Critical manufacturing
an ASM PT company

Maintenance Schedule Options

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Maintenance Schedule Options

This tutorial outlines the scheduling modes and parameters used in the Maintenance Management module of Critical Manufacturing MES. These settings determine when maintenance tasks are due and how to configure them, with examples for Time Based, Usage Based, and Usage and Time Based **Maintenance Activities**. Use this guide to configure and interpret maintenance scheduling behavior in Critical Manufacturing MES and take advantage of flexible, rule-based maintenance intervals.

Time Schedule Mode

	Time	Usage	Usage and Time
Applicability	✓	✗	✓

In Time Based or Usage and Time Based maintenance schedules, tasks can follow different scheduling modes. These modes determine how due dates are calculated when weekends or holidays occur. The main options are **Any Day**, **Next Working Day**, and **Previous Working Day**.

Consider a maintenance scenario where oil must be changed in a machine every 30 days. These are the configuration options for **Schedule Mode** and how they work:

Time Schedule Mode	Explanation	Example
Any Day	Maintenance is due every 30 calendar days from the previous completion date, regardless of weekends or holidays.	Due January 1st → completed January 5th → next due February 4th
Next Working Day	If the calculated due date falls on a weekend or holiday, it moves to the next working day.	Due January 1st (Sunday) → moved to January 2nd (Monday)
Previous Working Day	If the calculated due date falls on a weekend or holiday, it moves back to the previous working day.	Due January 1st (Sunday) → moved back to December 30th (Friday)

Table: Schedule Mode options and examples

Next MAO Schedule Mode

	Time	Usage	Usage and Time
Applicability	✓	✗	✓

When configuring a **Maintenance Plan Instance** created by associating the **Maintenance Plan** with an entity, you can define how the system determines the next available calendar day when the **Maintenance Activity Order (MAO)** will be scheduled. The options are **Earliest** and **Latest**.

Consider a scenario where monthly maintenance occurs on the 1st of each month, starting September 25th. These are the configuration options and how they work:

Next MAO Schedule Mode	Next Scheduled MAO	Explanation	Example
Earliest	October 1st	The earliest possible 1st day after the base date is selected. CM MES does not wait for the full monthly interval — it schedules for the next available 1st of the month.	Base date: September 25th → scheduled for October 1st
Latest	November 1st	CM MES waits for the full monthly interval before setting the next schedule. It selects the next 1st day after one full month.	Base date: September 25th → scheduled for November 1st

Table: Next MAO Schedule Mode options and examples

Schedule Next Mode

	Time	Usage	Usage and Time
Applicability	✓	✓	✓

In maintenance scheduling — whether Time Based, Usage Based, or Usage and Time Based — the **Schedule Next Mode** option defines how the next maintenance due date or threshold is determined after a task is completed. The two main modes are **Fixed** and **Dependant**, which differ in how they handle delays or late completions.

Consider a maintenance scenario with a usage based activity (replace rollers every 500 productive cycles) and a time based activity (inspect conveyor belt every 30 days). These are the configuration options for **Schedule Next Mode** and how they work:

Schedule Next Mode	Explanation	Usage Based Example	Time Based Example
Fixed	Maintenance is always due after the original planned interval, whether based on time or usage. The schedule does not shift if maintenance is completed late.	Due at 500 → completed at 520 → next due at 1000 cycles	Due January 1st → completed January 5th → next due January 31st
Dependent	Maintenance is rescheduled based on the actual completion date or usage. The interval restarts from when the task finishes.	Due at 500 → completed at 520 → next due at 1020 cycles	Due January 1st → completed January 5th → next due February 4th

Table: Schedule Next Mode options and examples

Time Due Options

	Time	Usage	Usage and Time
Applicability	✓	✗	✓

You can define different values to determine when a time based **MAO** is due, depending on the flexibility you want in the process.

Consider a monthly inspection scenario for a conveyor belt. There are three properties you can configure to make the process more adaptive: **Starting At**, **Time Early Due**, and **Time Late Due**.

Property	Explanation	Example
Starting At	The exact planned start time for the maintenance activity.	October 1st, 2025, 08:00 AM
Time Early Due	Maintenance can be performed up to 2 days early without being considered "early". This provides flexibility if technicians or resources are available ahead of time.	September 29th, 2025
Time Late Due	Maintenance can be delayed up to 3 days without penalty. After that, the system may trigger alerts or automatic actions (for example, mark the asset as on Hold and apply the `Auto Disable After Late Due` rule).	October 4th, 2025

Table: Time Due options and examples

Usage Due Options

	Time	Usage	Usage and Time
Applicability	✗	✓	✓

You can define different values to determine when a usage based **MAO** is due, depending on the flexibility required in the process.

Consider a maintenance scenario where rollers are replaced every 500 productive cycles. There are three properties you can configure to make the process more agile and adaptive: **Usage Due**, **Usage Early Due**, and **Usage Late Due**.

Property	Explanation	Example
Usage Due	The point when maintenance is expected to occur based on usage metrics.	500 productive cycles

Property	Explanation	Example
Usage Early Due	Maintenance can be performed up to 50 cycles early without being marked as "early". This allows planning flexibility.	450 productive cycles
Usage Late Due	A grace window of 50 cycles is allowed after the due point. If the task is not completed by 550 cycles, it becomes "late due".	550 productive cycles

Table: Usage Due options and examples

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