

# Functional Requirements Document-Asset Management & Maintenance

Prepared for  
**Technica International**

Version: **2.0**

Prepared by:  
**Nicolas Majdalani**

Contributors:  
**Antonio Saleh**  
**Abdo Khoury**

---

# Table of Contents

## Contents

Introduction ..... 3

1.1 Purpose ..... 3

1.2 Acronyms..... 3

    Business Process Diagram..... 4

1.3 Current Setup for Technica ERP project.....4

    1.3.1 Setup For Functional Location ..... 4

    1.3.2 Setup For Asset..... 6

    1.3.3 Setup For Maintenance Job ..... 14

    1.3.4 Setup For Projects Integration with Asset Maintenance Module ..... 18

    1.3.5 Setup For Maintenance Request ..... 19

    1.3.6 Setup For Preventive Maintenance ..... 22

    1.3.7 Setup For Work Orders ..... 25

    1.3.8 Setup For Workers ..... 26

    1.3.9 Requirements ..... 28

Asset Management Business Processes List.....29

2.1. Processes List .....29

Business Processes.....30

3.1. AM-001 Functional Location Creation.....30

    TO-BE Process Overview..... 30

    3.1.1. Requirements ..... 30

3.2. AM-002 Asset Creation (Manual/Automatic) .....30

    TO-BE Process Overview..... 30

    3.2.1. Requirements ..... 33

3.3. AM-003 Manual Maintenance Request / Work Order Creation .....33

    Process Diagram ..... 33

    TO-BE Process Overview..... 34

    3.3.1. Requirements ..... 37

3.4. AM-004 Work Order Processing Details.....38

    Process Diagram ..... 38

    TO-BE Process Overview..... 39

3.4.1. Requirements .....45

3.5. AM-005 Preventive Maintenance Plans (Automation) .....46

Process Diagram .....46

TO-BE Process Overview.....47

3.5.1. Requirements .....49

3.6. AM-006 Reports & Inquiries.....50

# Introduction

## 1.1 Purpose

The Functional Requirements Document (FRD) describes in common terms:

- An overview of the processes comprising each Work stream
- An overview of each sub-process comprising the Work stream
- Major gaps between the business requirements and the functionality supported by the standard Microsoft Dynamics 365 solution
- The problem summary including current business/environment issues

The FRD is the starting point of the solution and system development and is a collaborative effort between all business and technology stakeholders. The purpose of the Functional Requirements Document (FRD) is to document requirements for the requested system solution.

The objective of the Functional Requirements Document is to provide enhanced documentation for requirements that are a gap or will require a workaround or process change to fit the system solution of the client. The need for any modifications is clarified through the FRD. The FRD forms the basis of the subsequent task concerning the system design.

This document focuses on Asset Management requirements.

## 1.2 Acronyms

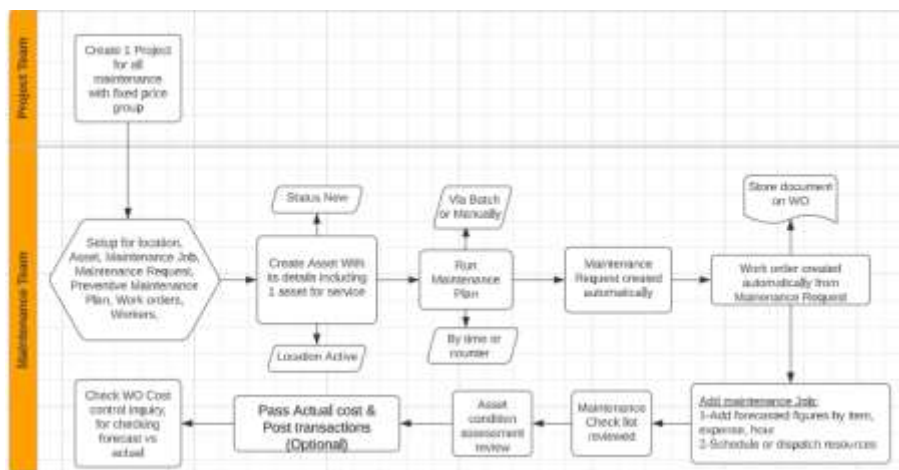
Abbreviation	Explanation
FRD	Functional Requirement Document
AM	Asset Management
System	Dynamics 365

Asset Management is an advanced module for managing assets and maintenance jobs in Dynamics 365 Supply Chain Management. It enables you to efficiently manage and carry out tasks related to managing and servicing many types of equipment in your company, for example, machines, production equipment, and vehicles.

### Analysis workshop details

Technica's business requirement will be reflected in the asset management out of the box functionalities as setup and process to be with very few customizations that will be listed in the requirement table as GAP.

### Business Process Diagram



## 1.3 Current Setup for Technica ERP project

### 1.3.1 Setup For Functional Location

Go to Asset management → Setup → Functional Locations

1. **Functional location types** This functionality allows for the location to have an Area, city or even warehouse, where this location is located in. It enables or restricts having multiple assets or 1 single asset installed in it. It can contain as well, maintenance plan so every asset type can execute a maintenance plan, this means that if we have 4 assets installed in this asset type this mean that the system will automatically takes the same maintenance plan for all of them (Explained in detail in details in the maintenance plan section)

**Commented [GB1]:** How the location is set in the system, is there any coding for the areas that should be implemented

**Commented [NM2R1]:** The location is set by Asset. And the location nature can be anything you choose (it can be a room, shelf, warehouse, site.....)

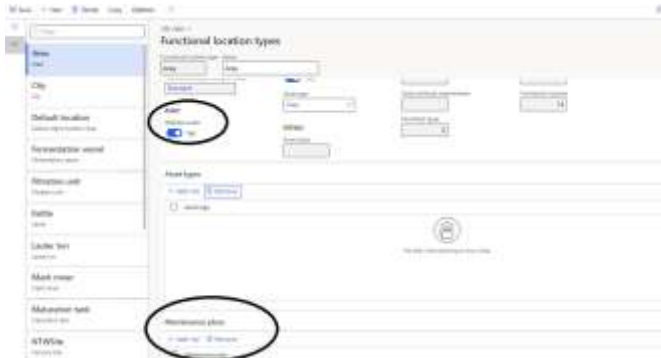


Figure 1 – Functional Location Type

## 2. Functional location life cycle states



Figure 2 – Functional Location Life cycle states

Functional location lifecycle states define the states that a functional location can go through, for example, New, active, planned, ended. You can view all functional locations, regardless of their lifecycle state, in the **All-functional locations** list page.

- As illustrated, if location is active, you may create asset in it.
- But if the location was set as "New", you can create an asset in it as per the configuration (Optional).

You can change the state of a functional location by selecting it in the **All-functional locations** list page and selecting **Update functional location state**.



Figure 3 – Update functional location states.

- As illustrated above, the system is showing the suggested next “Status” that you are allowed to select (this will be details in the next section of life cycle models).

### 3. Functional location life cycle models

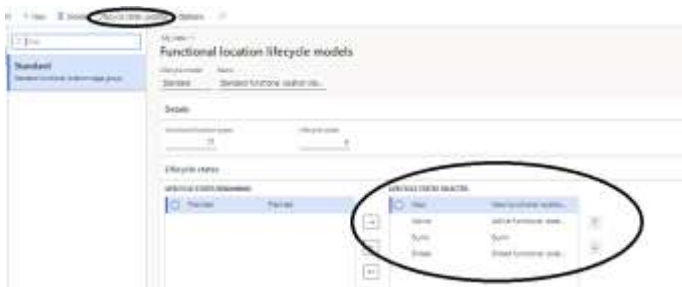


Figure 4 – Functional location life cycle models

Every model will be installed by default in a different location type. This model is brought up automatically from the life cycle state.

In the same screen, in the action pane, there is field named “Lifecycle state updates” click on it, you will see the below mapped optional criteria:

Setup allowed updates for Functional location lifecycle states

Lifecycle model: Standard - Standard functional location stage group

	New	Active	Burnt	Ended
NEW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ACTIVE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
BURNT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ENDED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 5 – Update next step functional location status.

- The check box serves to inform us what is the next status.
- For example, if the status starts by “New” → “Active”.
- If the status is “Active” → it can be changed to “Burnt” or “Ended”.
- But once the status is “Ended” → Cannot be changed to “New”, “Active” or “Burnt”.

N.B: As you can see, the above are optional validation that can be changed anytime depending on the business need.

#### 1.3.2 Setup For Asset

Go to Asset management → Setup → Asset types / Assets.

**Commented [GB3]:** All locations are active at Technica. Usually, we don't create an asset unless the location is already available. so, we have to check or re-consider if this option must be applied.

**Commented [NM4R3]:** As I said this is optional. Nothing mandatory. Depends on the asset itself we will configure the related location during the migration phase

## 1. Asset types

Asset types are used as general categories for assets. Examples: Conveyors, Car, Pipe, include CNC machines, measuring equipment, and truck engines. Asset types are used to manage the maintenance job types (Elaborated in detail in the maintenance section), asset lifecycle states, counters, asset attributes, condition assessment templates, and asset models that can be selected for an asset. When you create an asset, you must specify the asset type.

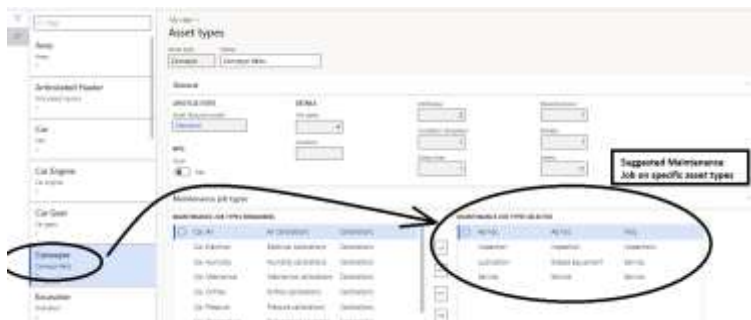


Figure 6 – Asset types

- Above maintenance job will be suggested for specific asset type, assets. So, doing the maintenance only those maintenance will show to the engineer on this specific asset.

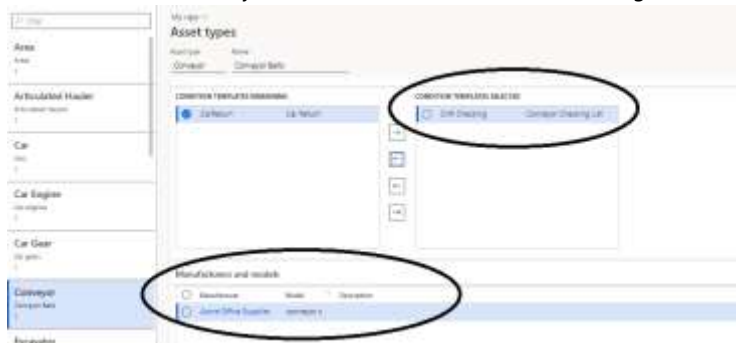


Figure 7 – Asset types

## 2. Condition Assessment Template

Within the asset types, Technica can create “Condition assessment template” that can be predefined and attached to specific asset types. So, whenever there is maintenance creating a work order, this template will be brought automatically (See below example on a [template](#)).

**Commented [GB5]:** Point not clear. What is the condition assessment used for, is it similar to the check list mentioned below?

**Commented [NM6R5]:** Yes it is a kind of a check list to validate the condition of the asset once the technician do the maintenance. He will come up with a results. Those results are added to the condition assessment list (Optional)

Standard view

### Condition assessment templates

**DETAILS**

Template: CVR Checking Unit: 3

Name: Conveyor Checking List Asset type: 5

**Condition assessment lines**

Line	Name	Description	Data type	Unit	Edit
1.0	Condition	Wood, stainless steel condition	String		
2.0	Wood	Wood insect	Integer		
3.0	Delivered on time	Delivery on time	Notes		

Figure 8 – Condition assessment template (Part 1)

- Below shows the interface that will show while creating the work order (Related to condition assessment):

Condition assessment

**DETAILS**

Condition assessment: 4000000000 Asset: 4000000000 Template: CVR Checking

Asset type: 5

**Condition assessment lines**

Line	Name	Description	Data type	Unit	Edit
1.0	Condition	Wood, stainless steel condition	String		
2.0	Wood	Wood insect	Integer		
3.0	Delivered on time	Delivery on time	Notes		

Figure 9 – Condition assessment template (Part 2)

### 3. Asset Type Default

Within the asset type, under “asset type default” Technica will add its suggested spare’s part and activated them so that it can be shown later in the work orders for usage purpose.

In addition, an automatic maintenance plan can attach to the asset type that can be run via batch scheduled or manually depends on the business need (Elaborated in detail in the maintenance plan section)

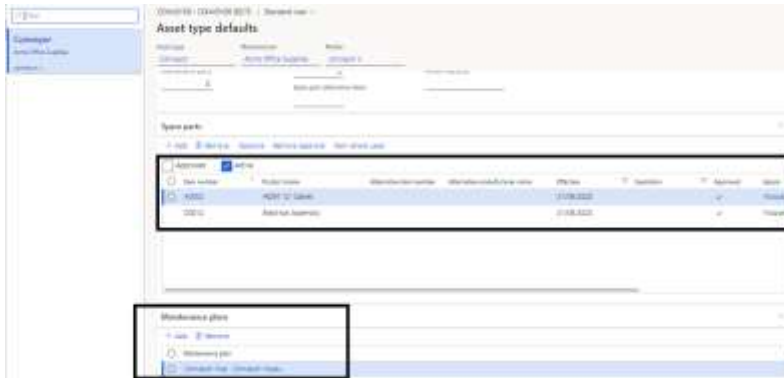


Figure 10 – Asset type defaults

- In case, spare part is not available, there is another field added for a replacement under “Alternative item number.”

#### 4. **Asset counters**

When asset types are added to a counter type in **Counters**, that counter is automatically added to the asset types on the **Counters** Fast Tab in Asset types.

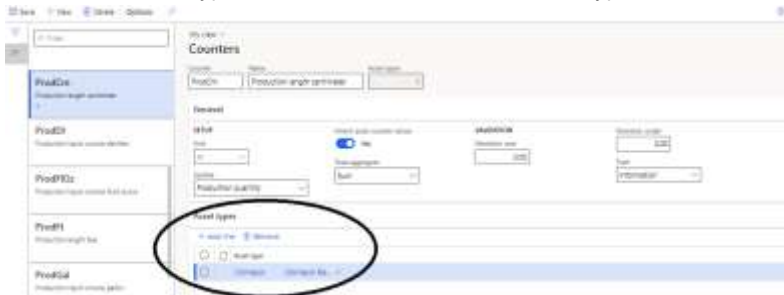


Figure 11 – Asset Counter

Counter types are used to make counter registrations on assets. For example, regarding number of production hours, or quantity produced on the asset. Asset types are related to the counter types. This means that a counter can only be used on an asset if the counter is set up on the asset type used on the asset.

- One of the options in Technica’s maintenance plan is to use “Counter” functionality.
- Maintenance plan will be generated based on specific values or ranges of counter (Details will be elaborated in the maintenance plan section).

The screenshot shows the SAP Fiori 'My view' interface. At the top, there are navigation tabs: Overview, Data, and Settings. Below these, there are several cards or sections: 'Material master data', 'Material master data - Overview', 'Material master data - Details', 'Material master data - History', and 'Material master data - Documents'. The 'Material master data' card is selected, and it displays a table of material master data. The table has columns: Material, Name, Description, Unit of Measure, and Quantity. The 'Material' column is highlighted with a red circle. Below the table, there is a 'Filter' section with a search bar and a 'Filter' button. The table contains two rows of data:

Material	Name	Description	Unit of Measure	Quantity
4000000000	Material 0000		1	100
4000000000	Material 0000		1	100

Figure 12 – Asset view

- 
- My view
- | Name       | Description | Source type | Payment          | Price   |
|------------|-------------|-------------|------------------|---------|
| 8000000000 | BT-Orange   | Product     | 7300000000000000 | 1.00000 |
| 8000000000 | BT-Orange   | Product     | 7300000000000000 | 1.00000 |

Figure 13 – Asset counter view

Asset lifecycle states are used to define whether an asset is active or inactive. For example, you can set up asset lifecycle states such as **New**, **Active**, **In Repair**, **Damaged**, **Sold**, and **Scrapped**...

Page 10  
Technica International FRD-Asset Management & Maintenance-Version 2.0

## 6. Asset life cycle models

The setup done in life cycle states will be enabled in the life cycle model. And you may set as previously explained an automated action for every state (next action)

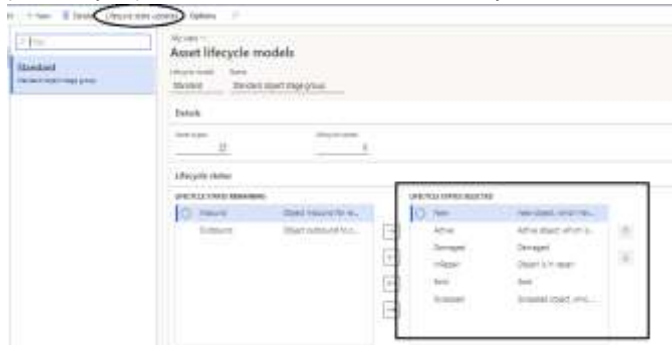


Figure 15 – Asset life cycle models

Every model will be installed by default in a different Asset type. This model is brought up automatically from the life cycle state.

In the same screen, in the action pane, there is field named "Lifecycle state updates" click on it, you will see the below mapped optional criteria:

Setup allowed updates for Asset state

Lifecycle model: Standard - Standard asset stage group

	New	Active	Damaged	In Repair	Sold	Scrapped
NEW	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ACTIVE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DAMAGED	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IN REPAIR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SOLD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SCRAPPED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 16 – Asset Allowed update for asset states.

- The check box serves to inform us what is the next status.
- For example, if the status starts by "New" → "Active".
- If the status is "Active" → it can be changed to "Damaged" or "In Repair" ....
- But once the status is "Scrapped" or "Sold" → We Cannot change back the status to "New", "Active" or others.

*N.B: As you can see, the above are optional validation that can be changed anytime depending on the business need.*

## 7. Asset Service Levels

Asset service levels are related to assets and are transferred to maintenance requests and work orders. They are used to calculate the priority of work orders during work order scheduling. Asset service levels can be changed if changes are required.

Figure 17 – Work order service levels

- Those start and end dates will show in the work order as expected.
- There will be another field for actual start once the work order is activated (Details will be elaborated in the work order section)

When the asset service level is used for maintenance requests and work orders, Asset Management goes through all asset service level records to check for a possible match. It always checks the most specific combination first. In other words, Asset Management first checks for a match for the Work order type field. If no match is found, it checks for a match for the Asset field, and so on (See below)

Figure 18 – Asset service levels

- As you can see this behavior means that, to find the most specific combination, Asset Management checks each record from right to left for a match.
- If no match is found, the default record that has no selections in those fields is used (in our case the default here is "5").

Work order	Work order type	Description	Date	Service level	Priority	Start date	Current status
4444444444444444	Preventive	Inspection	10/10/2024	5	High	10/10/2024 08:00:00	Open
4444444444444444	Preventive	Subsequent job: 4444444444444444 (Closed equipment)	10/10/2024	5	Medium	10/10/2024 08:00:00	Open
4444444444444444	Preventive	Inspection	10/10/2024	5	High	10/10/2024 08:00:00	Open
4444444444444444	Preventive	Subsequent job: 4444444444444444 (Closed equipment)	10/10/2024	5	Medium	10/10/2024 08:00:00	Open
4444444444444444	Preventive	Inspection	10/10/2024	5	High	10/10/2024 08:00:00	Open
4444444444444444	Preventive	Subsequent job: 4444444444444444 (Closed equipment)	10/10/2024	5	Medium	10/10/2024 08:00:00	Open

Figure 19 – All work orders screen

- If you change an asset service level record on the Asset service levels page after you've already used it on a work order, the service level on maintenance requests and work orders isn't updated accordingly.

**Commented [GB7]:** Point 7 related to asset service level is not clear. Need more clarification.

**Commented [NM8R7]:** Asset service level is a tool that will be used while creating a work order job. The purpose to identify which of these work order jobs (inspection, lubrication, ad-hoc.....) have priority more than the others. And as you saw in the setup, this service level can identify the suggested start and end date of a tasks once the job is created.

### 8. Asset Criticalities

Based on different variant shown below, the asset will be recognized under specific criticality



Figure 20 – Asset criticalities

Below shows criticality types:

Criticality	Name	Factor
1	Low	10
2	Medium	20
3	Low	30
4	Medium	40
5	Low	50
6	Medium	60
7	Low	70
8	Medium	80
9	High	90
10	High	100
11	High	110

Figure 21 – Asset Critical classification

Below shows after creating the assets, it picks the related criticality:



Figure 22 – Asset screen

Asset criticality is used to calculate work order criticality during work order scheduling. In other words, it's used to calculate the extent to which a maintenance job on an asset affects the productivity in your company.

Work order	Description type	Description	Date	Duration	Category	Date modified	Current workflow
NAAR000001001	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001002	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001003	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001004	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001005	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001006	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001007	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001008	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001009	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001010	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001011	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001012	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001013	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001014	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001015	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001016	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001017	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001018	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001019	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open
NAAR000001020	Preventive	Lubrication	7/10	1	Preventive	7/10/2022 10:00:00	Open

Figure 23 – All work orders screen

### 1.3.3 Setup For Maintenance Job

Go to Asset Management → Setup → Jobs.

#### 1. Maintenance Job Types

An asset type is attached to every asset. Asset types define the maintenance job types (and therefore, the maintenance jobs) that can be performed on assets. When you create a work order, you must select a maintenance job type. You can select only the maintenance job types that are related to the setup of the asset type that is used for the asset.

- We already saw in the section of setup of asset type how can we add for each asset type a set of suggested maintenance job type (Example: Ad Hoc, Inspection, Lubrication, Service...)
- Whatever we saw in asset type as suggested maintenance job is because we did the setup here.

**Maintenance job types**

**General**

Name:

Description:

Maintenance job type category:

**Description**

**Maintenance job type variants**

Figure 24 – Maintenance Job types

- For every maintenance Job type there are set of categories that will be classified as follows (Updated categories will be taken from Technica team during migration phase):

Maintenance job type category	Name	Job types
Calibration	Calibrate job types	0
Condition assessment	Condition assessment job types	2
Inspections	Inspection job types	1
Lubrications	Lubrication job types	1
Misc	Miscellaneous job types	1
Service	Service job types	2

Figure 25 – Maintenance Job type categories

- Info-sys suggested the below option for Technica team, and they will consider it for future use:
  - **Succeeding maintenance jobs:** Once the maintenance job that reflected a work order under “Ad Hoc” is generated, automatically it will generate another work order that is attached to it under “Inspection” as you can see in the below setup (Configurable and can be updated or even removed).

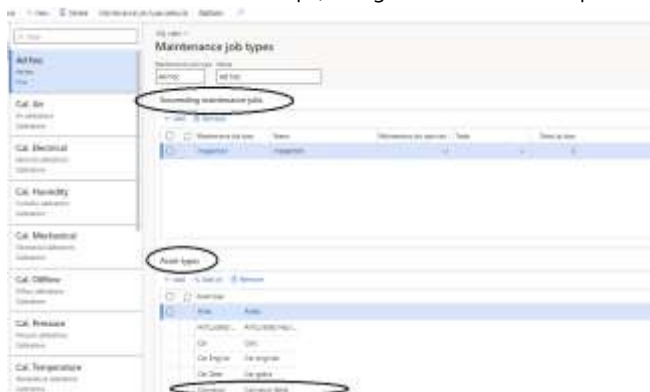


Figure 26 – Maintenance Job type

## 2. Maintenance Job Type Default

Within the same screen there is tab in the control button name “Maintenance Job type defaults”

This setup is essential to capture for all the below mentioned combinations the forecasted hour, item, expense with the related maintenance check list.

This process of selecting the available maintenance job type default based on the asset and related asset type setup is important for ensuring that the right maintenance job type is used for each asset. By checking for a possible match in the most specific combination first, the system ensures that the maintenance job type selected is as accurate as possible.

For example, if a maintenance job type default is set up for a specific trade (such as electrician), that default will be used for any assets that have that trade assigned to them. If there is no default set up for that trade, the system will then check for a possible match for the maintenance job type variant. If no match is found there, it will check for a match for the maintenance job type, and so on.

This process ensures that the most specific default is used whenever possible, which can help to improve the accuracy and efficiency of maintenance work. By using the right maintenance job type for each asset, organizations can ensure that their assets are properly maintained, which can help to extend their useful life and improve overall performance.

#### **A. Forecast**

For every work order created, a project ID will be attached to it (Info-sys and Technica team agreed that they will use only 1 project ID for all their future work orders to capture the forecasted budget vs actual cost by activity, by work order number) → will be detailed in the section of work order.



Figure 27 – Maintenance Job type default

- Once you click on Forecast, the screen below will appear to fill the expected forecasted values that will be later brought up automatically to the related work order job.

AD HDC | Standard view

### Maintenance job type default maintenance forecast

Hour forecast

+ Add Remove Hour forecast

Forecast model	Category	Hours	Line property
CurrentF	AM_Labor	1.00	NonBill

Item forecast

+ Add Remove Item forecast Inventory Item where used

Model	Item number	Sales quantity	Unit	Cost price	Currency	Line property
CurrentF	D0012	1.00	ea	56.00	USD	NonBill

Expense forecast

+ Add Remove Expense forecast

Forecast model	Category	Quantity	Cost price	Sales currency	Sales price	Line property
CurrentF	AM_Expense	1.00	50.00	USD	57.50	NonBill

Figure 28 – Maintenance Job type default maintenance forecast

## B. Maintenance Check List

Maintenance checklist templates will be used as a common set of tasks that a worker must perform to complete a work order correctly. The templates are referenced from maintenance checklist lines on the maintenance job type default.

Templates can be referenced across multiple maintenance job type default lines. Therefore, you can easily reuse a set of common maintenance checklist tasks.

- Examples of maintenance checklist templates include general safety instructions, and a list of items and conditions that must be checked on a specific pump or similar models of a conveyor belt.

Figure 29 – Maintenance Job type default check list

- For Text: line details will include instructions.
- For Measurement: line details will Counter type (Example kilometer, miles...), unit, Min value, max value, instructions.
- For template: You can define in advance all the above and brought it here.
- For Variables: there is a template that allows to do test for the expected results (Either pass or fail) → see below:

Figure 30 – Maintenance check list variables

*N.B: This is just the setup section that will be populated to the work order while generating the maintenance job.*

### 1.3.4 Setup For Projects Integration with Asset Maintenance Module

To benefit from having a high-level loop on the maintenance forecast hour, expenses and items used Vs actual cost, it is essential that we create a project ID as fixed price group to see all these figures.

As agreed with Technica team, we will create 1 project for all the maintenance that will happen so that we can start tracking effort and cost per activity and asset.

Go to Asset Management → Setup → Work orders → Project Setup

- Create a project for lifetime or a year and place it in the below screen by Asset type in case you want track the maintenance asset type or just remove so that all the maintenance will be under 1 project.



Figure 31 – Asset parameters (Project identification)

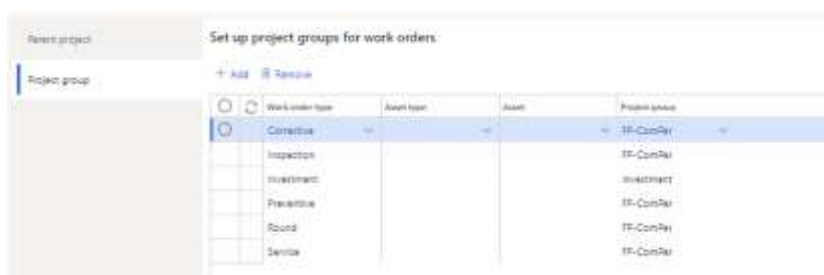


Figure 32 – Asset parameters (Project group identification)

- Once this setup is done, whenever a work order is created, the system will automatically pick the project ID number into the work order line.

### 1.3.5 Setup For Maintenance Request

Go to Asset Management → Setup → Maintenance Requests

#### 1. **Maintenance Request Types**

Maintenance request types are an important tool for categorizing and managing maintenance requests. By using different request types, organizations can easily track and prioritize different types of maintenance work, such as preventive maintenance, corrective maintenance, or repairs.

A maintenance request type defines the affiliation with a maintenance request lifecycle state group (maintenance lifecycle model). Maintenance request lifecycle models define the lifecycle states that can be set for a maintenance request. (Examples of maintenance request lifecycle states include **New**, **In Progress**, **Rejected** and **Finished**)

Figure 33 – Maintenance request types

As illustrated, a predefined work order type can be selected so that when it reach a certain where the work order need to be created automatically from the maintenance request, it picks automatically the corrective type or the preventive type or the investment type depends on the maintenance request type selected

## 2. Maintenance Request Life cycle state

Figure 34 – Maintenance request life cycle states

Maintenance request lifecycle states define the stages that a request can go through. Examples include "New", In Progress, Rejected and Finished.

When a maintenance request is converted to a work order, the maintenance request lifecycle state should be updated to "Rejected" or "Finished" to indicate that the maintenance request is no longer active. On the "All-maintenance requests" list page, you can view all maintenance requests, regardless of their lifecycle state.

***N.B:** As illustrated in the above screenshot, in this setup you may control creating a work order from maintenance request or not. And set actual end date if requested within the maintenance request.*

### 3. Maintenance Request Life cycle models

After you've created the lifecycle states that are required for your maintenance requests, they can be divided into lifecycle state groups, or lifecycle models. Maintenance request lifecycle models are used to create the flow that can be used for different types of maintenance requests. At a minimum, one standard maintenance request lifecycle model should be created.



Figure 35 – Maintenance request life cycle models

This model is brought up automatically from the life cycle state.

In the same screen, in the action pane, there is field named "Lifecycle state updates" click on it, you will see the below mapped optional criteria:

Setup allowed updates for Maintenance request lifecycle states

Lifecycle model: Standard - Standard request stage group

	New	Rejected	InProgress	Finished
NEW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
REJECTED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INPROGRESS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
FINISHED	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Figure 36 – Updates next step status for Maintenance life cycle states

- The check box serves to inform us what is the next status.
- For example, if the status starts by "New" → "InProgress" or "Rejected".
- If the status is "Rejected" → it can be changed to "New" again.
- If the status is "Finished" → It can be again updated to "New".

### 1.3.6 Setup For Preventive Maintenance

#### Process Diagram

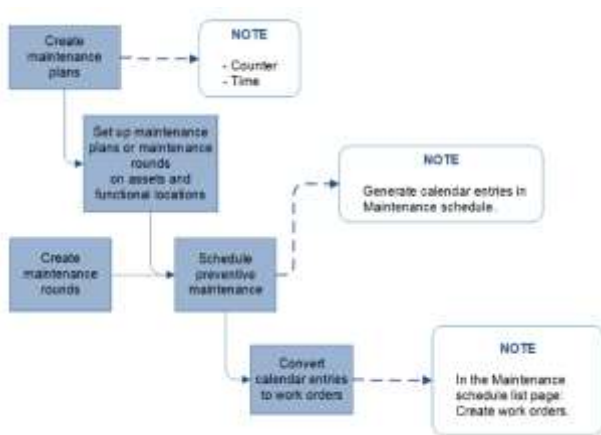


Figure 37 – Preventive maintenance process diagram

Maintenance plans are used for preventive and reactive maintenance on individual assets. Maintenance rounds are used for preventive maintenance on a group or a set of assets. Maintenance plans and maintenance rounds are used for generating work order proposals. The work order proposals are saved as maintenance schedule lines, which can be bundled and converted into work orders.

Technica will be using maintenance plan for time and counter because both methods are beneficial for their business. During the migration phase, maintenance plan process will be mapped. In addition, Technica use counter-based maintenance plan for diesel generators and air compressors.

Commented [GB9]: and air compressors

Commented [NM10R9]: Sentence adjusted

#### Setup

Go to Asset Management → Setup → Preventive Maintenance

##### 1. Maintenance Plans

A maintenance plan can have multiple maintenance plan lines. Maintenance job type and interval are specified on the maintenance plan line. There are two types of maintenance plan lines:

- Time (by maintenance job, with frequent timing, by period, planned date, by work order type) and the most important thing is that you can place on each maintenance plan what are the suggested assets or asset type that will have this plan.

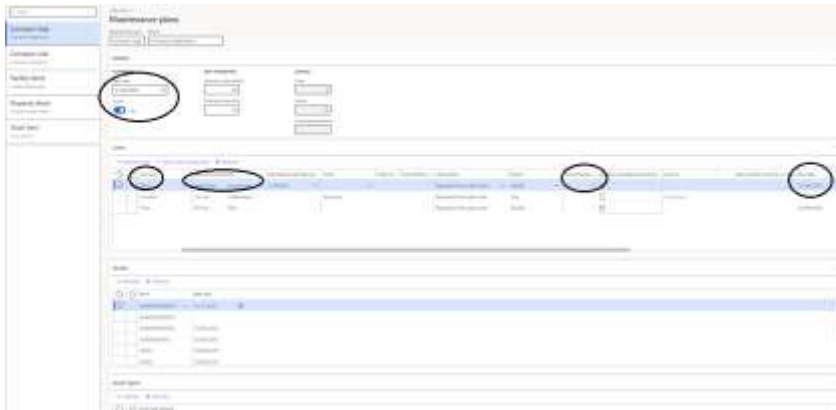


Figure 38 – Preventive maintenance plan (Time)

- Counter (on the asset itself you may change set the counter condition per asset) so that when the maintenance plans run, it compares the values and issue the maintenance or not.



Figure 39 – Preventive maintenance plan (Counter)

- The counter can be set for the below different criteria and running hour criteria:



Figure 40 – Preventive maintenance plan (Counter options)

- These criteria are attached directly to the asset itself. There is a counter on each asset and can be configured from there. So, whenever we reach to run the maintenance plan, the condition will meet (see below from asset)

**Commented [GB11]:** We need to add the running hours criteria.

**Commented [NM12R11]:** Added.





- All these features in the general section, are to allow or disable this functionality from happening while the life state cycle under 1 of these stages. Example, you may delete a work order once it is **created** but you cannot delete it if it is in the stage of **in progress**.
- In the section of "Validate" there is a section for maintenance downtime validation on work order level (This was requested initially by Technica).

### 3. Work Order Models:



Figure 45 – Work order life cycle models

Same concept as previous sections

### 4. Work Order Service Level



Figure 46 – Work order service level

This is where the work order will be classified by service level. Low priority to critical priority. When the engineer picks the related work order he will manage to choose the critical one 1<sup>st</sup>

## 1.3.8 Setup For Workers

Go to Asset Management → Setup → Workers.

### 1. Workers

Every worker can be defined in a group or under set of functional location. Workers created below are employees that are already created from the HR menu.

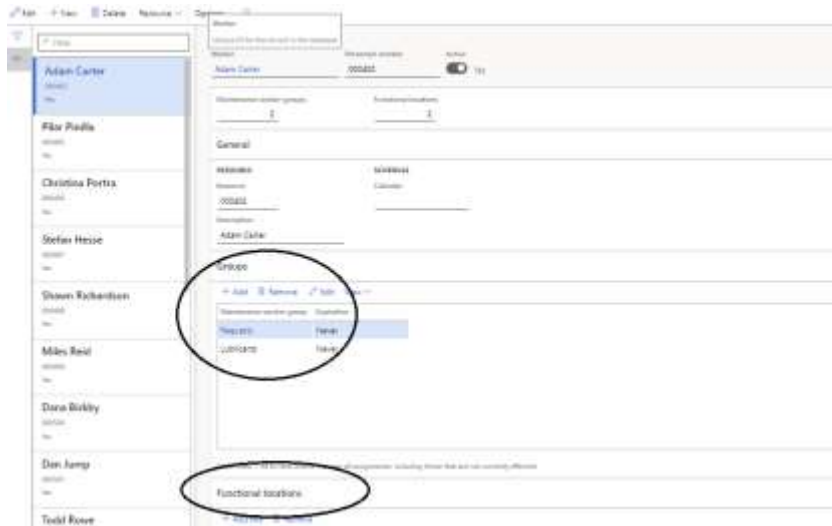


Figure 47 – Workers assigned to groups and functional locations.

## 2. Maintenance worker groups

Indicated above can be listed below automatically.

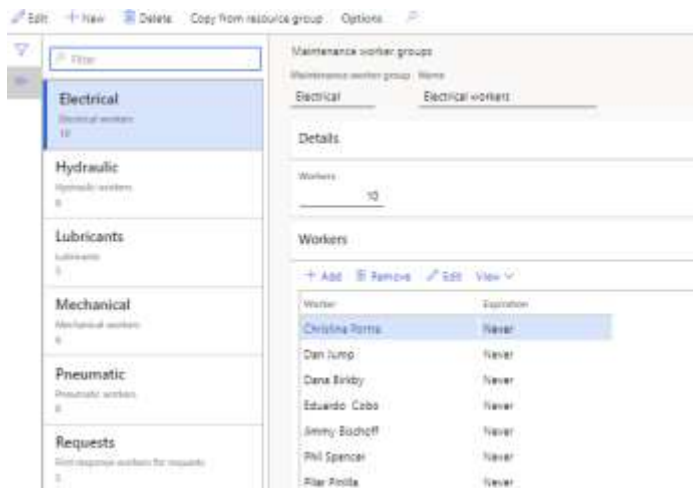


Figure 48 – Maintenance worker groups.

### 3. **Responsible maintenance workers**

During creation of a maintenance request, when a responsible maintenance worker or responsible maintenance worker group is made available for selection on the maintenance requests page, Asset Management goes through all responsible maintenance worker records to check for a possible match.

- It always checks the most specific combination first. In other words, Asset Management first checks for a match for the "Trade" field.
- If no match is found, it checks for a match for the "Maintenance job type variant" field.
- If no match is found, it checks for a match for the "Maintenance job type" field, and so on.
- As you can see in the layout of the page, this behavior means that, to find the most specific combination, Asset Management checks each record from right to left for a match (first "Trade", then "Maintenance job type variant", then "Maintenance job type", then "Maintenance job type category", then "Functional location", then "Asset", and finally "Asset type").
- If no match is found, the default record that has no selections in those seven fields is used.



Figure 49 – Responsible Maintenance workers

### 1.3.9 Requirements

ID	Desc	Fit/GAP
001-001	Functional Location Setup	FIT
001-002	Asset Setup	FIT
001-003	Maintenance Job Setup	FIT
001-004	Maintenance Request Setup	FIT
001-005	Preventive Maintenance Setup	FIT
001-006	Work Order Setup	FIT
001-007	Workers Setup / Preferred maintenance worker	FIT

## Asset Management Business Processes List

### 2.1. Processes List

To elaborate and define the functionality, the following processes have been presented in the subsequent sections:

Process ID	Name	Description
AM-001	Functional Location Creation	Functional Location Creation
AM-002	Asset Creation (Manual/Automatic)	Asset Creation (Manual/Automatic)
AM-003	Maintenance Request / Work Order Creation	Maintenance Request / Work Order Creation
AM-004	Work Order Processing Details	Work Order Processing Details
AM-005	Preventive Maintenance Plans (Automation)	Preventive Maintenance Plans

# Business Processes

## 3.1. AM-001 Functional Location Creation

### TO-BE Process Overview

Functional locations are elements of a technical structure, such as the functional units in a system. Functional locations are created hierarchically, and you install assets on them. The setup of functional locations in your company depends on the company's requirements.



Figure 50 – All Functional locations

### 3.1.1. Requirements

ID	Desc	Fit/GAP
AM-001-001	Define Functional Location	FIT
AM-001-002	Define Functional Location Type	FIT
AM-001-003	Define Parent Location to a Functional Location	FIT

## 3.2. AM-002 Asset Creation (Manual/Automatic)

### TO-BE Process Overview

#### Manually create an asset

- You may choose via the setup to disable the auto sequence number and place it manually.
- In case of automatic asset creation, you can bring the fixed asset number equal to Asset management number or you may leave it different.

**Commented [GB13]:** not clear

**Commented [NM14R13]:** The asset management module can be link to the fixed asset module. The link between both module is the asset#. What im telling you here is that when you create an asset management related to an existing fixed asset, you have the option to have the related sequence number same (example Asset management number VEH-00001 = Fixed asset number VEH-00001)



Figure 51 – All Assets

- If an Asset is under status new, you can add, modify anything you want as long in the life cycle state you are allowed to do so in Asset level (see setup section)

ID	Name	Status	Location	Other Details
10000000000000000000	Mercedes C126	New	Car	10000000000000000000
10000000000000000000	Mercedes C126	New	Car	10000000000000000000
10000000000000000000	Mercedes C126	New	Car	10000000000000000000
10000000000000000000	Mercedes C126	New	Car	10000000000000000000
10000000000000000000	Mercedes C126	New	Car	10000000000000000000

Figure 52 – All Assets (2)

- Depending on the life cycle stage, you will see that the status will be new on the creation and will be changed in case this asset was engaged into a maintenance request or a work order. So that nobody else can use it if it is under progress or in repair.
- You create an asset now and install it later another function location.

## To be process

Below is the existing functionality for transfer functional locations:



Figure 53 – All Assets (3)

1. Move To Parent Asset: Move an asset either to another asset structure or to another location in the same asset structure.

2. Remove From Parent Asset: Temporarily remove an asset from an asset structure so that it can be repaired or refurbished, and then add the refurbished asset back to the asset structure later. Alternatively, permanently replace a used asset with a new asset.
3. Install Asset at Location: Install a parent asset and any related child assets on a functional location.

### **Automatically create one asset on a functional location**



Figure 54 – Fixed assets screen

In the Fixed asset menu, you can auto create an asset and send it to the asset management, as per the below steps:

1. Go to fixed asset module, choose the asset that you wish to move to asset management.
2. Then click on action pane "Asset management" → create maintenance asset.
3. The below screen will show, and you will have to place the data. (Sequence numbers can be automated and can be added manually). In the case of Technica, it will be automatically because they don't wish to have the same number as the fixed asset number.

Figure 55 – Create asset screen.

4. Then click ok and the asset will be created immediately into the asset management.
5. The journey will start from there. Where you can place maintenance requests, work orders.

Go to Asset Management → Assets → Asset view.

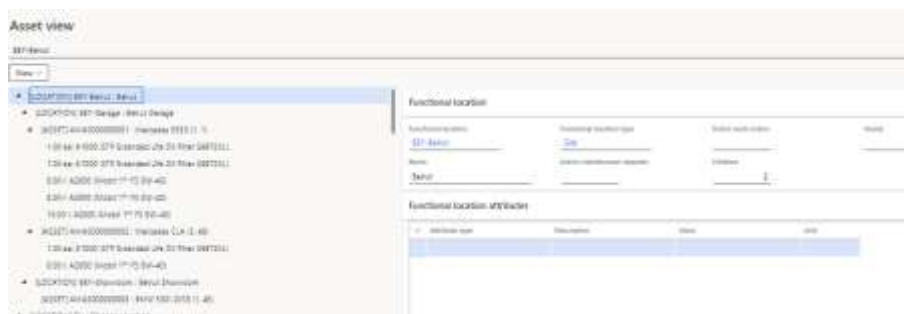


Figure 56 – Asset view screen

### 3.2.1. Requirements

ID	Desc	Fit/GAP
AM-002-001	Create Auto/Manual ASSET	FIT
AM-002-002	Move, Replace, Install Asset	FIT
AM-002-003	Asset View (See Assets by functional location / Parent)	FIT

## 3.3. AM-003 Manual Maintenance Request / Work Order Creation

### Process Diagram

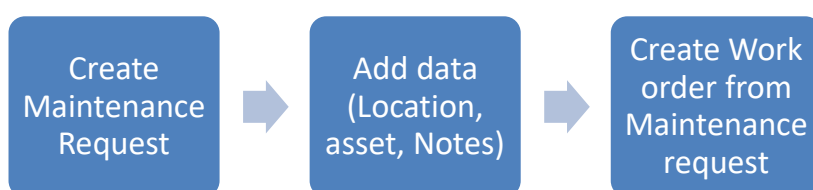


Figure 57 – Process diagram for maintenance/WO creation

## TO-BE Process Overview

Maintenance requests will be used if maintenance workers or production workers discover that equipment requires repair, but the repair job can't be done right away.

### **Example:**

While a maintenance worker is making a repair, they discover that another asset at the same location must be serviced. However, the maintenance worker doesn't have the time or the required spare parts to do the repair job. Therefore, they create a maintenance request on the asset and enter a short description of the issue.

1. Select Asset management → Common → Maintenance requests → All maintenance requests or Active maintenance requests.
2. Select "New".
3. In the Create request dialog box, in the "Maintenance request type" field, select the type of maintenance request. A default type is suggested.
4. In the Description field, enter a name or title that briefly describes the maintenance request.
5. In the "Functional location" and "Asset fields", select a functional location or an asset, or a combination of a functional location and an asset, as you require. You can create a maintenance request without selecting an asset, and the asset can be added to the maintenance request later. If the maintenance worker who is signed in is related to a resource that is related to an asset, the Asset field is automatically set.

If a maintenance request is already attached to the selected asset, a message bar appears at the top of the Create request dialog box to notify you about the ID of the existing maintenance request.

6. In the Service level field, select a service level that indicates the urgency of the request.
7. If the maintenance request has caused maintenance downtime, enter the start date and time of the downtime.

The "Started by" field is automatically set to your name.

8. The Actual start field is automatically set to the current date and time. However, you can change the value as you require.
9. In the Notes field, enter any additional notes that are required.
10. Select OK.





### Create A Work Order from a maintenance Requests.

After you've created maintenance requests, you can easily convert them to work orders.

- Select the maintenance request that is already created



Figure 60 – Auto work order creation

- Select work order, and the work order will be created and in the maintenance request itself, it will show the related work order created. In some conditions, the workorder will not be created:
  - If the asset was already in repair or in certain condition, the system will not allow you to pass a work order in it.

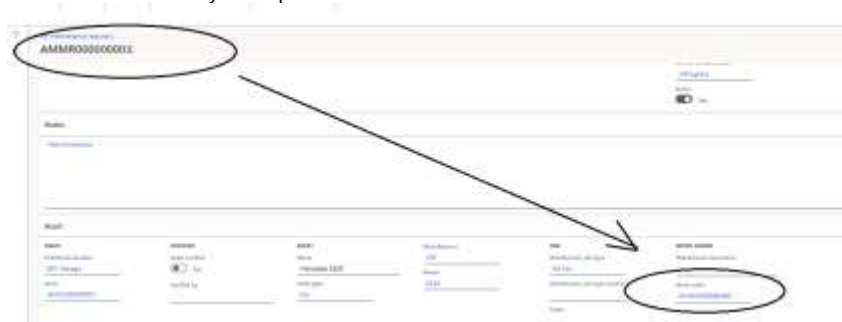


Figure 61 – Work order screen

- So, now the work order is ready to be processed and include in it the related cost after the engineer finish the maintenance (See work order processing section)

#### 3.3.1. Requirements

ID	Desc	Fit/GAP
AM-003-001	Create Maintenance Request	FIT
AM-003-002	Add Location, asset, notes, maintenance downtime, start date.	FIT
AM-003-002	Create Work order from Maintenance Request	FIT

### 3.4. AM-004 Work Order Processing Details

#### Process Diagram

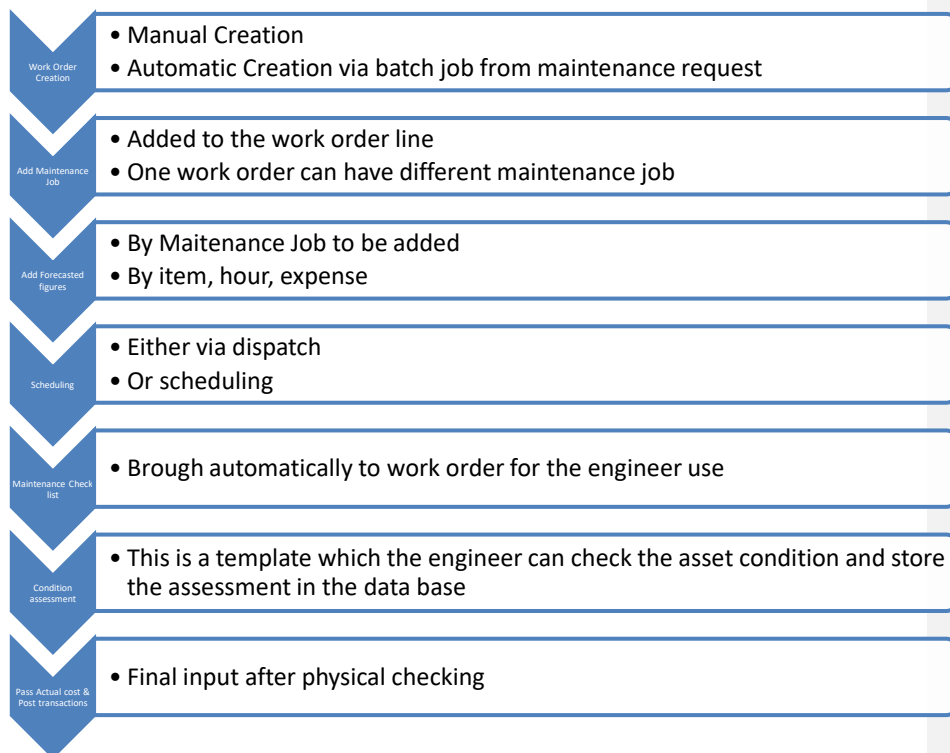


Figure 62 – Process diagram of work order processing details

## TO-BE Process Overview

Within the work order, all the info below is available:

- Asset number
- Maintenance request number
- Scheduled start and end date
- Actual start and end date → it will be automatically done once the physical maintenance is being done and then once the WO is submitted to be closed then the end date will be detected.

The screenshot displays the SAP Work Order header and details for work order AMWO000000922. The interface includes a top navigation bar with tabs for 'Header', 'Assets', 'Dates', 'Actuals', 'Work order number', 'Status', 'Work order number', 'Status', 'Work order number', 'Status'. The main content area shows the work order details, including the asset number (10), planned start and end dates (01.11.2021 12:00:00 AM to 14.11.2021 12:00:00 AM), and actual start and end dates (14.11.2021 12:00:00 AM to 14.11.2021 12:00:00 AM). Below this, there is a table with columns for 'Application', 'Status', 'Work order number', 'Planned start', 'Planned end', 'Actual start', 'Actual end', 'Work order number', 'Status', 'Work order number', 'Status', 'Work order number', 'Status'.

Figure 63 – Work order header and details

- You may Add many lines. Every line represents a maintenance Job like inspection, Ad Hoc, calibration...
- In the work order maintenance Jobs tab, there is "Asset documents" where you can attach a file, document, picture or even a note.

**A. As mentioned previously in the setup section of Forecast (1.3.3. in 2.A):**

- Project is already installed in the work order line.
- We previously set up a forecasted figures and we put it in the maintenance job type default (set of combination of Asset type, maintenance job)
- Now, we can identify what are the forecasted quantities, Hour, expenses, items that are brought up to this maintenance job (See below)

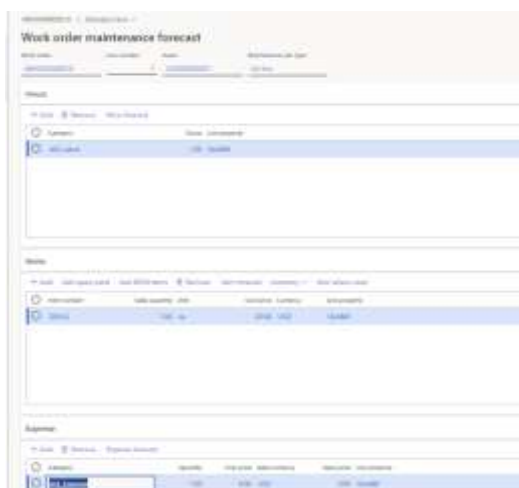


Figure 64 – Work order maintenance forecast

- Or simply we can add them manually based on the business need (Technica confirmed that most of the time they will use the predefined forecast).

## B. Inspection time:

- Now, it is time to send someone for Inspection, so you have to choose 1 of these options (*Make sure to change the status to a status that allows scheduling*)

1. Click on **Dispatch**: this is the option no one can know if this person is available or not but if it not available, the system will warn you.

The screenshot shows the 'Schedule work order' form. The 'WORK ORDER' section includes fields for 'Work order ID' (100), 'Order date' (10/01/2022), 'Order time' (10:00), and 'Order status' (Dispatch). The 'DISPATCH' option is selected under the 'Status' section. The 'Worker' field is set to 'John Doe'.

Figure 65 – Work order Dispatch (assign worker)

2. For automatic scheduling, click on "**Schedule**", the system will show you the available person by day by time so that you can choose the available one (note that these people will be available and also based on the responsible person that we have placed in the setup).

The screenshot shows the 'Schedule work order' form with the 'Schedule' option selected. Below the form, a calendar view displays the availability of workers for the selected work order. The calendar shows dates from 10/01/2022 to 10/07/2022. The 'Worker' field is set to 'John Doe'.

Day	10/01/2022	10/02/2022	10/03/2022	10/04/2022	10/05/2022	10/06/2022	10/07/2022
10/01/2022	10:00	10:00	10:00	10:00	10:00	10:00	10:00
10/02/2022	10:00	10:00	10:00	10:00	10:00	10:00	10:00
10/03/2022	10:00	10:00	10:00	10:00	10:00	10:00	10:00
10/04/2022	10:00	10:00	10:00	10:00	10:00	10:00	10:00
10/05/2022	10:00	10:00	10:00	10:00	10:00	10:00	10:00
10/06/2022	10:00	10:00	10:00	10:00	10:00	10:00	10:00
10/07/2022	10:00	10:00	10:00	10:00	10:00	10:00	10:00

Figure 66 – Work order Schedule (assign worker)

- There is an option where you can enable actual date scheduling on certain status.

Figure 67 – Work order header

- 

Figure 68 – Work order Journals

- | Voucher transactions |                |          |         |         |                |          |         |        |         |
|----------------------|----------------|----------|---------|---------|----------------|----------|---------|--------|---------|
| Document             |                | Date     |         | Name    |                | Account  |         | Amount |         |
| Account              | Document       | Date     | Name    | Account | Document       | Date     | Name    | Amount | Balance |
| 171000               | Pay(000000000) | 6/1/2007 | Payroll | 171000  | Pay(000000000) | 6/1/2007 | Payroll | 400.00 | 400.00  |
| 171000               | Pay(000000000) | 6/1/2007 | Payroll | 171000  | Pay(000000000) | 6/1/2007 | Payroll | 400.00 | 400.00  |
| 171000               | Pay(000000000) | 6/1/2007 | Payroll | 171000  | Pay(000000000) | 6/1/2007 | Payroll | 400.00 | 400.00  |
| 171000               | Pay(000000000) | 6/1/2007 | Payroll | 171000  | Pay(000000000) | 6/1/2007 | Payroll | 400.00 | 400.00  |
| 171000               | Pay(000000000) | 6/1/2007 | Payroll | 171000  | Pay(000000000) | 6/1/2007 | Payroll | 400.00 | 400.00  |

Figure 69 – Voucher transactions

- One thing to be mentioned here that this for every work order line, there is a project number and activity that is created which is integrated with the project management module (See setup section elaborating in detail).

Work order: AMWC000000932

Line details

Asset: AMAS000000025

Project: Project 01

Location: Location 01

Activity: ACTIVITY 01

Figure 70 – Work order line details

- Once the entries are posted, this means that the work order actual end date should be filled now and the status of the order to be changed to finished.
  - Meantime, as long as the order is not yet closed, the asset number will have a status under in repair.

Asset: AMAS000000025: Test Nicolas

Status: In Repair

Figure 71 – Asset header

- Once the WO status is marked as finished, the system will automatically change the status of the asset to “active” again. And by that it will be available again for future maintenances.

Asset: AMAS000000025: Test Nicolas

Status: Active

Figure 72 – Asset header (2)

### C. Maintenance Check list / Condition assessment

As previously mentioned in the setup section, the above subject are automated in to the work order after being added on certain combination. So now, if I opened my work order

pending I can see a suggested maintenance check list that will be to identify what are the things to be done to accomplish this job (see below).

Item number	Name	Type	Status	W/O	Asset number	Reference	Status
10	Check oil level	Task	Not started		4444444444	Maintenance job type	Not started
20	Check belt tension	Task	Not started		4444444444	Maintenance job type	Not started
30	Check fluid levels	Task	Not started		4444444444	Maintenance job type	Not started

Figure 73 – Work order maintenance Job check list

Same for condition assessment either to be brought automatically, or let the user assess it manually based on predefined template:

Item number	Name	Type	Status	W/O	Asset number	Reference	Status
10	Check oil level	Task	Not started		4444444444	Maintenance job type	Not started
20	Check belt tension	Task	Not started		4444444444	Maintenance job type	Not started
30	Check fluid levels	Task	Not started		4444444444	Maintenance job type	Not started

Figure 74 – Work order Condition assessment

#### D. Project Transactions view

Within work order screen you may check the project transactions passed as actual cost during the maintenance job life cycle

- As you can see it is tracked by asset number, work order number, category and resource assigned to this maintenance job and sure the cost incurred.

Date	Asset number	Work order number	Category	Resource	Cost
2019-01-01	4444444444	4444444444	Maintenance	4444444444	100.00
2019-01-01	4444444444	4444444444	Maintenance	4444444444	100.00
2019-01-01	4444444444	4444444444	Maintenance	4444444444	100.00

Figure 75 – Posted project transactions.

### E. Reports / Inquiries

Knowing that the work order has been closed, now you can see a view of what was forecasted Vs what was spent:

- Within the work order click on the below and explore the different figures either by cost or by hour



Figure 76 – Work order related information

- Once you click on it, you will have to run it from start to end date either for all line or for specific maintenance job (below inquiry for view purposes).
- Also, depends on if this is a preventive maintenance, or corrective, or investment the values will show in.



Figure 77 – Work order cost control inquiry

#### 3.4.1. Requirements

ID	Desc	Fit/GAP
AM-004-001	Work order processing (Manual creation or via maintenance request batch processing)	FIT
AM-004-002	Assign 1 maintenance job for work order or many maintenances job (different work order line)	FIT
AM-004-003	Add forecasted figures (either automated or added manual depends on the setup)	FIT
AM-004-004	Work order scheduling via dispatch or schedule	FIT
AM-004-005	Attach documents for work orders	FIT
AM-004-006	Maintenance Check list / Asset Condition Assessment	FIT
AM-004-007	Add charges on work order line by item by expense by hours cost	FIT

AM-004-008	Post Transactions	FIT
AM-004-009	Work order life cycle status validation on next step	FIT
AM-004-010	Generate reports/inquiry for checking actual vs forecast figures	FIT

### 3.5. AM-005 Preventive Maintenance Plans (Automation)

#### Process Diagram

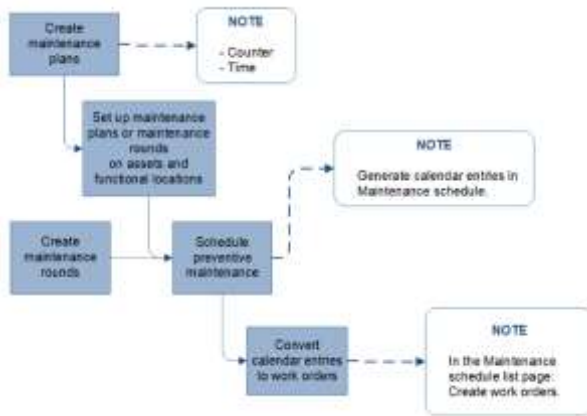


Figure 78 – Preventive maintenance process diagram

## TO-BE Process Overview

Maintenance plans are used for preventive and reactive maintenance on individual assets.

The work order proposals are saved as maintenance schedule lines, which can be bundled and converted into work orders via batch processing (Optional either we enable to auto creation or disable it) → see below:

Go to asset management → periodic → preventive maintenance → Schedule maintenance plan.

Figure 79 – Scheduling maintenance plan batch job

The setup of maintenance plan is covered in the setup section.

Go to Asset Management → Periodic → Preventive Maintenance → **Schedule maintenance plans.**

1. Run
2. Then go to Maintenance schedule → click open maintenance schedule line.

Figure 80 – Maintenance plan scheduled.

3. You have the ability to adjust the schedule before confirming the plan.
4. And move number of days 6 for example:

Adjust selected maintenance schedule lines

Expected start date (this is auto)

☒ EXPECTED START

☐ NEW EXPECTED START

Expected start: 14 Jun 2020 (2020-06-14)

☒ MOVE EXPECTED START

Number of days: 6

☐ EXPECTED END

Expected end: 20 Jun 2020 (2020-06-20)

☐ EXPECTED AGE

Expected age: 6

☐ EXPECTED DUE DATE

Expected due date: 20 Jun 2020 (2020-06-20)

☐ EXPECTED LEVEL

Expected level: 1

☐ REPAIRABLE

Repairable: 1

Figure 81 – Maintenance plan scheduled adjustments

5. Click ok and the expected start date will be 14 Jun + 6 days = 20 Jun
6. Select the maintenance plan and click on New → Work order (this is in case you wanted to be created manually without enabling the auto creation)
  - a. It all depends on the maintenance plan related to which maintenance job, asset type..

Line	Name	Asset	Maintenance plan	Maintenance type	Maintenance level	Maintenance date	Maintenance status	Maintenance description	Maintenance location	Maintenance priority	Maintenance category	Maintenance sub-category	Maintenance action	Maintenance action description	Maintenance action location	Maintenance action status
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Figure 82 – Maintenance scheduled lines

7. Plan will disappear and the work order will be created accordingly.
8. And from there the rest is already mentioned in the work order section

**A. Run maintenance plan manually:**

Within the same screen of the maintenance plan that we elaborate in the setup section, there is a button name "Auto create". Once you click on this button the maintenance will be run specifically without waiting any scheduled batch.



Figure 83 – Maintenance plans

**B. Work order automation:**

Work order creation should be automated based on the maintenance request; the information captured in the maintenance request should be sufficient for work order creation (as mentioned in the above section)

While using the automation process, Technica will adopt creating 1 project ID same for all the maintenance (as per setup section, this is done once a lifetime and all the created work order will bring the project ID automatically).

**N.B:**

For service items as agreed with Technica, we will create 1 asset for service items, and we will do the maintenance and the related work orders in it.

### 3.5.1. Requirements

ID	Desc	Fit/GAP
AM-005-001	Run Automatic Maintenance Schedule for Maintenance Plans	FIT
AM-005-002	Run Manually Maintenance schedule for Maintenance Plans	FIT
AM-005-003	Adjust schedule before creating work order	FIT

AM-005-004	Create Work Order Automatically Via Maintenance Plans	FIT
AM-005-005	Auto creation of Work order based on the maintenance request	FIT
AM-005-006	Service items maintenance / work orders on 1 asset	FIT

### 3.6. AM-006 Reports & Inquiries

1. Below listed reports are D365 Out of the box report/inquiries that will fulfill all the need of Technica's team requirements:
  - a. Asset consumption Report:

Asset consumption						Page 1 of 1
Commodities System - USA						04/06/2023
						09:49
Asset	AssetID:00000004		Name: 20mhz			
Name	Quantity:40000	Units	Item	Expense	Total	
Inventory	0.00	00.00	0.00	0.00	118.88	
Net Inv	0.00	00.00	0.00	0.00	00.00	
ASL (ASL)	0.00	00.00	0.00	0.00	00.00	
SubInventory			0.00	0.00	20.00	
ASL (Inventory)			20.00	0.00	00.00	
Inventory:00000004: 20mhz		80	20.00	0	118.88	

- b. Maintenance Status inquiry: the buttons in the header you can select them and thrill down by date, by month...

- c. Capacity load:

d. Item where used:

e. Asset cost control:

f. Hour cost control:

- g. Functional location cost control: same above concept
- h. Functional location hour control: same above concept
- i. Maintenance schedule cost:

j. Capacity Load:

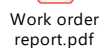
k. Work order cost control:

I. Work order date control:



p. Work order consumption report:

q. Work order report: → Open the PDF



- Master List.xlsx

Machines breakdown time.xls

Machine repair by quarter.xls

Cost of repairs.xls

Activities vs frequency.xls

Preventive Schedule.xls

## DOCUMENT APPROVALS

I have reviewed the information contained in this document and approved it through by sign off below:

Name	Department	Date	Signature

Comments:

- Will The work orders related to the preventive maintenance plan be created manually or automatically?

As I mentioned in the work order section, in the batch job selection while running the preventive maintenance, you may ask the system to auto generate the work order or leave it to be generated manually later (Optional both ways)

- The report we need to generate for the preventive maintenance will show all the work orders (for specific due dates) for all the assets in one report? Or each work order will be in one report?

It can show by work order by asset or all together depends on the data selection. Report name in D365 IS "Work order Report". I will place it in the Report section FYI (3.6. AM-006 Reports & Inquiries)

- All the reports I have sent before can be generated from this system? (Example: Break down time of each asset, qty of corrective repairs of each asset during a specific period...)

I will place all these excel that you have sent in the FRD in Reports section. Sure we will not use the same format that you have sent. We will use existing inquiries and reports in the system that already have all the requested data. In case of missing any field yes we can add it as long as this info exist on asset or work order or maintenance level. Easy to add (Most of your reports exist in D365 under "Asset cost control" inquiry which is mentioned now in section 3.6. AM-006 Reports & Inquiries point#1

The specifications and conditions are hereby accepted. Info-Sys is authorized to execute the project as outlined in this document. This document is not valid until signed by the customer representative and returned to Info-Sys.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_