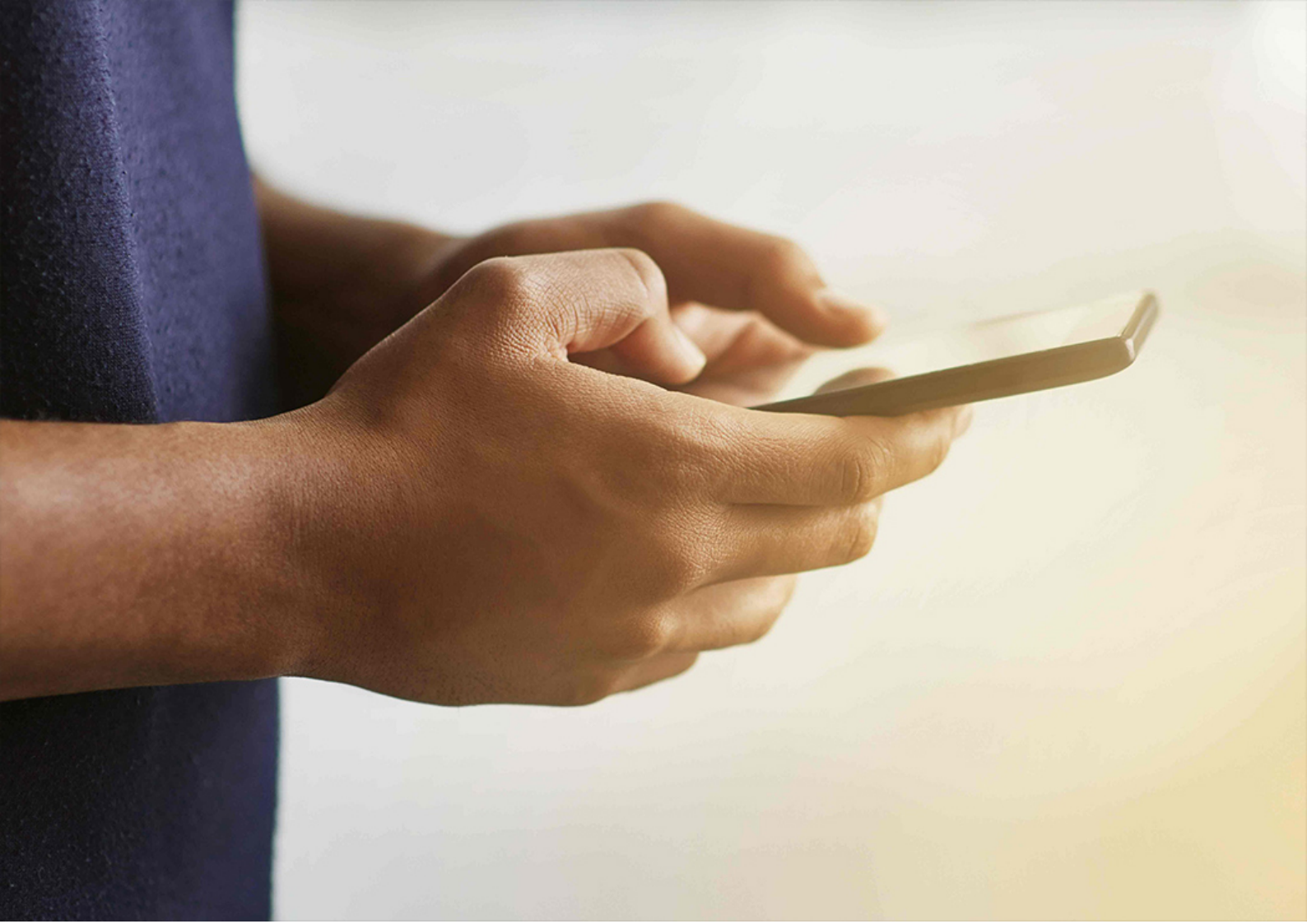




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Feature Scope Description for SAP Predictive Maintenance and Service, on-premise edition

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1 SAP Predictive Maintenance and Service, on-premise edition - Feature Scope Description

SAP Predictive Maintenance and Service, on-premise edition is an IoT product that brings together OT data (operational equipment sensor data) and IT data (business data), and applies analysis methods such as analytics and data mining to create insights that can be used to optimize business in areas such as maintenance, production, after-sales service, and procurement.

SAP Predictive Maintenance and Service, on-premise edition is designed to create an environment for systematic learning and business optimization, and comprises the following key areas:

- Collecting, storing, and managing large volumes of data from disparate sources, and providing means for cleansing and fusing these data sources together.
- Extracting insights from fused data sets by using analytics and data mining techniques.
- Using insights to optimize business.

About This Document

This feature scope description shows you which features are provided with SAP Predictive Maintenance and Service, on-premise edition. In addition, it defines the product documentation for SAP Predictive Maintenance and Service, on-premise edition.

Product Documentation

You can access the product documentation on the [SAP Help Portal](#)

Supported Languages

SAP Predictive Maintenance and Service, on-premise edition supports the following languages:

- English (locale: en) (**default UI language**)
- German (locale: de)
- Italian (locale: it)
- Simplified Chinese (locale: zh-CN)
- Japanese (locale: ja)
- French (locale: fr)
- Spanish (locale: es)

- Russian (locale: ru)

The language in which the UIs of SAP Predictive Maintenance and Service, on-premise edition are displayed depends on your browser language settings.

2 SAP Fiori Launchpad

You access the various functions of SAP Predictive Maintenance and Service, on-premise edition, using the SAP Fiori launchpad.

The launchpad supports the following SAP Fiori launchpad features:

- Anchor navigation
- Search
- Me area
 - App Finder
 - Settings : including the appearance of the launchpad and specifying a unit of measure
 - Edit Home Page

The role collections assigned to your user determine which groups and tiles are visible. The tiles are organised into the following groups:

- Master data - if you are a business user you can browse all kinds of related information about your equipment. If you are an administrator you can additionally create and edit master data.
- Processes - includes access to the **Explorer** and other equipment management functions.
- Administration - includes access to **configuration** of the Explorer and its analysis tools, including URL links to other systems such as MRP or ERP and user management.
- Machine learning engine - includes access to managing machine learning models.

3 Master Data and Processes

The following are available for creating master data and accessing processes. The roles assigned to your user determine whether you have read or write access to the following:

Overview of Scope of Master Data and Processes

Tile	Group	Use
<i>Equipment</i>	Master data	Create/display equipment. An item of an equipment is a physical instance of a model. An operator maintains additional information specific to an item of an equipment such as installation information, installation location, documents.
<i>Models</i>	Master data	Create/display models. A model is an abstract representation from the manufacturer that defines all maintenance and specification information related to a new or existing product. A physical equipment is an instance of a model.
<i>Locations</i>	Master data	Create/display a location is a virtual record of the location where an equipment is installed.
<i>Systems</i>	Master Data	Define systems based on a system model and assign system template to it.
<i>Spare parts</i>	Master data	Create/display spare parts. Spare parts are components that are kept in your inventory as spare. Typically, these components are not fitted into your equipment, but can be fitted into a piece of equipment when needed.
<i>Groups</i>	Master data	Create/display groups. You can group together different business objects for multiple purposes.
<i>Failure Modes</i>	Master data	Create/display failure modes. A failure mode is a probable failure that could occur to piece of equipment.
<i>Documents</i>	Master data	Create/assign/download/display documents for your equipment.
<i>Instructions</i>	Master data	Create/display instructions. An instruction is a set of steps that help the user to carry out a specific task, for example, maintenance of a specific piece of equipment

Tile	Group	Use
<i>Announcements</i>	Master data	Create/display announcements. An announcement is information communicated to equipment owners or operators, for example, to inform that an instruction has been updated.
<i>Explorer</i>	Processes	Use analysis tools in Explorer to view and filter data and navigate to the Equipment page to view a single equipment
<i>Performance Improvement</i>	Processes	Get suggestions or a solution for an equipment issue by creating an improvement request.
<i>Obsolescence Management</i>	Processes	A report that graphically illustrates deadlines for manufacturer support for a model or a piece of equipment.
<i>Lookup</i>	Processes	Search for error codes and look up related information for an equipment or a model.
<i>Smart Matcher</i>	Processes	Use the Smart Matcher application to assign models to a lean (equipment with no model assignment to it) equipment.

4 Explorer

The Explorer supports you in monitoring the health status of equipment while they are in operation.

Business Background

The Explorer is part of SAP Predictive Maintenance and Service, on-premise edition. It is used for the management of equipment health and supports maintenance scheduling and resource optimization based on health scores, anomaly detection, and machine learning.

To analyze the health status of your equipment, you use analysis tools.

Key Features

Key Feature	Use
Use analysis tool variants to analyze the health status of equipment.	Users can select analysis tool variants from the Analysis Tools Catalog and add them to the <i>Explorer</i> .
Select, search, and filter by equipment, work orders, notifications, or alerts	In the Equipment List, users can search for equipment, their attributes, assess status, and see the equipment hierarchy. In the Analysis Tools Catalog, users can select any of the variants defined in the configuration. In the <i>Explorer</i> you can move between the selected analysis tool variants using the anchor navigation and remove the analysis tools if required.
Global filter	You can select a work order, notification, alert or piece of equipment and choose <i>Apply as Filter</i> to apply the filter across all the analysis tools available in the Analysis Tools Catalog.
Display equipment scores	Users can see raw scores or normalized scores for equipment generated by machine learning algorithms. These scores indicate, for example, if the behavior of a piece of equipment is normal or abnormal. The scores can be displayed in the <i>Equipment List</i> , for example.
Display key figures and key figure sets	Users can see key figures and key figure sets for equipment (if configured accordingly by the administrator in the back-end).

Key Feature	Use
Analyze alerts	Users have a list of alerts. They can: • Display alerts in a 2D diagram for further analysis. • Find more information about the equipment and component for which alerts have been created. Click <i>Equipment Name</i>, <i>Component Name</i>, <i>Equipment ID</i>, and <i>Component ID</i> respectively. • View and create notifications related to an alert. Click <i>Notification ID</i> to view more details • View associated alert types and failure modes for an alert. Click <i>Type</i> to view the alert type.
Display work orders	Users can find more information about the work orders by clicking on the work order within the <i>Work Orders</i> analysis tool. The information is organised in tabs.
Display notifications	Users can find more information about the notifications by clicking on the notification within the <i>Notifications</i> analysis tool. The information is organised in tabs. Create notifications from the analysis tools, <i>Alerts</i> and <i>Notifications</i>.
Visualize sensor data in a 2D chart	From the Alerts analysis tool, users can access the 2D Chart and: • Display the selected alert and related measurement and threshold • Select a specific time interval they want to look at for a more focused analysis. • Rescale the y-axis • Use the time slider to quickly zoom in on a specific timeframe.
Display equipment on a map	Users can: • Select different base maps and different overlay layers (if configured accordingly). • Zoom into and out of the map. • Select equipment by drawing a geofence around them. • Pan the map • Use spider leg visualization - if at the lowest zoom level equipment are located so close together that they would appear as one icon, they are displayed as a cluster and the user can select that cluster and show all equipment as separate icons.
Edit table layout	In selected analysis tools, users can filter table contents and sort tables by columns. Users can also select the columns they want to display.

Key Feature	Use
Navigate	Users can navigate to the Equipment page from many of the analysis tools used in the Explorer.

5 Administration, Implementation, Configuration

SAP Predictive Maintenance and Service, on-premise edition supports you in administration, implementation, and configuration tasks.

Business Background

Users need to be authorized to use the services and applications provided with SAP Predictive Maintenance and Service, on-premise edition. An administrator creates these users and grants them the required permissions. An administrator also configures the analysis tools.

Key Features

Key Feature	Use
Role Templates	SAP Predictive Maintenance and Service, on-premise edition is delivered with a set of role templates containing the permissions that users need to work with the product services and applications. For more information, see the guide <i>Security Information for SAP Predictive Maintenance and Services, on-premise edition</i>.
REST APIs	SAP Predictive Maintenance and Service, on-premise edition is delivered with a set of REST APIs that administrators can use to complete the following actions: • Configure analysis tools • Configure variants of analysis tools • Create key figures and key figure sets • Display data • Upload data • Delete data • Register analysis tools in the Analysis Tools Catalog • Generate the Thing model For more information, see the API documentation.

Key Feature	Use
Configuration UIs for analysis tools, actions, and the application	Administrators can configure analysis tools variants and the Explorer using configuration UIs. They can also delete configurations of analysis tools.
Data upload	Administrators can load data for use with SAP Predictive Maintenance and Service, on-premise edition using the Executor Service.
Analysis Tool extension	Developers can create new analysis tools and make them available for use in the <i>Explorer</i> .

6 Machine Learning Engine

SAP Predictive Maintenance and Service, on-premise edition supports you in data science tasks.

Business Background

Data scientists need to work with certain algorithms in order to analyze sensor data and develop scores that, for example, give information about the health status of equipment. They also need to configure, train, and score models.

Key Features

Key Feature	Use
R packages	SAP Predictive Maintenance and Service, on-premise edition is delivered with R packages, which contain machine learning functions, algorithms, and abstraction layers. The packages can be used for training and scoring models: • Anomaly detection using principal component analysis (PCA) • Distance-based failure analysis using earth mover's distance (EMD) • Remaining useful life prediction using Weibull distribution (RUL) • Anomaly detection using multivariate autoregression (MAR) • Failure prediction using tree ensemble lassifier (TEC) • One Class Support Vector Machines (SVM) for anomaly detection • Logistic regression (LOR) for failure prediction

Key Feature	Use
REST APIs	SAP Predictive Maintenance and Service, on-premise edition is delivered with a set of REST APIs that data scientists can use to complete the following actions: • Display information about algorithms • Configure models • Train models • Score models • Monitor training jobs • Monitor scoring jobs • Display information about learner types • Display information regarding fusion views • Create custom algorithms • Integrate scores coming from SAP BusinessObjects Predictive Analytics For more information, see the API documentation for SAP Predictive Maintenance and Service, on-premise edition.
Managing the machine learning engine	Data scientists can use UIs provided on the launchpad to create, train, and score models, and to integrate custom algorithms. For more information, see the <i>Application Help</i>.

7 Integration

SAP Predictive Maintenance and Service, on-premise edition currently supports the following integration scenarios:

- SAP Multiresource Scheduling (SAP MRS) for scheduling maintenance for equipment.
Computerized maintenance management systems for posting work activities to a backend like SAP Customer Relationship Management (SAP CRM), SAP Plant Maintenance (SAP PM), or SAP Cloud for Customer (SAP C4C)
- SAP BusinessObjects Predictive Analytics to use scores coming from Predictive Factory in SAP Predictive Maintenance and Service, on-premise edition.

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