

Maintenance Management



Provides Preventive and Corrective Maintenance to Resources, Containers, Areas and Materials

Overview

Proper maintenance of equipment is critical to maintain the health and performance of manufacturing assets to reduce unplanned downtime. There are four different types of maintenance: corrective, preventive, condition based and predictive. Corrective maintenance is performed for unplanned downtime; preventive maintenance is based on pre-defined time and usage schedules; condition-based is triggered when certain conditions are observed; and predictive maintenance estimates the remaining useful life and failure probabilities. A maintenance involves the execution of a set of tasks as defined in a checklist, the replacement of spare parts, and the collection of data either for historical or verification purposes.

The Maintenance Management module supports the creation of maintenance plans and their associated activities. The MES ensures that maintenance plans are followed as defined and keeps track of the maintenance history for every equipment. As a fully integrated module, the usage counters are automatically increased as material is processed and prevents equipment from being used if maintenance is due. The system also checks the certifications of maintenance technicians and updates the inventory of spare parts as they are consumed. The Scheduling module is alerted of planned maintenance down times to ensure that equipment is unavailable.

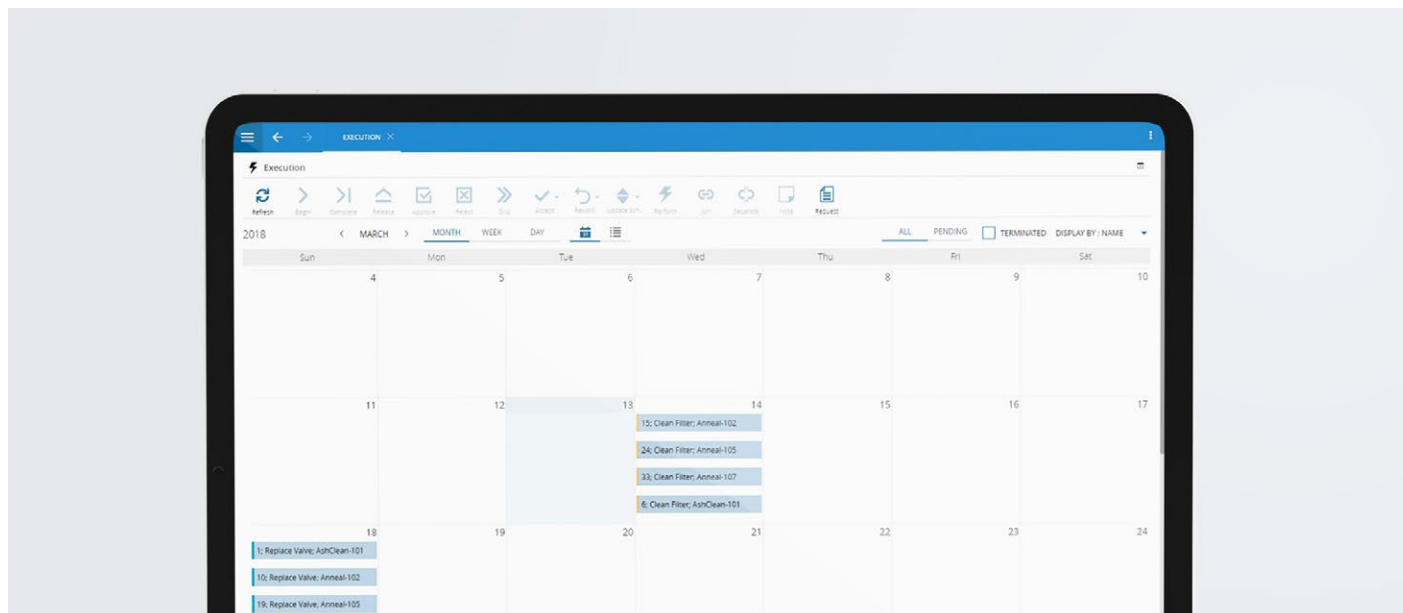


Figure 1 Maintenance activities visualization

Key Features

- Support for time-based, usage-based and ad-hoc (on demand) maintenance activities. Being an integrated system, the counters can be incremented automatically based on MES operations
- Support for Equipment Qualification at Equipment, Sub-Equipment, Equipment Service and Equipment Recipe level.
- Support for multiple maintenance plans per Resource (Equipment), Container, Area or Material
- Support for maintenance grace periods, between a user defined early due and late due
- Capability to prevent a Resource, Container or Material from being used if there is a maintenance activity is after late due
- Support for defining a Checklist, a Data Collection, a list of a SPC Charts and a list of spare parts for every Maintenance Activity
- Support for linked maintenance activities. For example, it's possible to define that a yearly maintenance includes a monthly maintenance
- Support for Approving, Rejecting, Releasing, Beginning, Completing, Aborting, Accepting and Reworking maintenance activities
- Capability to trigger business rules when different schedule states of a Maintenance Activity are reached
- Support for repairable spare parts
- Enforcement and tracking of maintenance labor personnel and labor hours
- Automatic cost calculation based on labor and parts
- Visualization of the maintenance activities in a Calendar view or as a table
- Integration with Material Tracking, Resource Tracking, Data Collection, SPC, Labor Tracking, Costing, SPC and Scheduling

Benefits

- Improved operational equipment effectiveness
- Better equipment utilization
- Better visibility and planning of maintenance personnel
- Reduction of downtime
- Improved maintenance history and traceability
- Improved spare parts inventory management

The screenshot displays the 'Perform Maintenance Activity Order' interface. At the top, there are tabs for 'CHECKLIST', 'DATA COLLECTION', 'PARTS', and 'PERSONNEL', with 'PARTS' currently selected. Below the tabs is a table with two columns: 'Part' and 'Quantity'. The table contains two rows: 'Pump' with a quantity of 2/1, and 'Valve' with a quantity of 2/1. To the right of the table, there are product details for 'Valve-01', including 'Actual Qty: 2', 'Consume Qty: Yes', 'Optional: false', 'Units: Pieces', 'Planned Qty: 1', 'Delta: -1', and 'Cost: 100'.

Part	Quantity
Pump	2/1
Valve	2/1

Product: Valve
 Actual Qty: 2
 Consume Qty: Yes
 Optional: false
 Units: Pieces
 Planned Qty: 1
 Delta: -1
 Cost: 100

Figure 2 Maintenance activities visualization