



# Maison Enterprise Asset Management Brochure







## Enterprise Asset Management

*The energy industry is amongst the world's most asset intensive with millions of dollars invested in mobile assets such as rigs, trucks and machinery, fixed assets like batteries, plants and pipelines, and technology assets including satellites, PDAs and laptop computers. Added to this mix are the human credentials of experience and certification that are required to maintain these assets and effectively deploy them in practice. Traditional asset maintenance solutions fall short in their ability to manage complex equipment configurations.*



*Microsoft Dynamics AX EAM has addressed these shortcomings by offering a high-specification solution centered on advanced configuration management. Mobile or fixed, simple or complex, Microsoft Dynamics AX EAM integrates enterprise asset management with your mission critical business systems affording you unparalleled process efficiencies.*



*The health of the equipments, machines, parts, fleets, tools, and assets have a considerable impact on the productivity & efficiency of your production units, plants, crews, customer service and consequently determines the profitability of your organization. Microsoft Dynamics AX Enterprise Asset Management provides integrated view of planning and maintenance of enterprise assets and equipments for several assets intensive industries, including manufacturing, oil & gas, petrochemical, energy and power, life sciences, transportation and fleets, constructions and telecommunication. This is done by enabling tight integration of Dynamics AX EAM functionalities with Dynamics AX core modules: AX Finance, Trade & Logistics and HR.*



*Dynamics AX EAM uses highly effective business analytics, on-line queries and more than 150 reports built in for quicker decision-making process thus providing better Availability, Reliability and Maintainability (ARM) of all critical assets, equipments, parts, crews and machine tools. Dynamics AX EAM offers real-time information that is crucial to productivity and efficiency of your assets, machines, tools, fleets and timely allocation of crews for successful planning and maintenance of these valuable machines, machine parts and any items that require planning and repair works.*





Key Functions Overview	Key Benefits
<ul style="list-style-type: none"> <li>➤ Multi-levels tracking of assets, equipments, machines, machine parts, crews and tools.</li> <li>➤ Detailed equipments and assets history</li> <li>➤ Planned Maintenance Schedules</li> <li>➤ Opportunity Maintenance</li> <li>➤ Work order scheduling and work flow process</li> <li>➤ Supervisor's workbench and authorization</li> <li>➤ Automatic alerts and email notifications to crews and managers</li> <li>➤ Corrective Repairs &amp; Maintenance</li> <li>➤ Breakdown Maintenance</li> <li>➤ Maintenance costs: Actual vs Budgeted costs tracking</li> <li>➤ Resources allocation and crew management</li> <li>➤ Condition Monitoring/Predictive Maintenance</li> <li>➤ Shutdown/Turnaround Maintenance</li> <li>➤ Safety &amp; Permit</li> <li>➤ Warranty Interface</li> <li>➤ Business Intelligence &amp; reporting interface with more than 150 reports</li> <li>➤ Tightly integrated with Dynamics AX Finance, Trade and</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reduce asset maintenance and operating cost</li> <li>➤ Properly maintained machines minimize downtime</li> <li>➤ Production cost decreases</li> <li>➤ Continuous improvement in commonly performed work.</li> <li>➤ Improved equipment life</li> <li>➤ Enhanced equipment availability and reliability</li> <li>➤ Improved employee work efficiency</li> <li>➤ Consistent operation of machinery improves product quality</li> <li>➤ Improve reporting and analysis capabilities.</li> <li>➤ Comply with Health and Safety Regulations.</li> <li>➤ Improve Business Planning and make informed decisions.</li> <li>➤ Improve operational efficiencies.</li> <li>➤ Increase productivity and profitability.</li> <li>➤ Improve strategic and business planning; Analyze records, needs and patterns.</li> <li>➤ Identify trends and highlight potential problem</li> </ul>





## Product Features

### Assets Equipments Definitions

- Attaches notes, drawings or any other document to assets, equipments, parts item
- Associates the relationship of each equipment to the asset details for expense capitalization, depreciation etc.
- Specifies the cost center and accounting details to which maintenance expenses are to be posted
- Records details of manufacturer, purchase, warranty, MTBF, history and information for each equipment
- Ability to define parameters of an equipment for condition monitoring
- Tracks associated costs, histories, and failures of a serialized piece of equipment as it moves throughout a plant or facility
- Builds failure code hierarchies to record equipment problems for analysis
- Performs trending and defect analysis through conditions monitoring, by set measurement points
- Assigns stores, repair shops as location record to facilitate continual tracking
- Provision to copy equipment and related details to multiple new equipment
- User definable levels in equipments, assets and item categories definition
- User definable attributes as templates for capturing Technical & Process parameters for an Equipment type & Sub type combination
- Queries to view availability of Interchangeable Equipment (similar Equipment)
- Warranty details for action on Equipment under warranty, claims etc.
- Monitors cost spent on equipments, parts, crews etc.
- Supports limited number of equipment locations for grouping equipment based on functional or planning attributes



<b>Equipments: Bill of Material</b>	<ul style="list-style-type: none"> <li>➤ Assets, Equipment, machinery, tools can be broken down into sub-assemblies which can be further broken down into discrete parts for maintenance purposes</li> <li>➤ Features to track specific part across all assets, equipments, machinery where it is used</li> <li>➤ Features to capture the criticality of equipments, parts etc.</li> <li>➤ Definition of spares for an equipment to provide effective monitoring / procurement / availability of spares and interchangeability details.</li> <li>➤ Provision to build assets, equipments hierarchy using parent – child relationships.</li> </ul>
<b>Trouble Shooting guide</b>	<ul style="list-style-type: none"> <li>➤ Allows creation of trouble shooting guides by associating set of problems, their causes and the corresponding solutions to failures</li> <li>➤ Easy user interface of defect codes and repair codes from the experience</li> <li>➤ Maintains details of each asset, equipment problems faced by maintenance personnel across the organizations and possible solutions to such problems</li> </ul>
<b>Resource Allocation</b>	<ul style="list-style-type: none"> <li>➤ Easy user interface to define resources like employees / tools / items and others.</li> <li>➤ Stores and retrieves technical scope of work for attending different types of jobs on the equipment</li> <li>➤ Stores estimates of the spares, consumables, man days and skills required for various jobs</li> <li>➤ Provision to allocate standard costs to each type of resource for cost tracking</li> <li>➤ Easy user interface to define types of attendance for employees like normal time, over time etc.</li> <li>➤ Provision to change costs of resource at work order level without affecting the standard cost</li> </ul>



<h2>Planned Maintenance</h2>	<ul style="list-style-type: none"> <li>➤ Defining activities to be carried out and updates of observation.</li> <li>➤ Resource planning and allocation of crews.</li> <li>➤ Definition of job to equipment along with details of frequency, expiry etc. to follow-up &amp; planning.</li> <li>➤ Schedule definition either as Hour based or periodicity based.</li> <li>➤ Matching multi -function jobs of Planned Maintenance for same Tag number.</li> <li>➤ Base shift – facility to shift base date globally for all equipments in the event of major stoppage/turnarounds by which all base dates are pushed for the number of days specified.</li> <li>➤ Histograms to view Load, resources requirement, Planned Vs actual for PM jobs.</li> <li>➤ Tracks cost for Job based on Crew, Material &amp; Special tools usage.</li> <li>➤ View status of material required for executing job, other jobs for the same equipment during authorization.</li> <li>➤ Prepare lubrication templates and plan lubrication schedule</li> </ul>
<h2>Condition Monitoring</h2>	<ul style="list-style-type: none"> <li>➤ Work orders generated when measurements fall outside warning limits and tolerances are exceeded.</li> <li>➤ Alerts can be attached / sent when control limits and tolerance are exceeded</li> <li>➤ Generation of schedules for equipments configured for condition monitoring</li> <li>➤ Sketch capturing as an image and definition of points.</li> <li>➤ Performance Data sheet – Catering to Temperature, Thickness measurement</li> <li>➤ Equipment Severity – Catering to Spike Energy, Vibration &amp; Displacement</li> <li>➤ Shock Pulse - Catering to Shock pulse details</li> <li>➤ Assets, Equipment and machines history with vibration data</li> <li>➤ Defining Jobs, Schedule &amp; Execute</li> <li>➤ Generation of Predictive Maintenance Report, History &amp; other analysis reports</li> <li>➤ Graphs for Trending</li> </ul>



<b>Opportunity Maintenance</b>	<ul style="list-style-type: none"> <li>➤ Create, review &amp; authorize jobs which cannot be taken-up immediately but can be taken up at an opportune time along with crew, material &amp; special tools requirement.</li> <li>➤ Access to views other jobs of Planned Maintenance / Work request for the same asset, equipment while authorization for effective use of stoppage.</li> </ul>
<b>Turnaround</b>	<ul style="list-style-type: none"> <li>➤ Creates standard codified activities</li> <li>➤ Creates repository of jobs Equipment wise to define Crew, Material &amp; Special tools requirement</li> <li>➤ Includes jobs from other modules to create standard job list in addition to jobs from the standard repository.</li> <li>➤ Plans, monitors &amp; executes jobs during actual Turnaround</li> <li>➤ Auto generation of maintenance work order's for shutdown jobs from shutdown register</li> </ul>
<b>Run Log</b>	<ul style="list-style-type: none"> <li>➤ Easy user interface to start / shut globally in status change run-logs</li> <li>➤ Query to view Reliability Run/Shut hours for all/any Equipment</li> <li>➤ Query to view Run/Shut/PM hours for any/all Equipment</li> <li>➤ Query based on Run-log to view availability of Equipment</li> </ul>
<b>Maintenance Planning Horizon</b>	<ul style="list-style-type: none"> <li>➤ Maintenance periods can be user defined and managed</li> <li>➤ Preventive maintenance details are automatically generated during period opening once maintenance periods are defined.</li> <li>➤ Work Orders scheduled can be reviewed and checked</li> </ul>





## Work order Management

- Easy user interface to create work orders for corrective / preventive / breakdown / overhaul maintenance
- Generate orders for reconditioning or repair works
- Easy user interface to generate blanket work orders for carrying out work on several equipments in a group (for example, replacement of tube lights and oil top-up in lubricating units)
- Easy user interface for automatic routing of requests to concerned maintenance planners for approval
- Option to convert maintenance requests to work orders automatically on approval
- User interface to monitor progress of work requests
- User interface to close requests on satisfactory completion of maintenance work
- Easy user interface to specify failure details in terms of problems and their causes
- User interface to specify tasks to be performed in a work order along with material and resource requirements
- Provision to copy tasks to the work order from the steps of Maintenance service sheet
- Easy user interface to copy tasks with material and resource requirements to the work order from standard procedures
- User interface to attach notes, equipment drawings / documents, standard operating guidelines for each task in a work order
- Easy user interface to look-up spares from spares structure of equipment
- User interface to define non-standard parts on-the-fly while specifying the task requirements in a work order
- User-defined categorization for work orders
- Capture accounting and cost center details for posting to accounting heads
- Set priority to the work order for scheduling



<h2>Work Execution</h2>	<ul style="list-style-type: none"> <li>➤ Assigns employees/ resources to carry out each task on one or more dates</li> <li>➤ Captures actual time spent by each resource on maintenance work</li> <li>➤ User interface to capture the actual time spent by employee (i.e. timesheet) on work order</li> <li>➤ User interface to specify break up for each time type i.e. normal hours or overtime</li> <li>➤ Specifies consumption details of items issued from inventory through section stores to facilitate return of balance items</li> <li>➤ Tracks issues, returns, receipts (including serial no details of items) for a work order</li> <li>➤ Specifies reasons for delay in execution of work</li> <li>➤ Provision to capture details of down hours, root cause and closing comments of the supervisor/planner.</li> <li>➤ Selectively flag off tasks as completed during the work order execution</li> </ul>
<h2>Analysis and Reviews</h2>	<ul style="list-style-type: none"> <li>➤ Analyzes maintenance history for a location, equipment / equipment group, cost center for a fiscal year or calendar year.</li> <li>➤ Graphically review the cost (total cost, resource or material costs) trend for equipment across various time periods</li> <li>➤ Tracks maintenance costs for an asset, equipment, machine for various types of work orders and different cost elements such as contract resource, employee resource, standard parts, miscellaneous costs, etc.</li> <li>➤ User interface to view cost break up between the main equipment and its child</li> <li>➤ User interface to view detailed history, resources and material utilized for all work orders</li> <li>➤ User interface for graphical analysis of equipment maintenance cost, down hours etc.</li> <li>➤ Performs failure analysis by reviewing the frequency of cause for various equipment</li> <li>➤ Provision to review history of spares usage</li> <li>➤ Supports tracking of work orders status like completed, in progress etc.</li> </ul>



## **Permit and Isolation**

- Comprehensive Work/Safety Permits and linked with work orders
- Parameterized validity period
- Multiple permits for a work order
- Multiple Extensions of permits
- Automatic closure of permits after validity period
- Specification of Isolations and normalizations
- Isolation linkage to work order and permits
- Specifications of Tag in tag out

# **Enterprise Asset Management**

- ✓ **Asset Maintenance & Repair**
- ✓ **Asset Maintenance Management**
- ✓ **Material and Workforce Handling**
- ✓ **Asset Configuration Management**
- ✓ **External Servicing and Workflow**



Microsoft Dynamics 365



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### ❖ Asset Maintenance and Repair

- ✓ Increase visibility and uptime of critical revenue generating plant assets
- ✓ Manage Equipment & Equipment groups
- ✓ Maintain and Manage Schedules and Requested Work Orders
- ✓ Manages Repair & Failure Codes
- ✓ Multiple Warehouses & Sites
- ✓ Maintain Workforce & Maintenance skills
- ✓ Maintain and Manage Standard Maintenance Procedures
- ✓ Raise the performance levels of internal services and related contractors
- ✓ Improve decision making

Dynamics 365 Finance and Operations Enterprise Asset Management > Common > Work Orders

APPROVAL CANCEL RELEASE COMPLETE MATERIAL  
Approve Cancel Release Complete Post Close Return

ALL WORK ORDERS

Filter

Work Order Id	Equipment Id	Equipment Name	Location Code	Location Name	Priority
WO_ID-000000001	Eq-000000002	PE Jaw Crusher	PROD	Production Site	High
WO_ID-000000002	Eq-000000017	SYNCHRONOUS GENE...	PROD	Production Site	High
WO_ID-000000003	Eq-000000003	PEW Jaw Crusher	PROD	Production Site	High
WO_ID-000000004	Eq-000000004	Impact Crusher	PROD	Production Site	High
WO_ID-000000005	Eq-000000017	SYNCHRONOUS GENE...	PROD	Production Site	High
WO_ID-000000006	Eq-000000017	SYNCHRONOUS GENE...	PROD	Production Site	High
WO_ID-000000008	Eq-000000021	Drag Chain Conveyor	PROD	Production Site	Medium
WO_ID-000000010	Eq-000000004	Impact Crusher	PROD	Production Site	High
WO_ID-000000011	Eq-000000033	AG-RCA	Cust-H		High
WO_ID-000000014	Eq-000000051	AIRBUS340-200	RIYADH	RIYADH AIRPORT	High
WO_ID-000000015	Eq-000000051	AIRBUS340-200	RIYADH	RIYADH AIRPORT	High
WO_ID-000000017	Eq-000000004	Impact Crusher	PROD	Production Site	High

### ✓ Asset Maintenance Management

- ✓ Define best practice Standard Maintenance procedures
- ✓ Reuse these procedures for Corrective, Preventative or Predictive maintenance
- ✓ Do what-if scenarios based on planned utilization of assets (mobile or fixed);
- ✓ Plan, allocate and execute maintenance
- ✓ Asset specific Scheduled and Requested Work Orders
- ✓ Track elapse time, hours send, spares used and other resources per Work Order

Dynamics 365 Finance and Operations Enterprise Asset Management > Setup > Equipment Maintenance

Edit +New Delete OPTIONS

Filter

Maintenance Id	Description
Main_ID-000000001	
Main_ID-000000003	
Main_ID-000000004	
Main_ID-000000005	
Main_ID-000000007	15000 MILES ANALYSIS
Main_ID-000000008	CHECK-A-MT
MRID-000000011	HP ProDesk 400 G4 MT
MRID-000000012	Lenovo S200 MiniTower
MRID-000000013	PowerTech PT4000 - Pet
MRID-000000014	Unique US 8500E 8.0 KW

EQUIPMENT MAINTENANCE

Maintenance Id Description  
Main\_ID-000000001

Maintenance Tasks

+ Add Task Remove Task Function

Task Code	Description	Sequence...
MT-1001	Movable jaw does not rotate...	0
MT-1002	Crushing plate shakes and m...	0
MT-1003	Increased granularity of crush...	0
MT-1004	Excessively high bearing tem...	0
MT-1005	Cleaning	0
MT-1006	Servicing	0
MT-1007	Oil Change	0



### ✓ Material Workforce Handling

- ✓ Item consumption per Maintenance Event
- ✓ Manages Material/Stock and Employee Skills
- ✓ Records all stock movements/transfers
- ✓ Purchase requisitions and purchase order management
- ✓ Task allocation and Time consumption w.r.t to Tasks, Work Orders and Employee

✓	Date	Item number	Site	Warehouse	L.	CW quantity	C.	Quantity
	7/5/2018	M0056	1	11				1,050.00
	7/5/2018	10005	1	11				2,050.00

### ✓ Asset Configuration Management

- ✓ Manage Asset conditions and Asset locations
- ✓ Manage Asset Numbers, Names and Groups
- ✓ Manage Asset Life, Life Inheritance from Parent Assets, Factored and UOM Converted Life
- ✓ Enforce Asset Number tracking and enforcement
- ✓ Manage the removal of Sub-assemblies and Component from Main Assets and Parent Assets

### ✓ External Servicing and Workflows

- ✓ External Service Management against tasks and Work Orders.
- ✓ Approval workflows for Scheduled and Requested Work Orders
- ✓ Approval and workflow capabilities reduce administrative workload and provide enhanced flexibility