ERP - PROJECT

SUGMAYA

END USER DOCUMENT

FOR

PLANT MAINTENANCE

PREVENTIVE MAINTENANCE

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1 DOCUMENT CONTROL

This is a controlled document and will be maintained on UJVNL portal.

Changes to this document will be recorded below and must be published to all interested parties.

1.1 DOCUMENT HISTORY

Version	Date	Author	VERSION DETAILS
V01	06-02-2018	Nimish Agrawal	First ISSUE

1.2 DISTRIBUTION

Date	Name	Purpose
	Mandeep Singh	For Information
	Brijesh Yadav	For Information

2 PROCESS OVERVIEW: PREVENTIVE MAINTENANCE

The Preventive Maintenance process shall consist of the following major activities:

- Creation of Task Lists
- Creation of Maintenance Plan
- Scheduling of Maintenance Plan
- Processing of Call Object

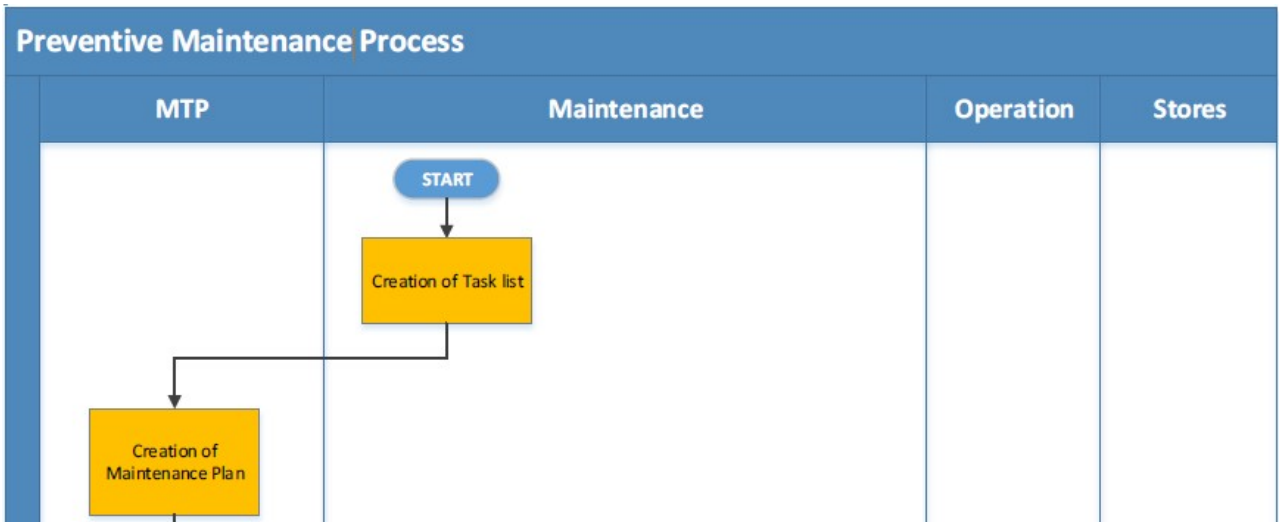
1. Task list is created for the technical object whose maintenance plan should be created for proper planning and execution of maintenance activities.
2. Maintenance plan is created by choosing plan category based on what should be the call object (e.g. Notification or Maint. order) of plan. Based on what is the frequency of maintenance, cycle time is given to the plan. If plan is counter based then the measurement counter number for the individual equipment/functional location will be maintained in plan. Respective reference object and task list is assigned to the maintenance plan. The call object is "order" & Order type ZM03: Preventive Maintenance will be maintained in plan.
    - A **single cycle plan** is the simplest form of maintenance plan. Create a single cycle plan and define exactly one time-based or performance-based maintenance cycle, in which it is needed to specify the interval at which all the tasks of maintenance plan should be executed.
      It might be used, for example, for the 6-monthly maintenance of a DG Set or for the preventive maintenance of a Generator after every 2,000 running hours.
    - In contrast, **strategy plans** are used to show complex maintenance cycles. We create a strategy plan and assign a maintenance strategy in which we define the different maintenance cycles of the strategy (called as Packages) to be used. For example, it makes sense to use a strategy plan if different maintenance tasks for a Control oil station are due in different cycles: oil check every 2000 running hours and oil change every 4000 running hours.
    - In time based strategy plan, we can plan maintenance item for Weekly, Monthly, Quarterly or Half Yearly maintenance activities for total period of the plan
3. Maintenance plan is scheduled so that the planned dates and call dates are displayed based on the scheduling parameters maintained in plan.
4. The call object is generated based on call horizon and planned date. Order will be processed in usual manner.
5. Applying permit(s) for work if required
6. Release of order by authorized person/supervisor in maintenance dep't
7. Issuing of permit(s) by Operation dep't or concerned agency
8. Issue of materials from store.
9. Execution of work at site by internal manpower and/or external agency.
10. Work Completion (WOCO) of maintenance order, which denotes permit cancellation request in system.
11. Return of permit(s) by Maintenance and closing of the same by Operations
12. Untagging/Normalisation of Isolations by operations dep't
13. Time confirmation of order operations (internal) by maintenance dep't
14. Entry of technical findings (Damage, cause, tasks etc.) and Malfunction end time in the breakdown notification by maintenance dep't
15. Completion of tasks in notification and subsequently Notification completion (NOCO)
16. Technical Completion (TECO) of order.
17. Month-end settlement of Maintenance order by F&A dep't.

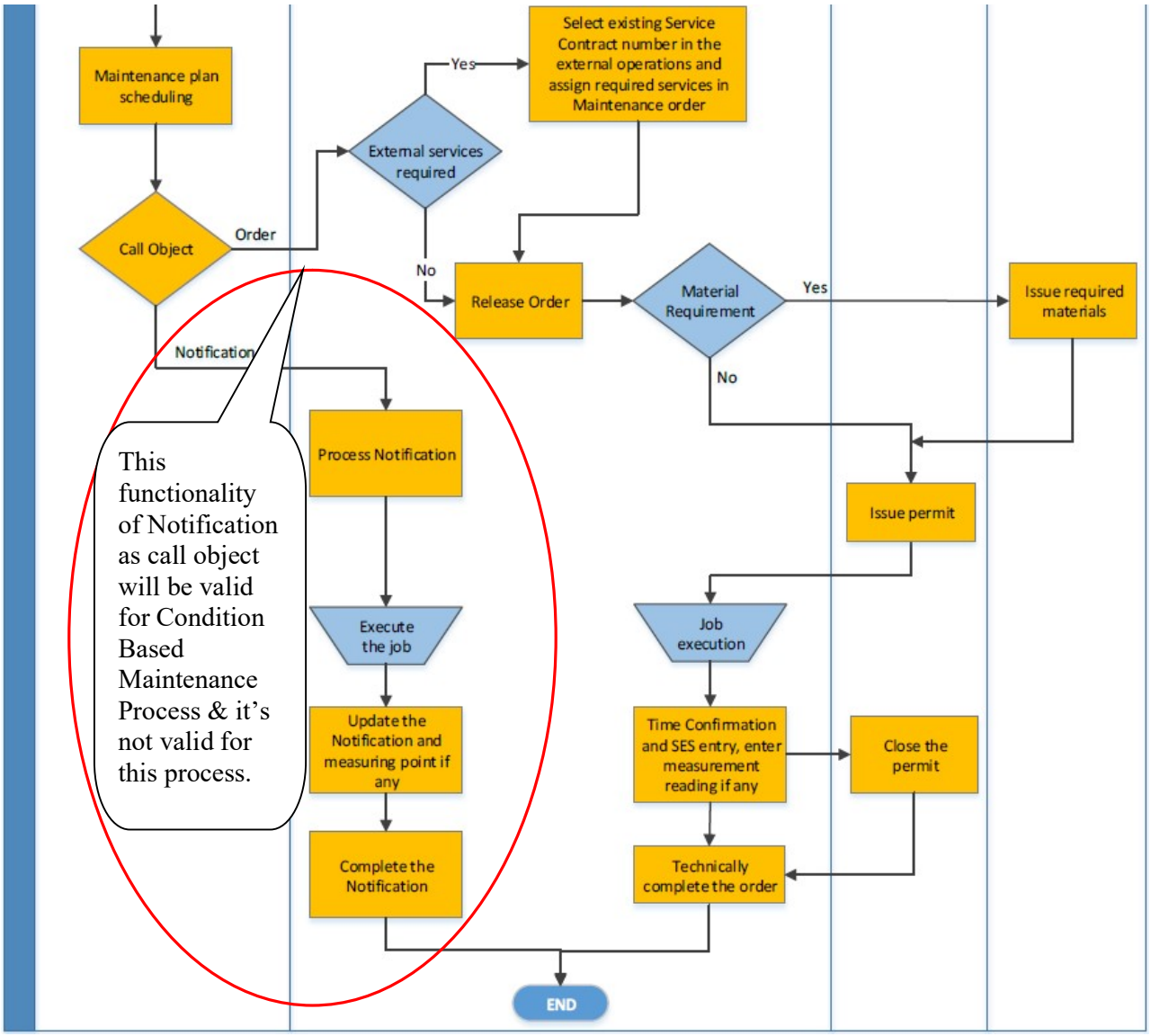
Icons:

	Caution
	Note

Abbreviations:

PM	Plant Maintenance
MTP	"Maintenance Planning" group in the Plant
WCM	Work Clearance Management
WAP	Work Approval
WCA	Work Clearance Application
WCD	Work Clearance Document
PTW	Permit to Work




Maintenance plan scheduling
Call Object
Order
External services required
Yes
Select existing Service Contract number in the external operations and assign required services in Maintenance order
No
Release Order
Material Requirement
Yes
Issue required materials
No
Notification
Process Notification
Issue permit
Execute the job
Job execution
Update the Notification and measuring point if any
Time Confirmation and SES entry, enter measurement reading if any
Close the permit
Complete the Notification
Technically complete the order
END
This functionality of Notification as call object will be valid for Condition Based Maintenance Process & it's not valid for this process.

3 CREATE TASK LIST

Maintenance task lists describe a sequence of individual maintenance activities which must be repeatedly performed within a company. They are used to standardize repetitive work processes, to plan them more effectively, and to save time when creating maintenance orders and maintenance plans.

The Task List can be created in the same way as explained in Master Data user manual.

The same Task List will be used in this process which was created in Master Data user manual

Task List = 23

4 MAINTENANCE PLANS

Maintenance plans merge the records of specific strategies, task lists, items and measuring points (when necessary) to generate a recurring maintenance schedule for the resultant orders/notifications which are copied from the task lists.

The Maintenance Plan can be created in the same way as explained in Master Data user manual.

The same Maintenance Plan will be used in this process which was created in Master Data user manual

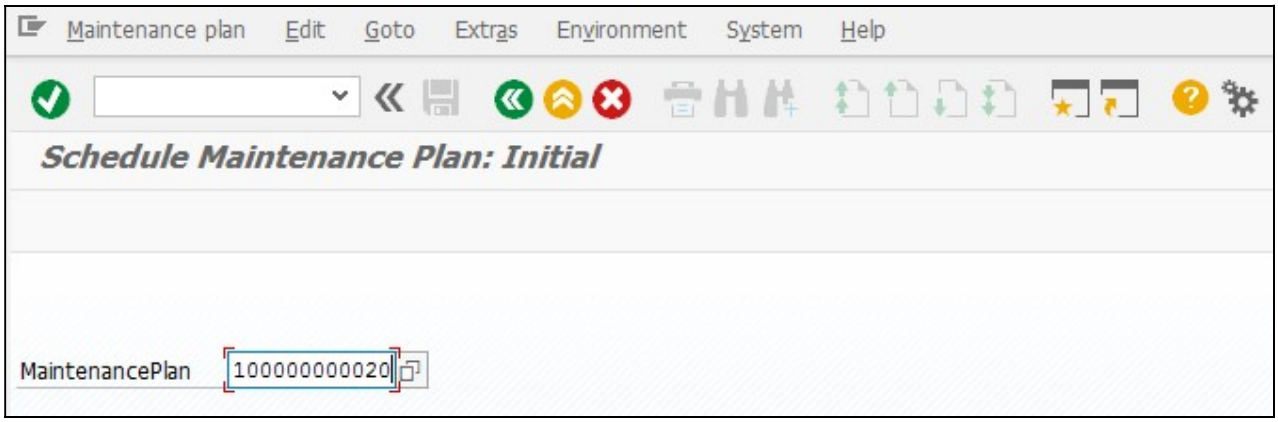
Maintenance Plan = 100000000020

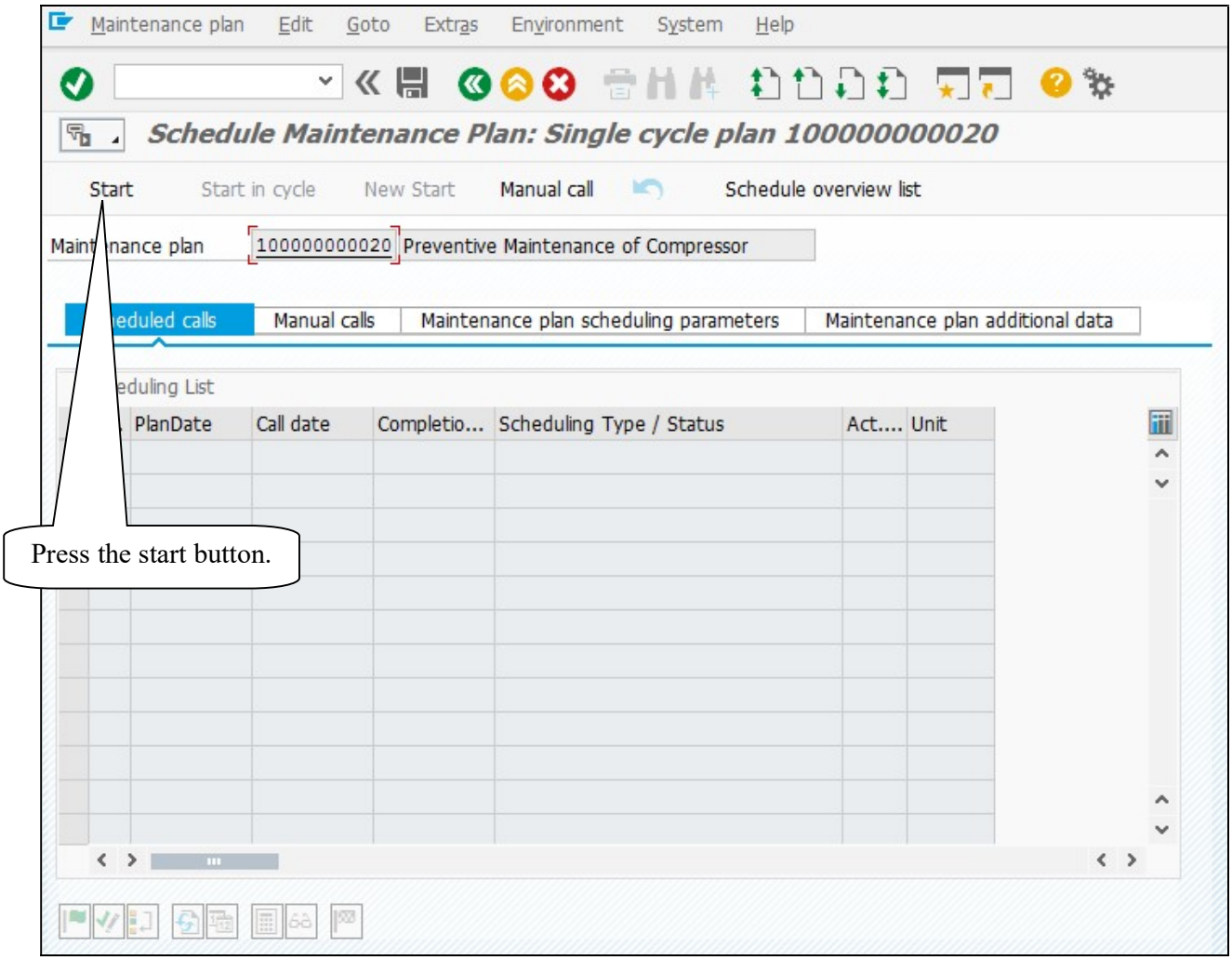
5 SCHEDULING OF MAINTENANCE PLANS

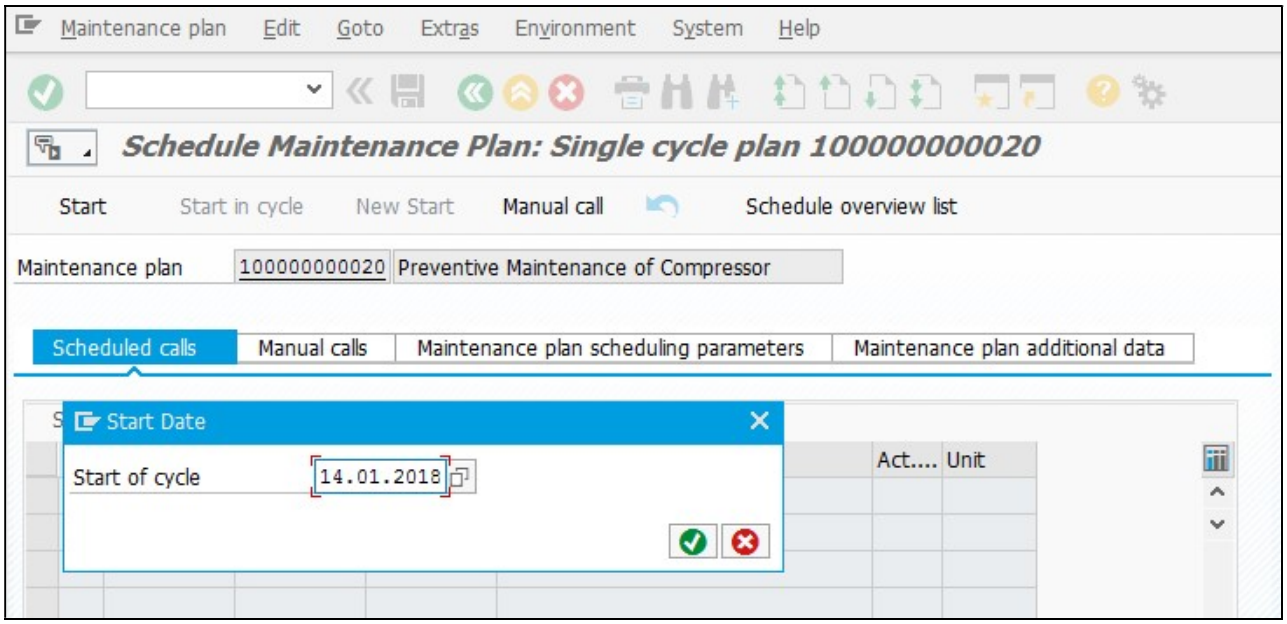
To generate call objects (Maintenance orders/Notifications) the plan needs to be scheduled

Menu Path	SAP Menu → Logistics → Plant Maintenance → Preventive Maintenance → Maintenance Planning → Scheduling for Maintenance Plans → Schedule
Transaction Code	IP10

Step No	Field Name	Description	User Action and Values
1	Maintenance plan number	Enter the maintenance plan number	

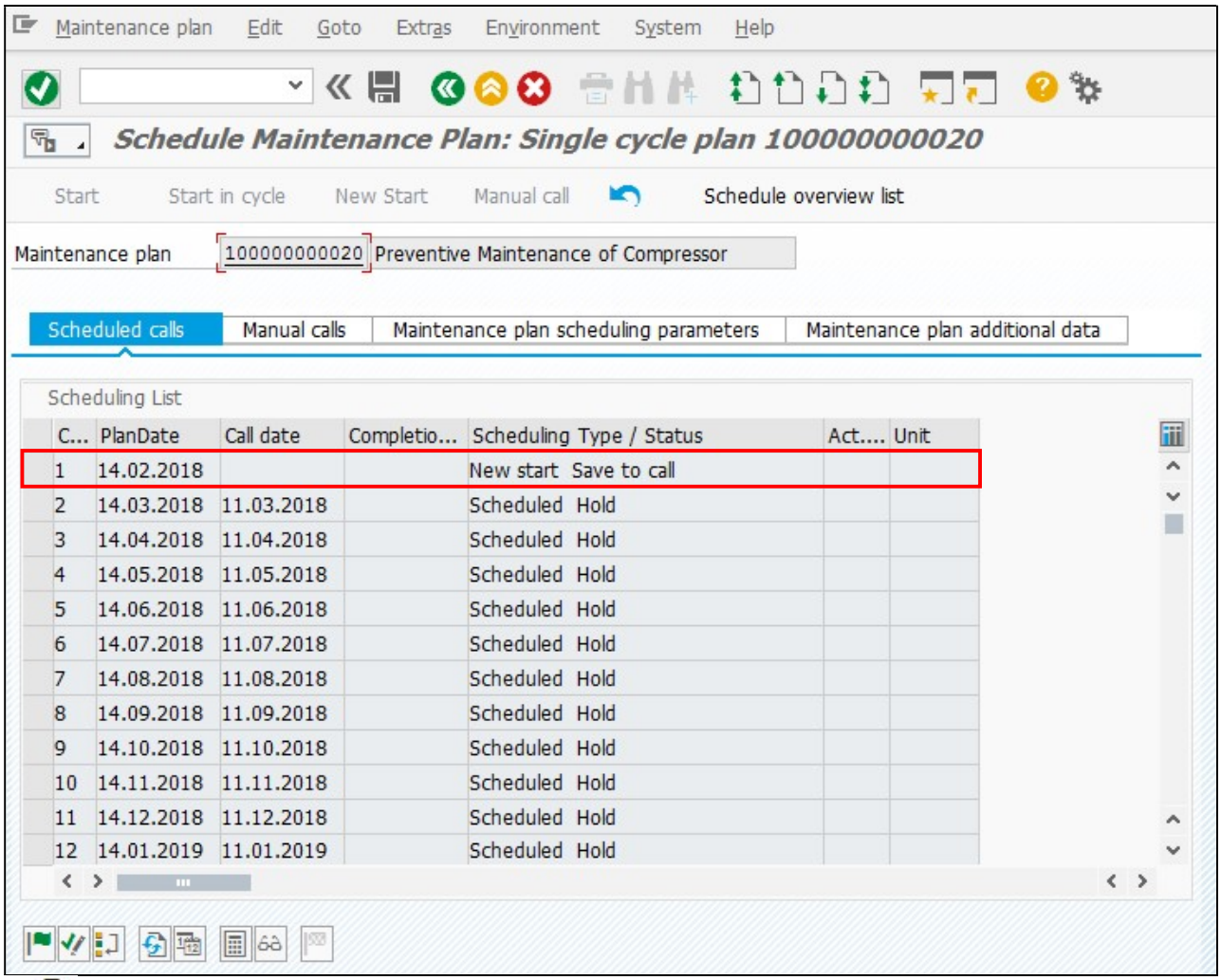



Maintenance plan
Edit
Goto
Extras
Environment
System
Help
Schedule Maintenance Plan: Single cycle plan 100000000020
Start
Start in cycle
New Start
Manual call
Schedule overview list
100000000020
Preventive Maintenance of Compressor
Manual calls
Maintenance plan scheduling parameters
Maintenance plan additional data
PlanDate
Call date
Completio...
Scheduling Type / Status
Act....
Unit
Press the start button.


Maintenance plan
Edit
Goto
Extras
Environment
System
Help
Schedule Maintenance Plan: Single cycle plan 100000000020
Start
Start in cycle
New Start
Manual call
Schedule overview list
Maintenance plan
100000000020
Preventive Maintenance of Compressor
Scheduled calls
Manual calls
Maintenance plan scheduling parameters
Maintenance plan additional data
Start Date
Start of cycle
14.01.2018
Act....
Unit

Step No	Field Name	Description	User Action and Values
1	Start of cycle	Enter the start date from which the maintenance plan needs to be scheduled	Enter a suitable date. The maintenance plans are scheduled from this start date.

The Start of cycle date is defaulted from maintenance plan. It can be changed if required.
Press to continue.
A list is displayed with all the plan dates and call dates as per the settings in maintenance plan for the entire duration of Scheduling period (1 year in our case).



The list of calls as per cycle length is displayed with status as **Scheduled Hold** which signifies that the plan is scheduled but the date on which the call object (Order or Notification) is to be generated is in future.

The call for which Call Date has arrived is shown in above image
The call object (order or notification) is generated as soon as save button is clicked.

Important Icons:

- **Manual release** of a call -This can be used to release a call object i.e. to call an order or a notification whose date lies in the future and is still on hold and provided that the previous call has occurred.

- **Fix call** - This functionality can be used to fix a call for a date, provided the previous call has occurred. The fixing can only be done between the previous call date and next call date.

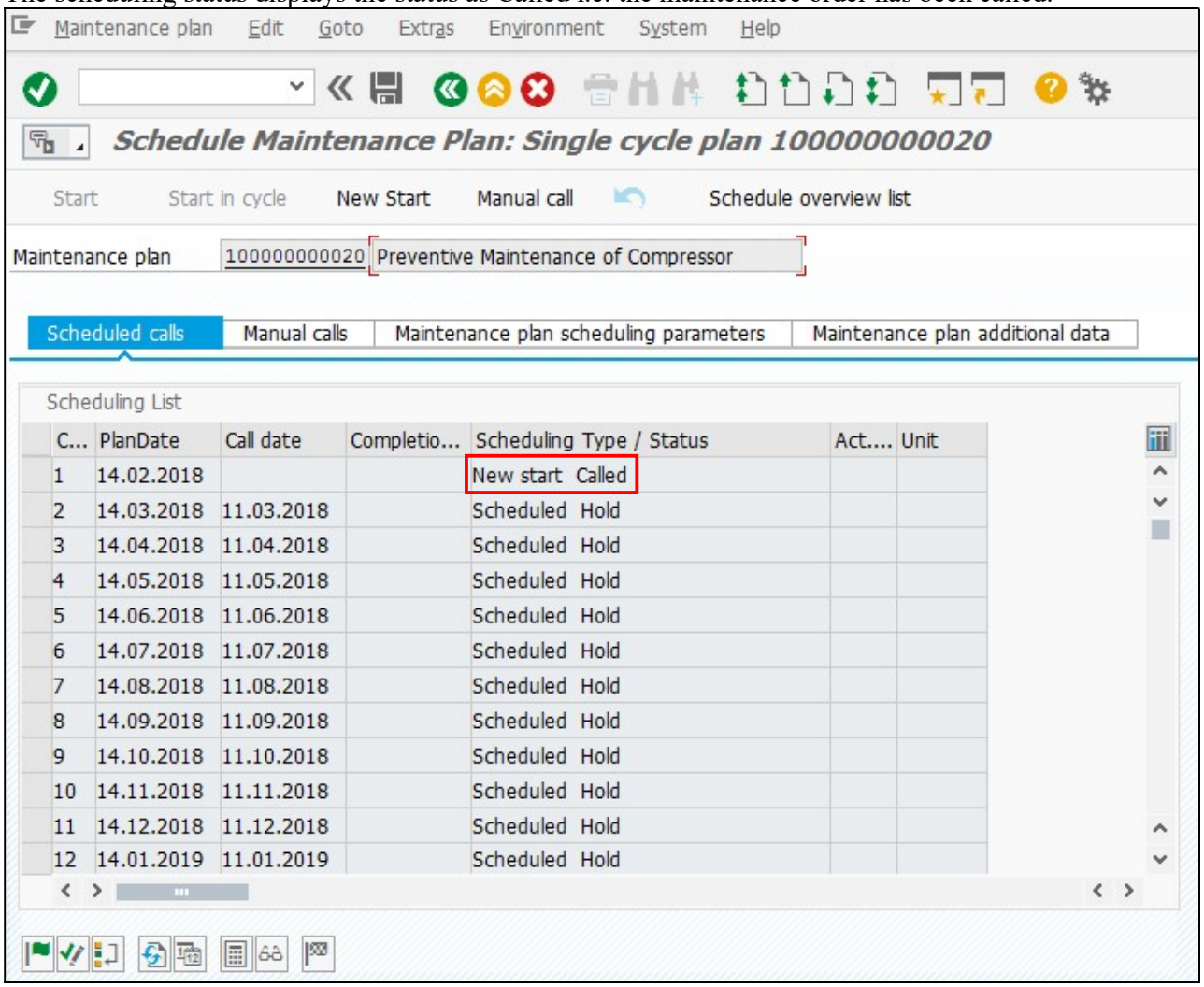
- **Skip call** -This functionality can be used to skip a call which is on hold provided the previous call is released or skipped or called.

Click button to save the scheduling of Maintenance Plan

Maintenance plan 100000000020 scheduled

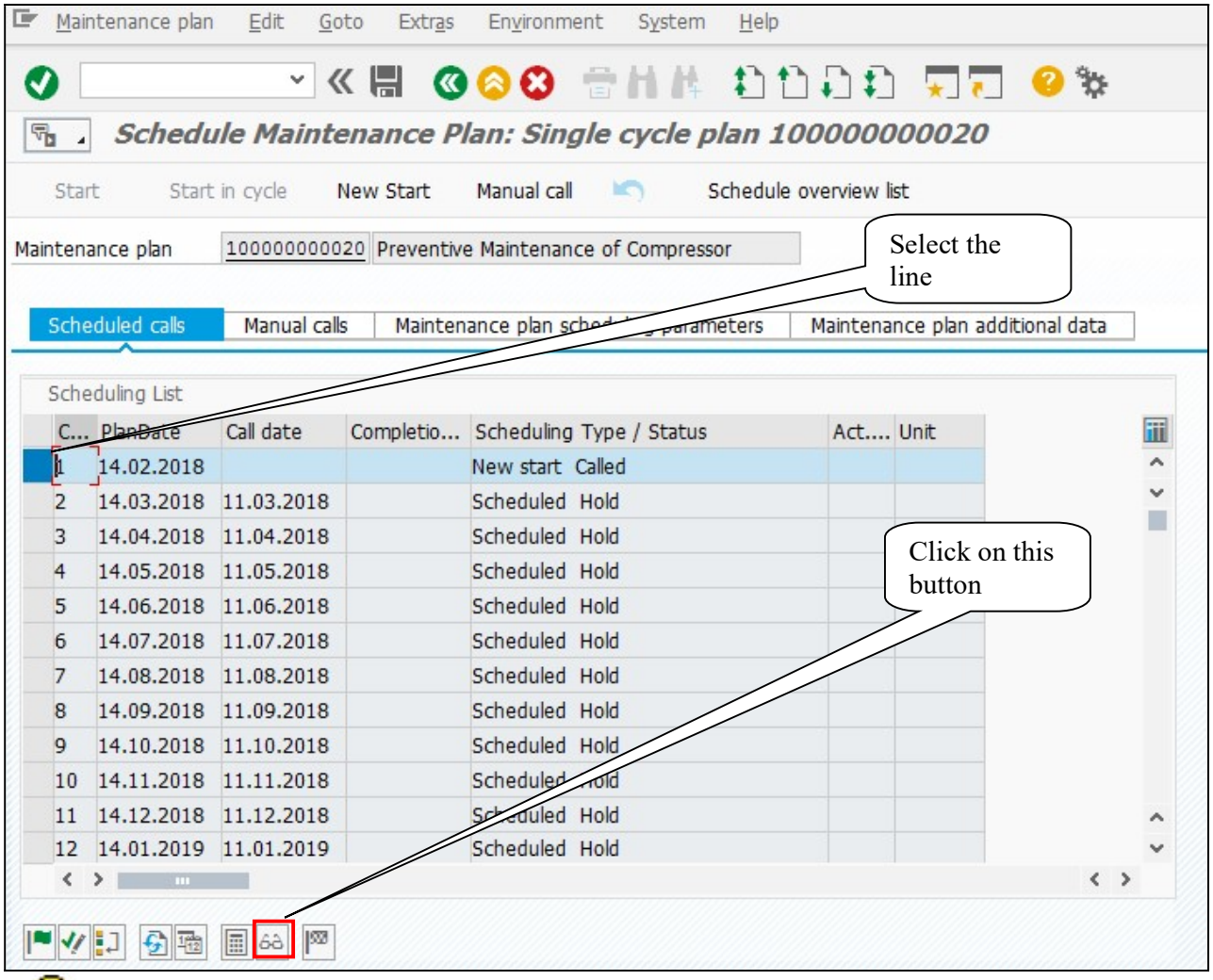
System will give a message in the message bar that your Maintenance Plan schedule as shown above.

The scheduling status displays the status as Called i.e. the maintenance order has been called.



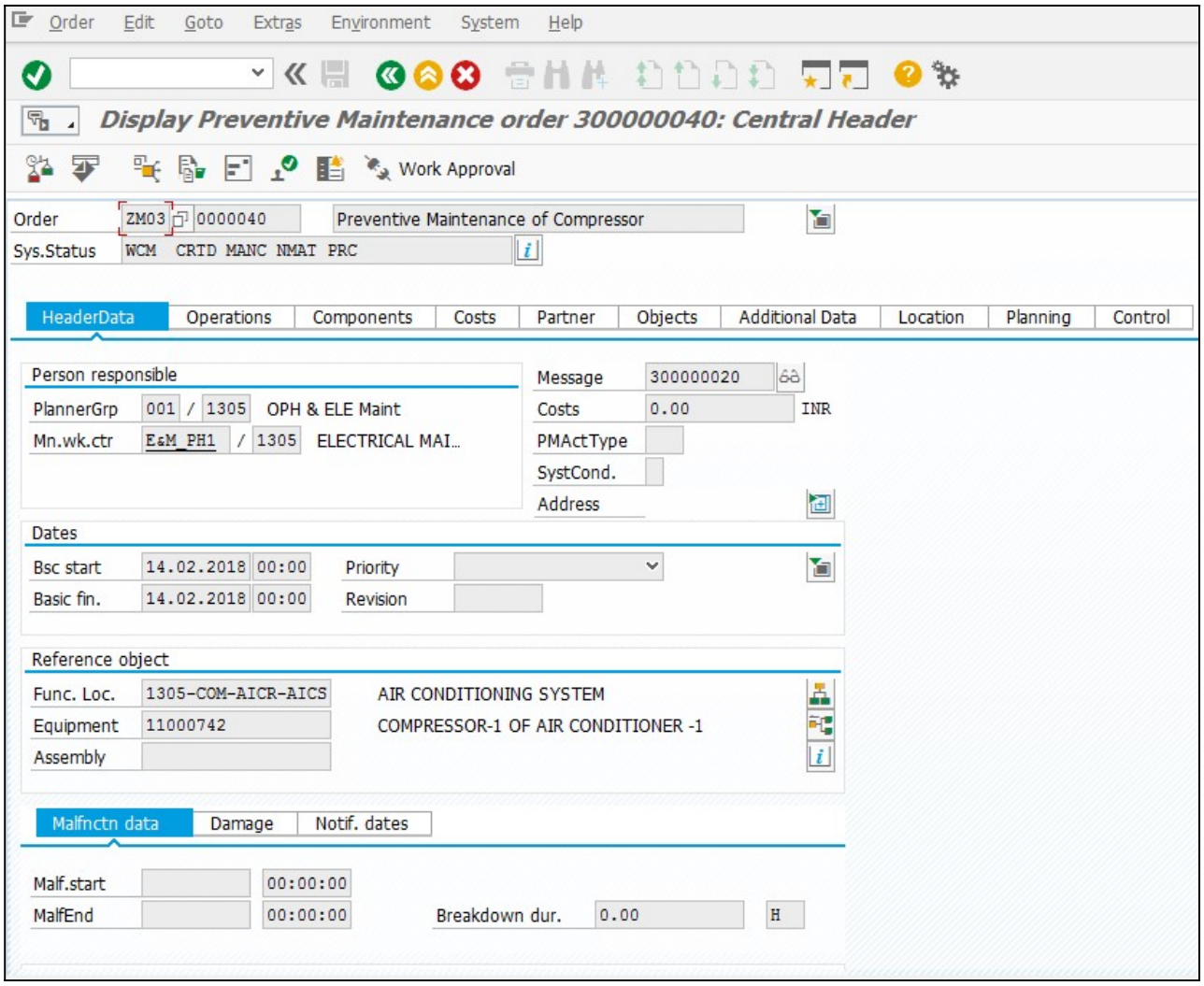
C...	PlanDate	Call date	Completio...	Scheduling Type / Status	Act....	Unit
1	14.02.2018			New start Called		
2	14.03.2018	11.03.2018		Scheduled Hold		
3	14.04.2018	11.04.2018		Scheduled Hold		
4	14.05.2018	11.05.2018		Scheduled Hold		
5	14.06.2018	11.06.2018		Scheduled Hold		
6	14.07.2018	11.07.2018		Scheduled Hold		
7	14.08.2018	11.08.2018		Scheduled Hold		
8	14.09.2018	11.09.2018		Scheduled Hold		
9	14.10.2018	11.10.2018		Scheduled Hold		
10	14.11.2018	11.11.2018		Scheduled Hold		
11	14.12.2018	11.12.2018		Scheduled Hold		
12	14.01.2019	11.01.2019		Scheduled Hold		

To display the maintenance order selects the line and below a display icon can be used to display the order.

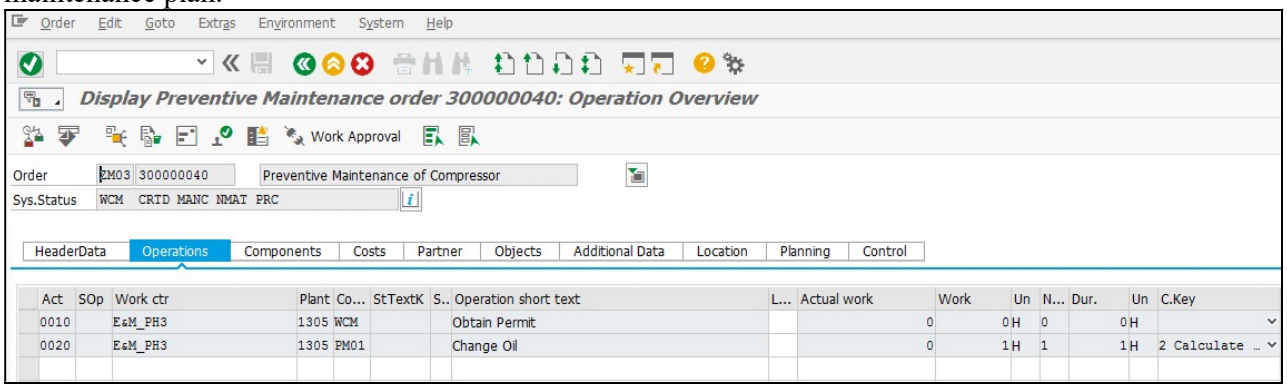


In case a plan contains more than one item, the number of orders generated will be equal to the number of items in a maintenance plan.

The maintenance order Type-ZM03 has been generated on the due date.



In the operations Tab, the operations are included in the order from the task list which was selected in the maintenance plan.



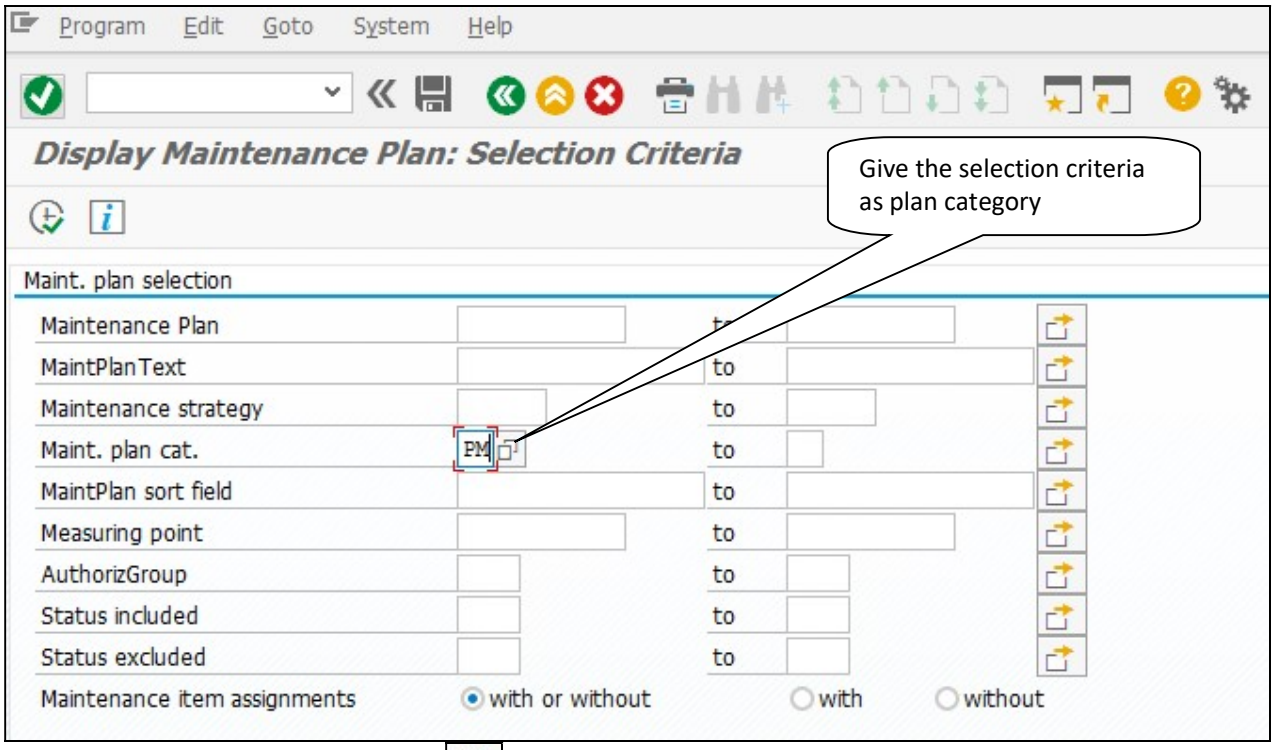
The maintenance order can be processed in the same way as explained in Breakdown Process user manual

6 LIST EDITING OF MAINTENANCE PLANS

To display a list of maintenance plans.

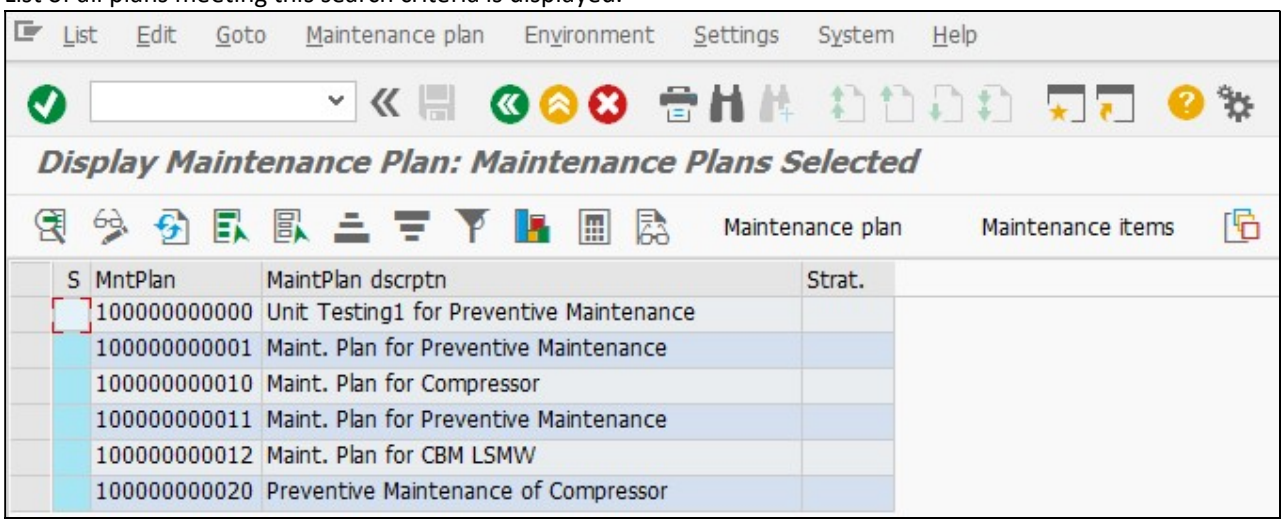
Menu Path	SAP Menu ⟶ Logistics ⟶ Plant Maintenance ⟶ Preventive Maintenance ⟶ Maintenance Planning ⟶ Maintenance Plans ⟶ List Editing ⟶ Display
Transaction Code	IP16

Give the selection criteria based on which the plans need to be scheduled.



Press F8 key or click on execute button

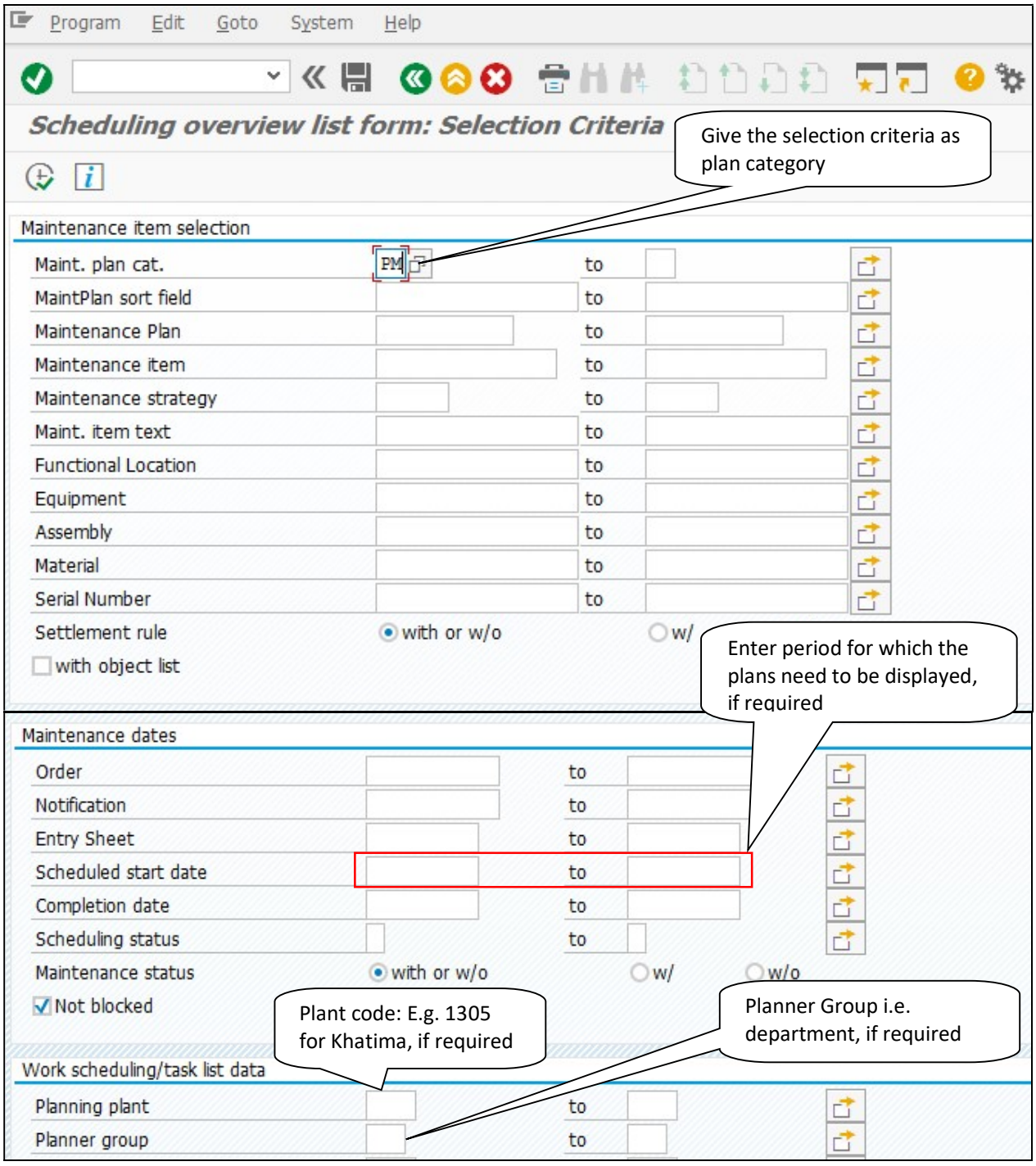
List of all plans meeting this search criteria is displayed.



User specific maintenance plan list layout variant can be saved after setting the columns & their sequence. This way every time the user will get the plan list layout defaulted when he will execute the transaction IP16.

7 SCHEDULING OVERVIEW

Menu Path	SAP Menu → Logistics → Plant Maintenance → Preventive Maintenance → Maintenance Planning → Scheduling for Maintenance Plans → Scheduling Overview → List Display
Transaction Code	IP24



Press F8 key or click on execute button
The output will be as displayed below:

List Edit Goto Environment Settings System Help

Scheduling overview list form: Maintenance Scheduling Overview List

Maintenance item Maintenance plans

S	Maintenance item	MntPlan	Strat.	Maintenance item description	Call Number	Start date	Order
	143	100000000001		Maint. Plan for Preventive Maintenance	11	12.08.2018	
	143	100000000001		Maint. Plan for Preventive Maintenance	12	12.09.2018	
	143	100000000001		Maint. Plan for Preventive Maintenance	13	12.10.2018	
	161	100000000010		Compressor Motor	1	05.11.2017	300000020
	161	100000000010		Compressor Motor	2	05.12.2017	
	161	100000000010		Compressor Motor	3	05.01.2018	
	161	100000000010		Compressor Motor	4	05.02.2018	
	161	100000000010		Compressor Motor	5	05.03.2018	
	161	100000000010		Compressor Motor	6	05.04.2018	
	161	100000000010		Compressor Motor	7	05.05.2018	
	161	100000000010		Compressor Motor	8	05.06.2018	
	161	100000000010		Compressor Motor	9	05.07.2018	
	161	100000000010		Compressor Motor	10	05.08.2018	
	161	100000000010		Compressor Motor	11	05.09.2018	
	161	100000000010		Compressor Motor	12	05.10.2018	
	201	100000000020		Preventive Maintenance of Compressor	1	14.02.2018	300000040
	201	100000000020		Preventive Maintenance of Compressor	2	14.03.2018	
	201	100000000020		Preventive Maintenance of Compressor	3	14.04.2018	
	201	100000000020		Preventive Maintenance of Compressor	4	14.05.2018	
	201	100000000020		Preventive Maintenance of Compressor	5	14.06.2018	
	201	100000000020		Preventive Maintenance of Compressor	6	14.07.2018	
	201	100000000020		Preventive Maintenance of Compressor	7	14.08.2018	
	201	100000000020		Preventive Maintenance of Compressor	8	14.09.2018	
	201	100000000020		Preventive Maintenance of Compressor	9	14.10.2018	
	201	100000000020		Preventive Maintenance of Compressor	10	14.11.2018	
	201	100000000020		Preventive Maintenance of Compressor	11	14.12.2018	
	201	100000000020		Preventive Maintenance of Compressor	12	14.01.2019	
	201	100000000020		Preventive Maintenance of Compressor	13	14.02.2019	

User specific notification list layout variant can be saved after setting the columns & their sequence. This way every time the user will get the notification list layout defaulted when he will execute the transaction IP24.

For Scheduling Overview & Simulation t-code IP19 can be used. It has the option of displaying scheduling overview in graphical form as well, apart from tabular form.

8 GLOSSARY

Company code	SAP term for legal entity for which a complete self-contained set of accounts can be drawn up for external statutory reporting
Plant	In Logistics, a plant is an organizational unit for dividing an enterprise according to production, procurement, maintenance, and materials planning. A place where materials are produced, or goods and services are provided.
Maintenance Plant	Maintenance plant is a plant in which the technical objects of the company are installed and where maintenance is done.
Maint. Planning Plant	A plant in which maintenance tasks are planned and prepared. The planning responsibility for a maintenance plant is defined using a planning plant. Maintenance plant are assigned to planning plants. Planning is performed for the Maintenance plants in the planning plants.
Plant Section	Plant section is subdivision of Maintenance Plant into different process / functional areas.
Planner Group	Planner Group is a group of persons responsible for maintenance planning in a Planning plant.
Functional Location	The business object functional location is an organizational unit within Logistics, that structures the maintenance objects of a company according to functional, process-related or spatial criteria. A functional location represents the place at which a maintenance task is to be performed.
Equipment	An equipment is known as an individual object in the system that is maintained independently. Equipment can be installed at different functional locations. You can create an individual equipment in an organization based on the object-based structure of a technical system.
Work Center	An organizational unit that defines where and when an operation must be performed. The work center has an available capacity. The activities performed at or by the work center are evaluated by charge rates, which are determined by cost centers and activity types. Work centers can be: - Machines - People - Production lines
Task List	It's the set of operations to be performed for the maintenance of a technical object
Object Type	You can assign each piece of equipment and each functional location to a technical object type. This allows pieces of equipment that have the same use, for example, to be combined into groups. You can use this grouping for evaluating your master data or maintenance data.
Catalog Profile	Catalog profile will group distinct characteristics of the notification which will cater the needs of management to analyze the company assets & to ascertain the decisions accordingly. Catalog profiles have sub class of code groups which will group the codes as per their feature.

9 APPENDIX

9.1 T - CODES FOR REOPRTS

T-Code	Description
IW38	PM Order List Change
IW39	PM Order List Display
IW47	Display PM Order Confirmation using Operation List
IA08	Task List Change
IA09	Task List Display
IP15	Maintenance Plan List Change
IP16	Display Maintenance Plan
IP18	Maintenance Item List Display
IP24	Scheduling overview list form
MM60	Materials List
MMBE	Display Material Stock Overview

9.2 T - CODES FOR PM

T-Code	Description
IA05	Create General Task list
IA06	Change General Task list
IA07	Display General Task list
IA01	Create Equipment Task List
IA02	Change Equipment Task List
IA03	Display Equipment Task List
IA11	Create FunctLoc Task List
IA12	Change FunctLoc Task List
IA13	Display FunctLoc Task List
IP41	Create single cycle Maintenance Plan
IP01	Create Strategy Maintenance Plan
IP02	Change Maintenance Plan
IP03	Display Maintenance Plan
IP10	Schedule Maintenance Plan
IP30	Deadline Monitoring
IW21	Create PM Notification
IW22	Change PM Notification
IW23	Display PM Notification
IW31	Create PM Order
IW32	Change PM Order
IW33	Display PM Order
IW34	Create Notification Order
IW41	PM Order Confirmation
IW42	Overall Completion Confirmation
IW43	Display PM Order Confirmation
IW45	Cancel PM Order Confirmation