

	Solution Design Document	
	SAP Plant Maintenance	

Document Change Control							
Release	Description	Created by	Date	Reviewed by: BPO/CTM	Date	Approved by	Date
V1.0	Preventive Maintenance - Time based	<User Name>		<User Name>			

Revision History					
Sr. No	Date	Change Done	Page No	Change Approved by)	Remarks

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SDD Number	PM.02.1.1 Time Based Maintenance
Scenario Description	PM.02.1 Preventive Maintenance Process
Link to Other Module SDD, if any	N/A

1. Current Business Process Requirements / Expectations

A brief definition of the process and its requirements.

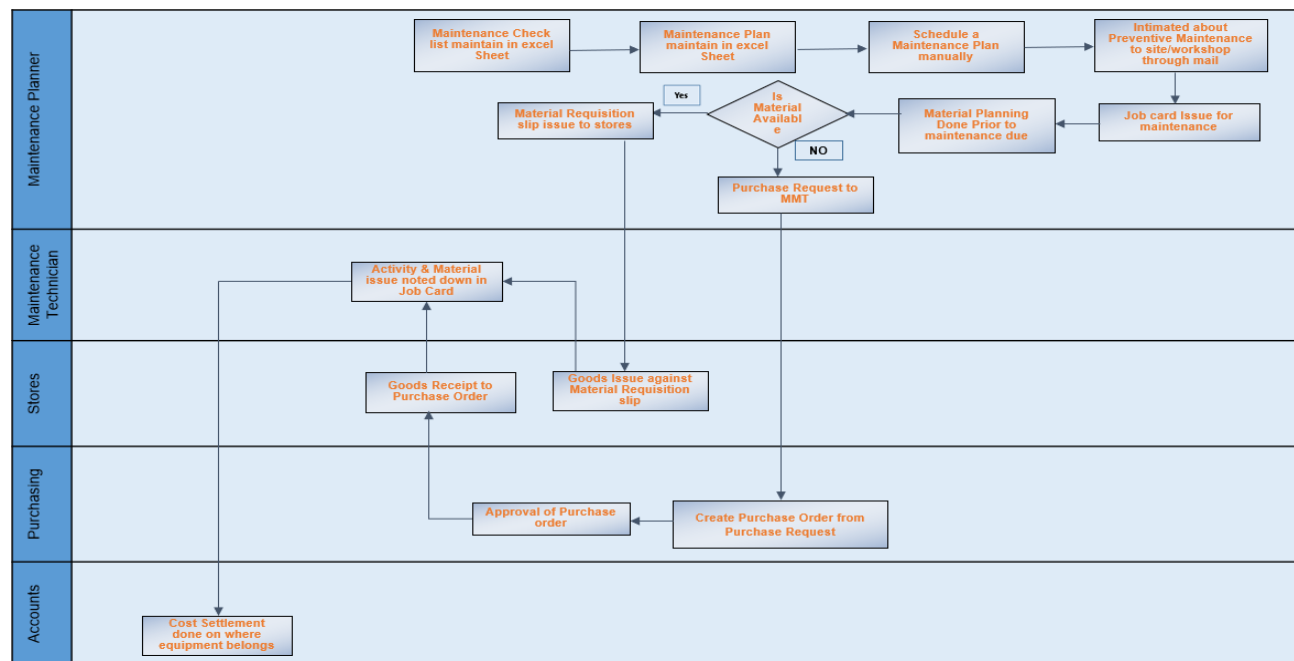
- Time based maintenance is performed on strategies like 1/3/6/12 month.
- Time based maintenance planning done in excel sheet manually.
- On maintenance cycle is due to fall.
- Intimation mail sent to site to perform preventive maintenance.
- Spare parts, tasks & Labor pre-plan to perform maintenance activity. The Spare parts should be available before specified in the maintenance plan.
- Job card issue to monitor maintenance activities.
- Material Requisition slip raised to industrial plot for goods issue. .
- Technical support provided from Industrial Plot wherever reqd.
- Maintenance activity carried out & completed the job.
- Currently, time-based maintenance is not carried out as per maintenance plan, it should be done randomly as per specialized team available at site.
- Maintenance costs will be settled on site location of equipment/machine/vehicle.

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2. Current Process Flow Diagram

Provide links to all related process maps or diagrams

Process Flow:



3. Changes to Existing Organization processes (If any)

Change management issues as appropriate.

SAP will be used for mapping this process.

4. Description of Improvements

It is important to outline where the business will realize the benefits of implementation. Both in its use of software and streamlined business processes.

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- Equipment downtime has decreased.
- It will save huge maintenance costs.
- Increased the life expectancy of equipment's.

5. Proposed Solution – Steps in SAP.

Describe how this process will be addressed in the product.

1. Prerequisite Master Data:

Below master data required to schedule & perform preventive maintenance.

1.1 Maintenance Strategy

1.2. Task list

1.3. Maintenance Plan

1.1 Maintenance Strategy:

- A rule for the sequence of planned maintenance and predefined tasks.
- A maintenance strategy contains the maintenance packages that define the cycle in which the tasks must be performed.
- In ABC Corp., Maintenance strategies can be set up for time-based maintenance like 1/3/6/12 months as per cycle defined for equipment.

T-Code	Scheduling Indicator	UOM (Depend on cycle)
IP11	Time – Key date	WK/MON/YR

Cycle Length	UOM	Cycle text	Cycle short text
1	MON	Preventive Check Monthly	P1
3	MON	Preventive Check for 3 Months	P2
6	MON	Preventive Check 6 Months	P3

1.2 Maintenance Task list:

- Every Task list will have a different number of Operations, which will be used to carry Preventive Maintenance.
- In ABC Corp., For Preventive Maintenance two types of task list will be used.

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- **General Task List:** The task list will create common activities & applicable for a group of equipment to perform preventive maintenance.

T -Code	Task list Type	Description	Number Range (External)
IA05	A	General Task list	A-Z

- **Equipment Task list:** The task list will be created equipment specific based on equipment supplier recommendation.

T -Code	Task list Type	Description	Number Range (External)
IA01	E	Equipment Task list	A - Z

- The checklist of Preventive maintenance can be attached to operation in long text.
- In ABC Corp., the required Components/Spare Parts can be attached to the Maintenance Task list at operation level. So, whenever a maintenance order is created. Material is available. Below Item category used for material/Spare parts.

Item Category	Description	
L	Stock item	Creates material reservation
N	Non-Stock Item.	Create PR through PM order

- Assign the maintenance strategy with a task list.

1.3 Maintenance Plan:

- We are using the maintenance plan category as follows.

Maintenance Plan Category	Number Range (Internal)
PM	Maintenance Order
NO	Notification

- The strategy Maintenance Plan will be created with details such as Task list, Maintenance strategy, Functional location/Equipment etc.

T -Code	Maintenance Plan	Number Range (External)

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IP41	Single Cycle	A - Z
IP42	Strategy Plan	A-Z

2. Maintenance Order Processing:

Below are the functions carried out for maintenance order processing.

2.1. Scheduling

2.2. Order Creation

2.3 Order Release

2.4 Goods issue

2.5 External Services (Optional)

2.6 Operation Confirmation

2.7 Technically Completion of Order

2.8 Cost settlement

2.9 Order Closure

2.1 Scheduling:

- Scheduling of maintenance plans done in the background daily using deadline monitoring.
- Manual scheduling possible, if maintenance activity needs to be preponed or Postponed.

2.2 Order Creation:

- Orders are created based on the time period set in the maintenance plan. The orders can be viewed by listing or individually
- The following order type will be used for the preventive maintenance activity in the system.

T -Code	Order Type	Description	Number Range (Internal)
IW38/IW32	ZPM1	Preventive Maintenance Order	100000000-199999999

- The Maintenance department can attach the components/spare parts and manpower as operation activity to this Order.

2.3 Order Release:

- The maintenance order will be released.
- Release of the maintenance order is an important business function, which controls things like the goods issued for the order, Procurement, confirmation of the order progress etc.

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- You can take Printout of shop paper such as material reservation slip, time tickets etc.

2.4 **Goods Issue:**

- Based on the release of maintenance order,
 - The reservation for the stock-able spares and consumables is created in the system.
 - The Maintenance department can withdraw the required material from the Stores against reservation.
 - For non-stock spares, the PR is created from the maintenance order.
 - Purchase order will be created against the purchase requisition by MM team.
 - Upon receiving the material, it will be consumed against the maintenance order.

2.5 **External Services (If required):**

- External Services are the external support required from the expert for the maintenance of equipment's.
- Wherever the external services are required, in the relevant operation of that order, the PM03 (Plant Maintenance External Services) control key is used. Using this key, the system requires the Service No. / Description, Quantity and price of the service.
- On saving Maintenance order, Purchase Requisition Created for external Services.
- This PR number is used to create the Service Purchase Order by MM. Authorized Person Release the purchase order.
- For confirmation of external services, a Service Entry Sheet is used. The service entry sheet is created with reference to the Service PO.
- Accordingly, the data is updated in Controlling and Financial Accounting for releasing the payment for the external services.

2.6 **Operation Confirmation:**

- After completion of maintenance activities, the order needs to be confirmed.

T -Code	Description	Number Range (Internal)
IW41	PM Order Confirmation-Actual	1000000-1999999

- It is used to record processing status of order, operations, and individual capacities.
- Order confirmation can be done partially or final. For partial confirmation, the order must not yet have been completed fully.
- With confirmation you can specify the,
 - How much work was actually done.
 - Which work center was used for operation.
 - Work Start/End date & time.
 - Measurement Documents for measuring points.
- Following business transaction executed via order confirmation.

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- Updating order like activities, dates, status etc.,
- Updating activity cost based on actual confirmation.

2.7 Technically Completion of Order:

- After confirmation for the maintenance order, the order needs to be technically completed.

2.8 Cost Settlement of Order:

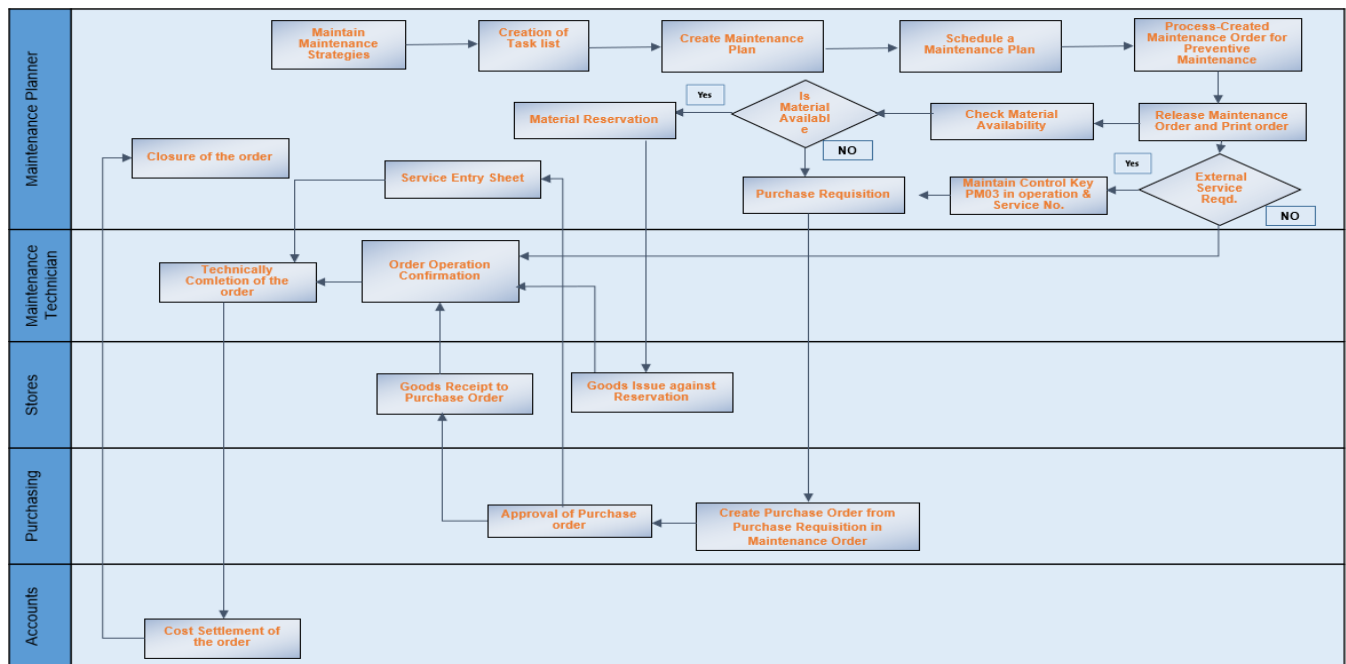
- Cost needs to be settled to the appropriate cost centre or WBS element based on settlement profile

2.9 Order Closure:

- When all the activities are completed & cost settlement done against that order, business completion for the order is done.

6. Proposed Solution – Process Flow in SAP

Process Flow:



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7. Description of Functional Deficits

Where appropriate, identify any gaps. This section is important when assessing risk, as well as estimating the need for ABAP (or similar) resources.

Purchase Requisition should be created after maintenance order creation. So, Material availability prior not possible through order

Shop Paper

- Operation Control Ticket
- Reservation Slip
- Operation Confirmation Slip

8. Approaches to Covering Functional Deficits

Documentation of any work-around or assumptions that have been made when outlining functional deficits.

N/A

9. Integration considerations

Specify what integration you need with other SAP modules / sub modules in scope of < CLIENT>

- MM
 - Purchase Requisition document type for external Procurement.
 - Goods issued from stores.
 - Goods transfer posting from plant to plant.
- CO
 - Cost Center will be entered as a settlement Receiver.
- PS
 - WBS element will be entered as a settlement Receiver.

10. Reporting Requirements

Document the various reports that you would require.

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Sr. No.	Report Description	SAP Standard Report
1	List of Orders created for Technical Object	IW39
2	List of Operations created for Technical Object	IW49
3	List of Order & Operations created for Technical Object	IW49N
4	Work Order Report Details	IW47
5	Order Confirmation List	IW47N
6	Material Consumed against Maintenance Order	IW3M

11. Authorization Requirements

Document the level of authorizations that you need for each process in the system

To be given by ABC Corp.

12. File Conversion / Interface Consideration

Document file conversion/interface requirements. Where the information is to come from, what data is to be converted manually/automatically and at what point in time. This is critical information that is used later.

13. FIORI APP proposed

N/A