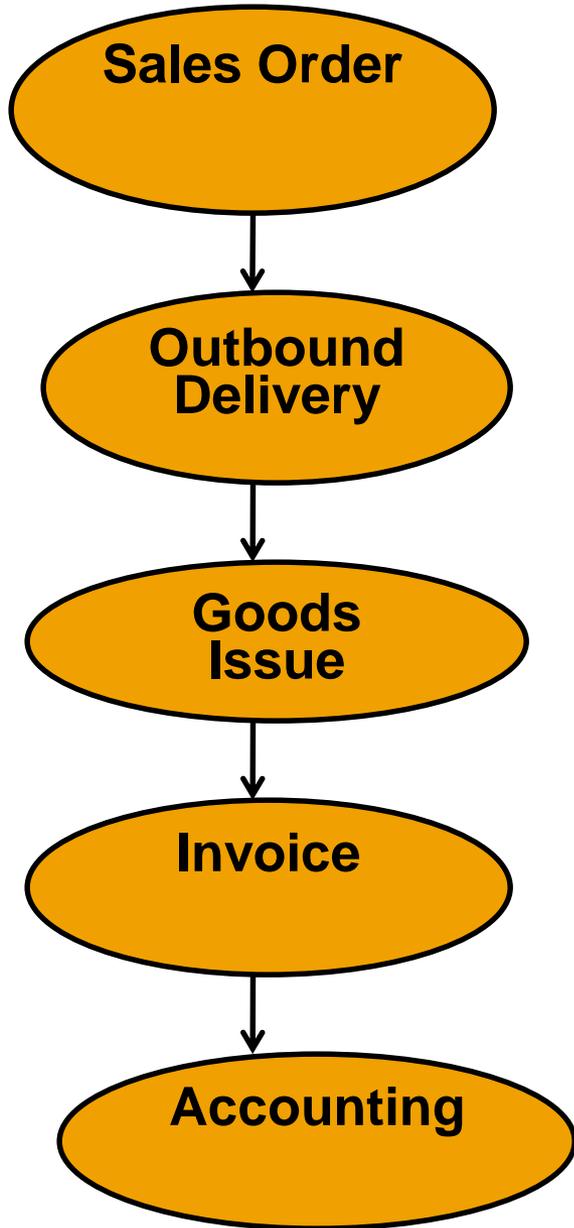
Payment



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	MM01	Create Material
2	MM02	Change Material
3	MM03	Display Material
4	MM06	Flag Material for Deletion
5	O4D1	Create, Driver
6	O4D2	Change, Driver
7	O4D3	Display, Driver
8	O4D4	Delete, Driver
9	O4V1	Create, Vehicle
10	O4V2	Change, Vehicle
11	O4V3	Display, Vehicle
12	O4V4	Delete, Vehicle
13	VA01	Create Sales Order
14	VA02	Change Sales Order
15	VA03	Display Sales Order
16	VA05	List of Sales Orders
17	VD01	Create Customer (Sales)
18	VD02	Change Customer (Sales)
19	VD03	Display Customer (Sales)
20	VD04	Customer Changes (SD)
21	VD05	Block customer (sales)
22	VD06	Mark customer for deletion (sales)
23	VF01	Create Billing Document
24	VF02	Change Billing Document
25	VF03	Display Billing Document

Transaction Code

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

Transaction Code

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

Transaction Code

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

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

Transaction Code

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

Examples

Sl 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>

ENVIRONMENT

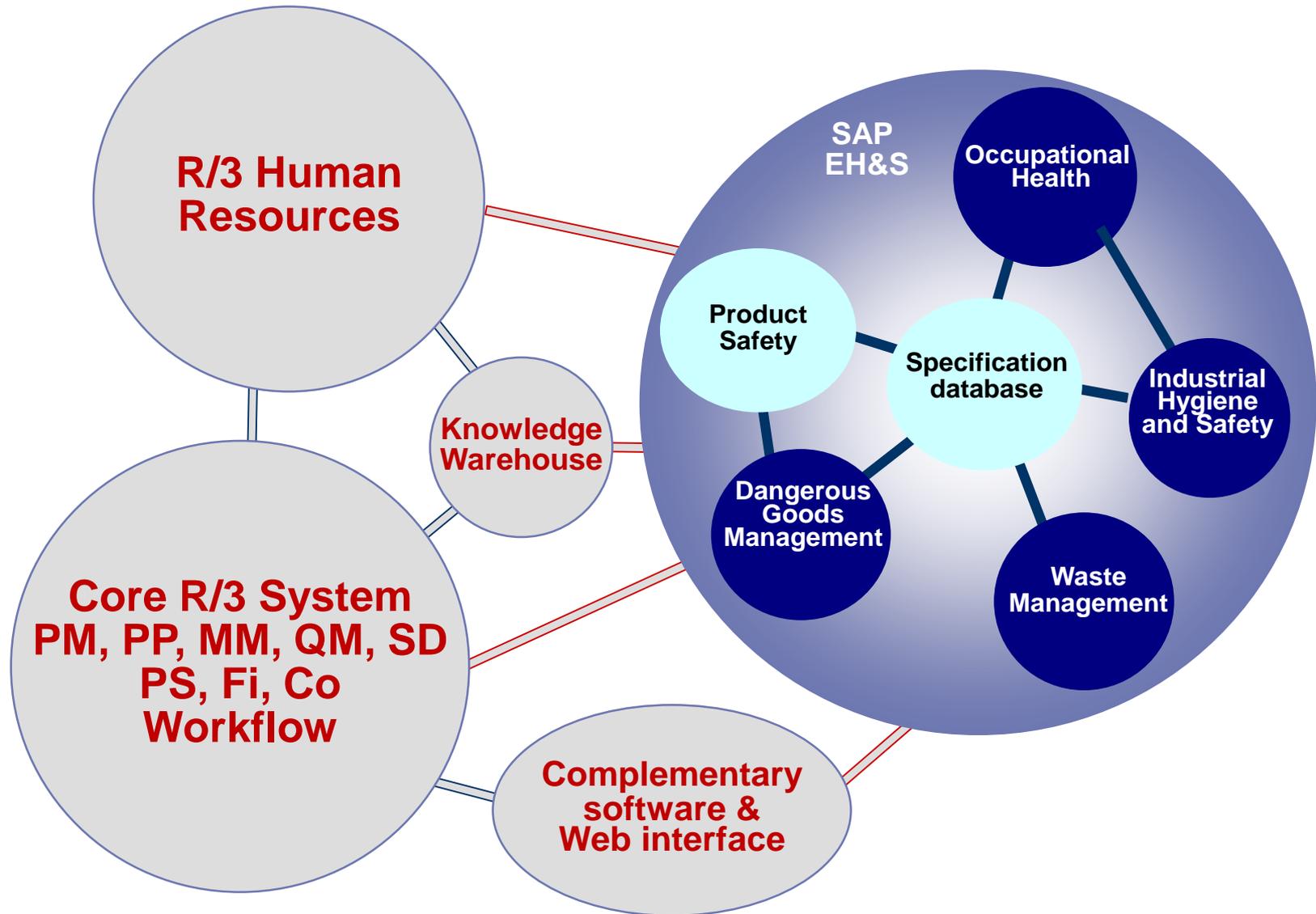
**SAP
EHS**

HEALTH

SAFETY

**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 →

EHSAMBTAET .

➤ T.Code : EHSAMBTAET.

- 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 → EHSAMBTAET .**

➤ **T.Code : EHSAMBTAET.**

➤ **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 → EHSAMBTAET .

T.Code : EHSAMBTAET.

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

Activity	Assigned To
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	EHSAMBTAET	Answering Questionnaire
2	EHSAMBTAET	Assigning Of Diagnoses
3	EHSAMBTAET	Closing The Medical Service
4	EHSAMBTAET	Create And Edit Injury & Illness Log
5	EHSAMBTAET	Document Protocol Results & Follow Up Appointments.
6	EHSAMBTAET	Employee Health Education
7	EHSAMBTAET	Entering Medical Examination & Test Results.
8	EHSAMBTAET	Set Restictions
9	EHSASSIGN	Assign Medical Protocol To Employee
10	EHSPERSHC-1	Health Centre Assignment
11	EHSSERV01	Select Person To Medical Service
12	EHSTERM01	Schedule The Medical Service

Examples

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



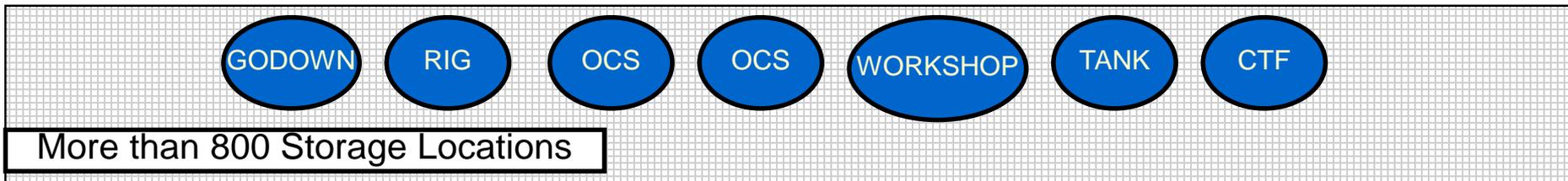
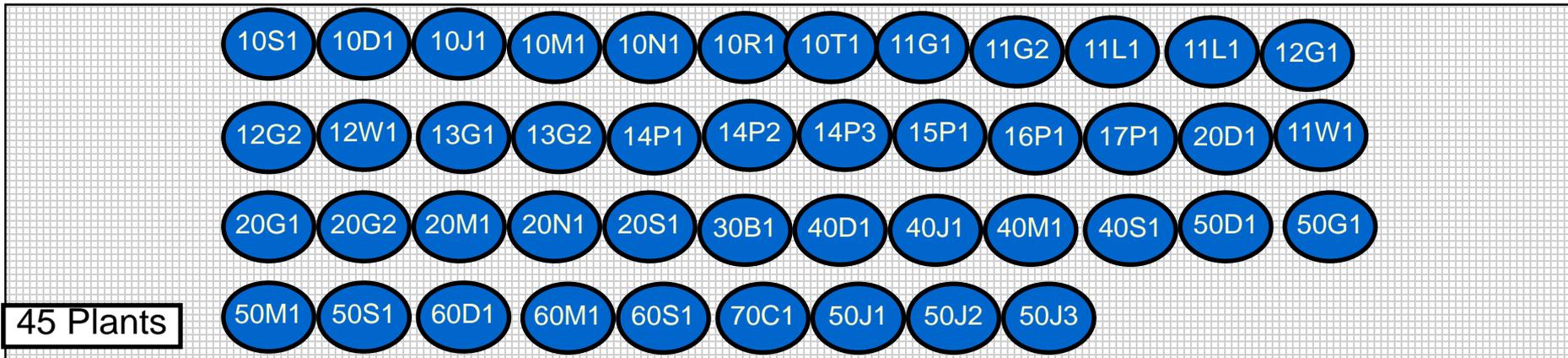
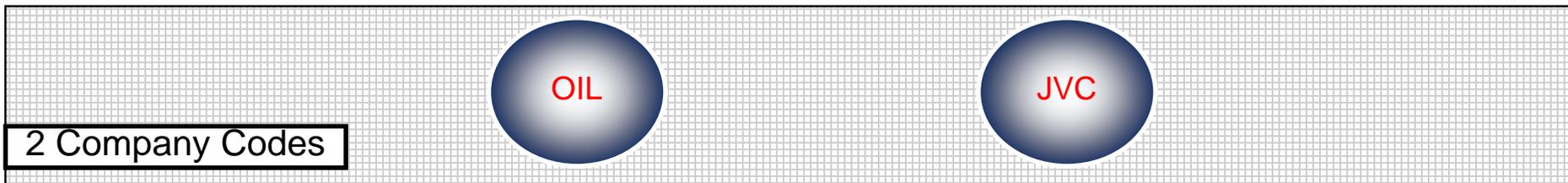
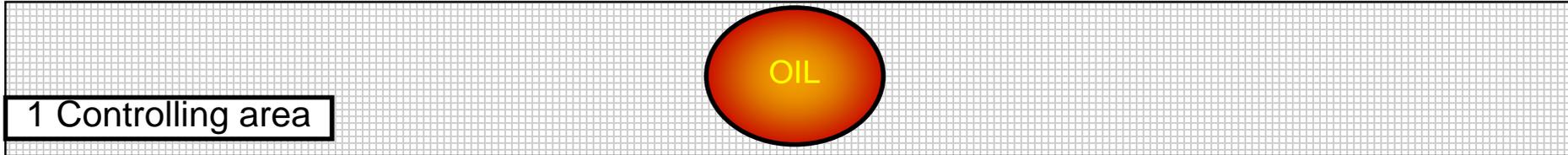
Quality

Management

Quality Management Module



Organizational - Granularity



Purchasing Organization

Purchasing Organization

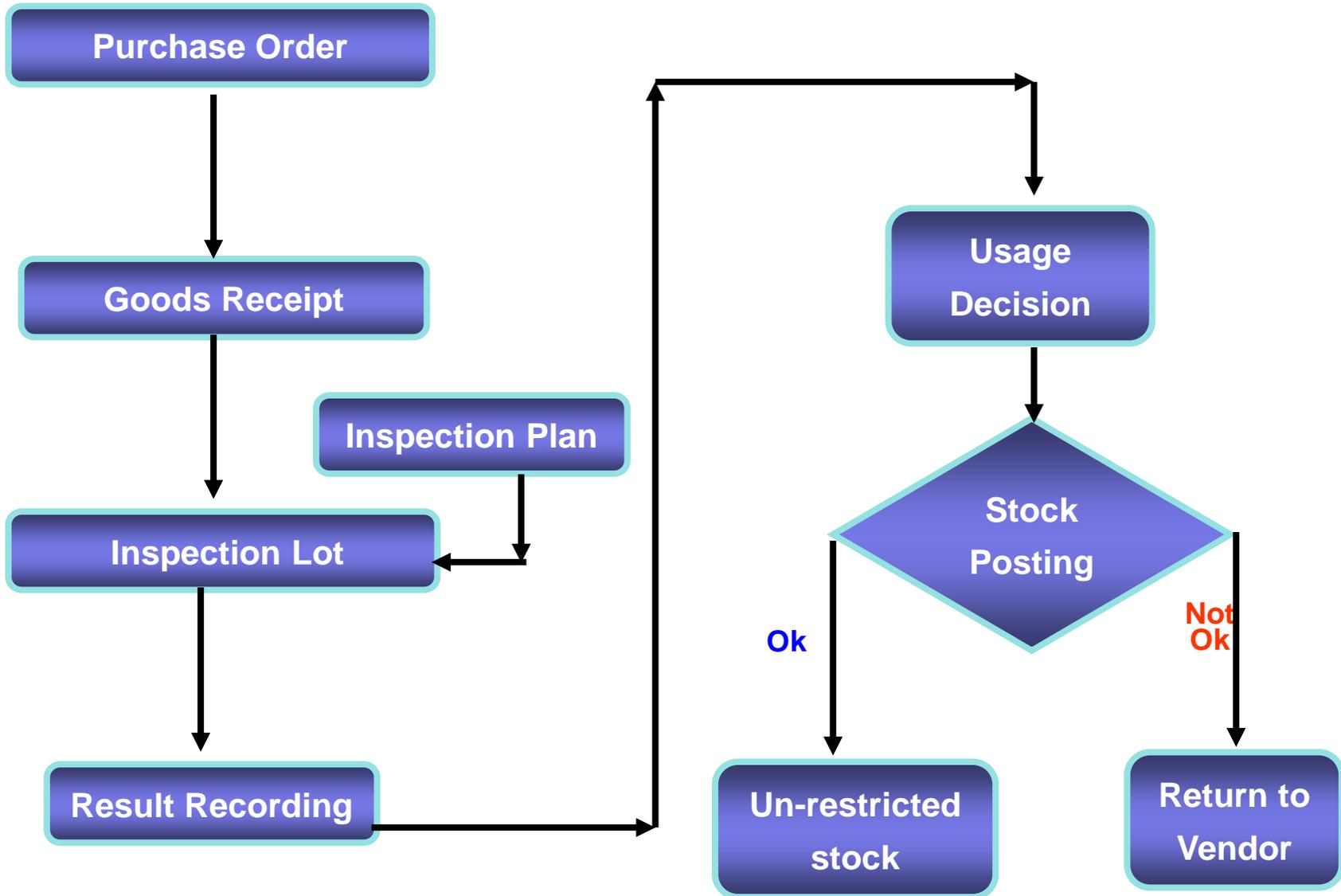
An organizational unit responsible for procuring materials or services for one or more plants and for negotiating general conditions of purchase with vendors. The purchasing organization assumes legal responsibility for all external purchase transactions.

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

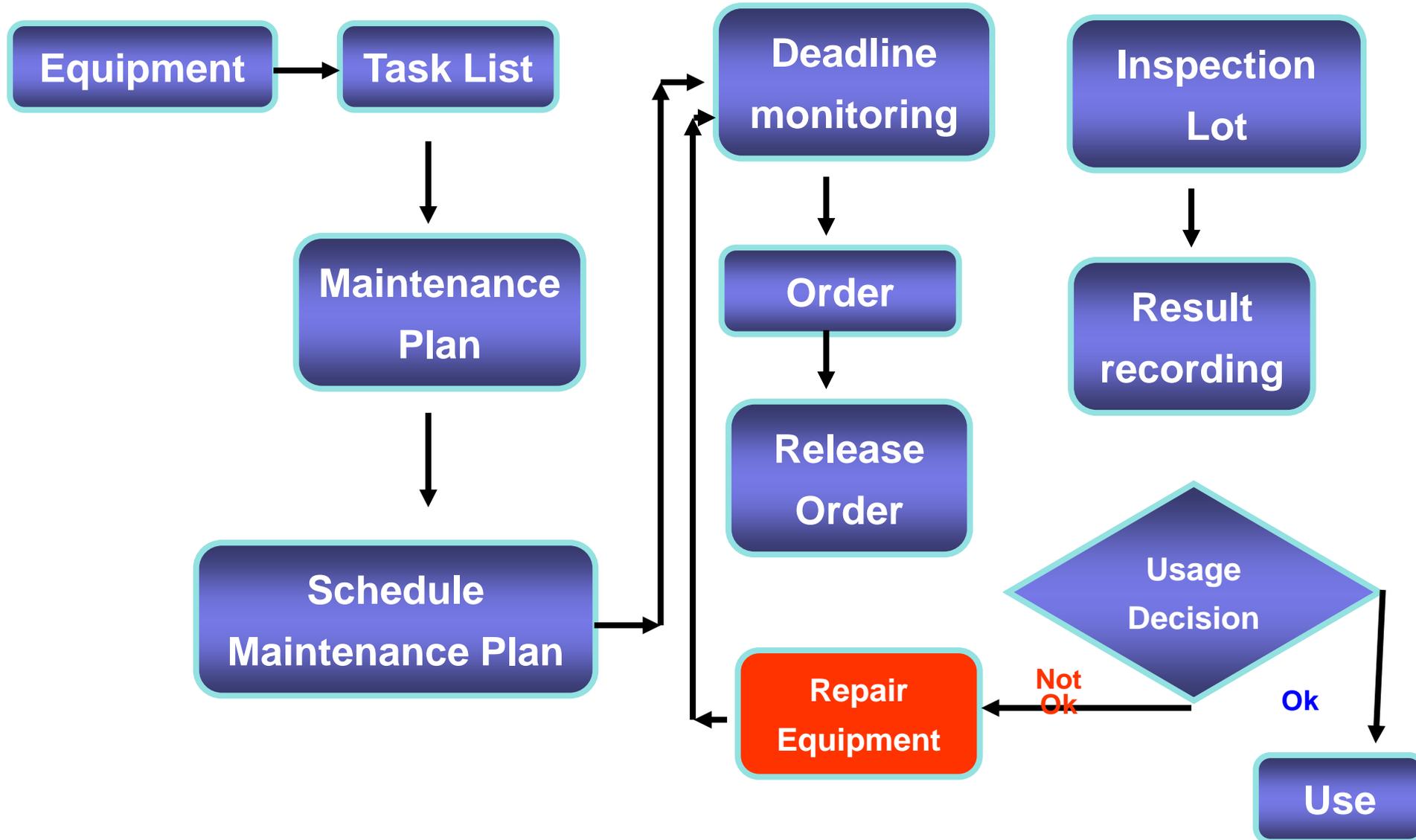
Quality Management Module

- **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 - 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.

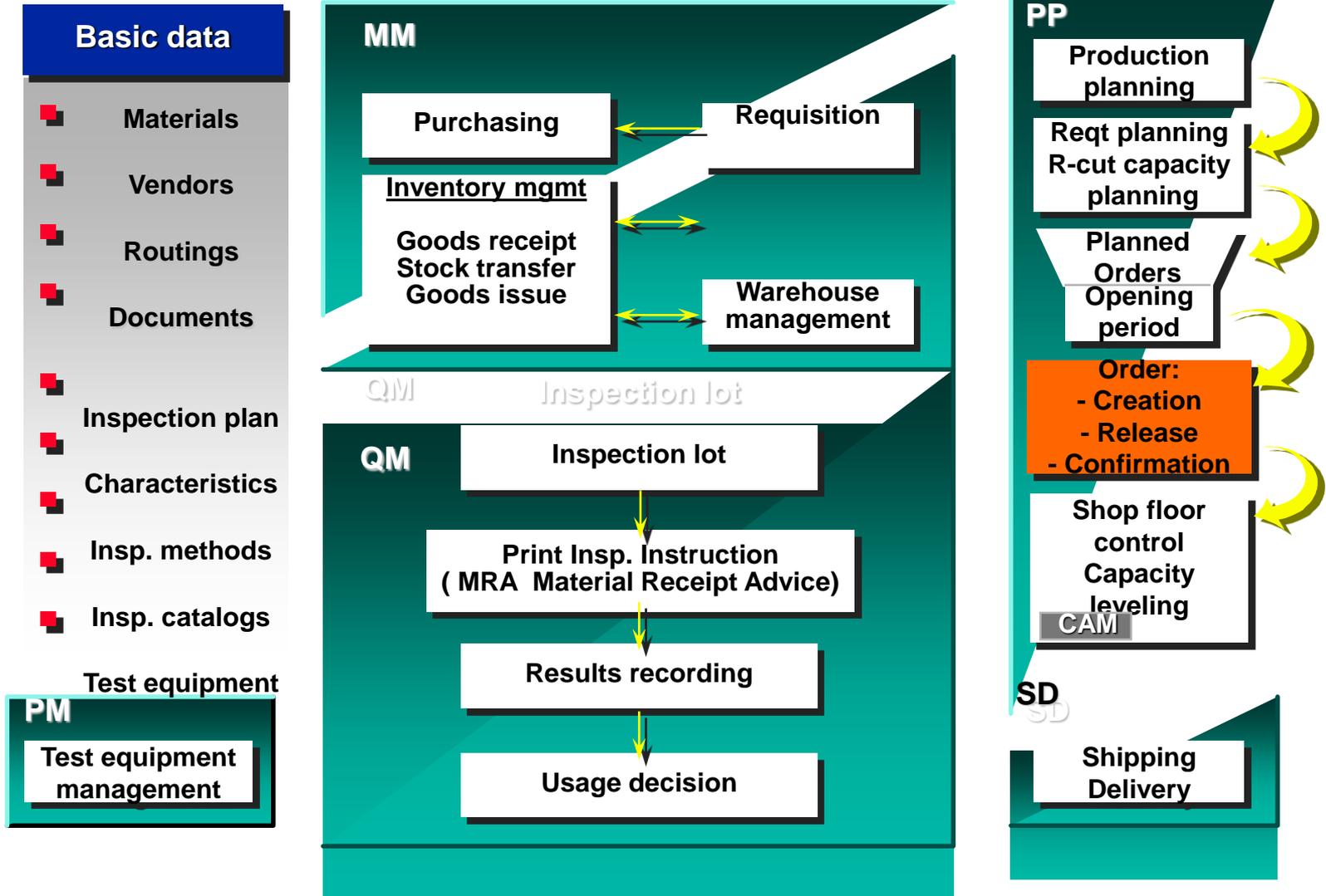
Defects Recording : When you process an inspection lot, you can record the results for the inspection in the form of characteristic values or defects. A defect is any property or attribute of a material, product or process that does not meet the inspection characteristic specifications. You record the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

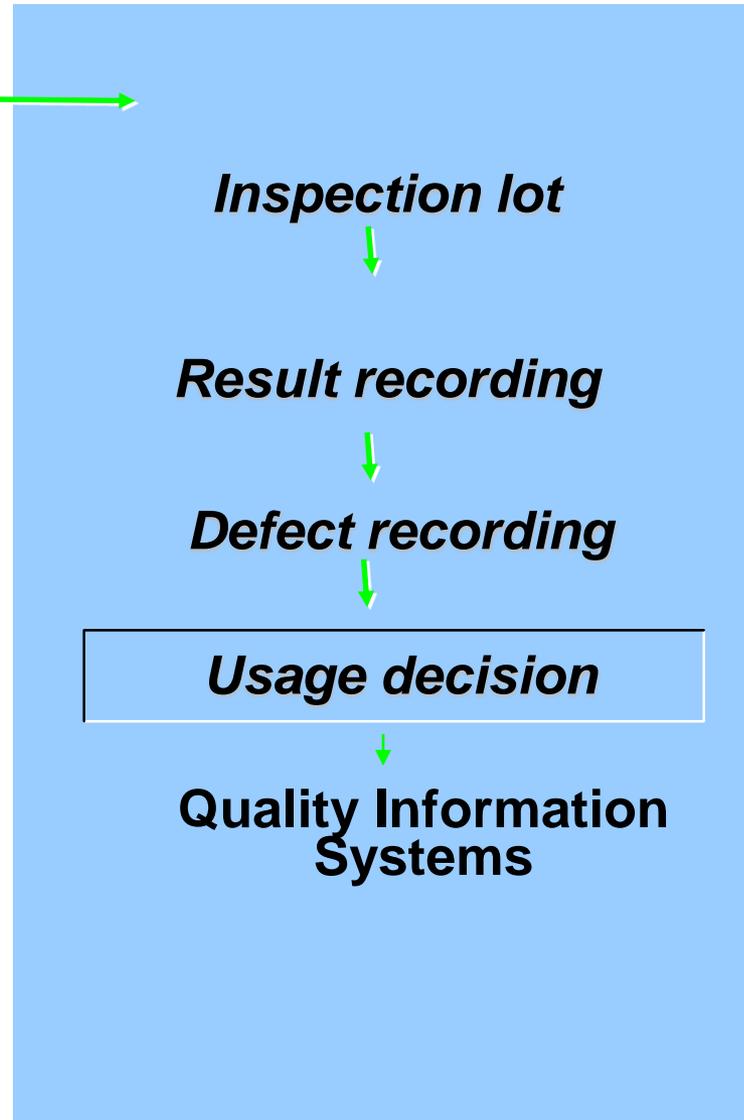
Quality Management within Logistics Chain



Quality Processing



Q/Inspection



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	CRQ1	Quality Work Center
2	IA05	Task list
3	IE01	Equipment create
4	IP10	Schedule maintenacne plan
5	IP30	Deadline monitoring
6	IP41	Maintenance plan
7	IW32	Release maintenance order
8	MIGO	Goods Movement 103 Type - For QM Inspection Lot Ref
9	MM01	Material Master QM view
10	QA01	CREATE INSPECTION LOT
11	QA11	Usage Decision
12	QA32	Quality Work List
13	QDP1	
14	QDV1	Quality Sampling Procedure
15	QE01	Quality Result Recording For Operation
16	QE51	Quality Result Recording Using Work List
17	QE71	Work list
18	QGA3	Print Quality Inspection Result
19	QGP1	History For Inspection Characteristic
20	QGP2	Calibration Results
21	QI01	Quality info
22	QI07	Source Inspection
23	QP01	Quality Inspection Plan
24	QS41	Code Group
25	QS51	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

