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Application Help for SAP Asset Strategy and Performance Management

THE BEST RUN

Content

1 Introduction to SAP Asset Strategy and Performance Management

SAP Asset Strategy and Performance Management is a cloud solution that enables plant managers and reliability engineers to measure and improve the performance of their assets and optimize the maintenance strategies.

Features

- Templates
  Define template that helps you to define the attributes attribute group, causes and effects. You use this create template of the following types:
  - Model template
  - Equipment template
  - Spare parts template
  - Location template
  - System template
- Models
  Model and assign business entities such as instructions, documents, announcements, parts information of the model. 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. A model is based on a template and allows users to add values to the definitions used in the underlying template.
- Systems
  Model systems and sub-system that help the operators to create hierarchies in addition to functional location hierarchy. This allows you to view the associated topology diagram and relevant connections can be made using the APIs.
- Equipment
  Create a piece of equipment based on an existing model, and add additional information such as operator, equipment installation information, equipment location information, and assign documents relevant to the equipment. In addition, it allows you to view the assessment score details of an equipment.
- Location
  Create a location and assign it to your item of equipment. This assignment is made based on the functionality of the items of equipment. A functional location corresponds to a virtual record of the location where an equipment is installed. This is based on a template and allows users to add values to the definitions used in the underlying template. In addition, it allows you to view the assessment score details of a location.
- Performance Improvement
  Provide suggestions or solutions about a piece of equipment, its process, or maintenance.
- Groups
  Group together different business objects for multiple purposes. In addition, you can view the assessment score details of groups.

- Spare Parts
  You use this feature to perform various operations on a spare part such as creating spare parts, viewing spare parts, and deleting spare parts. Spare parts are components that are kept in your inventory as spare. Typically, these components are not fitted into your item of equipment, but can be fitted into the item of equipment when needed. If these spare parts are fitted into the physical item of equipment, you can assign these spare parts to the corresponding model on the network.
- Failure Modes
  You use this feature to view the probable failure that could occur to piece of equipment or a model. A total of five objects can be assigned.
  The failure mode keeps the operator informed about possible failures and helps them to handle the failure modes efficiently.
- Announcements
  You use this feature to perform various operations on an announcement such as creating an announcement, viewing an announcement, updating an announcement, deleting an announcement, and assigning documents, models, items of equipment and locations (of type Availability) to an announcement. An announcement is the information that a manufacturer communicates to all his equipment owners or operators. For example: an existing instruction has been updated, or spare parts of an item of an equipment has been updated.
- Instructions
  You use this feature to set-up steps that help the user to carry out a specific task. The manufacturer shares the instructions with the operator. The instructions help the operator to maintain the equipment better.
- Assessment Templates
  You use this feature to create assessment template. This used while assessing equipment, location and groups. This can be of following types:
  - Risk and criticality assessment template
  - Questionnaire template
- Assessment
  You use this feature for assessing and viewing the calculated scores. This can be of the following types:
  - Risk and criticality assessment
  - Questionnaire
- Impacts
  You use this feature to view the impacts from the conducted risk assessments. For example an event may impact multiple aspects each with its own severity. This is defined as impacts for example safety of people and plant, environmental compliance, operational loss, financial impact and so on.
- Scale and Dimensions
  You use this feature to define the question and answers based on which the assessment is done.

> **i Note**
>
> - The sharing feature will only be available when SAP Asset Intelligence Network is installed and subscribed in the same tenant. If SAP Asset Strategy and Performance Management is installed as a stand-alone, the sharing will not be enabled for the applications.
> - This documentation may focus on examples from SAP Asset Intelligence Network such as Role Groups for information purposes only.

2 Administration

2.1 Managing Company Profile

As an organization administrator, you can edit your organization's company profile, add locations of your organization, add subsidiaries and maintain Industry IDs of your organization in SAP Asset Strategy and Performance Management. You can search for organizations using the industry member names. You can also create locations, contact persons and industry ID's for a subsidiary.

Prerequisites

Your organization and the users of your organization are successfully registered with SAP Asset Strategy and Performance Management and you have received the necessary information to logon to the SAP Asset Strategy and Performance Management and use the applications of SAP Asset Strategy and Performance Management.

Context

You use the *Company Profile* application to work with the company profile of your organization.

2.1.1 Adding Location Details of your Organization

Prerequisites

Your user ID either belongs to the groups `AIN_ORG_ADMIN`, or has the role `COMPANYPROFILE_DELETE`, `COMPANYPROFILE_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Company Profile* application.
2. Choose *Locations*.
3. Choose *New Location*.
4. In the *New Location* popup, enter the *Location Details* and *Contact Person Details*.
    1. For *Location Details*, enter the values for the fields as described in the table below:

Field	Description
Location Name (*)	Enter the name of your location.
Street/Number	Enter the street and house number information for your location.
Postal Code/City	Enter the postal code and city information for your location.
Country (*)	Enter the country information for your location.
Phone Number	Enter the phone number for your location.

    2. For **Contact Person Details**, enter the values for the fields as described in the table below:

> **i Note**
>
> If you want to use the primary contact person details of your base location, select the checkbox *Reuse Primary Contact Person Details*.

Field	Description
Title	Enter the title of your contact person
First Name (*)	Enter the first name of your contact person
Last Name (*)	Enter the last name of your contact person
Phone Number	Enter the phone number of your contact person
Email Address (*)	Enter the Email address of your contact person

> **i Note**
>
> The information you enter for your contact person will be visible for other companies when they are viewing your company profile.
>
> Therefore, make sure that your contact person is aware of this system behavior, and you only enter a contact person whose tasks include to represent your company location to external business partners.

> If you change a contact person, the previously entered contact person data gets overwritten with the new contact person information and cannot be restored.

5. Choose *Save*.

2.1.2 Updating Location Details of your Organization

Prerequisites

- You have at least one location of your organization in SAP Asset Strategy and Performance Management.
- Your user ID either belongs to the groups `AIN_ORG_ADMIN`, or has the role `COMPANYPROFILE_DELETE`, `COMPANYPROFILE_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Company Profile* application.
2. Choose *Locations* and select the location you want to edit.
3. Choose *Edit*.
4. In the *Edit Location* pop-up, update the *Location Details* and *Contact Person Details*.
5. Choose *Save*.

2.1.3 Deleting Location Details of your Organization

Prerequisites

- You have at least one location of your organization in SAP Asset Strategy and Performance Management.
- Your user ID either belongs to the groups `AIN_ORG_ADMIN`, or has the role `COMPANYPROFILE_DELETE` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Company Profile* application.
2. Choose *Locations* and select the location you want to delete.
3. Choose *Delete*.
    - To delete multiple locations, perform these steps:
        1. Choose the **List View** icon.
        2. Select all the locations you wish to delete.
        3. Choose *Delete*.
4. Choose *OK* on the warning message.

2.1.4 Creating Subsidiary Details

You perform this procedure to add your subsidiary company details to the network.

Prerequisites

Your user ID either belongs to the groups `AIN_ORG_ADMIN`, or has the role `COMPANYPROFILE_DELETE`, `COMPANYPROFILE_EDIT` and `DOCUMENT_EDIT` or `DOCUMENT_DELETE` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Company Profile* application.
2. Choose *Subsidiaries*.
3. Choose *New* .
4. In the *New Subsidiary* popup, add the following details:
    1. For Subsidiary Details enter the values for the fields as described in the table below:

Field	Description
Company Name(*)	Name of the subsidiary company
Subsidiary Logo	Browse the subsidiary logo and upload
Company Short Name	Enter a short name for the subsidiary

Field	Description
Roles (*)	Choose the roles from the dropdown Th following roles are available: ◦ Bill-To Party ◦ Insurer ◦ Manufacturer ◦ Operator ◦ Regulator/Authority ◦ Retailer ◦ Service Provider ◦ Ship-To Party ◦ Software Partner/Content Partner ◦ Sold-To Party ◦ Supplier / Dealer
Mnemonics	Enter informal names (for example, obsolete company names, abbreviations or potential wrong spellings) of the subsidiary company that may be used for search.
Street/Number	Enter the street and house number information for the subsidiary
Postal Code	Enter the postal code information for the subsidiary
City	Enter the city information for the subsidiary
Country (*)	Enter the country information for the subsidiary
Phone Number	Enter the phone number of the subsidiary
Web Site (*)	Enter the URL of the subsidiary Web site
Acquired Subsidiary	Specify if your organization has acquired the subsidiary. i Note Yes/No is a toggle button. If Yes, specify the date you acquired the subsidiary company.
Contact Person Details	Enter the contact person title, first name, last name, phone number, and e-mail address

2. For Contact Person Details enter the values for the fields as described in the table below:

i Note

The information you enter for subsidiary contact person will be visible for other companies when they are viewing the subsidiary information in your company profile.

Therefore, make sure that your subsidiary organization is aware of this, and you only enter a subsidiary contact person whose tasks include to represent the subsidiary externally.

If you change a subsidiary contact person, the previously entered subsidiary contact person data gets overwritten with the new subsidiary contact person information and cannot be restored.

Field	Desccription
Title	Enter the title of the subsidiary contact person
First Name (*)	Enter the first name of the subsidiary contact person
Last Name (*)	Enter the last name of the subsidiary contact person
Phone Number	Enter the phone number of the subsidiary contact person
Email Address (*)	Enter the Email address of the subsidiary contact person

5. Choose *Save*.

Results

The subsidiary company, as a separate entity, cannot create or access business objects in the network.

i Note

You can also create locations and industry IDs for subsidiaries. To do so, open the subsidiary and choose *Locations* or *Industry IDs* to maintain the respective information.

2.1.5 Viewing Company Profile

Prerequisites

Your user ID either belongs to the groups `AIN_ORG_ADMIN`, `AIN_ORG_DATA_EXPERT` or `AIN_ORG_DATA_READ`, or has the roles `COMPANYPROFILE_DELETE`, `COMPANYPROFILE_READ`, or `COMPANYPROFILE_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Company Profile* application.
2. Choose *Locations* to view the locations of an organization.
3. Choose *Subsidiaries* to view the list of all the subsidiary companies or acquired companies of an organization.

   Choose Industry IDs to view or search for member IDs or member name as SAP Asset Intelligence Network account has in a specific industry group.

2.1.6 Editing Company Profile

Prerequisites

Your user ID either belongs to the groups AIN_ORG_ADMIN, or has the role COMPANYPROFILE_DELETE, COMPANYPROFILE_EDIT assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18]

Procedure

1. Open the *Company Profile* application.
2. Choose *Edit* to edit your Company Details and your Primary Contact Person Details
   a. In the *Edit Company Profile* > *Company Details* dialog box, enter the values for the fields as described in the table below:

Field	Description
Company Name (*)	Enter your company name.
Web Site (*)	Enter the URL of your company Web site

Field	Description
Company Logo	Browse for and upload the logo of your company. **i Note** The logo will be displayed on the Company Profile, on the Company Details, as well as on list views/ grid views that show company information.
Background Image	Upload a background image for your company.
Company Short Name	Enter your company short name **i Note** This short name will be displayed in list/grid views (for example, in Business Partner app), and value helps (for example, Manufacturer/Operator/Service Provider value helps) if it is mainatined. .
Roles (*)	Select additional roles for your company from the drop-down. **i Note** The selected roles will indicate to your business partners in which roles you participate in SAP Asset Strategy and Performance Management. The role selection here also adds your company name to the respective value helps.
Mnemonics	Enter informal names (e.g. obsolete company names, abbreviations or potential wrong spellings) for your company that other business partners may search for. **Example:** In Company Profile you entered SAP SE as company name. Some of your business partner may still know your company as SAP AG. If you enter SAP AG in the mnemonic field, business partners in SAP Asset Strategy and Performance Management who still search by SAP AG will find you under the official company name SAP SE.
Street/Number	Enter the street and house number information for your company.

Field	Description
Postal Code/City	Enter the postal code and city information for your company
Country (*)	Enter the country information for your company
State/Region	Enter the state and region information for your company
Phone Number	Enter the phone number for your company.

b. In the *Edit Company Profile* > *Primary Contact Person Details* dialog box, enter the values for the fields as described in the table below:

> **Note**
>
> The information you enter for your primary contact person will be visible for other companies when they are viewing your company profile.
>
> Therefore, make sure that your primary contact person is aware of this system behavior, and you only enter a primary contact person whose tasks include to represent your company to external business partners.
>
> If you change a contact person, the previously entered contact person data gets overwritten with the new contact person information and cannot be restored.

Field	Description
Title	Enter the title of your primary contact person
First Name (*)	Enter the first name of your primary contact person
Last Name (*)	Enter the last name of your primary contact person
Phone Number	Enter the phone number of your primary contact person
Email Address (*)	Enter the Email address of your primary contact person

3. Choose *Save*.

2.1.7 Recording Industry ID Information

You perform this activity to maintain the unique reference number (for example, a vendor ID, a manufacturer ID) your company has with a standard organization that issues such unique IDs.

Prerequisites

Your user ID either belongs to the groups `AIN_ORG_ADMIN`, or has the role `COMPANYPROFILE_DELETE`, `COMPANYPROFILE_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18]

Procedure

1. Open the *Company Profile* application.
2. Choose the *Industry IDs* tab.
3. Choose *New*.
4. In the *New* window, under the *Industry ID Detail*, fill in *Industry Group*, *Member ID* and *Member Name*.
5. Choose *Save*.

2.2 Application Settings

You must be an organization administrator to perform the activities using Application Settings.

You can perform the following tasks with this application:

- Create user information (see Creating User Details [page 25])
- Update user information (see Updating User Details [page 27])
- Delete user information (see Deleting User Details [page 27])
- Configure document size limit: Use this functionality to set the maximum document size limit. This setting determines the allowed maximum upload size of your documents from the *Documents* application. For more information, see Configuring Document Upload Size [page 29]
- Create an extension for the object pages of models, equipment, locations, spare parts, or improvement cases and use as a plug-in in the respective object pages. For more information, see Creating an Extension for Business Objects [page 31]
- Configure Prefix: Configuring the Prefix for the Object ID of your Organization [page 28].

> **i Note**
>
> Only premium account holders can maintain prefix. The prefix is valid for its invitees as well. Prefix maintenance section is made non-editable for the invitee administrators.

- Maintain Email domains for Automatic User Creation. Premium accounts can maintain one or more Email domains for their organization.
- Maintain customer-specific list of object types. In the reusable dialog to maintain external IDs, you can optionally select the previously maintained object types to create multiple `<External IDs for a system>`.
- In the section *Organizational Configurations* you can:
    - Enable *User Authorization*, and *Spare Parts Obsolescence*.
    - Define the Retention Period for the deleted users after which the users will be permanently deleted from the system.
    - Define retention period for off-boarding objects.
    - Define the Default Scope (in case your organization is working with multiple scopes).
    - Define a technical user with user name, user ID and e-mail address.
- You can maintain 2 default indicator names in the header information of all the equipment in your organization using the *Header Status* section.
- Define the automatic email domains for user under *General Application Settings* > *Automatic User Creation*.
  As a premium organization administrator, you have to maintain allowed email domains, relevant for premium organization users, if there are one or more invitee organizations on-boarded using *Company Profile* app.

  > **i Note**
  >
  > This is to avoid any invitee user from getting on-boarded as premium organization user automatically and hence be able to access premium organization data, which is inappropriate from a security perspective.

- Object Types: The object types are used for external systems integration.
  To support external object ID mapping, you are provided with a capability to add custom object type, in case a relevant object type is missing in the standard list using *Application Settings* > *Object type* > *Add*.
  You can use it later for corresponding External ID mapping in *Company Profile* app.
- Under *General Application Settings* > *Bar Code Configurations*, you can define the `<Prefix>` and `<Suffix>`. You can then use the RFID feature in the *Lookup* application in devices that support RFID reader.
- You can maintain the default configuration settings for the equipment, model, and system object page under *Object Page Configurations*.

2.3 Configuration Tasks

As an organization admin, you perform several configuration tasks.

The following list provides the list of tasks that an administrator performs:

- Assign roles to the users of your organization (see Roles for SAP Cloud Platform - Neo Environment [page 18]).
- Configure the Application Settings (see Application Settings [page 16]).

- Configure documents at subclass level (see Configuring the Document Category [page 29]).

2.3.1 Roles

2.3.1.1 Roles for SAP Cloud Platform - Neo Environment

SAP Asset Strategy and Performance Management provides the following three predefined groups:

> **Note**
>
> These predefined groups as well as the single roles listed below are available in SAP Cloud Platform Cockpit, and the assignment of users to the predefined authorization groups is done there.
>
> For more details, see Administrator Guide for SAP Asset Intelligence Network.

The group `ORG_ADMIN` has the following predefined roles:

Role Name	Description
`TEMPLATE_DELETE`	*Templates* application.
`MODEL_DELETE`	Create, update, view, or delete a model using the *Models* application.
`EQUIPMENT_DELETE`	Create, update, view, or delete an item of equipment using the Create, update, view, or delete a model template, equipment and location templates using the *Equipment* application.
`INSTRUCTION_DELETE`	Create, update, view, or delete an instruction using the *Instructions* application.
`ANNOUNCEMENT_DELETE`	Create, update, view, or delete an announcement using the *Announcements* application.
`DOCUMENT_DELETE`	Create, update, view, or delete a model template, equipment andCreate, update, view, or delete a document using the *Documents* application.
`COMPANYPROFILE_DELETE`	Create, update, view, or delete your organization details using the *Company Profile* application.
`IMPROVEMENT_DELETE`	Create, update, view or delete improvement cases using the *Performance Improvement* application

Role Name	Description
FUNCTIONAL_LOCATION_DELETE	Create, update, view or delete locations using the *Locations* application
PART_DELETE	Create, update, view or delete locations using the *Spare Parts* application
CONFIGURATION_DELETE	Perform all configuration tasks using the *Application Settings* application
FAILURE_MODE_DELETE	Create, update, view or delete failure modes using the *Failure Modes* application
GROUP_DELETE	Create, update, view or delete groups using the *Groups* application
SYSTEM_DELETE	Create, update, view or delete systems using the *Systems* application
INDICATOR_DELETE	Create, update, view or delete indicators.
USER_AUTH_DELETE	Create, update, view or delete user authorizations using the *User Authorization* application.
ASSESSMENT_DELETE	Create, update, view or delete assessments.
FINGERPRINT_DELETE	Create, update, view or delete fingerprints.
FUNCTION_DELETE	Create, update, view or delete functions.

The group ORG_DATA_EXPERT has the following predefined roles:

Role Name
TEMPLATE_DELETE
MODEL_DELETE
EQUIPMENT_DELETE
INSTRUCTION_DELETE
ANNOUNCEMENT_DELETE
DOCUMENT_DELETE
COMPANYPROFILE_DELETE
IMPROVEMENT_DELETE
FUNCTIONAL_LOCATION_DELETE
PART_DELETE
CONFIGURATION_READ
FAILURE_MODE_DELETE

Role Name
GROUP_DELETE
SYSTEM_DELETE
INDICATOR_DELETE
USER_AUTH_DELETE
ASSESSMENT_DELETE
FINGERPRINT_DELETE
FUNCTION_DELETE

The group ORG_DATA_READ has the following predefined roles:

Role Name	Description
TEMPLATE_READ	View a model template using the *Templates* application.
MODEL_READ	View a model using the *Models* application.
EQUIPMENT_READ	View an item of equipment using the *Equipment* application
INSTRUCTION_READ	View an instruction using the *Instructions* application.
ANNOUNCEMENT_READ	View an announcement using the *Announcements* application.
DOCUMENT_READ	View an document using the *Documents* application.
COMPANYPROFILE_READ	View your organization details using the *Company Profile* application
IMPROVEMENT_READ	View an improvement case using the *Performance Improvement* application.
FUNCTIONAL_LOCATION_READ	View a location using the *Locations* app
PART_READ	View a spare part using the *Spare Parts* app
CONFIGURATION_READ	View all configuration-related settings using the *Application Settings* app
FAILURE_MODE_READ	View a failure mode using the *Failure Modes* application
GROUP_READ	View a group using the *Groups* application
SYSTEM_READ	View a system using the *Systems* application
INDICATOR_READ	View indicators.

Role Name	Description
`USER_AUTH_READ`	View user authorizations using the *User Authorization* application.
`ASSESSMENT_TEMPLATE_READ`	View assessment templates
`FINGERPRINT_READ`	View fingerprinst.
`FUNCTION_READ`	View functions.

There are additional roles that do not belong to any of the groups. The following table lists these roles:

Role Name	Description
`ANNOUNCEMENT_EDIT`	Create, update, or view an announcement using the *Announcements* application.
`COMPANYPROFILE_EDIT`	Create, update, or view your organization details using the *Company Profile* application.
`DOCUMENT_EDIT`	Create, update, or view an document using the *Documents* application.
`EQUIPMENT_EDIT`	Create, update, or view an item of equipment using the *Equipment* application.
`INSTRUCTION_EDIT`	Create, update, or view an instruction using the *Instructions* application.
`MODEL_EDIT`	Create, update, or view a model using the *Models* application.
`TEMPLATE_EDIT`	Create, update, or view a model template using the *Templates* application.
`IMPROVEMENT_EDIT`	Create, update or view an improvement case using the *Performance Improvement* application.
`FUNCTIONAL_LOCATION_EDIT`	Create, update or view a location using the *Locations* application.
`PART_EDIT`	Create, update or view a spare part using the *Spare Parts* application.
`CONFIGURATION_EDIT`	Perform all configuration tasks using the *Application Settings*app
`FAILURE_MODE_EDIT`	Create, update or view a failure mode using the *Failure Modes* application
`GROUP_EDIT`	Create, update or view a group using the *Groups* application

Role Name	Description
SYSTEM_EDIT	Create, update or view a system using the *Systems* application
INDICATOR_EDIT	Create, update, or view indicators
USER_AUTH_EDIT	Create, update or view user authorizations using the *User Authorization* application.
ASSESSMENT_EDIT	Create, update, view, or delete assessments
ASSESSMENT_TEMPLATE_EDIT	Create, update, view, or delete assessment templates
FINGERPRINT_EDIT	Create, update, view or delete fingerprints.
FUNCTION_EDIT	Create, update, view or delete functions.

As an administrator you can assign users to the above mentioned groups. Additionally, you can create your own groups, assign roles to the groups and assign users to these groups.

DPP_AUTH role is available for data protection and privacy officers to access the *Blocked Users* and *Logs* section in the Data Protection and Privacy application.

For more information, see *SAP Cloud Platform* > *Managing Roles* at http://help.sap.com/. As an administrator you can also create users and assign any of the above mentioned roles.

> **Note**
>
> You must also assign the role AIN_GENERAL to either the groups or users to ensure that the users in the group can access the SAP Asset Strategy and Performance Management applications hosted on the SAP Fiori Launchpad

2.3.1.2 Roles for SAP Cloud Platform - Cloud Foundry Environment

SAP Asset Strategy and Performance Management provide the following two predefined role templates:

- ASPM_ORG_DATA_EXPERT - for reading, editing, and deleting data
- ASPM_ORG_DATA_READ - for reading data

> **Note**
>
> These predefined role templates as well as the single roles listed below are available in SAP Cloud Platform – Cloud Foundry Cockpit. For more details, see Setting up Roles and Onboarding Users.

The role template ASPM_ORG_DATA_EXPERT has the following predefined roles:

Role Name	Description
TEMPLATE_DELETE	Templates application.
MODEL_DELETE	Create, update, view, or delete a model using the *Models* application.
EQUIPMENT_DELETE	Create, update, view, or delete a piece of equipment using the *Equipment* application.
INSTRUCTION_DELETE	Create, update, view, or delete an instruction using the *Instructions* application.
ANNOUNCEMENT_DELETE	Create, update, view, or delete an announcement using the *Announcements* application.
DOCUMENT_DELETE	Create, update, view, or delete a document using the *Documents* application.
COMPANYPROFILE_DELETE	Create, update, view, or delete your organization details using the *Company Profile* application.
IMPROVEMENT_DELETE	Create, update, view, or delete improvement cases using the *Performance Improvement* application
FUNCTIONAL_LOCATION_DELETE	Create, update, view, or delete locations using the *Locations* application
PART_DELETE	Create, update, view, or delete locations using the *Spare Parts* application
CONFIGURATION_DELETE	Perform all configuration tasks using the *Application Settings* application
FAILURE_MODE_DELETE	Create, update, view, or delete failure modes using the *Failure Modes* application
GROUP_DELETE	Create, update, view, or delete groups using the *Groups* application
SYSTEM_DELETE	Create, update, view, or delete systems using the *Systems* application
INDICATOR_DELETE	Create, update, view, or delete indicators.
USER_AUTH_DELETE	Create, update, view, or delete user authorizations using the *User Authorizations* application.
RISK_ASSESSMENT_DELETE	Create, update, view, or delete assessments.
ASSESSMENT_TEMPLATE_DELETE	Create, update, view, or delete assessment templates.
FUNCTION_DELETE	Create, update, view, or delete functions.

The role template ASPM_ORG_DATA_READ has the following predefined roles:

Role Name	Description
TEMPLATE_READ	View a model template using the *Templates* application.
MODEL_READ	View a model using the *Models* application.
EQUIPMENT_READ	View an item of equipment using the *Equipment* application
INSTRUCTION_READ	View an instruction using the *Instructions* application.

Role Name	Description
ANNOUNCEMENT_READ	View an announcement using the *Announcements* application.
DOCUMENT_READ	View a document using the *Documents* application.
COMPANYPROFILE_READ	View your organization details using the *Company Profile* application
IMPROVEMENT_READ	View an improvement case using the *Performance Improvement* application.
FUNCTIONAL_LOCATION_READ	View a location using the *Locations* app
PART_READ	View a spare part using the *Spare Parts* app
CONFIGURATION_READ	View all configuration-related settings using the *Application Settings* app
FAILURE_MODE_READ	View a failure mode using the *Failure Modes* application
GROUP_READ	View a group using the *Groups* application
SYSTEM_READ	View a system using the *Systems* application
INDICATOR_READ	View indicators.
USER_AUTH_READ	View user authorizations using the *User Authorizations* application.
ASSESSMENT_TEMPLATE_READ	View assessment templates
RISK_ASSESSMENT_READ	View assessments
FUNCTION_READ	View functions

There are additional roles that do not belong to any of the role templates. The following table lists these roles:

Role Name	Description
ANNOUNCEMENT_EDIT	Create, update, or view an announcement using the *Announcements* application.
COMPANYPROFILE_EDIT	Create, update, or view your organization details using the *Company Profile* application.
DOCUMENT_EDIT	Create, update, or view a document using the *Documents* application.
EQUIPMENT_EDIT	Create, update, or view an item of equipment using the *Equipment* application.
INSTRUCTION_EDIT	Create, update, or view an instruction using the *Instructions* application.
MODEL_EDIT	Create, update, or view a model using the *Models* application.
TEMPLATE_EDIT	Create, update, or view a model template using the *Templates* application.
IMPROVEMENT_EDIT	Create, update, or view an improvement case using the *Performance Improvement* application.

Role Name	Description
FUNCTIONAL_LOCATION_EDIT	Create, update, or view a location using the *Locations* application.
PART_EDIT	Create, update, or view a spare part using the *Spare Parts* application.
CONFIGURATION_EDIT	Perform all configuration tasks using the *Application Settings* app.
FAILURE_MODE_EDIT	Create, update, or view a failure mode using the *Failure Modes* application.
GROUP_EDIT	Create, update, or view a group using the *Groups* application.
SYSTEM_EDIT	Create, update, or view a system using the *Systems* application.
INDICATOR_EDIT	Create, update, or view indicators.
USER_AUTH_EDIT	Create, update, or view user authorizations using the *User Authorizations* application.
RISK_ASSESSMENT_EDIT	Create, update, view, or delete assessments.
ASSESSMENT_TEMPLATE_EDIT	Create, update, view, or delete assessment templates.
FUNCTION_EDIT	Create, update, view, or delete functions.

As an administrator you can assign users to the above-mentioned roles or role templates. Additionally, you can create your own groups, assign individual roles (from any of the above-mentioned role templates and roles) to the groups and assign users to these groups.

DPP_AUTH role is available for data protection and privacy officers to access the Blocked Users and Logs section in the Data Protection and Privacy application.

For more information, see *SAP Cloud Platform* > *Managing Roles* at http://help.sap.com/. As an administrator you can also create users and assign any of the above-mentioned roles.

2.3.2 Creating User Details

As an administrator you can add the details of the users of your organization to SAP Asset Strategy and Performance Management.

Prerequisites

- Your user ID either belongs to the groups ORG_ADMIN, or has the role CONFIGURATION_DELETE, CONFIGURATION_EDIT assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- The users that you create have been assigned predefined roles of **SAP Asset Strategy and Performance Management** to access and perform appropriate actions using applications of **SAP Asset Strategy and Performance Management**.

Procedure

1. Open the **SAP Cloud Platform** Cockpit for your account.
2. Choose *Security* > *Authorizations* > *Authorization* tab.
3. Choose the respective role and assign the user ID to the role. For more information about roles, see Roles for SAP Cloud Platform - Neo Environment [page 18]

   > **i Note**
   >
   > The user IDs you assign here are the user IDs you obtained when creating or importing your users in SAP Cloud Platform Identity Administration Console (for more details see Administrator's Guide for SAP Asset Intelligence Network).

4. Log on to **SAP Asset Strategy and Performance Management**.
5. Open the *Application Settings* application.
6. Navigate to *Users* > *Add*.
   a. Choose *Add Single User* to add a single user only.

      Enter the user ID, first and last name, email address and organization name.

      > **i Note**
      >
      > The user IDs you enter here are the user IDs you obtained when creating or importing your users in SAP Cloud Platform Identity Administration Console (for more details see Administrator's Guide for SAP Asset Intelligence Network), and which you also used to assign the user to the respective role (see step 3 above).

   b. Choose *Mass Upload Users* to add at multiple users.
   a. Download the CSV template.
   b. Enter the user ID, first and last name, email address and organization name in the template.

      > **i Note**
      >
      > The user IDs you enter here are the user IDs you obtained when creating or importing your users in SAP Cloud Platform Identity Administration Console (for more details see Administrator's Guide for SAP Asset Intelligence Network), and which you also used to assign the user to the respective role (see step 3 above).

   c. Upload the CSV template with the user information.
7. Choose *Save*.

2.3.3 Updating User Details

If your organization possesses a premium account, as an administrator you can update the details of the users of your organization and your supplier organization in SAP Asset Strategy and Performance Management.

Prerequisites

- Your user ID either belongs to the group ORG_ADMIN, or has the roles CONFIGURATION_DELETE or CONFIGURATION_EDIT assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- The users that you create have been assigned predefined roles to access and perform appropriate actions using applications .

Procedure

1. Open the *Application Settings* application.
2. Choose *Users*.
3. Choose *More* on a user tile, and choose *Edit*.
4. In the *Edit User* pop-up, update the user details.
5. Choose *Save*.

2.3.4 Deleting User Details

You perform this procedure to remove the user from SAP Asset Strategy and Performance Management.

Prerequisites

Your user ID either belongs to the group ORG_ADMIN, or has the roles CONFIGURATION_DELETE assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Application Settings* application.
2. Choose *Users* > *My Users* > *Users*.

3. Select the user you want to delete.
4. Choose *Delete*.
5. Choose *OK* on the warning message.
6. Open your **SAP Cloud Platform** account.
7. Navigate to the *Security* > *Authorizations* tab.
8. Choose the respective role and unassign the user ID from the role.

2.3.5 Configuring the Prefix for the Object ID of your Organization

You perform this activity to configure the Instruction ID, Document ID and Announcement ID for your organization. Setting a prefix from the *Application Settings* app determines the object ID while you are creating an instruction, document, and announcement from the respective applications for your organization.

Prerequisites

Your user ID is configured to the group ORG_ADMIN or ORG_DATA_EXPERT.

Procedure

1. Launch the *Application Settings* application.
2. Choose the *General Application Settings* tab.
3. In the *Prefix for Objects created* field, input a prefix of 4 characters.
4. Click *Save*.

> **i Note**
>
> - This is a one-time activity and you cannot modify or delete the prefix at a later point in time.
> - Only premium account holders can maintain prefix. The prefix is valid for its invitees as well. Prefix maintenance section is made non-editable for the invitee administrators.

2.3.6 Configuring the Document Category

To ensure complete documentation for assets such as models, or equipment, an SAP administrator configures the significance of a document category at the subclass level. As an organization admin, you can set the preference of the document category at the subclass level.

Prerequisites

- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `TEMPLATE_DELETE` or `TEMPLATE_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- You have identified the subclass for which you want to configure the documents.

Context

The preference set by the organization administrator overrides the preference set by the SAP administrator for the document category.

Procedure

1. Open the *Templates* application.
2. Search for a subclass template.
3. Select a subclass template from the search results.
4. In the *Template* screen, select the *DOCUMENT CATEGORIES* tab.
5. In the *DOCUMENT CATEGORIES* section, choose *Edit* and update the category configuration for model and category configuration for equipment as appropriate.
6. Choose *Save*.

2.3.7 Configuring Document Upload Size

You perform this activity using the *Application Settings* application to set the document size limit for upload. This setting determines the document upload size in *Documents* application.

Prerequisites

Your user ID belongs to the group `ORG_ADMIN`.

Procedure

1. Launch the *Application Settings* application.
2. Choose the *General Application Settings* tab.
3. Choose *Edit*.
4. Enter the upload size of your choice.
5. Choose *OK*.

2.3.8 Configuring External Systems

You perform this activity as a prerequisite to add external IDs to map object data from an external system.

Prerequisites

- Your user ID either belongs to the group `ORG_ADMIN` or has role `CONFIGURATION_DELETE` or `CONFIGURATION_EDIT` assigned.

Context

You find the following external systems are already configured inSAP Asset Strategy and Performance Management:

- SAP ERP
- SAP Service Cloud
- SAP Predictive Maintenance and Service
- SAP Cloud Platform Internet of Things
- SAP Cloud Platform Integration
- SAP Commerce Cloud
- Other External System
  This system type is to be used if you want to configure a non-SAP system.

Procedure

1. Launch the *Application Settings* application.
2. Choose the *External Systems* tab.
3. Choose *Add*.
4. Choose the relevant external system. For example: SAP ERP.

5. In the *Add System* pop-up window, provide the details as listed:

Item	Description
System Name	As provided in the external system
Client	As provided in the external system
System Status	Active or Inactive
URL Information	URL of the external system
Additional Information	As necessary

6. Choose *OK*.

   The external system with details gets populated in the *External Systems List*.

2.3.9 Creating an Extension for Business Objects

You create an extension when you want to customize the applications in SAP Asset Intelligence Network to suit your business requirements. The extension acts as a plug-in and is available to all organizations associated with the relevant business objects.

Prerequisites

- Your user ID either belongs to the group `ORG_ADMIN` or has role `CONFIGURATION_DELETE` or `CONFIGURATION_EDIT` assigned.
- You have coded the view and controller files. For more information, refer to the chapter **Extension to Applications of SAP Asset Intelligence Network** in the Administrator's Guide at http://help.sap.com/ain-current

Context

You can create an extension for the following applications:

- Models
- Equipment
- Locations
- Spare Parts
- Performance Improvement

Procedure

1. Launch the *Application Settings* app.
2. Go to the *Extensions* tab.
3. Choose *New*.
4. In the *New Extension* pop-up, enter a name and description for the extension.
5. Upload the XML View and Controller files.
6. From the *Relevance* drop-down, choose relevant object for which you want to create the extension. For example: Locations.
7. Choose *OK*.
8. Choose *Submit*.

> **i Note**
>
> Upon choosing *Submit*, your new extension is sent to the SAP Operations team for approval. Upon approval, you will find your new extension in the relevant object page as a new tab.

2.3.10 Supported Browsers and Devices

You can use the SAP Asset Strategy and Performance Management applications on a number of devices and browsers. All applications have been tested in browsers such as IE 11, Chrome (latest), Firefox and on devices such as IPhone 6s and IPAD.

The following table gives a general overview of the supported browsers and platforms:

Platform	Device Category	Platform Version	Internet Explorer	Google Chrome	Mozilla Firefox	Microsoft Edge	SAP Fiori Client	Safari
Windows	Desktop	Windows 7, 8.1	Version 11[2]	Latest version	Latest and Extended Support Release(ESR)[1,5]	-	-	-
		Windows 10				Latest Current Branch for Business	-	-
	Touch[3,4]	Windows 10	Version 11[2]	Latest version[5]	Latest and Extended Support Release(ESR)[1,5]	Latest Current Branch for Business[5]	Latest version	-
Windows Phone	Phone[3,4,5,6]	Windows 10 Mobile	-	-	-	Latest version	Latest version	-

Platform	Device Category	Platform Version	Internet Explorer	Google Chrome	Mozilla Firefox	Microsoft Edge	SAP Fiori Client	Safari
macOS	Desktop	Latest 2 versions	-	Latest version[3]	Not Supported[7]	-	-	Latest 2 versions
iOS	Phone and Tablet[3,4]	Latest 2 versions	-	-	-	-	Latest version[6]	Latest 2 versions
Android	Phone and Tablet[3,4,6]	As of version 5	-	Latest version	-	-	Latest version	-

1. In regards to handling touch events, there are some issues with Windows 8. For more information, see https://sapui5.hana.ondemand.com/sdk/#/topic/8168059f21bb41bda96901eaf9c4302e.html
2. Internet Explorer 11 requires add-ons **XML DOM Document** and **XML DOM Document 3.0** to be activated for XML parsing support.
3. Not supported for `sap.ui.commons` and `sap.ui.ux3`.
4. Not supported for `sap.gantt`. Note that gantt charts consuming `sap.gantt` can be displayed on tablet devices.
5. Not supported for `sap.ui.vbm`.
6. Not supported for `sap.ui.vk`.
7. `sap.suite.ui.commons` and `sap.suite.ui.microcharts` support the latest version of Mozilla Firefox.

Supported Languages:

- English
- German
- Spanish
- French
- Italian
- Japanese
- Danish
- Polish
- Simplified Chinese
- Russian
- Czech
- Hungarian
- Korean

Some of the features are not supported on few devices or browsers. The following list provides you this information:

- You cannot work with hotspots or 3D visual files on any of the handheld devices other than a PC and a MAC.
- In the *Equipment Overview* application, you can scan the barcode of an item of equipment on handheld devices that use SAP Fiori client only. For PCs and MACs you must enter the barcode manually.
- You cannot upload files on an iPad that is using an SAP Fiori Client.
- Personal dashboard is preconfigured for end users only and does not include administrator relevant transactions. However, administrator can directly access the URL to navigate to each individual Admin app.

- Currently, Smart Matcher does not work on handheld devices.

Supported Reference Devices

For mobile operating systems, support is restricted to specific reference devices.

Platform	Device	End of Support Date
iOS SAP always supports the 2 latest releases of the iOS operating system, not exceeding 3 years from vendor release date. SAPUI5 supports Apple iPhone and iPad series until 3 years from the vendor device release date, except defined otherwise.	Apple iPhone 6s	25 September 2018
	Apple iPhone 5 SE	31 March 2019
	Apple iPhone 7	16 September 2019
	Apple iPhone 8	22 September 2020
	Apple iPhone X	3 November 2020
	Apple iPad mini 4	9 September 2018
	Apple iPad Pro (1st, 12.9'')[1]	11 November 2018
	Apple iPad Pro (1st, 9.7'')[1]	31 March 2019
	Apple iPad (2017)	24 March 2020
	Apple iPad Pro (2nd, 12.9'')[1]	13 June 2020
	Apple iPad Pro (2nd, 10.5'')[1]	13 June 2020
	Apple iPad (2018)	27 March 2021
Android Android OS based devices are very fragmented in matters of operating system variants and hardware diversity. SAPUI5 supports Samsung Galaxy S and Galaxy Tab series until 3 years from vendor device release date, except defined otherwise.	Samsung Galaxy S6 & S6 Edge	10 April 2018
	Samsung Galaxy S6 Edge+	21 August 2018
	Samsung Galaxy S7 & S7 Edge	12 March 2019
	Samsung Galaxy S7 Active	10 June 2019
	Samsung Galaxy S8 & S8+[1]	21 April 2020
	Samsung Galaxy S9 & S9+[1]	16 March 2021
	Samsung Galaxy Tab S2 8.0 & S2 9.7	3 September 2018
	Samsung Galaxy Tab A 10.1	10 May 2019
	Samsung Galaxy Tab S3	24 March 2020

Platform	Device	End of Support Date
Windows Phone SAPUI5 supports the following Windows reference devices until 3 years from vendor device release date, except defined otherwise.	Microsoft Lumia 950[2,3]	17 November 2018
	Microsoft Surface Pro 4	26 October 2018
	Microsoft Surface Pro (2017)	15 June 2020
	Microsoft Surface Pro with LTE Advanced	6 March 2021

1. Not supported for `sap.suite.ui.commons` and `sap.suite.ui.microcharts`.
2. Not supported for `sap.ui.vbm`.
3. Not supported for `sap.ui.vk`.

> **Note**
>
> Touch-enabled devices are not supported by the `sap.ui.commons`, `sap.ui.ux3` and `sap.gantt` libraries.

2.3.11 Configuring Default Indicators in the Header Status

You perform this activity to display default indicators in the header status of a piece of equipment. You can maintain 2 default indicator names in the header information of all the equipment in your organization.

Prerequisites

- Your user ID either belongs to the group `ORG_ADMIN` or has role `CONFIGURATION_EDIT` assigned.

Context

You can have exceptions for the default header status based on the subclass used by a piece of equipment. You can define a different set of indicators to be displayed for a listed subclass instead of the default using the *Class Configurations*.

Procedure

1. Launch the *Application Settings* application.
2. Choose the *Equipment* under *Header Status* tab.

3. Choose *Edit*.
4. Configure the 2 default status by selecting from the dropdown menu.
5. As an optional step, you can maintain the statuses to be displayed for different subclass under *Class Configurations*.

   You can add, edit, or remove the entries.
6. Choose *Save*.

> **i Note**
>
> The indicators are visible in the header information of a piece of equipment only if the indicators are assigned to the equipment and values are defined for the indicators.

2.4 User Authorizations

For SAP Cloud Platform - Neo Environment

You use this feature to define a more granular access to SAP Asset Strategy and Performance Management business objects for users within your organization.

> **i Note**
>
> *User Authorization* is an optional feature, which can be used in addition to the existing *Network Authorizations*.
>
> The existing network authorizations remain unchanged and can be used as they are, that is, without the *User Authorization* feature.

You can use the *User Authorization* app to:

- Create an organizational hierarchy.
- Assign the following to a node in the organizational hierarchy:
  - Users
  - Business Objects
  - Groups
- Edit the organization hierarchy and its assigned objects.
- Delete a node from the organizational hierarchy.

All the users assigned to a node in the organizational hierarchy have access to:

- The business objects and groups assigned to the relevant node in the hierarchy.
- The business objects and groups assigned to the subnodes of a relevant parent node in the organizational hierarchy.

i Note

- The administrator of your organization must be assigned to the root node or parent organizational level in your organizational hierarchy to have access to all the business objects in your organization.
- The level of authorization for each user is defined under `<Privilege>`.
- If a user is assigned to multiple nodes in the organizational hierarchy, then the privilege maintained on the highest level is by default inherited to the subnodes. If required you can also edit an inherited privilege on a subnode.

Process Overview

- Enable User authorization in *Application Settings* > *General Application Settings* > *Organizational Configurations*.

  i Note

  User Authorization is an optional feature, which can be used in addition to the existing *Network Authorizations*. By default the application setting for *User Authorization* is disabled.

  The existing network authorizations remain unchanged and can be used as they are.
- Create an organizational hierarchy for your organization in *User Authorization* app.

  i Note

  Currently, you can have only one organizational hierarchy for your organization.
- Assign SAP Asset Strategy and Performance Management users to the nodes in your organizational hierarchy in *User Authorization* app.
- Assign business objects to the nodes in your organizational hierarchy in *User Authorization* app. You can:
  - Directly assign business objects to the nodes in your organizational hierarchy in *User Authorization* app

  Create a group in *Groups* app and assign business objects to this group, and then assign the group to a node in your organizational hierarchy in *User Authorization* app.

Example

Company B wants to provide a more granular access to business objects for their internal users, so that their users can only access business objects that are assigned to their area of responsibility.

i Note

The following example is based on a simple country or region structure, but you can flexibly model other structural elements as well according to your needs.

1. Authorized user at **Company B** enables user authorization in *Application Settings* > *General Application Settings* > *Organizational Configurations*.
2. Authorized user at **Company B** creates an organizational hierarchy in *User Authorization* app:
   1. Create root node **Company B**.
   2. Create child node *Company B* > *Germany*.
   3. Create 2 child nodes *Company B* > *Germany* > *Germany North* and *Company B* > *Germany* > *Germany South*

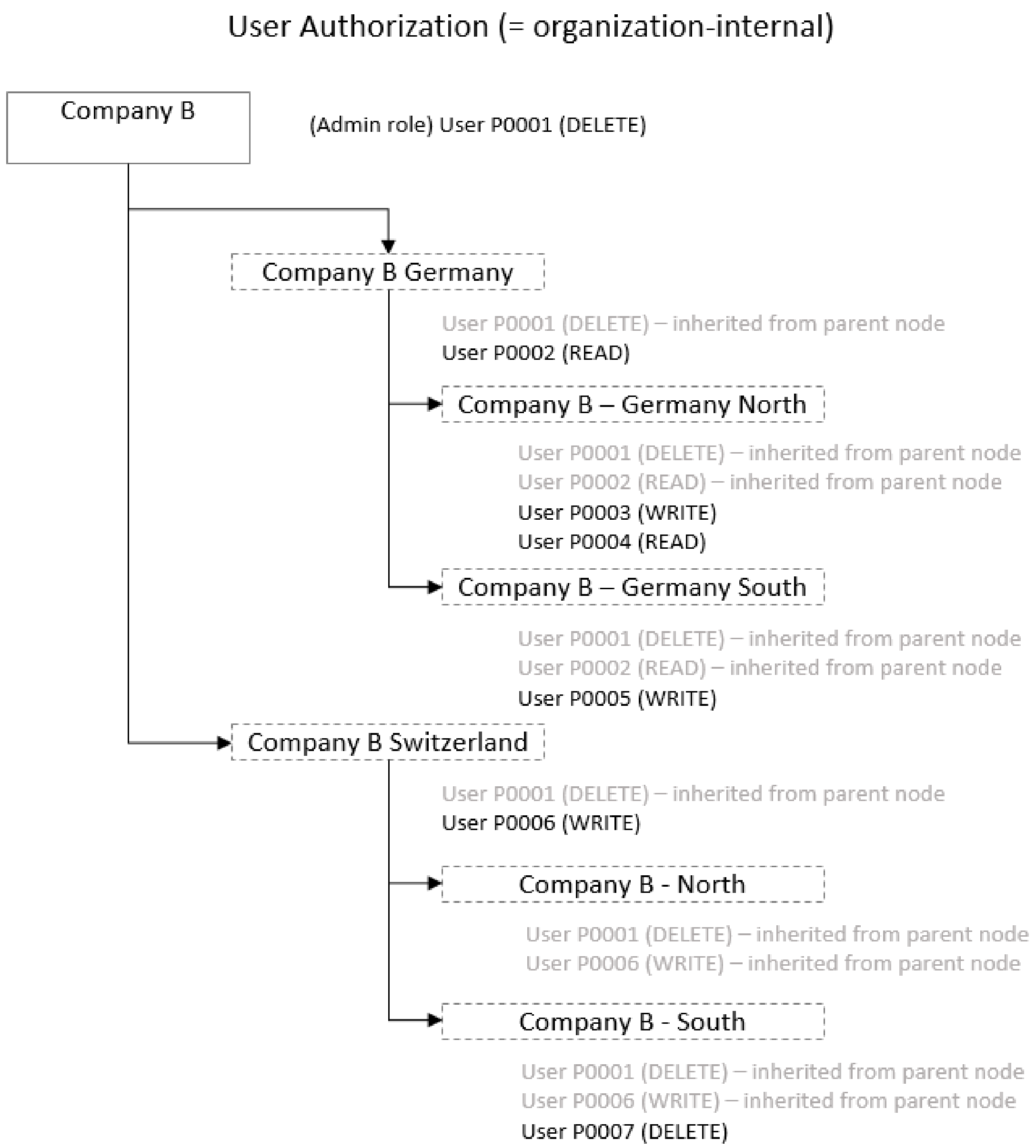
4. Create a second child node under the root node ▶ *Company B* ▶ *Switzerland* ◀.
5. Create 2 child nodes ▶ *Company B* ▶ *Switzerland* ▶ *Switzerland North* ◀ and ▶ *Company B* ▶ *Switzerland* ▶ *Switzerland South* ◀

3. Authorized user at *Company B* assigns SAP Asset Strategy and Performance Management users to the respective nodes in the organizational hierarchy:
    1. Assign an admin user to the root node *Company B* and provide respective privileges, which the user is to have on the business objects
    Users assigned to the root node can access all of the business objects assigned to the child nodes with the maintained privilege.

    > **i Note**
    >
    > It is recommended to add at least one admin user as well as substitutes to the root node to ensure that there is always at least one user in the organization who has full access to all objects.

    2. Assign other users to the respective nodes in the organizational structure and provide respective privileges the users are to have on the business objects.
    Users can be assigned to one or more nodes in the organizational structure. If a user is assigned to a node, which has further child nodes, the user can access the business objects assigned to the current node as well as all of the child nodes with the maintained privilege.

Result: Authorized user of *Company B* created their organizational hierarchy and assigned SAP Asset Strategy and Performance Management users.



4. Authorized user at *Company B* creates groups in *Groups* app.
   Create groups *Germany*, *Germany - North*, *Germany - South*, *Switzerland*, *Switzerland - North*, and *Switzerland – South*.

   > **i Note**
   >
   > You can freely define the groups in the *Groups* app according to your needs.
   >
   > It is recommended to use group names that can be easily associated with the node names of the organizational hierarchy. This facilitates assigning the groups to the organizational hierarchy.

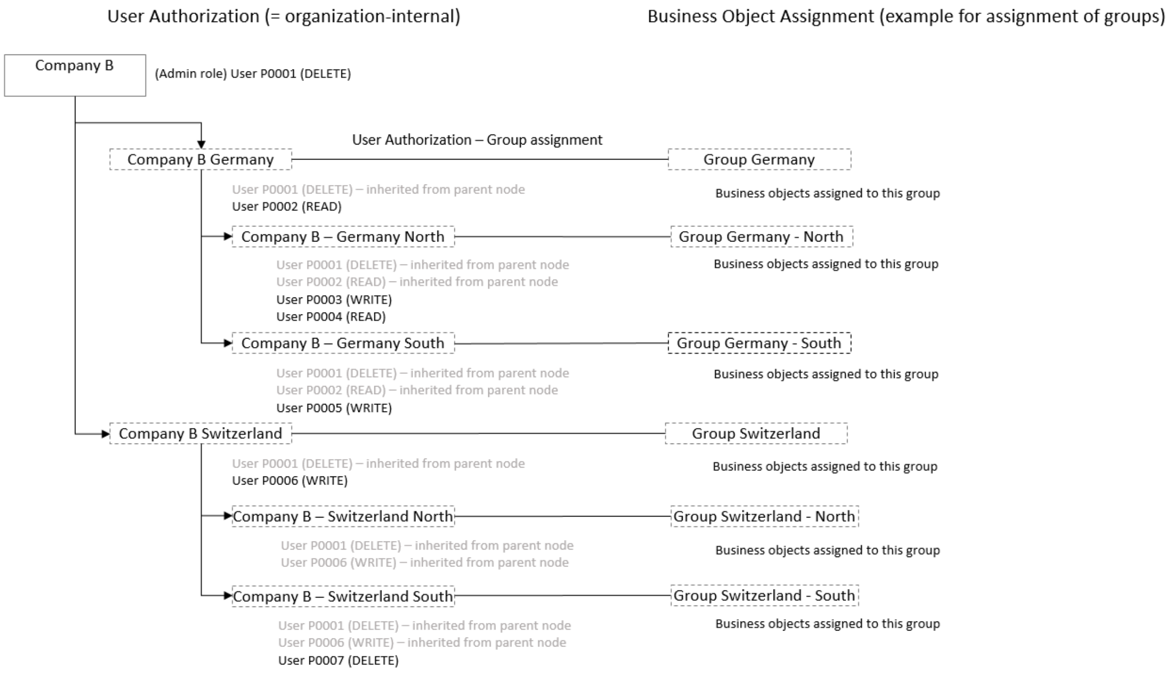
5. Authorized user at *Company B* assigns business objects to the respective groups in *Groups* app.

Assign business objects to groups *Germany*, *Germany - North*, *Germany - South*, *Switzerland*, *Switzerland - North*, and *Switzerland - South*.

> **Note**
>
> Depending on the group type you selected, you can assign one or more business object types to a group.

6. Authorized user at *Company B* assigns groups to relevant node in the organizational hierarchy in *User Authorization* app.
    1. Assign group *Germany* to node *Company B* > *Germany*.
    2. Assign group *Germany-North* to node *Company B* > *Germany* > *Germany North*.
    3. Assign group *Germany-South* to node *Company B* > *Germany* > *Germany South*.
    4. Assign group *Switzerland* to node *Company B* > *Switzerland*.
    5. Assign group *Switzerland-North* to node *Company B* > *Switzerland* > *Switzerland North*.
    6. Assign group *Switzerland-South* to node *Company B* > *Switzerland* > *Switzerland South*.

Result:
Authorized user of *Company B* assigned all relevant groups to the relevant nodes in the organizational hierarchy.



> **Note**
>
> Once a business object was assigned to a group, which is assigned to a node in the organizational hierarchy, this business object is only visible to the users assigned to the respective node in the organizational hierarchy.
>
> Business objects that are not assigned to the organizational hierarchy, are accessible to everyone in the organization.

If the business object is assigned to a group (that is assigned to a node in the organizational hierarchy) or node in the organizational hierarchy, then it accessible to only those users who have authorizations at that level in the organizational hierarchy.

Example: Equipment 123 is part of group “Germany – North”, so only users who are part of authorization node “Company B- Germany North” can now view, edit, or delete this equipment. Equipment 456 has not been assigned to any group nor directly assigned to a node in the authorization hierarchy, so all users of Company B with EQUIPMENT_READ or EQUIPMENT_EDIT or EQUIPMENT_DELETE role can view, edit, and delete this equipment.

For SAP Cloud Platform - Cloud Foundry Environment

You use this feature to define a more granular access to SAP Asset Strategy and Performance Management business objects for users within your organization.

> **i Note**
>
> *User Authorization* is an optional feature, which can be used in addition to the existing *Network Authorizations*.
>
> The existing network authorizations remain unchanged and can be used as they are, that is, without the *User Authorization* feature.

You can use the *User Authorization* app to:

- Create an organizational hierarchy.
- Assign the following to a node in the organizational hierarchy:
  - Role Collections
  - Business Objects
  - Groups
- Edit the organization hierarchy and its assigned objects.
- Delete a node from the organizational hierarchy.

Role collections get assigned to one or more nodes in the organization hierarchy. Users who are part of a user group that is mapped to a role collection (which is assigned to a node in the organizational hierarchy) have access to:

- The business objects and groups assigned to the relevant node in the hierarchy.
- The business objects and groups assigned to the sub-nodes of a relevant parent node in the organizational hierarchy.

> **i Note**
>
> - The administrator of your organization must be assigned to the root node or parent organizational level in your organizational hierarchy to have access to all the business objects in your organization.
> - The level of authorization for each user is defined under `<Privilege>`.
> - If a role collection is assigned to multiple nodes in the organizational hierarchy, then the privilege maintained on the highest level is by default inherited to the sub-nodes. If required you can also edit an inherited privilege on a sub-node.

Prerequisites

The following objects and object relationships have been configured in SAP Cloud Platform Identity and SAP Cloud Platform Cockpit:

- In SAP Cloud Platform Identity:
  - User groups created
  - Users assigned to user groups

> **Note**
>
> Users can also be added to user groups at a later point in time.

- In SAP Cloud Platform Cockpit:
  - Role Collections created
  - Mapping of User groups to Role Collections done

> **Note**
>
> All these set-up steps are not specific to User Authorization but should already have been done during the setting up of roles and onboarding of users to your account.
>
> For more details on these steps, refer to https://help.sap.com/ under *Administrator's Guide for SAP Asset Strategy and Performance Management* > *Getting Started* > *Getting Started for SAP Cloud Platform Cloud Foundry Environment* > *Setting up Roles*.

Process Overview

- Enable User authorization in *Application Settings* > *General Application Settings* > *Organizational Configurations*.

> **Note**
>
> *User Authorization* is an optional feature, which can be used in addition to the existing *Network Authorizations*. By default, the application setting for *User Authorization* is disabled.
>
> The existing network authorizations remain unchanged and can be used as they are.

- Create an organizational hierarchy for your organization in *User Authorization* app.

> **Note**
>
> Currently, you can have only one organizational hierarchy for your organization.

- Assign role collections to the nodes in your organizational hierarchy in *User Authorization* app.
- Assign business objects to the nodes in your organizational hierarchy in *User Authorization* app. You can directly assign business objects to the nodes in your organizational hierarchy in *User Authorization* app, create a group in *Groups* app and assign business objects to this group, and then assign the group to a node in your organizational hierarchy in *User Authorization* app.

Example

Company B wants to provide a more granular access to business objects for their internal users, so that their users can only access business objects that are assigned to their area of responsibility. In the example:

- Equipment 2 is to be visible for users assigned to Germany
- Equipment 3 is to be visible for users assigned to Germany - North
- Equipment 3 and 4 are to be visible for users assigned to Germany - South
- Equipment 5 is to be visible for users assigned to Switzerland
- Equipment 6 are to be visible for users assigned to Switzerland - North
- Equipment 7 are to be visible for users assigned to Switzerland - South
- Equipment 1 is to be visible for all areas

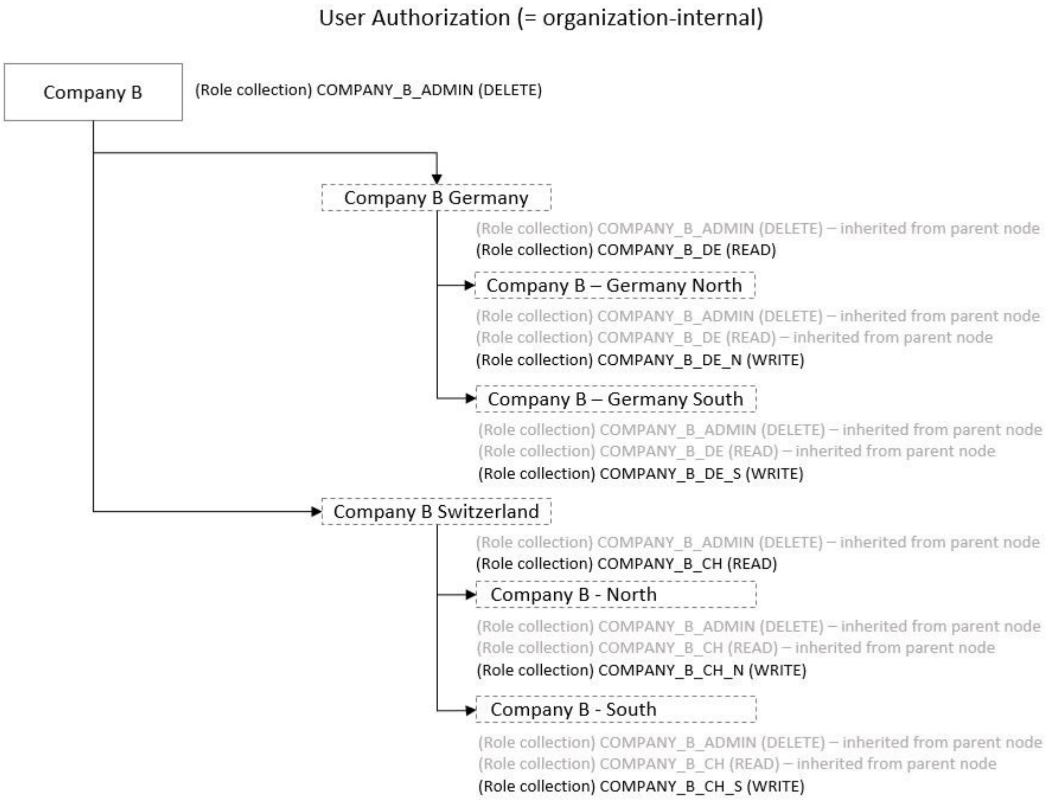
> **i Note**
>
> The following example is based on a simple country or region structure, but you can flexibly model other structural elements as well according to your needs.

1. Authorized user at **Company B** enables user authorization in *Application Settings* > *General Application Settings* > *Organizational Configurations*.
2. Authorized user at **Company B** creates an organizational hierarchy in *User Authorization* app:
    1. Create root node **Company B**.
    2. Create child node *Company B* > *Germany*.
    3. Create 2 child nodes *Company B* > *Germany* > *Germany North* and *Company B* > *Germany* > *Germany South*
    4. Create a second child node under the root node *Company B* > *Switzerland*.
    5. Create 2 child nodes *Company B* > *Switzerland* > *Switzerland North* and *Company B* > *Switzerland* > *Switzerland South*
3. Authorized user at *Company B* assigns role collections to the respective nodes in the organizational hierarchy:
    1. Assign an admin role collection (= role collection to which your admin user group is assigned) to the root node *Company B* and provide respective privileges, which the user is to have on the business objects
    Users assigned to the user group which is mapped to the role collection that is assigned to the root node can access all of the business objects assigned to the child nodes with the maintained privilege.

    > **i Note**
    >
    > It is recommended to add at least one admin user as well as substitutes to the admin user group assigned to the root node to ensure that there is always at least one user in the organization who has full access to all objects.

    2. Assign other role collections to the respective nodes in the organizational structure and provide respective privileges the users in the associated user group are to have on the business objects.
    Role collections can be assigned to one or more nodes in the organizational structure. If a role collection is assigned to a node, which has further child nodes, the users in the associated user group can access the business objects assigned to the current node as well as all of the child nodes with the maintained privilege.

Result: Authorized user of *Company B* created their organizational hierarchy and assigned role collections.



4. Authorized user at *Company B* assigns equipment to the relevant nodes in the organizational hierarchy in *User Authorization* app.
   1. Assign *Equipment 1, 2, 5, and 8* to node *Company B* > *Germany*.
   2. Assign *Equipment 6 and 7* to node *Company B* > *Germany* > *Germany South*.
   3. Assign *Equipment 3, 4, and 8* to node *Company B* > *Switzerland*.

   Result:
   Authorized user of *Company B* assigned all relevant business objects to the relevant nodes in the organizational hierarchy.

> **i Note**
>
> Once a business object was assigned to a node in the organizational hierarchy, this business object is only visible to the users assigned to the user groups which are mapped to one or more role collections that are assigned to the respective node in the organizational hierarchy.
>
> Business objects that are not assigned to the organizational hierarchy, are still accessible to everyone in the organization.

Example:*Equipment 2* was assigned to hierarchy node *Company B Germany*, so only users who belong to a user group that is mapped to the role collections assigned to hierarchy node *Company B Germany* and have either EQUIPMENT_READ or EQUIPMENT_EDIT or EQUIPMENT_DELETE privileges can now view, edit, or delete this equipment.

Equipment 10 was not/neither directly assigned to a node in the authorization hierarchy nor belongs to any group which is assigned to a node in the authorization hierarchy, so all users of *Company B* with EQUIPMENT_READ or EQUIPMENT_EDIT or EQUIPMENT_DELETE privileges can view, edit, or delete this equipment.

2.4.1 Creating Organizational Hierarchy

You perform this activity to define a new organizational hierarchy for your organization.

Prerequisites

Your user ID either belongs to thegroup `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles USER_AUTH_DELETE, or USER_AUTH_EDIT assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

Creating Single Organizational Unit

1. Open the *User Authorization* app.
2. Choose *New* > *Single Organizational Unit*.
3. In the **New Organizational Unit** dialog box, provide the appropriate organizational unit name, short and long descriptions.
4. Choose *OK*.

Creating Multiple Organizational Units

5. Open the *User Authorization* app.
6. Choose *New* > *Multiple Organizational Units*.
7. In the **Multiple Organizational Units** dialog box, download the CSV template.
8. Enter the organizational unit name, short and long descriptions, and parent organizational unit name in the template.

   > i Note
   >
   > - Root organization is an organization that does not have any parent organization unit. It is mandatory for every organization to have parent organization except for root organizations.
   > - You can have only one root organization.
   > - You cannot maintain duplicate organization entries

9. Upload the CSV template with the organizational information.

   > i Note
   >
   > Upload CSV can only be used if there is no organizational units created or maintained in the organization structure.

10. Choose *Upload*.

Results

System creates a node or multiple nodes in the organizational hierarchy to which you can add users, business objects, and groups.

2.4.2 Assigning Users

Context

You perform this activity to add users to the selected node in the organizational hierarchy.

> **Note**
>
> All the assigned users have authorizations to access all the business objects and groups associated with the node in the organizational hierarchy at this level and all the subnodes of this level.

Procedure

1. Open the *User Authorization* app.
2. Select a node in the organizational hierarchy.
3. Select *Edit* in the *Users* section of the organizational hierarchy object page.
4. Choose *Assign*.
5. Select the relevant users in the *Assign Users* window.
6. Choose *Add*.
7. Define the level of authorization for each users in the *Privilege* field.

   By default, the users have read access.
8. Choose *Save*.

2.4.3 Assigning Business Objects

Context

You perform this activity to assign the relevant business objects to the selected node in the organizational hierarchy.

Procedure

1. Open the *User Authorizations* app.
2. Select a node in the organizational hierarchy.
3. Select the relevant business object like model, locations in the **Business Objects** section in the object page of the selected node. For example, you have selected **Models**.

   You can share the following business objects:
   - Models
   - Equipment
   - Announcements
   - Templates
   - Documents
   - Instructions
   - Locations
   - Spare Parts
   - Systems
   - Failure Modes
     You can only assign published failure modes to the selected node in the organizational hierarchy.
   - Attributes
   - Attribute Groups
   - Indicators
   - Indicator Groups
4. Choose *Assign* in the **Models** section.
5. Select the relevant models in the **Select Models** window.
6. Choose *Assign* to save the changes.

2.4.4 Assigning Groups

You perform this activity to assign the relevant groups to the selected node in the organizational hierarchy.

Prerequisites

You have created one or more groups in the *Groups* app. You have assigned the business objects that you want to use for user authorization to these groups.

Procedure

1. Open the *User Authorizations* app.

2. Select a node in the organizational hierarchy.
3. Choose *Assign* in the **Groups** tab in the object page of the selected node.
4. Select the relevant groups in the **Select Groups** window.
5. Choose *Assign* to save the changes.

2.4.5 Deleting an Organizational Unit

Context

You perform this activity to delete an existing node from the organizational hierarchy.

Procedure

1. Open the *User Authorizations* app.
2. Select the node from the organizational hierarchy that you want to delete.
3. Choose *Delete* in the object page of the selected node
4. Choose *OK* on the confirmation message dialog box.

2.5 Data Protection and Privacy

- *Users*
  You can view details regarding your personal data like e-mail address, first name, last name, and user ID and the objects that you have created or modified under *Core and Others*.

  > **i Note**
  >
  > You can download the information using *Export to Excel*.

  If you have an admin role, then you can view the list of users, their personal data, and the list of objects that each user has created or modified. If the user is a functional location or company profile contact person, then you can view their personal data as well as relevant address details.
- *Blocked Users*
  You can view the list of users who are deleted. The user will be deleted from the system at the retention period.

> **Note**
>
> You can set the retention period under the *Organizational Configurations* section in *Application Settings* > *General Application Settings*.

- *Logs*
  You can view the change and read logs in this section.

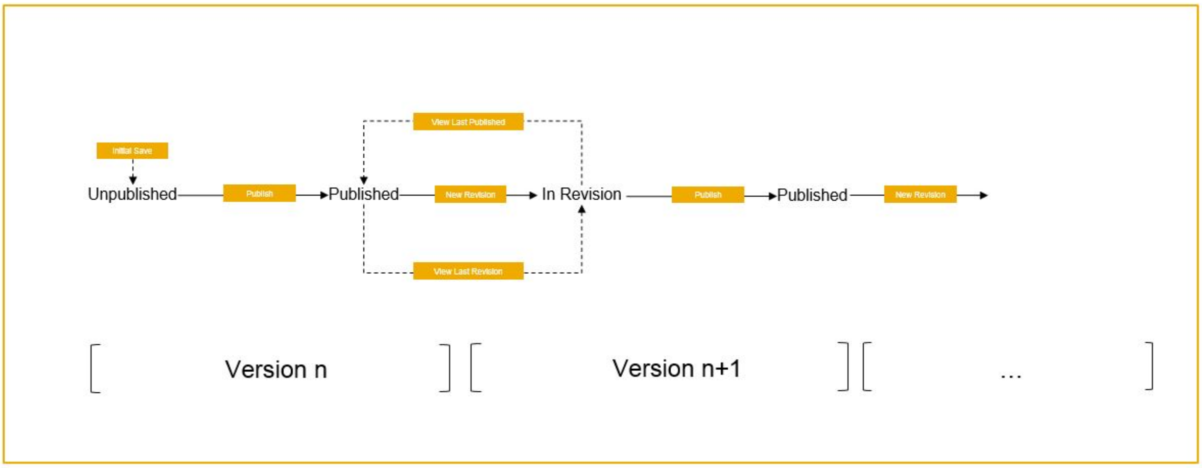
> **Note**
>
> You must have the role `DPP_AUTH` assigned to you to view the *Blocked Users* and *Logs* section.

3 Master Data

3.1 State Transitions

A business object such as a model, or an equipment undergoes state transitions during its creation and maintenance in SAP Asset Strategy and Performance Management.

The following diagram illustrates these state transitions:



Business objects such as models and items of equipment move to an unpublished state as soon as you create either a new model or a new item of equipment. You do not have to save these business objects explicitly. However, business entities such as instructions and announcements move to unpublished state on explicit save. When you further publish these business objects or business entities they move to a published state.

When the business object or entity is in its published state, and you select new revision the business object or business entity moves from published state to the in revision state. You can toggle between published state and the in revision states by choosing the *View Last Published* option, and *View Last Revision* on the UI.

You can create further versions of the business object or a business entity from the in revision state by choosing to publish the business object.

3.2 Creating Revisions and Switching Between Revisions and Published State

You can create revisions of a business object such as a model, or an item of equipment. Additionally, you can create revisions for business entities such as an instruction, or an announcement.

Procedure

1. To create a new revision of the business object or the business entity, open the business object or the business entity in the published state and choose the link *New Revision*.

   System creates the next higher revision than the published state of the business object or the business entity.
2. To switch from in revision to the last published state of the business object or the business entity, open the business object or the business entity in the revision state and choose the link *View Last Published*.
3. If multiple revisions for the business object or the business entity exists and you want to switch from last published to the last in revision state of the business object or the business entity, open the business object or the business entity in its published state, choose *View Last Revision*.

   Irrespective of the number of published models and the number of revisions that exist for a business object or a business entity, SAP Asset Strategy and Performance Management allows you to switch between the last published state or the last revision of the business object or the business entity.

3.3 Export to Spreadsheet

This feature enables you to export the data to an excel for offline reference.

This feature is available on the all the object list pages.

For easier understanding, the document refers to the exporting equipment data to a spreadsheet.

1. Choose the *Equipment* app.
   You can view the equipment list page.
2. Choose *Export to Spreadsheet*
   You can customize the columns that you want to export to the spreadsheet.

Result

The data is exported to a spreadsheet as .xlsx file.

3.4 Templates

A template is a format created by SAP Asset Strategy and Performance Management organization (for example, manufacturer, operator, or service provider) to maintain metadata, that is, attributes and attribute groups, related to a model, equipment, location, system, or spare part. A template inherits metadata from its parent objects, for example, parent subclass templates or other parent templates, and can have additional attribute groups and attributes.

Example:

A model template inherits the structure from a parent model template, a parent subclass template, other related parent subclasses, and the parent class.

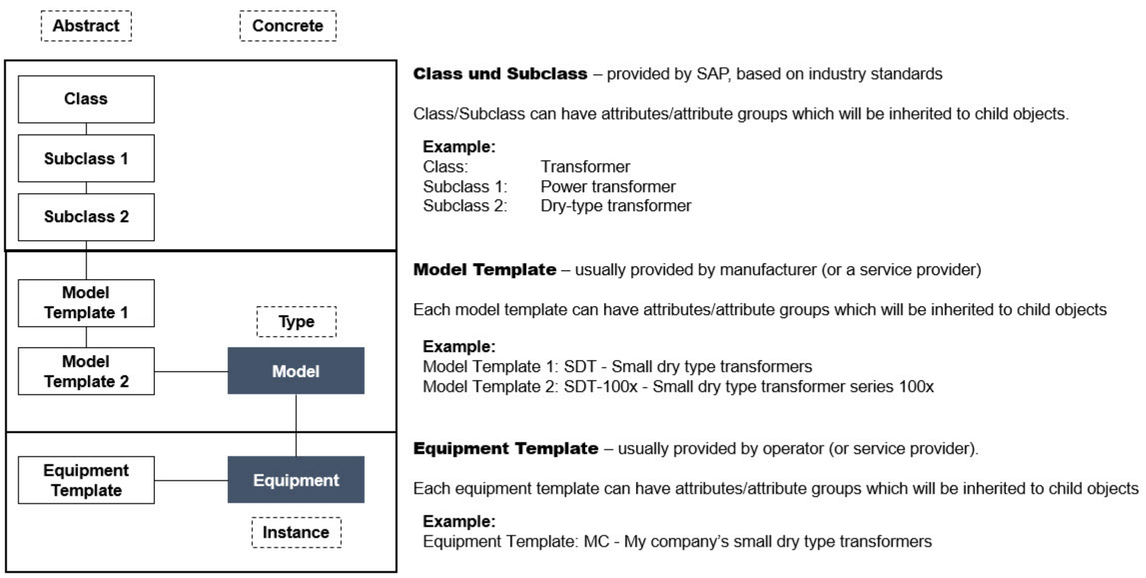
> **i Note**
>
> Classes and subclasses are provided by SAP Asset Strategy and Performance Management. The classification structure as well as assigned attributes and attribute groups are based on a classification industry standard. Classes and Subclasses can be reused, but not edited.

> **i Note**
>
> You can create hierarchies of template from an existing template.

A template in SAP Asset Strategy and Performance Management is identified by a unique name and comprises of attribute groups and attributes. An attribute group is a logical grouping of related attributes of the equipment, model and location, and an attribute is a qualifier to define the equipment.

Example for a classification structure and the relationship to model and equipment

The following example explains how classification objects delivered by SAP Asset Strategy and Performance Management, classification objects that can be created by customers, and type and instance information also created by customers relate.



1. The **class** level – delivered by SAP Asset Strategy and Performance Management based on an industry standard – can be considered the top-node of the classification used in SAP Asset Strategy and Performance Management.
   A class does not have a parent object, but can have multiple subclasses as child objects.
2. **Subclasses** – also delivered by SAP Asset Strategy and Performance Management based on an industry standard – are the child objects of a class. It is possible to model multiple subclasses under the top-level subclass. Each child subclass will inherit attributes or attribute groups from its parent objects, that is, class and subclasses.
   In the example:
   - • **Subclass 1 (Power transformer)** would inherit from **Class (Transformer)**
   - **Subclass 2 (Dry-type transformer)** would inherit from **Subclass 1 (Power transformer)** and **Class (Transformer)**
3. **Model Templates** – created by manufacturers – can be child objects of a subclass, or be used without a parent object. It is possible to have multiple model templates under the top-level model template. Each child model template will inherit attribute or attribute groups from its parent objects, that is, class and subclasses and model templates.
   When creating a model, you do this with reference to a model template.
   In the example:
   - **Model Template 1 (SDT)** would inherit from **Subclass 2 (Dry-type transformer)**, **Subclass 1 (Power transformer)**, and **Class (Transformer)**
   - **Model Template 2 (SDT-100x)** would inherit from **Model Template 1 (SDT)**, **Subclass 2 (Dry-type transformer)**, **Subclass 1 (Power transformer)**, and **Class (Transformer)**
   - **Model** would be created with reference to **Model Template 2 (SDT-100x)**, and therefore the Model would have all attributes or attribute groups coming from the model template itself as well as the ones inherited.
4. **Equipment Templates** – created by operators – are used to provide equipment-specific attributes or attribute groups. You can use equipment templates as only reference for an equipment or in combination with the templates coming via a model.

   i Note

   Similar to the model template it is possible to have multiple equipment templates under the top-level equipment template. Each child equipment template will inherit attribute or attribute groups from its parent object, that is, equipment templates.

   In the example:
   - **Equipment** was created in reference to **Model**, and therefore this equipment would have all attributes /attribute groups associated with the model, that is, inherit from **Model Template 2 (SDT-100x)**, **Model Template 1 (SDT)**, **Subclass 2 (Dry-type transformer)**, **Subclass 1 (Power transformer)**, and **Class (Transformer)**
   - Since **Equipment** was also created in reference to **Equipment Template**, this equipment would additionally have all attributes or attribute groups associated with the equipment template.

3.4.1 Managing Templates

You use the *Templates* app to work with a template. The templates are grouped as cards by `<Template>` types, `<Attribute Groups>`, and `<Attributes>`. This provides easier visualization of the template hierarchy. You can drill down the template hierarchy using the navigation on the cards.

You can perform the following operations using the *Templates* app:

- Create a model template to define the attributes and attribute groups related to a model. For more information, see Creating a Model Template [page 75].
- Create an equipment template to include equipment-specific attributes and attribute groups. For more information, see Creating an Equipment Template [page 78].
- Create a location template to include location-specific attributes. For more information, see Creating a Location Template [page 80].
- Create a system template to include system-specific attributes and attribute groups. For more information, see Creating a System Template [page 83].
- Create a spare part template to include spare part-specific attributes and attribute groups. For more information, see Creating a Spare Part Template [page 82]
- View details of a template and update the existing template with new information, or update the incorrect information. For more information, see Viewing and Updating a Template [page 85].
- View `<External IDs>` for attribute groups, attributes, and causes.
- If more than one language is maintained for a template, `<Available Language>` field is displayed in all the templates.

3.4.1.1 Adding, Updating, and Deleting Code Lists

You can create code lists to be used in string, numeric, and date data types.

Context

You can create, update, or delete code lists using the following procedure.

Procedure

1. Select *Code Lists*.
2. Choose *New Code List* to create a new code list. Perform the following tasks:
   a. In the *New Code List* > *Code List Details* window, enter the values for the fields as described in the table:

Field	Description
ID(*)	Enter an ID for the code list. **i Note** ○ There are no spaces allowed in the ID. ○ You cannot change the ID of the code list once it has been created.
Description(*)	Enter an appropriate short description that describes the code list.
Long Description	Enter an appropriate long description that describes the code list.
Data Type (*)	Select the data type from the list: ○ Date ○ String ○ Numeric ○ Numeric Flexible
Values (*)	Enter the values for the code list using +.

> **i Note**
>
> All the mandatory fields are marked as (*) in the table.

b. You can add industry standards by choosing *Add Industry Standard* under *New Code List* > *Industry Standards*.

c. Choose *OK*.

3. To edit a code list, select the code list from the *Code List Details* page. Choose *Edit* from the code list object page.
4. You can delete a code list by:
   - selecting the code lists from the *Code List Details* page and choosing *Delete*.
   - choosing *Delete* form the code list object page.

3.4.1.2 Adding Attribute Groups and Attributes

You perform this procedure to add attributes and attribute groups either directly on a template object or from the *Attribute Groups* tab or *Attributes* card.

Context

Using this procedure, you can add attribute groups/attributes directly on a template object.

> **Note**
>
> You can use this approach for the creation of attribute groups or attributes on a template object.

SAP Operations can now deliver attribute groups & attributes that can be commonly re-used:

- Global attribute groups & attributes are displayed in the attribute group/attribute lists with Source = SAP
- Global attribute groups & attributes can be re-used, but not edited

Procedure

1. Select a template and choose *Add* > *Attribute Groups*. In the *Add Attribute Groups* window, to add new attribute group, select *New* and perform the following tasks:
    a. In the *New Attribute Group* window, enter the values for the fields as described in the table below:

Field	Description
ID(*)	Enter an ID for the attribute group. **Note** ○ There are no spaces allowed in the ID. ○ You cannot change the ID of the attribute group once it has been created.
Short Description(*)	Enter an appropriate short description that describes the attribute group.
Long Description	Enter an appropriate long description that describes the attribute group.
Industry Standards	Add the relevant industry standards.

> **Note**
>
> All the mandatory fields are marked as (*) in the table.

   b. Choose *OK*.
   c. You can add the attributes and also the industry standards by selecting the attribute group and choosing the *Edit* button.

2. In the *Add Attribute Groups* window, to edit an existing attribute group, search for an existing attribute group and perform the following tasks:
   a. From the search results, select an appropriate attribute group.
   b. Choose *OK*.
3. To save the attribute group, choose *Save* in the *<Name of the Attribute Group>* section.

   > **Note**
   >
   > Each time you save the attribute group of a template, system updates the template automatically. You do not have to save the template explicitly.

4. To remove the attribute group, choose *Remove* in the *<Name of the Attribute Group>* section.

   > **Note**
   >
   > Each time you remove an attribute group from a template, system updates the template automatically.

5. To add attributes to the attribute group, perform the following tasks:
   a. In the *<Name of the Attribute Group>* section, choose *Edit* to add attributes to the attribute group.
   b. To add a new attribute, in the *<Name of the Attribute Group>* > *Attributes* > *Add* perform the following tasks:
      1. In the *Add Attributes* pop-up, to add new attribute, select *New*.
      2. In the *New Attribute* window, enter values for the fields as described in the table below:

Field	Description
ID(*)	Enter a name for the attribute. **Note** ○ There are no spaces allowed in the ID. ○ You cannot change the ID of the attribute group once it has been created.
Short Description(*)	Enter a short description.
Long Description	Enter a long description.

Field	Description
Data Type(*)	Select any of the following options: ○ `boolean`: select boolean if you want the data type to support boolean values such as true or false. ○ `string`: select string if you want the data type to support alpha numeric values. You can now also define string data type as hyperlink. **i Note** If you want the string data type to be language-dependent, under the Attribute Conditions section, choose Yes from the Language Dependency radio button. **i Note** You can create code lists for Numeric Flexible data type and assign the code list to attributes based on data type, scale, and precision match. ○ `date`: select date if you want the data type to support a date value. If you select a value list for the data type, then you can also maintain the attribute condition *Allow Additional Values* to allow additional texts to be maintained with the code for the codelist values. **i Note** You can create code lists for Numeric Flexible data type and assign the code list to attributes based on data type, scale, and precision match. ○ `numeric`: select numeric if you want the data type to support a numeric value. You can now also have numeric as relational operators. **i Note** You can create code lists for Numeric data type and assign the code list to attributes based on data type, scale, and precision match.

Field	Description
	For a numeric data type you can define additional properties. To do so, in the *Attribute Conditions* section, enter values for the fields as described in the table below: ○ *Dimension*: Select an appropriate dimension from the drop-down. ○ *Threshold*: If the dimension has a suitable threshold which you want to use when entering attribute values, select an appropriate value from the drop-down. ○ *Dependent Dimension*: If you want to use an additional dimension dependent on the dimension you selected before, choose yes for the Create Dependent Dimension and select the dependent dimension from the drop-down for *Entry field At*. **i Note** Numeric attributes can also be created without dimension and without an associated unit of measure. ○ *Relational Operator*: Check this setting if you want to be able to maintain values with relational operators (for example, <, <=, >=, >). For example, Number of gears: <= 5. ○ `enum`: select enum if you want the data type to support constant values. **i Note** ○ Enter the values that you want the enum data type to support in the *Values* text box under the *Attribute Conditions* section. Also, if you want the user to select a single enum value, select the *Single Select* radio button and if you want the user to select multiple enum values, select the *Multi Select* radio button.

Field	Description
	◦ We now support multi-language enumerations. User has to enter enum value against one or more languages. **i Note** enum data type is deprecated and will not be available from the next release. ◦ `picture`: select picture if you want to maintain images with an attribute. ◦ `Currency`: select currency if you want to maintain currency values ◦ `numeric flexible`: select numeric flexible if you want the data type to support decimal value. **i Note** You can create code lists for Numeric Flexible data type and assign the code list to attributes based on data type, scale, and precision match. For a numeric flexible data type you can define additional properties. To do so, in the *Attribute Conditions* section, enter values for the fields as described in the table below: ◦ *Dimension*: Select an appropriate dimension from the drop-down. ◦ *Threshold*: If the dimension has a suitable threshold which you want to use when entering attribute values, select an appropriate value from the drop-down. ◦ *Dependent Dimension*: If you want to use an additional dimension dependent on the dimension you selected before, choose yes for the Create Dependent Dimension and select the dependent dimension from the drop-down for *Entry field At*. ◦ *Total Length of the Number*: Enter the total length of the number including decimals.

Field	Description
	i Note Total length of the number should be greater than zero. ○ *Decimal Places Allowed*: Enter the number of decimal places allowed for the number. **i Note** ○ The allowed number of decimal places cannot be greater than the total length of the number. ○ Decimal places cannot be less than zero. **i Note** ○ To accommodate attributes that are already shared, the difference between new and old value of decimal places must not be greater than difference between new and old value of total length of the number. ○ Data type **Integer** is covered by the newly introduced data type **`Numeric Flexible`** if the *Decimal Places Allowed* is equal to 0.
Priority(*)	Specify if using the new attribute is **Recommended**, **Mandatory** or **Optional**.

3. To add an industry standard, choose *Add Industry Standard*.
4. From the *Industry Standards* dropdown, choose your relevant industry standard.
5. Specify a standard ID.
6. Choose *OK*.

c. To assign an existing attribute, choose *<Name of the Attribute Group>* > *Attributes* > *Add*. In the *Add Attributes* pop-up, to use an existing attribute from SAP Asset Strategy and Performance Management, search for an existing attribute using the *Search* text box and perform the following tasks:

a. From the search results list, select an appropriate attribute.

b. Choose *OK*.

3.4.1.3 Adding Indicator Groups and Indicators

You perform this procedure to add indicators and indicator groups either directly on a template object or from the *Indicator Groups* or *Indicators* card.

Context

Using this procedure, you can add indicator groups or indicators directly on a template object.

> **Note**
>
> You can use this approach for the creation of indicator groups or indicators on a template object.

SAP Operations can now deliver indicator groups and indicators that can be commonly reused:

- Global indicator groups & indicators are displayed in the indicator group or indicator lists with Source = SAP
- Global indicator groups & indicators can be reused, but not edited.

Procedure

1. Select the template and choose *Add* > *Indicator Groups*. In the *Add Indicator Groups* window, to add new Indicator group, select *New* and perform the following tasks:
   a. In the *New Indicator Group* window, enter the values for the fields as described in the table:

Field	Description
ID(*)	Enter an ID for the indicator group. **Note** ◦ There are no spaces allowed in the ID. ◦ You cannot change the ID of the indicator group once it has been created.
Short Description(*)	Enter an appropriate short description that describes the indicator group.
Long Description	Enter an appropriate long description that describes the indicator group.

> **Note**
>
> All the mandatory fields are marked as (*) in the table.

   b. Choose *OK*.
   c. You can add the attributes by selecting the attribute group and choosing the *Edit* button.
2. In the *Add Indicator Group* option from the template object window, to use an existing indicator group, search for an existingindicator group, and perform the following tasks:
   a. From the search results, select an appropriate indicator group.
   b. Choose *OK*.
3. To save the indicator group, choose *Save* in the relevant indicator group section.

   > **i Note**
   >
   > Each time you save the indicator group of a template, system updates the template automatically. You do not have to save the template explicitly.

4. To remove the indicator group, choose *Remove* in the relevant indicator group section.

   > **i Note**
   >
   > Each time you remove an indicator group from a template, system updates the template automatically.

5. To add indicators to the indicator group, perform the following tasks:
   a. In the selected indicator group section, choose *Edit* to add indicators to the indicator group.
   b. In the indicator group window, go to *Indicators* tab and choose *Add* and perform the following tasks:
      1. In the *Add Indicators* dialog box, to add new indicator, select *New*.
      2. In the *New Indicator* window, enter values for the fields as described in the table:

Field	Description
ID(*)	Enter a name for the indicator. **i Note** ○ There are no spaces allowed in the ID. ○ You cannot change the ID of the indicator group once it has been created.
Description(*)	Enter a short description.
Long Description	Enter a long description.

Field	Description
Data Type(*)	Select any of the following options: ◦ `Date`: select date if you want the data type to support a date value. ℹ Note ◦ For a date data type the *Aggregation Concept* is always set to **Last Available Value**. ◦ *Code List*: Assign code list for the indicator. ◦ `Boolean`: select boolean if you want the data type to support boolean values. ℹ Note For a boolean data type the *Aggregation Concept* is always set to **Last Available Value**. ◦ `String`: select string if you want the data type to support alpha numeric values. ℹ Note ◦ For a string data type the *Aggregation Concept* is always set to **Last Available Value**. ◦ *Code List*: Assign code list for the indicator. ◦ `Numeric`: select numeric if you want the data type to support a numeric value. You can now also have numeric as relational operators. ℹ Note ◦ *Dimension*: Select an appropriate dimension from the dropdown. ◦ *Expected Behaviour(*)*: Specify if the expected behaviour of the new indicator is **Increasing**, **Decreasing**, **Unknown**, or **None**. ◦ *Color*: You can specify if you want a specific color for the indicator. You can select a color value from the palette.

Field	Description

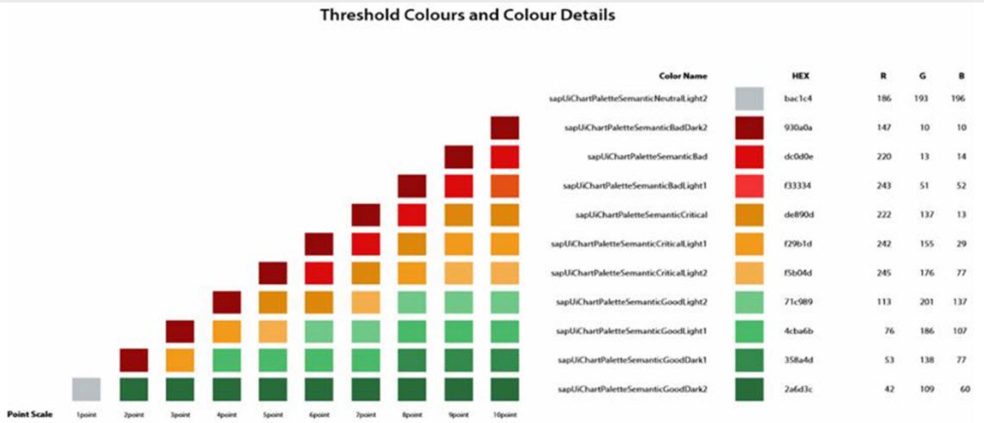
	◦ *Indicator Category*: Define the indicator category:
	  ◦ Continuous
	  ◦ Level
	  ◦ Discrete
	◦ *Aggregation Concept*: Specify the aggregation concept of the new indicator. The following values can be assigned
	  ◦ Minimum
	  ◦ Maximum
	  ◦ Average
	  ◦ Sum
	  ◦ Last Available Value
	◦ *Code List*: Assign code list for the indicator.
	◦ **`Numeric Flexible`**: select numeric flexible if you want the data type to support decimal value.
	
	i Note
	
	For a numeric flexible data type you can define additional properties.
	◦ *Dimension*: Select an appropriate dimension from the dropdown.
	◦ *Expected Behaviour(*)*: Specify if the expected behaviour of the new indicator is **Increasing**, **Decreasing**, **Unknown**, or **None**.
	◦ *Color*: You can specify if you want a specific color for the indicator. You can select a color value from the palette.
	◦ *Indicator Category*: Define the indicator category:
	  ◦ Continuous
	  ◦ Level
	  ◦ Discrete
	◦ *Total Length of the Number*: Enter the total length of the number including decimals.

Field	Description
	i Note Total length of the number should be greater than zero. ◦ *Decimal Places Allowed*: Enter the number of decimal places allowed for the number. i Note ◦ The allowed number of decimal places cannot be greater than the total length of the number. ◦ Decimal places cannot be less than zero. ◦ *Aggregation Concept*: Specify the aggregation concept of the new indicator. The following values can be assigned ◦ Minimum ◦ Maximum ◦ Average ◦ Sum ◦ Last Available Value ◦ *Code List*: Assign code list for the indicator. i Note ◦ To accommodate attributes that are already shared, the difference between new and old value of decimal places must not be greater than difference between new and old value of total length of the number. ◦ Data type **Integer** is covered by the newly introduced data type **`Numeric Flexible`** if the *Decimal Places Allowed* is equal to 0.

Field	Description
Indicator Type	Define if the indicator is of type: ○ Measured Quantitative indicators that help you to monitor whether you are doing what you planned (outputs) but do not give us an idea of the effect that is brought about by these outputs. ○ Calculated Indicators derived using algorithms or some kind of calculation. ○ Assessed Indicators that can be used in assessments.

i Note

- Aggregation Concept: Aggregation concept is only applicable if the values for the indicators are derived from multiple applications or the same application through different methods.
  - Minimum: Minimum of the values is displayed
  - Maximum: Maximum of the values is displayed
  - Average: Average of the values is displayed
  - Sum: Sum of the values is displayed
  - Last Available Value: latest value is displayed
- Expected Behaviour: Is only relevant for suggesting the color codes for threshold values. For the number of thresholds available for the indicator, the relevant color codes are defined by default. You can also customize the color codes for the thresholds.
  For suggested colors in case of `<Expected Behaviour>` as **`Increasing`**, refer to the below diagram:

  For suggested colors in case of `<Expected Behaviour>` as **`Decreasing`**, refer to the above diagram by reversing the colors

For suggested colors in case of `<Expected Behaviour>` as **None** or **Unknown**:

	1	2	3	4	5	6	7	8	9	10
1	#bac1c4	#930a0a	#930a0a	#930a0a	#930a0a	#930a0a	#930a0a	#930a0a	#930a0a	#930a0a
2		#2a6d3c	#2a6d3c	#f29b1d	#f29b1d	#f29b1d	#f29b1d	#f29b1d	#f29b1d	#dc0d0e
3			#930a0a	#2a6d3c	#2a6d3c	#4cba6b	#4cba6b	#f5b04d	#f5b04d	#f29b1d
4				#930a0a	#f29b1d	#2a6d3c	#2a6d3c	#4cba6b	#4cba6b	#f5b04d
5					#930a0a	#f29b1d	#4cba6b	#2a6d3c	#2a6d3c	#4cba6b
6						#930a0a	#f29b1d	#4cba6b	#4cba6b	#2a6d3c
7							#930a0a	#f29b1d	#f5b04d	#4cba6b
8								#930a0a	#f29b1d	#f5b04d
9									#930a0a	#f29b1d
10										#930a0a

- **Code Lists**: You can specify a list of predefined values for the attribute or indicator datatype. You can create codelists using the Codelist feature, see Adding, Updating, and Deleting Code Lists [page 55].
- **Color**: This color is used in the indicator chart (SAP Predictive Maintenance and Services specific feature). You can define a color for each indicator and the relevant lines in the indicator chart will be of that color.
- **Indicator Category**: This is used in the indicator chart (SAP Predictive Maintenance and Services specific feature). According to the category selected the way the indicator values are plotted in indicator chart differs.
  - Flow: These variables are visible as continuous variations on the chart. Flow is line graph, the indicator values in the indicator chart are connected by line.
  - Level: These variables remain unchanged until a new value exists, that is, level variables are not interpolated linearly between indicators, but a step function is used (the last value is repeated until a new value exists). An example of a level variable is stock inventory. It is displayed similar to a step chart.
  - Discrete: Displays the state of the equipment as a horizontal bar on top of the chart.

3. Choose *OK*.

6. In the *Add Indicators* dialog box, to use an existing indicator from SAP Asset Strategy and Performance Management, search for an existing indicator using the *Search* text box and perform the following tasks:
   a. From the search results list, select an appropriate indicator.
   b. Choose *OK*.

Results

1. Go to the relevant app *Equipment* or *Models*. You have created the indicators. To instantiate the indicators:
2. Select a piece of equipment or a model from the list.
3. Choose *Indicators* under the *Monitoring* tab.

4. Select the indicator that you want to instantiate and choose *Configure*.
   You can define the indicator type, unit of measure, indicator category, indicator space, and threshold values for the indicator.
5. Choose *Confirm*.

3.4.1.4 Adding Alert Types

You perform the following procedure to add alert types directly on a template object page. The alert type definition allows you to define the alerts that are based on equipment error codes. The definition can also define associations with an indicator and possible failure modes. The association with failure mode data allows you to identify associations like instructions.

Prerequisites

- To update a template, your user ID must have the scopes `TEMPLATE_DELETE` or `TEMPLATE_EDIT` assigned.
- To view a template, your user ID has the scope `TEMPLATE_READ` assigned.
- You have identified the template that you want to update.

Context

In the *Template Explorer* window, to add new alert type, select the *New* button and perform the following tasks:

Procedure

1. In the Template Explorer window, enter the values for the fields as described in the following table:

Field	Description
Alert Type ID	Define a unique alphanumeric ID for the alert type. **i Note** 1. No spaces allowed in the ID. 2. Only the following characters are supported: ○ Uppercase and lowercase alphabets a through z and A through Z. ○ Numeric digits 0 through 9

Field	Description
	◦ Punctuation marks underscore (_), hyphen (-), colon (:), and full-stop (.) ◦ Maximum number of characters allowed is 29 You cannot change the ID of the alert type once created.
Category	Select an alert category from the dropdown list: ◦ Environment ◦ Health ◦ Equipment ◦ Operation ◦ Process ◦ Safety ◦ Other
Description	Enter an appropriate description that describes the alert type. **i Note** Maximum number of characters allowed is 255.
Severity	Select the severity of the alert type: ◦ Information (1) ◦ Warning (2) ◦ Error (3)
Indicator	Assign indicator to the alert type by selecting from the list.
Origin	This allows you to differentiate between the alert type that is defined for the alert arising from an equipment. Select from the dropdown: ◦ Equipment: On selecting, you can enter an error code (this is optional) ◦ Rule: Value should be used for the alert type defined for rules.
Error Code	Enter an error code. This field is available only if you select **Equipment** as origin. **i Note** Maximum number of characters allowed is 32.

Field	Description
Failure Modes	Assign failure modes to the alert type by selecting from the list. i Note Multiple failure codes can be assigned to an alert type.

2. Choose Save.

> i Note
>
> You cannot create same alert type with the same ID.

If corresponding external ID is not populated, IoT Application Enablement replication of alert type has failed. In such a scenario, edit and save the alert type that will trigger the IoT replication.

Results

In the **Alert Type** window, the newly created alert type displays. You can search and sort, group by alert types, filter, and export details in an excel.

Editing Alert Type

Using the *Edit* option, you can edit an existing alert type or newly creating alert type. For this, click the alert type you want to edit. You can also reassign failure modes to the alert types. To view the instructions assigned with the failure mode, click the number visible within the <Instructions> column.

> i Note
>
> - Alert type cannot be deleted if assigned to an alert type group. Unassign from alert type group to delete an alert type.
> - Shared alert types will also be displayed in the list page. Shared alert types are read-only, you cannot edit/delete them.
> - You cannot assign shared alert types to an alert type group.
> - Alert types are implicitly shared with the relevant model, but the failure modes associated with the shared alert types must be explicitly shared.

Related Information

Failure Modes [page 200]
Viewing and Editing Indicators [page 190]

3.4.1.5 Adding Alert Type Groups

You perform the following procedure to add alert type groups directly on a template object page. Alert type group is a grouping of alert types and can be assigned to a model.

Prerequisites

- To update a template, your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT` or has the scope `TEMPLATE_DELETE` or `TEMPLATE_EDIT` assigned.
- To view a template, your user ID either belongs to the group `ORG_DATA_READ` role template AssetCoreReader; or has the scope `TEMPLATE_READ` assigned.

Context

In the *Template Explorer* window, to add new alert type group select the *New Alert Type Group* button and perform the following tasks:

Procedure

1. In the *Template Explorer* window, enter the values for the fields as described in the following table:

Field	Description

ID	Enter an ID for the alert type group.
	
	i Note
	○ No spaces allowed in the ID.
	○ Only the following characters are supported:
	  ○ Uppercase and lowercase alphabets a through z and A through Z.
	  ○ Numeric digits 0 through 9.
	  ○ Punctuation marks underscore (_), hyphen (-), colon (:), and full-stop (.).
	  ○ Maximum number of characters allowed is 32
	.
	
	You cannot change the ID of the alert type once created.

Field	Description
Description	Enter an appropriate description that describes the alert type group. i Note Maximum number of characters allowed is 255.
Long Description	Enter a details description, if any, for the alert type group. i Note The maximum number of characters allowed is 5,000.

2. Choose *Save*.

> i Note
>
> You cannot create the same alert type group with the same ID.

Results

In the *Alert Type Group* window, the newly created alert type group displays. You can search and sort, group by alert type group, filter, and export details in an excel.

Editing Alert Type Group

Click the respective alert type group to edit details. You can also assign new alert types to the selected alert type group using the *Assign* option in the *Edit* mode. You can also edit the details of assigned alert type. For this, select the alert type within the *Alert Types* list and click *Edit*.

It is also possible to create alert type from the *Assign Alert Type* dialog box.

> i Note
>
> - You cannot delete alert type group if assigned to a model.
> - You cannot assign shared alert types to an alert type group.

Related Information

Failure Modes [page 200]
Instructions [page 130]

3.4.1.6 Adding Causes and Effects

You perform this procedure to add causes or effects from the *Causes* tab or *Effects* card respectively.

Context

Using this procedure, you can add causes and effects that can be used in failure modes.

Procedure

1. To add causes, perform the following tasks:
   a. Choose *Causes* > *New Cause*.
   b. Enter short and long descriptions, and level of failure mode in the **Create Cause** dialog box.
   c. Choose *OK*.
2. To add effects, perform the following tasks:
   a. Choose *Effects* > *New Effect*.
   b. Enter short and long descriptions in the **Create Effect** dialog box.
   c. Choose *OK*.

3.4.1.7 Creating a Model Template

You use this procedure to create a model template that helps you to define the attributes and attribute groups related to a model.

Prerequisites

- You have identified the subclass template provided by SAP Asset Strategy and Performance Management, or a model template created within your organization or shared by a different organization, from which you can create the template.

  > **i Note**
  >
  > A model template can also be created without a parent object (subclass/another model template), in this case the model template acts as a top node.

- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `TEMPLATE_DELETE` or `TEMPLATE_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Launch the *Templates* app.
2. On the *Templates* window, navigate into *Model Templates* card and choose *New* and perform the following substeps:
   a. In the *New Model Template* popup, enter values for the fields as described in the following table:

Field	Description
Template ID(*)	Enter a unique ID for the model template. **i Note** ○ There are no spaces allowed in the Template ID. ○ You cannot change the ID of the template once it has been created.
Short Description(*)	Enter a short description.
Long Description	Enter a long description
Parent Subclass/Model Template	Select a subclass template, or another model template as parent template. **i Note** You can create a model template without a parent template.
Industry Standards	Add an industry standard. **i Note** ○ This field is scope-specific. ○ Template objects can have only one industry standard assigned to them. They can also have no industry standards assignments. ○ If an industry standard is assigned to a template object, you can change or delete it.

   > **i Note**
   >
   > All the mandatory fields are marked as (*) in the table.

   b. Choose *OK*.

   System creates a model template.

3. To edit the description of the template, choose *Edit Description* in the template header and perform the following tasks:
    a. In the *Edit* <Name of the Model Template> popup, enter suitable description in the *Description* text box.
    b. Choose *Save*.
4. To add attribute groups and attributes to a template, choose *Add* > *Attribute Groups* from the template header.

    For more information, see Adding Attribute Groups and Attributes [page 57].

    > **i Note**
    >
    > Each time you save the attribute group of a template, system updates the template automatically. You do not have to save the template explicitly.

5. To add indicator groups and indicators to a template, choose *Add* > *indicator Groups* from the template header.

    For more information, see Adding Indicator Groups and Indicators [page 63].

    > **i Note**
    >
    > Each time you save the indicator group of a template, system updates the template automatically. You do not have to save the template explicitly.

6. To add an industry standard to the template, perform the following tasks:
    a. Go to the *Industry Standard* section on the template and choose *Add Industry Standard*.
    b. In the *Industry Standard* popup, select the industry standard you want to assign to the template object.

    > **i Note**
    >
    > Optionally, you can enter a standard ID or code as defined in an industry standard. You can only assign one industry standard for an object.

    You can also directly add an industry standard to an attribute.

    > **i Note**
    >
    > - Template objects can have only one industry standard assigned to them. They can also have no industry standards assignments.
    > - If an industry standard is assigned to a template object, you can change or delete it.

    a. To add to an existing attribute, select the attribute and choose *Edit Attribute*.
    b. In the *Edit Attribute* popup, choose *Industry Standards* > *Add Industry Standard* .
    c. To add to a new attribute, choose *Add Attribute* > *New Attribute* and enter all attribute-relevant information.
    d. In the *Industry Standards* section, and *Add Industry Standard* .
    e. In the *Industry Standards* popup, select an industry standard and enter an industry Standard ID.
    f. Choose *OK*.

Next Steps

- You can update the model template with new attribute groups and attributes.
  For more information, see Viewing and Updating a Template [page 85].
- You can create a model using the model template.
  For more information, see Creating a Model [page 120].
- You can add the template to a group using the *Group* button. For more information, see Groups [page 208].
- You can reorder the attribute groups using the *Reorder* button on the details screen.

3.4.1.8 Creating an Equipment Template

You use this procedure to create an equipment template that helps you to define the equipment-specific attributes and attribute groups related to an item of equipment. This template allows you to create new attributes and attribute groups that need not be inherited from a class, subclass or a model template.

Prerequisites

Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`; or has the roles `TEMPLATE_DELETE` or `TEMPLATE_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Launch the *Templates* application.
2. On the *Templates* object page, choose *New* > *Equipment Template* and proceed as follows:
   a. In the *New Equipment Template* pop-up, enter values for the fields as described in the table below:

Field	Description
ID(*)	Enter a unique ID for the equipment template. **Note** ◦ There are no spaces allowed in the ID. ◦ You cannot change the ID of the template once it has been created.
Short(*) and Long Description	Enter a template description.

Field	Description
Subclass/Equipment Template	Select a subclass template, or another equipment template as parent template. **i Note** You can also create an equipment template without a parent template.
Industry Standards	Add an industry standard. **i Note** ◦ This field is scope-specific. ◦ Template objects can have only one industry standard assigned to them. They can also have no industry standards assignments. ◦ If an industry standard is assigned to a template object, you can change or delete it.

> **i Note**
>
> All the mandatory fields are marked as (*) in the table.

b. Choose *OK*.

The system creates an equipment template.

3. To edit the description of the template, choose *Edit Description* in the template header and proceed as follows:
   a. In the *Edit* pop-up, enter a suitable description in the *Description* text box.
   b. Choose *Save*.
4. To add attribute groups and attributes to a template, choose *Add Attribute Group* from the template header.

   For more information, see Adding Attribute Groups and Attributes [page 57].

   > **i Note**
   >
   > - Each time you save the attribute group of a template, system updates the template automatically. You do not have to save the template explicitly.
   > - Multi-level inheritance is supported, that is:
   >   - you can create equipment templates under another equipment template
   >   - you can create an equipment template with reference to a subclass
5. To add indicator groups and indicators to a template, choose *Add* > *indicator Groups* from the template header.

   For more information, see Adding Indicator Groups and Indicators [page 63].

> **i Note**
>
> Each time you save the indicator group of a template, system updates the template automatically. You do not have to save the template explicitly.

3.4.1.9 Creating a Location Template

You use this procedure to create a location template that helps you to define the location-specific attributes and attribute groups related to a location.

Prerequisites

Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`; or has the roles `TEMPLATE_DELETE` or `TEMPLATE_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Launch the *Templates* application.
2. On the *Templates* object page, choose *New* > *Location Template* and proceed as follows:
    a. In the *New Location Template* pop-up, enter values for the fields as described in the table below:

Field	Description
Template ID(*)	Enter a unique ID for the location template. **i Note** ○ There are no spaces allowed in the ID. ○ You cannot change the ID of the template once it has been created.
Short(*) and Long Description	Enter a template description.

Field	Description
Parent Subclass/Location Template	Select a subclass template, or another location template as parent template. **i Note** You can also create a location template without a parent template.
Industry Standards	Add an industry standard. **i Note** ○ This field is scope-specific. ○ Template objects can have only one industry standard assigned to them. They can also have no industry standards assignments. ○ If an industry standard is assigned to a template object, you can change or delete it.

b. Choose *OK*.

The system creates a location template.

3. To edit the description of the template, choose *Edit Description* in the template header and proceed as follows:
   a. In the *Edit* pop-up, enter a suitable description in the *Description* text box.
   b. Choose *Save*.
4. To add attribute groups and attributes to a template, choose *Add Attribute Group* from the template header.

   For more information, see Adding Attribute Groups and Attributes [page 57].

> **i Note**
> - Multi-level inheritance is supported, that is:
>   - you can create location templates under another location template
>   - you can create a location template with reference to a subclass
> - Each time you save the attribute group of a template, system updates the template automatically. You do not have to save the template explicitly.

Next Steps

You use the location template while creating a location from the **Locations** application.

3.4.1.10 Creating a Spare Part Template

You use this procedure to create a spare part template that helps you to maintain manufacturing information, technical data, and assignment information pertaining to spare parts.

Prerequisites

Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`; or has the roles `TEMPLATE_DELETE` or `TEMPLATE_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Launch the *Templates* application.
2. On the *Templates* object page, choose *New* > *Spare Part Template* and proceed as follows:
   a. In the *New Spare Part Template* dialog box, enter values for the fields as described in the table below:

Field	Description
Template ID(*)	Enter the template ID. **i Note** ◦ There are no spaces allowed in the ID. ◦ You cannot change the ID of the template once it has been created.
Short Description(*)	Enter a short description.
Long Description	Enter a long description.
Parent Subclass/Spare Part Template	Select a subclass template, or another spare part template as parent template. **i Note** You can also create a spare part template without a parent template.

Field	Description
Industry Standards	Add an industry standard. i Note ◦ This field is scope-specific. ◦ Template objects can have only one industry standard assigned to them. They can also have no industry standards assignments. ◦ If an industry standard is assigned to a template object, you can change or delete it.

b. Choose *OK*.

The system creates a spare part template.

> i Note
>
> Multilevel inheritance is supported, that is:
> - you can create a spare part template under another spare part template
> - you can create a spare part template with reference to a subclass

3. To edit the description of the template, choose *Edit Description* in the template header and proceed as follows:
   a. In the *Edit* dialog box, enter a suitable description in the *Description* text box.
   b. Choose *Save*.
4. To add attribute groups and attributes to a template, choose *Add Attribute Group* from the template header.

   For more information, see Adding Attribute Groups and Attributes [page 57]

3.4.1.11 Creating a System Template

You use this procedure to create a system template that helps you to maintain system information, attribute groups, industry standards, and groups assignment information pertaining to system.

Prerequisites

Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`; or has the roles `TEMPLATE_DELETE` or `TEMPLATE_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Launch the *Templates* application.
2. Choose *System Templates* > *New System Template* and proceed as follows:
    a. In the *New System Template* dialog box, enter values for the fields as described in the table below:

Field	Description
Template ID(*)	Enter the template ID. **Note** ◦ There are no spaces allowed in the ID. ◦ You cannot change the ID of the template once it has been created.
Short Description(*)	Enter a short description.
Long Description	Enter a long description.
Parent Subclass/System Template	Select a subclass or another system template as the parent template. **Note** You can also create a system template without a parent template.
Industry Standards	Add an industry standard. **Note** ◦ This field is scope-specific. ◦ Template objects can have only one industry standard assigned to them. They can also have no industry standards assignments. ◦ If an industry standard is assigned to a template object, you can change or delete it.

    b. Choose *OK*.

    The system creates a system template.

> **Note**
>
> Multi-level inheritance is supported, that is:
> - you can create a system template under another system template
> - you can create a system template with reference to a subclass

3. To edit the description of the template, choose *Edit Description* in the selected template header and proceed as follows:
    a. In the *Edit* dialog box, enter a suitable description in the *Description* text box.
    b. Choose *Save*.
4. To add attributes to the system template, choose *Add Attribute Groups* in the object page header and proceed as follows:
    a. In the **Add Attribute Groups** dialog box, select existing attribute groups from the list or add new attribute group using *New Attribute Group*.
    b. Choose *OK*.

3.4.1.12 Viewing and Updating a Template

Prerequisites

- To update a template, your user ID either belongs to thegroup `ORG_ADMIN` or `ORG_DATA_EXPERT` or has the roles `TEMPLATE_DELETE` or `TEMPLATE_EDIT` assigned.
- To view a template, your user ID either belongs to the group `ORG_DATA_READ`role template `AssetCoreReader`; or has the role `TEMPLATE_READ` assigned.
- You have identified the template that you want to update.

Procedure

1. Open the *Templates* app.
2. Search for a template that already exists using the search filter.
3. Select the template from the search results.

    > **i Note**
    >
    > The search result displays the number of templates by the template types.

4. Choose a template type to view more details of the templates displayed in the search results.
5. Choose a template.

    The template details are displayed in a flexible column layout and as a side-by-side view of the selected template in the list view or card view, and the template details in the template object page.

    > **i Note**
    >
    > The quick view (small and medium detailed view) only provides limited editing options. In the full screen view you have the full editing functionalities.

    System displays the attribute groups, and attributes of the template.

6. Choose *Edit Description* to update the short and long description of the template.
7. To update the description of the attribute group, choose *Edit* in the *<Name of the Attribute Group>* section and perform the following tasks:
    a. Under the *<Name of the attribute group>* section, in the *Short Description* and *Long Description*field, update the descriptions of the attribute group.
    b. Choose *Save*.
8. To update the attributes of the attribute group, in the *<Name of the attribute group>* section, choose *Edit Attribute* and perform the following tasks:
    a. In the *<Name of the attribute>* pop up, update the fields of *Attribute Details* section.

        For more information, see Adding Attribute Groups and Attributes [page 57]

        > **i Note**
        > - You cannot update the attributes that have been inherited from a class, subclass, or another model template.
        > - You cannot update the attributes that have been used in creating any child objects such as models, items of equipment or locations.

    b. Choose *OK*.
9. To remove the attributes of the attribute group, in the *<Name of the attribute group>* section, choose *Remove Attribute* and perform the following tasks:
    a. In the *Warning* pop-up, choose *OK* if you are sure that you want to remove the attribute to the attribute group.
    b. Choose *Save*.

        > **i Note**
        > - You cannot remove attribute groups and attribute that have been inherited either from a class template, subclass, template, or a model template.

10. To add new attribute groups and attributes to the template, choose *Add Attribute Group* from the template header.

    More information, see Adding Attribute Groups and Attributes [page 57].

    > **i Note**
    > Each time you save the attribute group of a template, system updates the template automatically.

Results

You have created a template that you can update with additional attribute groups or attributes.

.

3.4.2 Assessment Templates

This application allows you to create and maintain assessment template for assessing equipment, location, groups and systems. You can consolidate the user questions and answers and the related information within a template. The assessment template can be of the following types:

- Risk and criticality template
- Questionnaire template
- FMEA
- Checklists

> **Note**
>
> -
> - Sharing feature is enabled only in the SAP Cloud Platform - Neo environment.
>   Read-only share is allowed for assessment template. If you want to use the assessment template, you have to create a copy and use it. You can share an assessment template explicitly. All the associated dimensions, scales, and impacts are shared implicitly with the template.The assessment templates overview screen allows you to search in all objects. This includes risk and criticality, questionnaire, FMEA, checklists, impacts, scales and dimensions.

Prerequisite

You must have the following roles:

- ASSESSMENT_TEMPLATE_DELETE
- ASSESSMENT_TEMPLATE_READ
- ASSESSMENT_TEMPLATE_EDIT

3.4.2.1 Attributes

You use this when creating an assessment template with default data maintained for your organizational unit. The attributes object contains the following information:

- *Impacts/Sections* that are used for assessments
- *Dimensions/Questions* and *Scales/Answers* to define the question and answers based on which the assessment is done.

3.4.2.1.1 Impacts/Sections

You use this feature to view the impacts/sections that are used for assessments. Impacts/sections, for example, can be defined as safety of people, environmental compliance, operational loss, financial impact and so on.

This allows you to:

- Create and publish new impact/section such environment, brand, safety, health and so on.
- Edit impacts/sections that are not in published state
- Delete impacts/sections that are in unpublished state or impacts which are not used in any assessment templates
- Publish impact/section category that are in unpublished state
- View list of existing impacts/sections
- Sort existing impacts/sections in ascending or descending order based on selected column
- Search existing impacts/sections

> **i Note**
>
> The shared impacts/sections will not be displayed in the list page as the user cannot directly use the shared impacts/sections in the assessment template.

3.4.2.1.1.1 Creating and Publishing a New Impact/Section

Context

You use this procedure to create and publish a new impact/section such as environment, brand, safety, health, and so on.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Impacts/Sections*.

   The *Assessment Templates* screen with impacts/sections overview appears.
3. Choose `<New>`

   The system displays the `<Create Impact/Section>` window.
4. Enter the `<Short Description>` and `<Long Description>`.
5. Click the *Category* field and select the category from the available list.

> **i Note**
> - A newly created impact/section will be in the **Unpublished** status. You can publish the impact/section once finalized and no changes are to be made.
> - You cannot change the impact/section once published.

6. Save your entries.

Results

You have created an impact/section for an assessment template.

3.4.2.1.1.2 Editing an Existing Impact/Section

Context

You use this procedure to edit impacts/sections that are not in **Published** status.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Impacts/Sections*.

   The *Assessment Templates* screen with impacts/sections overview appears.
3. Select the required impact/section and choose the *Edit* button.

   The system displays the `<Edit Impact/Section>` window.
4. Enter the `<Short Description>` and `<>`.
5. Click the *Category* field and select the category from the available list.Long Description
6. Save your entries.

   The impact/section will be in the **Unpublished** status.
7. Choose the *Publish* button to publish the impact/section.
   - A newly created impact/section will be in the **Unpublished** status.
   - You cannot change an impact/section once published.

3.4.2.1.1.3 Sorting Existing Impacts/Sections in a Specific Order

Context

You use this procedure to sort impacts/sections based on the following selection:

- Ascending
- Descending
- Dimension
- Short Description
- Changed On

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Impacts/Sections*.

   The *Assessment Templates* screen with impacts/sections overview appears.
3. Select the required impact/section and choose the *Sort By* button.
4. Choose *OK* to confirm your entries.

3.4.2.1.1.4 Publishing an Impact/Section

Context

You use this procedure to publish impacts/sections that are in the **Unpublished** status.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Impacts/Sections*.

   The *Assessment Templates* screen with impacts/sections overview appears.

3. Select the required impact/section and choose the *Publish* button.

   The system displays the `<Confirmation >`window

   > **i Note**
   >
   > You cannot change an impact/section once published.

4. Choose *OK* to confirm your entries.

Results

The selected impact/section is successfully published.

> **i Note**
>
> Mass publish of the selected impacts/sections in **Unpublished** state are allowed.

3.4.2.1.1.5 Viewing Impacts/Sections

Context

You use this procedure to view the list of existing impacts/sections.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Impacts/Sections*.

   The *Assessment Templates* screen with impacts/sections overview appears.

   > **i Note**
   >
   > You can also sort the impact/section list using the *Sort By* option.

Results

A list of existing impacts/sections along with their **Unpublished** or **Published** status are displayed.

i Note

You can edit, delete, or publish impact/section that are in the **Unpublished** status.

3.4.2.1.1.6 Searching an Existing Impact/Section

Context

You use this procedure to search an existing impact/section.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Impacts/Sections*.

   The *Assessment Templates* screen with impacts/sections overview appears.
3. Enter the search text in the *Search Impacts/Sections* field.

Results

All impacts/sections that match the search text are displayed.

3.4.2.1.1.7 Deleting an Impact/Section

Context

You use this procedure to delete the impacts/sections that are:

- In the **Unpublished** state.
- Not used in any assessment templates.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Impacts/Sections*.

   The *Assessment Templates* screen with impacts/sections overview appears.
3. Select the required impact/section and choose the *Delete* button.

   The system displays the **Confirmation** window.
4. Choose *OK* to confirm your entries.

Results

The selected impact/section is successfully deleted.

> **Note**
>
> Mass delete of the selected impacts/sections is allowed.

3.4.2.1.2 Dimensions/Questions

You use this feature to define the dimensions/questions based on which the assessment is done. This allows you to:

- Create a new dimension/question and publish
- Edit an existing dimension/question
- Display existing dimensions/questions in a list
- Delete an existing dimension/question
- Sort existing dimension/question in ascending or descending order based on selected column
- Search an existing dimensions/questions

> **Note**
>
> The shared dimensions/questions will not be displayed in the list page as the user cannot directly use the shared dimensions/questions in the assessment template.

3.4.2.1.2.1 Creating and Publishing a New Dimension/ Question

Context

You use this procedure to create and publish a new dimension/question.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Dimensions/Questions*.

   The `<Assessment Templates >`overview screen appears.
3. Choose *New*.

   The system displays the `<Dimension/Question>` window.
4. Enter the following information:
   - Basic Information
     - Short Description
     - Long Description
     - Scale/Answer

     > **Note**
     >
     > You can create a new scale/answer or assign an existing **Published** scale.
   - Question Data
     - Question Text
     - Question Description
   - Scale/Answer Details
     - Short Description
     - Long Description
     - Type
     - Unit of Measure

     > **Note**
     >
     > Enter the scale/answer details if you are creating a new scale/answer.
   - Scale/Answer Options
     - Display Value
     - Scale/Answer Value
     - Short Description

- Long Description

5. Save your entries.

Results

You have created the dimension/question for an assessment template. A newly created dimension/question is in the **Unpublished** status.

> **i Note**
> - You can create your own dimensions/questions. You can publish the dimension/question once finalized and no changes are to be made.
> - You cannot change the dimension/question once published.

3.4.2.1.2.2 Editing an Existing Dimension/Question

Context

You use this procedure to edit dimensions/questions that are not in **Published** status.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Dimensions/Questions*.

   The `<Assessment Templates >`overview screen appears.
3. Select the required dimension/question and choose the *Edit* button.

   The system displays the `<Dimension/Question>` screen.
4. Edit the required details.
5. Save your entries.

   You can create your own dimension/question.

Results

You have edited the dimension/question. The newly created dimension/question is in the **Unpublished** status.

You may choose to **Publish** the dimension/question.

> **i Note**
>
> You cannot change a dimension/question once published.

3.4.2.1.2.3 Sorting Existing Dimensions/Questions in a Specific Order

Context

You use this procedure to sort dimensions/questions based on the following selection:

- Ascending
- Descending
- Dimension
- Description
- Changed On

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Dimensions/Questions*.

   The `<Assessment Templates >`overview screen appears.
3. Select the required impact and choose the *Sort By* button.
4. Choose *OK* to confirm your entries.

Results

All the dimensions/questions are sorted as per the selected column.

3.4.2.1.2.4 Publishing a Dimension/Question

Context

You use this procedure to publish dimensions/questions that are in the **Unpublished** status.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Dimensions/Questions*.

   The `<Assessment Templates >`overview screen appears.
3. Select the required dimension/question and choose the *Publish* button.

   The system displays the `<Confirmation>` window.

   > **Note**
   >
   > You cannot change a dimension/question once published.
4. Choose *OK* to confirm your entries.

Results

The selected dimension/question is successfully published.

> **Note**
>
> Mass publish of the selected dimensions/questions in **Unpublished** state are allowed.

3.4.2.1.2.5 Viewing Dimensions/Questions

Context

You use this procedure to view the list of the existing dimensions/questions.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Dimensions/Questions*.

   The `<Assessment Templates >`overview screen appears.

   > **i Note**
   >
   > Edit, delete, and publish actions can be done if the dimension/question is in the **Unpublished** status.

Results

A list of existing dimensions/questions along with their **Unpublished** or **Published** status are displayed.

> **i Note**
>
> The *Edit* and *Cancel* buttons are enabled for the unpublished dimensions/questions. The *Close* button is enabled for the published dimensions/questions.

3.4.2.1.2.6 Searching an Existing Dimension/Question

Context

You use this procedure to search an existing dimension/question.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Dimensions/Questions*.

   The `<Assessment Templates >`overview screen appears.
3. Enter the search text in the *Search Dimensions/Questions* field.

Results

All dimensions/questions that match the search text are displayed.

3.4.2.1.2.7 Deleting a Dimension/Question

Context

You use this procedure to delete the dimensions/questions that are:

- In the **Unpublished** state.
- Not used in any assessment templates.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Dimensions/Questions*.

   The `<Assessment Templates >`overview screen appears.
3. Select the required dimension/question and choose the *Delete* button.

   The system displays the `<Confirmation>` window.
4. Choose *OK* to confirm your entries.

Results

The selected dimension/question is successfully deleted.

> **Note**
>
> Mass delete of the selected dimensions/questions is allowed.

3.4.2.1.3 Scales/Answers

You use this feature to define the question and answers based on which the assessment is done. This allows you to:

- Create new scale/answer and publish
- Search existing scales/answers
- Display list of existing scales/answers
- Edit the existing scale/answer and its scale/answer options
- Delete existing scale/answer and its definition
- Sort existing scale/answer in ascending or descending order based on selected column

> **i Note**
>
> The shared scales/answers will not be displayed in the list page as the user cannot directly use the shared scales/answers in the assessment template.

3.4.2.1.3.1 Creating and Publishing a New Scale/Answer

Context

You use this procedure to create and publish a new scale/answer.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to ▶ *Attributes* ▶ *Scales/Answers* ◀.

   The `<Assessment Templates >`overview screen appears.
3. Choose *New*.

   The system displays the `<Scale/Answer>` window.
4. Enter the following information:
   - Scale/answer Details
     - Short Description
     - Long Description
     - Type

   > **i Note**
   >
   > You can choose UoM based on `<Type>`.

   - Scale/Answer Options
     - Display Value
     - Scale/Answer Value
     - Short Description

- Long Description

> **Note**
>
> - A newly created scale/answer will be in the **Unpublished** status. You can publish the scale/answer once finalized and no changes are to be made.
> - You cannot change the scale/answer once published.

5. Save your entries.

Results

You have created the scale/answer for an assessment template. A newly created scale/answer is in the **Unpublished** status.

> **Note**
>
> Mass publish of the selected scales/answers in unpublished state are allowed.

3.4.2.1.3.2 Searching a Scale/Answer

Context

You use this procedure to search an existing scale/answer.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Scales/Answers*.

   The `<Assessment Templates >`overview screen appears.
3. Enter the search text in the `<Search Scale/Answers>` field.

Results

All scales/answers that matches the search text are displayed.

3.4.2.1.3.3 Editing an Existing Scale/Answer

Context

You use this procedure to edit scales/answers that are not in **Published** status.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Scales/Answers*.

   The `<Assessment Templates >`overview screen appears.
3. Select the required scale/answer and choose the *Edit* button.

   The system displays the `<Scale/Answer>` screen.
4. Edit the required details.
5. Save your entries.

   The scale/answer will be in the **Unpublished** status.
6. Choose the *Publish* button to publish the scale/answer.

Results

You have edited a scale/answer. The edited scale/answer will be in the **Unpublished** status.

> i Note
>
> You cannot change a scale/answer once published.

3.4.2.1.3.4 Sorting Scales/Answers in Specific Order

Context

You use this procedure to sort scales/answers based on the following selection:

- Ascending
- Descending
- Scale ID
- Description
- Changed On

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Scales/Answers*.

   The `<Assessment Templates >`overview screen appears.
3. Select the required scale/answer and choose the *Sort By* button.
4. Choose *OK* to confirm your entries.

Results

All the scales/answers are sorted as per the selected column.

3.4.2.1.3.5 Deleting a Scale/Answer

Context

You use this procedure to delete the scales/answer that are:

- In the **Unpublished** state.
- Not used in any dimensions/questions.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Scales/Answers*.

   The `<Assessment Templates >`overview screen appears.
3. Select the required scale/answer and choose the *Delete* button.

   The system displays the `<Confirmation>` window.

4. Choose *OK* to confirm your entries.

Results

The selected scale/answer is successfully deleted.

> **i Note**
>
> Mass delete of the selected scales/answers is allowed.

3.4.2.1.3.6 Viewing Scale/Answer List and its Details

Context

You use this procedure to view the list of the existing scales and its details.

Procedure

1. Open the *Assessment Template* application.
2. Navigate to *Attributes* > *Scales/Answers*.

   The `<Assessment Templates >`overview screen appears.
3. Select the required scale/answer.
4. Click anywhere on the selected scale/answer.

Results

You can view the scale/answer details of the selected scale.

> **i Note**
>
> The *Edit* and *Cancel* buttons are enabled for the unpublished scales/answers. The *Close* button is enabled for the published scales/answers.

3.4.2.2 Creating an Assessment Template

Context

You use this procedure to create and publish a new assessment template.

Creating a Risk and Criticality Assessment

1. Navigate to **Templates** and choose *Risk and Criticality*.
2. Choose *New*.
3. Enter the following information:
    1. Step 1 - Basic Information
        - Enter the `<Short Description>` and `<Long Description>`.
        - Select the relevant assignments – `<Groups>`, `<Equipment>`, `<Locations>`, `<Systems>`.
        - Select the calculation method - `<Multiplication>` or `<Summation>`.
        - Choose if you want to enable the `<Impact/Section Weightage>`.
        - Choose if you want to enable the `<Dimension/Question Weightage>`.
        - You can enter the relevant *Roles* that are required.
    2. Step 2 - Impacts/Sections Selection
        - Select the *Assign* button.
        - Select the relevant impacts/sections that are of the **Published** status and choose the *Assign* button.
        - Enter the `<Weightage>` information. The total weightage should be 100%.
    3. Step 3 - Dimension/Question Selection
        - Choose the *Assign* button for an impact.
        - Select the required dimensions/questions and choose the *Assign* button.

        > i Note
        > - If the assessment is of type **Risk and Criticality**, a minimum of two dimensions/questions have to be selected per impact/section category.
        > - You can assign a maximum of 25 dimensions/questions to an impact/section category.
    4. Step 4 - Threshold Definitions
        - Enter the `<Threshold Value>`.
        - Select the required `<Action>` and `<Description>`.
4. Choose the *Review* button to check the assessment template details.
5. Save your entries

Creating a Questionnaire

1. Navigate to **Templates** and choose *Questionnaire*.
2. Choose *New*.
3. Enter the following information:
    1. Step 1 - Basic Information

- Enter the <Short Description><Long Description>.
- Select the relevant assignments – <Groups>, <Equipment>, <Locations>, <Systems>.

2. Step 2 - Impacts/Sections Selection
   - Select the *Assign* button
   - Select the relevant impacts/section that is in the **Published** status and choose the *Assign* button
3. Step 3 - Dimension/Question Selection
   - Choose the *Assign* button
   - Select the required dimensions/questions and choose the *Assign* button.

   > **i Note**
   >
   > - You can assign a maximum of 25 dimensions/questions to an impact/section category.
4. Step 4 - Threshold Definitions
   - Enter the <Threshold Value>.
   - Select the required <Description>.

4. Choose the *Review* button to check the assessment template details.
5. Save your entries

Creating an FMEA Assessment

1. Navigate to **Templates** and choose and *FMEA*.
2. Choose *New*.
3. Enter the following information:
   1. Step 1 - Basic Information
      - Enter the <Short Description> and and <Long Description>.
      - Select the relevant assignments – <Groups>, <Equipment>, <Locations>, <Systems>, <Models>.
      - You can enter the relevant *Roles* that are required.
   2. Step 2 - Impacts/Sections Selection
      - Select the *Assign* button.
      - Select the relevant impact/section that is in the **Published** status and choose the *Assign* button.
   3. Step 3 - Dimensions/Questions Selection
      - Choose the *Assign* button for an impact.
      - Select the required dimension/question, one each for <Severity>, <Occurrence>, and <Detectability>, and choose the *Assign* button.
   4. Step 4 - Threshold Definitions
      - Enter the <Threshold Value>
      - Select the required <Description>
4. Choose the *Review* button to check the assessment template details.
5. Save your entries

Creating a Simple Checklist Templates

1. Navigate to **Templates** and choose *Checklists*.
2. Choose *New*.
3. Enter the following information:
   1. Enter the <Description> and <Long Description>.

2. Select the relevant assignments – *Equipment*, *Locations*, *Models*, *Systems*.
3. Select the checklist type: *Simple*
4. Select the relevant category type:
    - Environment
    - Safety
    - Operation
    - Brand
    - Finance
    - Production
    - Schedule
    - Health
    - Society
    - Quality
    - Security
    - Shutdown
    - Purchasing
    - Installation or Uninstallation
5. Choose *OK*.
6. On the checklist object page, you can:
    1. In the *Information* tab:
        1. View the highlight in the *Highlights* section.
        2. View the list of announcements in the *Announcements* section.
    2. In the *Assignments* tab:
        1. To assign class templates, choose *Assign* > *Class*.
        2. To assign subclass templates, choose *Assign* > *Subclass*.
        3. To assign equipment templates, choose *Assign* > *Equipment Templates*.
        4. To assign location templates, choose *Assign* > *Location Templates*.
        5. To assign system templates, choose *Assign* > *System Templates*.
        6. Select a template form the list and choose *Assign*.
        7. Enter the checklist details like `<Estimated Cost>`, `<Recommended Frequency>`, and `<Estimated Interval Required>`
           You can also update the master data of the object by setting *Update Master Data* to **Yes**. By default, it is set to **No**.
        8. Choose *OK*.
    3. In the `<Sections>` tab:
        1. You can assign the Impacts/sections by choosing *Add Sections*.
        2. Choose *Add Questions* for an impact and select the relevant questions for the impact. Choose *Assign*.

> **i Note**
>
> - If you have assigned questions to the checklist, you can define the thresholds using the *Thresholds* in the header data. Choose the number of thresholds from the dropdown list, only then the thresholds are displayed.
> - You can assign sections from the `<Sections>` in the header data.

4. You can view all the changes made to the checklist data in the *Timeline* tab.

Creating Advanced Checklist Templates

1. Navigate to **Templates** and choose *Checklists*.
2. Choose *New*.
3. Enter the following information:
    1. Enter the `<Description>` and `<Long Description>`.
    2. Select the relevant assignments – *Equipment*, *Locations*, *Models*, *Systems*.
    3. Select the checklist type: *Advanced*
    4. Choose *OK*.
    5. On the checklist object page, you can:
        1. In the *Assignments* tab, you can assign the following templates by choosing *Assign*:
            - Class
            - Subclass
            - Equipment Templates
            - Location Templates
            - System Templates
            - Model Templates
        2. In the *Sections/Questions* tab:
        3. You can assign the Impacts/sections by choosing *Add Sections* in the *Questions* tab.

            > **i Note**
            > - You can further assign sections from the `<Sections>` in the header data.

        4. Further you can add questions to each impact/section by choosing *Add Questions*.
        5. Choose *Edit* to add the `<Next Step>` and`< Secondary Step>` for all the questions.
            You can assign **Questions** or **Actions** as the next step. You can only assign an action as the secondary step.
        6. Choose *Save*.
            You can select one of the questions as the trigger question using *Mark Trigger* button.
            You can use *Simulate* button to display a graphical overview of the Questions and the associated actions (next steps and secondary steps).

            > **i Note**
            > Advanced checklist template is only used while creating RCM assessment templates.

Creating Reliability Centered Maintenance (RCM) assessment Templates

1. Launch *Assessment Templates* application
2. Select the assessment template type: *RCM*
3. Choose *New*.

Field	Description
Description (*)	Enter a name for the assessment template.
Long Description	Enter a long description, if necessary.

Field	Description
Assignments (*)	Select the kind of objects that can be assigned to this assessment template. You can assign equipment, models, locations, or systems.
Checklist Template	Select a checklist template. **i Note** Only the published checklist templates of type **Advanced** will be displayed in the list.
Display Failure Modes and Causes together	Select **Yes** or **No**. If you select **Yes**, then the assessments that use this template will perform consequence evaluation for each effect and each cause assigned to the failure mode. If you select **No**, then the assessments will perform consequence evaluation for each effect assigned to the failure mode.
Default Currency (*)	Select the default currency.
Risk Reduction	**Currency** or **Percentage** Select if you want to calculate the risk reduction based on currency or in percentage

4. Choose *Save*.
   The template object page is displayed.
5. Select the roles that are needed for the assessment by choosing *Roles* > *Edit*, you can mark the relativity of the roles by choosing:
   - Not Required
   - Mandatory
   - Optional
6. Under *Assignments* tab, based on the objects assigned while creating the template in step 3 – `<Assignments>` field, template objects can be assigned to the RCM template. Class and subclass are available by default.
7. Choose *Publish*, a dialog box is displayed to confirm if you want to create an announcement. Choose *OK* to create an announcement. Enter the details to create an announcement and choose *Save and Publish*.
   The announcements are now visible in the *Announcements* section of the assessment template object page.

Results

You have created an assessment template in the **Unpublished** status. To publish an assessment template, choose *Publish*.

See Also

Reviewing an Assessment Template [page 110].

Maintaining an Assessment Template [page 112]

3.4.2.3 Reviewing an Assessment Template

Context

You use this procedure to get an overview of the assessment template. This allows you to review the details and acts as a last step and before you publish an assessment template.

Procedure

1. Open the *Assessment Templates* application.
2. Navigate to `<Templates>`, select either *Risk and Criticality*, *Questionnaire*, or *FMEA*.
3. Select the required assessment template.

   > **i Note**
   >
   > Select the assessment template that is in the **Unpublished** or **In Revision** status.

4. Choose *Review*.

Results

The assessment template details such as basic information, impacts/sections selection, scale/answer options, threshold definitions and its details are displayed.

See Also

Creating an Assessment Template [page 105].

3.4.2.3.1 Publishing an Assessment Template

Prerequisites

You have reviewed an assessment template. For more information, see Reviewing an Assessment Template [page 110].

Context

You use this procedure to publish assessment templates that are reviewed.

Publishing Risk and Criticality, Questionnaire, and FMEA Assessment Templates

1. Open the *Assessment Templates* application.
2. Navigate to `<Templates>`, select either *Risk and Criticality*, *Questionnaire*, or *FMEA*.
3. Select the required assessment template.

> i Note
>
> Select the assessment template that is in the **Unpublished** or *In Revision* status.

4. Choose *Review*.
5. Review the required details.
6. Choose the *Publish* button.
   The system displays the **Confirmation** window.

> i Note
>
> You cannot change an assessment template once published.

7. Choose *OK* to confirm your entries.

Publishing a Checklist

1. Open the *Assessment Templates* application.
2. Navigate to `<Templates>`, select *Checklists*.
3. Select the required checklist.

> i Note
>
> Select a checklist that is in the **Unpublished** or *In Revision* status.

4. Choose the *Publish* button.
   The system displays the **Confirmation** window.

> i Note
>
> You cannot change a checklist once published.

5. Choose *OK* to confirm your entries.

Results

The selected assessment template is successfully published.

3.4.2.4 Maintaining an Assessment Template

Function	Procedure	Result
View the existing assessment template details	1. Open the *Assessment Templates* application. 2. Navigate to **Templates.** 3. Select the required assessment template.	Details of assessment template such as the assessment template ID, descrip-tion, business objects, status, type and so on are displayed.
Search existing assessment template	1. Open the *Assessment Templates* application. 2. Navigate to **Templates**. 3. Enter the search text in the `<Search>` field	All the assessment template that matches the search text are displayed.

3.4.2.5 Editing an Existing Assessment Template

Context

You use this procedure to edit an existing assessment template.

> **i Note**
>
> The details of the assessment template such as name, description, long description, business objects selected, associated impact/section categories, associated dimensions/questions are editable only when assessment template is in **Unpublished** or **In Revision** state.

Procedure

1. Open the *Assessment Templates* application.
2. Choose **Assessment Templates** by navigating to the list view.
3. Select an assessment template and make the changes.
4. Save your entries

   The selected assessment template is set to **Unpublished** status.

Results

The assessment template is created and a version 0 gets created. You may select *Publish* after editing the details and reviewing them.

> **Note**
>
> Once you publish the assessment template, the version of the assessment template gets incremented.

3.4.2.5.1 Copying an Existing Assessment Template to Create a New Template

Procedure

1. Open the *Assessment Templates* application.
2. Navigate to **Assessment Templates** by switching to the list view.
3. Select the required assessment template and choose *Manage* > *Copy*
4. *Save* and *Publish* your entries

   Choosing *Save* will create the assessment templates in **Unpublished** version.

Results

New categories with ID and Name is created and is in **Published** status. Details of the categories are displayed and all the details such as types, impact/section categories and dimension/question details gets copied.

3.4.2.6 Sort the Attributes of the Assessment Templates

Context

You use this procedure to sort the attributes of the assessment templates in ascending or descending order.

Procedure

1. Open the *Assessment Templates* application.
2. Navigate to **Assessment Templates** by using the list view.
3. Select the required `<Attributes>`.
4. Choose *Sort By*.

> **i Note**
>
> You can choose the sorting order (ascending or descending)

Results

All the assessment templates are sorted as per the user selection.

3.4.2.7 Assessing Risks Using an Assessment Template

Context

You use this procedure to assess risk using a selected assessment template.

Procedure

1. Open the *Assessment Templates* application.
2. Navigate to **Assessment Templates** by using the list view.

3. Select the required assessment template with status **Published**.
4. Choose *Manage* and the *Assess* option.

   The **Create Assessment** window is displayed.
5. Enter the required details and save your entries.

Related Information

Creating an Assessment Template [page 105]

3.4.2.8 Displaying the Assessment Template in a Card or List Page

Context

You use this procedure to view the announcement details of an existing assessment template.

Procedure

1. Open the *Assessment Templates* application.
2. Navigate to **Assessment Templates** by using the list view.
3. Select the required assessment template.

   The **Assessment Templates** screen appears.
4. Choose the *Grid View* or the *List View* button.

Results

The assessment template details can be viewed based on the selected option.

3.4.2.9 Displaying the Announcement Details of an Existing Assessment Template

Context

You use this procedure to view the assessment template in card or a list page

.

Procedure

1. Open the *Assessment Templates* application.
2. Navigate to **Assessment Templates** by using the list view.
3. Select the required assessment template.
4. Choose *Manage* and the *Related Information*.
5. Select the *Announcement* tab.

Results

The details of announcement such as announcement ID, description, type, published on, priority and status are displayed.

> **Note**
>
> You can choose the filter or sort the order.

3.4.2.10 Viewing the Timeline Details of an Existing Assessment Template

Context

You use this procedure to view the timeline details of an existing assessment template.

Procedure

1. Open the *Assessment Templates* application.
2. Navigate to **Assessment Templates** by using the list view.
3. Select the required assessment template and choose *Manage*.
4. Choose the *Related Information* option.
5. Select the *Timeline* tab

> **Note**
>
> You can filter the time line data using the *Filter By* option.

Results

The timeline tab displays the version-wise details of the assessment template.

3.4.2.11 Related Information for an Assessment Template

Context

You use this procedure to view the announcements and object templates assigned to an existing assessment template and also to assign object templates to the assessment templates in unpublished state.

Procedure

1. Open the *Assessment Templates* application.
2. Navigate to relevant *Assessment Templates* by using the list view.
3. Select the required assessment template and choose *Manage*.
4. Choose the *Related Information* option.
5. You can view the announcements and relevant object templates assigned to the selected assessment template.

   In case of assessment templates in **Unpublished** state, you can assign multiple equipment, location and model templates to the assessment template using *Assignments* > *Template* > *Assign*.

3.4.2.12 Deleting an Existing Assessment Template

Context

You use this procedure to delete an existing assessment template.

Procedure

1. Open the *Assessment Templates* application.
2. Navigate to **Assessment Templates** by using the list view.
3. Select the required assessment template.
4. Choose *Manage* and select the *Delete* option

> i Note
>
> You can only delete assessment templates that are not yet in the **Published** status.

Results

The selected assessment template is deleted.

3.5 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.

A model is based on a template and allows users to add values to the definitions used in the underlying template.

A model maintains maintenance information using the following business entities:

- **Instruction**:
  An instruction is a collection of steps from the manufacturer that make up a procedure on how to carry out a service by an operator. An instruction consists of information that help the operator to maintain the equipment better. There are five types of instructions: Planned Maintenance Instruction, Troubleshooting and Breakdown Instruction, Installation instructions, Operations instruction, Disposal instruction.
- **Announcement**:
  An announcement is a way of communicating structured information from a manufacturer to an operator, or a set of operators.. For example: change in instruction

- **Parts**
  A part is a single piece of an equipment. A manufacturer provides a list of parts used in the model along with the visual representation of each one of them. An operator can select a specific part of the model from the list to view the manufacturer details, spare part number, and the quantity of the part used in the model and use these details for procurement purposes.
- **Document**
  A document is a material of reference provided by the manufacturer and contains information relevant to a specific phase in the life cycle of the model.
- **Hotspot**
  A hotspot is an area on the visual image that is of more interest. A hotspot allows you to view detailed information of a model component in a pictorial way. You can assign additional information to a hotspot such as model, equipment, and instruction to which users can navigate to.

A model can be in any of the following states:

- *Unpublished*
- *In Revision*
- *Published*

For more information, see State Transitions [page 51].

3.5.1 Managing Models

Context

You use the *Models* app to work with a model. You can perform the following operations using the *Models* app:

- Create a model and assign business entities such as instructions, documents, announcements, parts information of the model
  - Update successor model information.
  - Add hotspots to the images of a model.
  - Old and new images are shown on the timeline if image-relevant fields are updated on model and equipment level.

  For more information, see Creating a Model [page 120].
- Add and remove model components.
  For more information, see Adding Model Components [page 126].
- View details of an existing model and update an existing model.
  For more information, see Updating a Model [page 127].
- Delete a model to clean up the data that is not required to be on the network.
  For more information, see Deleting a Model [page 128].
- Reuse the created models within your organization.
- Create models relevant for systems.
  You can create a system using *Manage* > *Create System* option. You can also create multiple systems from a model as components.

- You can view all the indicators associated with a model using the **Indicators** section under **Monitoring**. You can define, model, and edit additional properties of the indicators and their thresholds using the **Edit** option in the **Indicators** section.
- You can assess a model and view all the assessments assigned to the model under *Assessments*.

3.5.1.1 Creating a Model

You use this procedure to: create a model and add business entities to it such as instructions, documents, announcements, parts information, hotspots to the images uploaded as documents for a model.

Prerequisites

- Your user ID has the roles `MODEL_DELETE` or `MODEL_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- To create a model, you must have a subclass or a model template to inherit from.
- You have identified a manufacturer profile to assign to a model.

Procedure

1. Launch the *Models* app.
2. Choose *New*.
3. In the *New Model* dialog box, enter the following details:
   a. In the *Type* field, select if the model is relevant for equipment or system.
   b. In the *Model ID* field, enter the ID for the model.

      > **Note**
      >
      > Provide a unique model ID, as ID is unique for a specific manufacturer.

   c. In the *Short Description* field, enter a short description for the model.
   d. In the *Long Description* field, enter a long description for the model.
   e. In the *Tracking* drop-down, select the type of tracking you want to assign to an item of equipment that is based on the model.

      The following list helps you to select an appropriate value:
      - **`Serial number tracking at model level`**: As a manufacturer, you want to track an item of equipment within a model using unique serial number. An operator uses the unique serial number while creating an item of equipment.
      - **`Serial number tracking at manufacturer level`**As a manufacturer, you want to track all items of equipment using unique serial number. An operator uses the unique serial number while creating an item of equipment.

- `Batch number tracking at batch level`As a manufacturer, you want to track all items of equipment within a batch using a batch number. An operator uses the batch number while creating an item of equipment.

f. In the *Parent Subclass/Model Template* field, select a subclass or model templates.

   If you select more than one template, then the *Primary Template* field is displayed where you need to select one of the templates as the primary template.

   You can assign one or more parent subclasses or model templates to a model. If you enter more than one parent subclass/model template, you must additionally select a primary template in the dropdown of field `<Primary Template>`. This primary template will be used for class/subclass/template display in the breadcrumb as well as in the model list. The assignment of the primary template can later be changed in the Data Sheet section of the model.

   > **i Note**
   >
   > All assigned templates and subclasses (as well as associated classes) are available in the Model Information section. If there are more than one class/subclass/template, count values are displayed in the respective fields. When clicking on one of the count values you will be able to view the complete template hierarchy for your model.

g. In the *Manufacturer* field, select the manufacturer name.
h. Choose *OK*.

4. To add values to the attributes of the underlying templates choose *INFORMATION* > *Data Sheet* and perform the following steps:
   a. Choose *Edit* and enter values for the attributes as defined by the underlying templates.
   b. You can reorder the attribute groups using *Reorder Groups*.
   c. You can display the alternate unit of measure using *Show Alternate UoM*.

      You can set the default unit of measurement system in the *Unit of Measure Variant* under *User Account(icon on the left corner of the launchpad)* > *Settings* > *Unit of Measure* .
   d. You can add additional Templates or Subclasses using *Add Template*.

      If there are multiple templates assigned, you will get filtering options on the data sheet:
      - All = displays all attribute groups and attributes
      - <Industry Standard> = displays all attribute groups and attributes that have the respective industry standard maintained
      - <Custom> = displays all attribute groups and attributes that are coming from customer-created model templates
   e. If there are multiple Subclasses and Templates assigned, you can change the Primary Template using *Update Primary Template*.
   f. If there are multiple Subclasses and Templates assigned, you can remove assigned objects using *Remove Template*.

      > **i Note**
      >
      > It is mandatory to have at least one parent object assigned, i.e. it is not possible to remove all assigned objects.
   g. Choose *Save*.

5. To add model-specific information, choose *INFORMATION* > *Model Information* and perform the following steps:
    a. Choose *Edit*As a manufacturer, you want and enter the following fields:

Field	Description
Tracking	Update the tracking mechanism, if necessary.
Safety Risk	Select a recommended safety risk for the model during its operating condition.
Generation	Specify a number that indicates the version of the model.
Model Release Date	Enter a date by which the model will be released.
Description	Enter a model description.
Firmware Support	Specify if the model supports firmware.

    b. To assign a tag, choose *Add/Remove Tags*.
    c. In the *Add/Remove Tags* dialog box, assign a tag.
    d. Choose *OK*.

    You can assign such tags that logically categorize model information, maintenance, and other model-relevant data.
    e. Choose *Save*.
6. In the *Model Usage* section, you can view the extent of model's usage.

    If consumer or operator is sharing equipment based on the model relation, the usage is linked to the related equipment and operators.

    > **i Note**
    >
    > When the model is published, you can also create an equipment using this model from the *Create Equipment* button.
7. To update a model as the successor to the current model, choose *INFORMATION* > *Life Cycle Information* and perform the following steps:
    a. Choose *Assign* in the **Successor Model** section.
    b. In the *Assign Successors* popup, select the model you want to assign as successor.
    c. Choose *Assign*.

    > **i Note**
    >
    > The successor model you want to assign must have the same subclass as the current model.
8. To add the model to a group, go to *INFORMATION* → *Groups*→ *Add*.

    You can view the list of groups to which the model is added.
9. To add model components, perform the following:

a. Choose STRUCTURE AND PARTS > Structure > → Edit.

a. Choose *Assign*. From the *Select Component* dialog box, select the model component.
b. Choose *Add*.
c. You can define if an assigned structure component is mandatory or optional for a model.
d. You can adjust the quantity and the item description for the structure components. You can change the Quantity to a quantity range using the *Define Quantity Range*.
e. You can select an enum attribute to define default list of description to be assigned to the components using *Select Description Attribute*.
f. Choose *Save*.

10. To assign spare parts to a model, perform the following:

a. Choose *STRUCTURE AND PARTS* > *Spare Parts* > *Assign*.

a. From the *Assign Spare Parts* dialog box, select the spare part, and choose *Provide Quantity*.
b. In the *Provide Quantity* dialog box, enter values for *Default Delivered Quantity*, *Advised Stock Quantity*, and *BoM Quantity*. You can also enter a comment if necessary.
c. Choose *Assign*.

11. To assign a visual part to a model, perform the following steps:

a. Go to *Documentation* > *Documents* section.
b. Choose *Add*. You can assign an existing or a new document.
c. To assign a visual part, you must add a document of type **.vds**.
d. Choose *Assign*. You can now view the visual parts under *Structure & Parts* > *Visual Parts*.

The viewer search is extended to search for part name, description, manufacturer part number, and EAM number. You can select search result and display it in the viewer window.

12. To add an instruction to the model, choose the *Documentation* > *Instructions* tab and perform the following tasks:

a. In the *Instructions* section, choose *Assign* to perform the following steps:
b. In the *Assign Instructions to a Model* dialog box, search for an appropriate instruction.
c. From the *Instructions* search results list, select an instruction.

> **Note**
>
> You can assign instructions that are in a published state only to a model.

d. Choose *Assign*.

You can view the different instruction types in the following tabs: *Planned Maintenance*, *Breakdown*, *Installation*, *Operations*, and *Disposal*.

13. To add, or assign, or edit an existing document to the model, choose the *Documentation* > *Documents* tab, and perform the following tasks:

a. In the *Documents* section, from the *Add* menu, choose *New* to upload a new document, and perform the following steps.
b. In the *Add Document* dialog box, browse for a file name or provide a link in the *File* text box.
c. In the *Phase* field, select the phase in the life cycle of the model where the document is relevant for use.
d. In the *Category* field, select the category relevant to a phase.
e. In the *Language* dropdown box, choose your language.

f. In the *Data Sensitivity* dropdown, choose if the document contains any sensitive or personal information for document security purpose such as **Personal Data**, **Sensitive Personal Data**, or **No Sensitive Information**.
g. In the *Description* field, enter a description for a document.
h. Choose *Upload*.

   When uploading a new document, you can upload the document directly without checking for duplicate documents in the system.

   You can use *Check and Upload* to check if there are any duplicates that exist in the system. If duplicate files exist, you will then view the files in the *Similar Files Detected* dialog box. You then can *Continue Uploading the New File* or you can select a file from the duplicate file list and *Use Selected File* option to upload it.

14. In the *Documents* section, from the *Add* menu choose *Assign* to upload an existing document and perform the following steps:
    a. In the *Select Documents* dialog box, search for an appropriate file.
    b. From the *Documents* search results list, select a document.
    c. Choose *Assign*.

    You can also use *Remove* and *Download* to remove or download any of the documents assigned to the model.
15. To add a hotspot to an image select an image in the *Documents* section, see Creating Hotspots [page 152].
16. To assign a failure mode, choose *Documentation* > *Failure Modes* perform the following steps:
    a. Choose *Assign*.
    b. In the **Select Failure Modes** dialog box, select the failure modes that you want to assign to the model.
    c. Choose *Assign*.

       You can create a copy of the failure mode using *Copy*.

       > **i Note**
       >
       > When you copy a failure mode and *Save & Publish* it:
       > - A new failure mode is created with the same causes and instructions from the source failure mode
       > - The newly created failure mode is directly assigned to the object
       > - The new failure mode is in published state
       > - You navigate to the new failure mode instance page that includes all the copied failure mode instances: effects, causes, instructions, and detection method
       > - The new failure mode appears in the failure mode section list

       You can navigate to the instance page of a failure by double-clicking on it in the failure mode list. In the failure mode instance page, you can:
       - View the failure mode information.
       - Add or remove effects from the failure mode.
       - Add or remove causes from the failure mode.
       - View the maintenance strategy for the failure mode.
       - Assign or remove instructions for the failure and manage cause for the instructions.

       If you have write access to the model even though you do not have write access to the failure mode, you can edit the failure mode instance page of the model.

17. In the *Documentation* › *Alert Types* section, you can, *Assign* or *Remove* alert type group.
18. To add an announcement to the model, choose the *Documentation* › *ANNOUNCEMENTS* tab and perform the following steps:
    a. In the *Announcements* section, choose *Assign* to assign an existing announcement and perform the following steps.
    b. In the *Assign Announcements to a Model* dialog box, search for an appropriate announcement using the filters – *Announcement Type*, or *Priority*, or *Status*.
    c. From the *Announcements* search results list, select an announcement.
    d. Choose *Assign*.
19. You can create an improvement request for the model using *Documentation* › *Improvement Requests* › *New Improvement Requests*.

    You can enter the details in the *New Improvement Request* dialog box. Choose *OK*.

    You are navigated to the new improvement request object page where you can further edit the request and save it.
20. In the *Indicators* section, you can view the list of indicators associated with the model. You can select an indicator from the list and use *Configure* to define the Threshold values for the indicator.

    For Numeric and Numeric Flexible datatypes, you can also define the `<Reset>`, `<Min>`, `<Max>`, and `<Normal>` values. You can also define threshold range for these datatypes.*Reset* button is functional only for these two datatypes and will delete all the existing values and insert the reset value wherever applicable.

    > **i Note**
    > - In the case of indicators of data type Boolean, the maximum number of thresholds selected must be 2 with values **True** and **False**. Anything else can lead to inconsistency.
    > - You can personalize the indicator filters and columns in the *Indicator* section. When you login again the same filters and columns are displayed.
21. To publish model, choose *Publish*.
    System publishes the model and creates a first revision of the model in SAP Asset Strategy and Performance Management. Users of your organization can view the published model. If you navigate away from the *Models* application without saving the model, the model remains in the unpublished state and is not visible to any users in the organization until you publish the model.
22. Once the model is published, you can create an FMEA assessment or a checklist for the model under *Assessment*.
    - FMEA
      You can create an FMEA assessment from *Assessment* › *FMEA* › *Assess*. If the model has subcomponents, then the system prompts to confirm if the subcomponents also have to be assigned to the assessment. You can choose *Yes* or *No*. In the **Create Assessment** dialog box, enter the details and choose *Save*. The FMEA assessment object page is displayed where you can further it edit, validate, and publish the assessment.
    - Checklist
      You can create checklists for the model by selecting a checklist and choosing *Fill Checklist*.
      You can download the checklist template by choosing *Download*.
      You can view the number of checklist records (of the selected type) created by choosing *View Records*.

You can also view all the checklist records created for the model using *View All Records*. It displays the *View Records* screen. You can also compare a maximum of three checklist assessments by selecting the assessments and choosing *Compare Assessments* button on this screen.

- RCM
  You can view the Reliability Centered Maintenance (RCM) assessments assigned to the model. An overview of the following are displayed as a card view:
  - Functions
  - Cost of Corrective Tasks
  - Cost of Preventive Tasks
  - Distribution by Activity
  - Recommendation Count
  - Placeholder Instructions

  Choose any card to view the details in the *Recommendations* dialog box.
  Choose *View Assessments* to view a list of RCM assessments.
  Choose an assessment from the list to view the details of the assessment.

23. You can view the changes made on the model data in the *Timeline* section.

    You can click the model date range to open the *Filter By* dialog box. You can select to show the event for a particular object and define the time range during which you want to see the changes.

    For each change entry, you can view changes made in other languages on the timelines using the *Show Details* button.
24. To create revisions of a model and to switch between the published and revision states, see Creating Revisions and Switching Between Revisions and Published State [page 52].

3.5.1.1.1 Adding Model Components

You perform this activity when you need to alter the model components to customize to your requirement.

Prerequisites

- You have already created a model in SAP Asset Strategy and Performance Management. For information about creating a model, see Creating a Model [page 120].
- The model is in status **Unpublished** or **In Revision**.
- Ensure that the component you want to add already is created in the network as a model.

Procedure

1. Launch the *Models* application.
2. Open the relevant model.
3. From the *Model* object page, choose *New Revision*.

4. Choose the **Model Component** icon.
5. Choose *Add Component*.
6. In the *Select Component* pop-up box, select the component you want to add.
7. Choose *Add*.
    - To remove component, proceed as follows:
        - From the *Model Component* page, select the model and choose *Remove Component*.
        - From the *Select Component* page, select the component you want to remove.
        - Choose *Remove*.

3.5.1.2 Updating a Model

You use this procedure to update an existing model that has either incorrect or missing information.

Prerequisites

- You have created a model that is either in an unpublished state, or in the in revision state.
- Your user ID has the roles `MODEL_DELETE` or `MODEL_EDIT` assigned. For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Models* application.
2. Search for a model that you want to update using the search filters.
3. Select the model from the search results.
4. If you choose a model that is in a published state, choose *New Revision* from the *Model* screen and perform the following tasks:
    a. To update attributes such as manufacturer's name, or model name, or any of the model related attributes select *INFORMATION* > *Model Information* tab and perform the following tasks:
    b. Choose *Edit* in the *Model Information* section and update the relevant fields. For more information on the field descriptions, see Creating a Model [page 120].
    c. Choose *Save*.
5. To update additional attributes related to the model, select *INFORMATION* > *Attributes* tab and perform the following tasks:
    a. Choose *Edit* in the *Attributes* section and update the relevant fields. For more information on the field descriptions, see Creating a Model [page 120].
    b. Choose *Save*.
6. To assign existing planned maintenance instructions, or troubleshooting and breakdown instructions to the model; or to unassign the instructions related to the model, choose the *INSTRUCTIONS* tab and perform the following tasks:

> **i Note**
>
> You must have instructions created in the SAP Asset Strategy and Performance Management.

a. Choose *Edit* in the *Instructions* section.
b. To assign an instruction, choose *Assign*.
   If you are unable to see the *Assign* button, change your browser zoom and re-try.
c. To unassign an instruction, choose *UnAssign*.

7. Choose *Publish* to publish the updated model.

3.5.1.3 Publishing a Model

When you have more models created using public APIs provided by SAP Asset Strategy and Performance Management, you can view these models using the *Models* application and perform a mass publish of such models.

Prerequisites

Your user ID has the roles `MODEL_DELETE` or `MODEL_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Models* application.
2. Search for models that are either in unpublished, or in the in revision state.
3. Select one or more models from the search results.
4. Choose *Publish*.

3.5.1.4 Deleting a Model

You can delete a model that you do not want to have on the network.

Prerequisites

- Your user ID has the role `MODEL_DELETE` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

- You have created a model and the model is in any of the following states:
  - *Unpublished*
  - *Published*
  - *In Revision*

Procedure

1. Open the *Models* app.
2. Search for a model.
3. Select a model from the search results.
4. Choose *Delete*.

3.5.1.5 Assigning Alert Type Groups to a Model

You can assign alert type groups to a model of an equipment.

Prerequisites

- You have created a model that is in the revision state.
- Your user ID has the scopes `MODEL_DELETE` or `MODEL_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Context

On assigning an alert type group, the alert types are automatically assigned to a model.

> **i Note**
>
> You cannot assign alert type group to a model template.

Procedure

1. Open the *Models* application.
2. Search for a model or models that you want to assign an alert type group.

   > **i Note**
   >
   > You can assign the same alert type group to more than one model.

3. Click *Alert Types* from the *Documentation* tab.

   List of alert types assigned to a particular alert type group displays.
4. Click *Assign Alert Type Group* to assign.

   You can view details of the alert type such as category, severity, alert type group, indicator, origin, and failure modes.
   - If rules are maintained for the alert type, the message **Rules Maintained** display against the alert type.
   - It is not possible to unassign an alert type group from a model, if its alert types are used in the rules.

   > **i Note**
   > - Make sure that you add only the alert groups having alert types that have indicators matching with the indicators of the model. In case this criteria is not met, the rules created using these alert types will not be functional.
   >   For example, indicator I1 and I2 are assigned to alert types A1 and A2, respectively. These alert types are grouped within an alert type group, AG1. This alert type group (AG1) can be assigned to a model only if the indicators I1 and I2 are already part of the model.
   >   This is not applicable to failure modes.
   > - Do not delete indicators that are assigned to a model and used in an alert type. Considering the above example, I1 or 12 should not be deleted as these indicators are used in the alert type groups, as well.

Related Information

Adding Alert Types [page 70]
Adding Alert Type Groups [page 73]

3.6 Instructions

An instruction is a set of steps that help the user to carry out a specific task. In SAP Asset Strategy and Performance Management, the manufacturer shares the instructions with the operator. The instructions help the operator to maintain the equipment better. SAP Asset Strategy and Performance Management has the following instruction types:

- **Planned maintenance instruction**: An instruction that has information about a task that the operator has to perform at regular intervals. However, these are not mandatory instructions and the operator can choose to apply them based on local conditions such as climatic conditions.
- **Breakdown instruction**: An instruction that has information about a task that the operator has to perform when dealing with unplanned situations such as an item of equipment fails to open on demand, or an item of equipment fails to operate due to an internal leak.
- **Installation instruction**: An instruction that provides information while installing an equipment.
- **Operations instruction**: An instruction that provides information on how to use an equipment.
- **Disposal instruction**: An instruction that provides information on how to dispose an equipment.

In addition, you can use the following key information to define an instruction:

- **Activity type:** Defines the primary context where the instruction is applicable.
- **Failure mode**: Defines the effect by which a failure is observed on a failed item.
- **Frequency**: Defines the interval at which you must execute the instruction.
- **Document**: Unstructured document attached to an instruction that is relevant to a specific phase of an item of equipment.
- **Safety rule**: Specifies the recommended guidance from the manufacturer for executing the instructions safely.
- **Model**: Specifies an abstract representation from the manufacturer that defines all maintenance information related to a new or existing product.
- **Precondition**: Specifies an activity that needs to be completed before executing the instruction.
- **Step**: Specifies a single instruction.
- **Post check**: Specifies an activity that needs to be completed after executing the instruction.

An instruction moves from one state to another during its process of creation and maintenance. The different states that an instruction goes through are listed below:

- *Unpublished*
- *Published*
- *In Revision*

For more information, see State Transitions [page 51].

3.6.1 Managing Instructions

You can perform various operations on an instruction such as creating an instruction, viewing an instruction, updating an instruction, deleting an instruction, and assigning models to an instruction.

Context

You use the Instructions app to work with an instruction.You can perform the following tasks:

Procedure

1. Create an instruction (see Creating an Instruction [page 132]).
2. Create an instruction by reusing an existing instruction (see Creating an Instruction by Reusing an Existing Instruction [page 137]).
3. Update an existing instruction (see Updating and Publishing an Instruction [page 139])
4. Viewing an instruction (see Viewing an Instruction [page 138])
5. Deleting an instruction (see Deleting an Instruction [page 140])
6. Assign models to an instruction (see Assigning a Model to an Instruction [page 141])

3.6.1.1 Creating an Instruction

Using the Instructions application you can create five types of instructions - planned maintenance, breakdown, installation, operations, and disposal. You can also specify useful key information such as activity type, failure mode, frequency, document, safety rule, preconditions, steps, and post checks for an instruction.

Prerequisites

- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `INSTRUCTION_DELETE` or `INSTRUCTION _EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- You have identified the subclass that you want to use for your instruction.

  > **i Note**
  >
  > You must use the same subclass as the model uses to which you assign the instruction.

- If you want to assign a model to an instruction, you must ensure that models already exist in SAP Asset Strategy and Performance Management.

Context

For simplicity, we only describe the planned maintenance instruction and a breakdown instruction procedure. In addition, you can assign a model to the instruction so that the operator using the model can use the instruction information for equipment maintenance.

Procedure

1. Open the *Instructions* app.
2. On the *Instructions* screen, choose *New*.
3. In the *New Instruction* pop-up, perform the following tasks:
   a. In the *Instruction Type* field, enter **`Planned Maintenance`** to create a planned maintenance instruction, or a **`Breakdown`** instruction to create an unplanned instruction.
   b. In the *Subclass* field, enter a subclass to which you want to assign an instruction.

   > **i Note**
   >
   > You must use the same subclass as the model uses to which you assign the instruction.

   c. Choose *Create*.
4. In the *Planned Maintenance Instruction* screen, perform the following tasks:
   a. In the Header section, enter the following information:

Field	Description
Short Description	Enter the short description for the instruction.
Expected Duration	Enter the total time required to execute the instruction and also the unit of time.
Criticality	Specify the importance of the instruction.

b. In the *Information* section, enter the following information:

Field	Description
Activity(*)	Select an activity type.
Failure Mode Category(*)	For a breakdown instruction, select an appropriate value from the drop down. The list below describes what each failure mode means ○ Fail to function: equipment does not function. ○ Fail to open: equipment does not open. ○ Fail to close: equipment does not close, ○ Operation delay: equipment operation is delayed.. ○ Output is high: output of the equipment is high. ○ Output is low: output of the equipment is low.
Long Description(*)	Enter a description for the instruction.
Frequency(*)	For a planned maintenance instruction, enter the recurring time interval at which the instruction must be executed. In the adjacent drop-down, specify the unit of time

Field	Description
Primary Document	An unstructured document that provides more information about the instruction. To add a new document, follow the steps below: 1. Choose *New*. 2. In the *Add Document* dialog box, browse for a file name. 3. In the *Phase* drop down, specify a phase. 4. In the *Category* drop down, choose a category that corresponds to a phase. 5. In the *Description* field, enter a description. 6. Choose *Upload*. To assign an existing document, follow the steps below: 1. In the *Assign Documents to Instruction* window, search for a document using the filters *Phase*, or *Category*. 2. Select a document from the search results list. 3. Choose *Assign*. To view the list of supported MIME types, see the Supported MIME Types table under the Documents documentation. To add a hotspot to an image, see Creating Hotspots [page 152].
3D Visual	Add either a new 3D visual file, or assign an existing 3D visual file. You can refer to the steps mentioned for the Primary Document to upload a new 3D visual file, or to assign an existing 3D visual file. **i Note** System captures a snapshot of the 3D visual file to use it as a preview image for the instruction.
Relevant to Warranty	Specify if the instruction is relevant for warranty.

> **i Note**
>
> Mandatory fields are marked as (*) in the table.

5. On the *Safety Rules* screen area, choose *Add* to add a new safety rule and perform the following tasks:
   a. In the *Safety Rules* dialog box, select a safety rule and choose *OK*.

   For example, if you want the user to wear safety boots while performing the step in the instruction, choose `Safety boots must be worn`.

6. In the *Models* screen area, choose *Assign* to assign an existing model to the instruction and perform the following tasks:
    a. In the *Select Models* dialog box, search for an appropriate model using the search filters Class or Manufacturer.
    b. From the *Models* search list, select an appropriate model.
    c. Choose *Assign*.

    > **i Note**
    >
    > To unassign a model to the instruction, select the model in the *Models* section and choose *Unassign*.

7. In the *Equipment* screen area, to assign an equipment, choose *Assign* and perform the following tasks:
    a. In the *Select Equipment*, select the appropriate equipment.
    b. Choose *Assign*.
8. In the *Preconditions* screen area, choose *Add* to add an activity that must be performed before executing the instruction.
9. In the *Steps* screen area, to add individual instructions to the overall instruction, choose *Add*.
10. In the *Post Checks* screen area, to add an activity that needs to be performed after the instruction execution, choose *Add* and enter values in the *Post Check*s field.
11. *Save* the instruction, or *Save and Publish* the instruction.
12. To add the instruction to a group, go to the instruction detail page and navigate to *GROUPS* → *Add*.
13. To create a new revision, and to switch between published and revision states, see Creating Revisions and Switching Between Revisions and Published State [page 52].

3.6.1.2 Adding Steps to an Instruction

You use this procedure to add a set of steps to an instruction. Each steps consists of information such as documents, 3D visual file, or spare parts that help the operator during the maintenance of an item of equipment.

Prerequisites

- If you want to add spare parts information to an instruction, you must have uploaded 3D visual files into SAP Asset Strategy and Performance Management for a model, a piece of equipment, an instruction, or an announcement.
- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `INSTRUCTION_DELETE` or `INSTRUCTION _EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18]
- You have created an instruction. For more details see Creating an Instruction [page 132]

Procedure

1. Launch the *Instructions* application.
2. From the *Instructions* list page, open the instruction in question.
3. In the *Instructions* object page, scroll down to the *Step* section and perform the following tasks:
   a. In the Step header section, enter the following details:

Field	Description
Step Name	Enter a step name.
Step Description	Enter a step description.
3D Visual / Image	Upload either an image file, or a 3D visual.

   b. In the *Information* section, enter the following details:

Field	Description
People Required	Enter the number of people required to completed the step.
Expected Work	Enter the total time required to complete the step.
Tools	Enter the list of tools required to execute the step. **i Note** You must press the enter button after you enter a tool.
Roles	Specify a role.
Risk Category	Specify the risk category
Risk Description	Enter a risk description.

   c. In the *Parts* section, to add new parts choose *Add* and perform the following tasks:
      1. Choose the drop-down for *Material*.
      2. In the *Select Parts* pop-up, select an appropriate spare part that is relevant to the instruction and choose *OK*.
      3. In the *Quantity* field, enter the quantity for the spare part.

   d. In the *Documents* section, to add a new document choose *Add* and perform the following tasks:
      1. In the *Add Document* screen, browse for a file name in the *File Name* field.
      2. In the *Phase* drop down, choose a phase in the lifecycle of the item of equipment.
      3. In the *Category* drop down, choose a category that corresponds to a phase.
      4. In the *Description* field, enter a description for the document.
      5. Choose *Upload*.

e. In the *Documents* screen area, to assign an existing document choose *Assign* and perform the following tasks:
    1. In the *Assign Documents to Step* screen, search for an appropriate document using the filters.
    2. Select an appropriate document from the search results list.
    3. Choose *Assign*.

    > **i Note**
    >
    > To remove a document that is assigned to a step, select the assigned document from the list in the *Documents* screen area, and choose *Remove*.

4. Choose *Save*.
5. Choose *Save and Publish* to publish the updated instruction.

3.6.1.3 Creating an Instruction by Reusing an Existing Instruction

You use this procedure to create an instruction by reusing an existing instruction. For simplicity the procedure below describes the planned maintenance instruction.

Prerequisites

Your user ID either belongs to thegroup `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `INSTRUCTION_DELETE` or `INSTRUCTION _EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18]

Procedure

1. Open the *Instructions* app.
2. In the *Instructions* screen, search for an appropriate instruction using the filters Instruction *Type*, *Activity*, *Status*, or *Model Name*.
3. Select an instruction from the search results list.
4. Select *Copy*.

    System creates a new instruction reusing the characteristics of the underlying instruction.
5. In the *Header* section, you must update name of the instruction as instruction names must be unique.

    You must update other fields as appropriate.
6. To add additional information to the newly created instruction, see Creating an Instruction [page 132].
7. To save the instruction, choose *Save*.

8. To publish the instruction, choose *Save and Publish*.

   The app displays a dialog box to check if you want to create an announcement for the instruction. In the *Create Announcement* pop-up, choose *yes* and then *OK*.

   For more information, see Creating an Announcement [page 154].

3.6.1.4 Viewing an Instruction

You can view an instruction to verify if the information contained in an instruction is appropriate or not.

Prerequisites

- To publish an instruction, your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `INSTRUCTION_DELETE` or `INSTRUCTION _EDIT` assigned.
- To view an instruction, your user ID either belongs to the group `ORG_DATA_READ`, or has the roles `INSTRUCTION_READ` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Context

When you have more instructions created using public APIs provided by SAP Asset Strategy and Performance Management, you can view these instructions using the Instructions app and perform a mass publish of such instructions.

In addition, if you have assigned a model to an instruction, or an announcement to an instruction you can navigate to the model details, or the announcement details and work with a model or an announcement.

The following procedure applies to all types of instructions (Planned Maintenance, Breakdown, Installation, Operations, or Disposal). For simplicity, we only describe the planned instruction procedure.

Procedure

1. Open the *Instructions* app.
2. In the *Instructions* screen, search for an instruction using the filters – *Instruction Type*, *Activity*, *Status*, or *Model Name*.

   > **i Note**
   >
   > To publish one or more unpublished instructions created either using APIs, or using the Instructions app, select multiple instructions from the list and choose *Publish*.

3. Choose an instruction from the search list and select *View Details*.
4. In the *Planned Maintenance Instruction* screen, choose the *Information* tab to view the details that are specific to the instruction. These details can include activity type, failure mode, frequency, documents, preconditions, steps, and post checks.
5. Choose the *Safety Rules* tab for any information about safety measures to follow.
6. Choose the *Tools and Spare Parts* tab for information pertaining to spare parts during maintenance.
7. Choose the *Roles* tab for information regarding number of people, expected duration and the person's roles while carrying out the activity.
8. Choose the *Models* tab to view the models assigned to the instruction. If you want to view details of a model, double-click on the selected the model.
9. Choose the *Equipment* tab to view the models assigned to the instruction. If you want to view details of a equipment, double-click on the selected the equipment.
10. Choose the *Announcements* tab to view the announcements assigned to the instruction. If you want to view details of an announcement, double-click on the selected the announcement.
11. Choose *Groups* tab to view the list of groups to which the instruction is assigned.
12. Choose *Failure Modes* tab to view the list of failure modes to which the instruction is assigned.
13. Choose the *Preconditions* tab to view the recommended guidance to be followed before executing an instruction.
14. Choose the *Steps* tab to view the instruction steps.
15. Choose the *Post Checks* tab to view the recommended guidance to be followed after executing an instruction.

3.6.1.5 Updating and Publishing an Instruction

You can update a planned maintenance instruction or a troubleshooting and breakdown instruction.

Prerequisites

Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `INSTRUCTION_DELETE` or `INSTRUCTION _EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

.

Context

The following procedure applies to all types of instructions. For simplicity, we only describe the planned instruction procedure.

Procedure

1. Open the *Instructions* app.
2. In the *Instructions* screen, search for an appropriate instruction.
3. Choose an instruction from the search list and select *View Details*.
4. If the instruction is already published, choose *New Revision* in the *Planned Maintenance Instruction* window.
5. To update any of the sections of an instruction, see Creating an Instruction [page 132]
6. Choose *Save*.
7. To publish the instruction, choose *Save and Publish*.

   The app displays a pop-up to check if you want to create an announcement for the instruction. In the *Create Announcement* pop-up, choose *Yes* and then *OK*.

   > **i Note**
   >
   > For more information about creating a revision for an instruction and switching between a revision and a published version, see Creating Revisions and Switching Between Revisions and Published State [page 52]

3.6.1.6 Deleting an Instruction

You can delete an instruction that you no longer want to have on the network. For simplicity, we only describe the procedure to delete planned instruction.

Prerequisites

Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `INSTRUCTION_DELETE` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Instructions* app.
2. In the *Instructions* screen, search for an instruction.
3. Choose an instruction from the search list and select *View Details*.
4. 4. In the <*Instruction Type*> *Instruction* screen, choose *Delete*.

3.6.1.7 Assigning a Model to an Instruction

You can assign a model to an instruction so that the operator can use the instruction information for the items of equipment that are based on the model.

Prerequisites

- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `INSTRUCTION_DELETE` or `INSTRUCTION _EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- You have identified the instruction to which you want to assign a model (see Creating an Instruction [page 132])
- You have ensured that the instruction in question is in *Unpublished* or *In Revision* states.
- You have identified a model that you want to assign to the instruction (see Creating a Model [page 120]).

Context

The following procedure applies to all types of instructions. For simplicity, we only describe the planned instruction procedure.

Procedure

1. Open the *Instructions* app.
2. In the *Instructions* screen, search for an instruction using the filters –*Instruction Type*, *Activity*, *Status*, or *Model Name*.
3. In the *Instructions* screen, select a model and choose *Assign Models*.
4. In the *Assign Models to Instruction* pop-up, search for a model using the search filters *Class*, or *Manufacturer*.
5. From the search results list, select a model using the check box and choose *Assign*.

3.7 Documents

You use the Documents application to perform the following operations:

- View all the documents that are used by your organization in SAP Asset Strategy and Performance Management.

- Upload new documents and assign the document to business objects such as models, items of equipment, announcements, requests, locations, spare parts, and instructions (see Uploading a Document [page 143] and Assigning Documents to Business Objects [page 150])
- Update a document centrally so that the changes apply to all associated business objects (see Updating a Document [page 147])
- Edit attributes of multiple documents centrally so that the changes apply to all associated business objects (see Editing Document Attributes [page 147])
- Delete documents that are not required on the network (see Deleting a Document [page 151])
- Add hotspots to an image file (see Creating Hotspots [page 152])
- Upload a link as document and assign the document to business objects such as models, items of equipment, announcements, requests, locations, spare parts, and instructions.
  Documents with links allow reference to documents in external DMS and other document systems.
- Add the documents to different groups.

To view the list of document formats you can upload, see Updating a Document [page 147].

> i Note
>
> You must have configured a prefix for the object ID of your organization to perform above operations on the documents. For more information, refer to Configuring the Prefix for the Object ID of your Organization [page 28].

Updating Language Files

- Overwrite any language file of a document record for business partner with write permission.
- Delete any language files even if uploaded by another business partner, except for the last remaining language file of the document record. The last remaining language file for a document record can only be deleted by the owner of the overall document record.

Supported Document Size

You can upload a document up to 25 MB. To upload a document of a higher size, configure using the *Application Settings* app. For more details, see Configuring Document Upload Size [page 29]

3.7.1 Uploading a Document

Prerequisites

- Your user ID either belongs to the group ORG_ADMIN or ORG_DATA_EXPERT, or has the roles DOCUMENT_DELETE or DOCUMENT_EDIT assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- The document you want to upload is among the supported document formats and the configured file size. For more details see Documents [page 141]

Procedure

1. Open the *Documents* application.
2. Choose *Add*.
3. Choose *New*.
4. In the *Add Document* popup browse for a file or provide a URL link to the document along with a <Display Name>.

   > **Note**
   >
   > You cannot upload private domains such as .corp as links.
5. Assign a *Category* to classify the document.
   You can also assign a*Phase* if required.
6. Select the type of sensitive data available in the document from the *Data Sensitivity* list.
7. Select the language from the dropdown that corresponds to the documents.
8. Enter a description.
9. Select the confidentiality of the document .
10. Choose *Upload*.

    You can also run a duplicate check and if no duplicates, only then upload a document using the *Check and Upload* button.

    The following table lists the MIME types and the MIME groups.

    MIME Groups

File Extension	MIME Type	MIME Group
.txt	text/plain	Text Document
.jpg	image/jpeg	Image

File Extension	MIME Type	MIME Group
.jpeg	image/jpeg	Image
.jpe	image/jpeg	Image
.jfif	image/jpeg	Image
.jpg	image/jpeg	Image
.doc	application/msword	Word Document
.pdf	application/pdf	PDF
.png	image/png	Image
.bmp	image/bmp	Image
.dib	image/bmp	Image
.bmp	image/x-windows-bmp	Image
.gif	image/gif	GIF
.tif	image/tiff	Image
.tiff	image/tiff	Image
.bmp	image/x-ms-bmp	Image
.ppt	application/mspowerpoint	PowerPoint
.ppt	application/powerpoint	PowerPoint
.docx	application/vnd.openxmlformats-officedocument.wordprocessingml.document	Word Document
.docm	application/vnd.ms-word.document.macroenabled.12	Word Document
.dotx	application/vnd.openxmlformats-officedocument.wordprocessingml.template	Word Document
.odt	application/vnd.oasis.opendocument.text	Open Document
.rtf	application/msword	Word Document
.xps	application/vnd.ms-xpsdocument	XPS

File Extension	MIME Type	MIME Group
.pptx	application/vnd.openxmlformats-officedocument.presentationml.presentation	PowerPoint
.vds	application/octet-stream	VDS
.dif	application/octet-stream	DIF
.prn	application/octet-stream	PRN
.bag	application/octet-stream	Augmented Reality
.hdf5	application/octet-stream	Augmented Reality
.fbx	application/octet-stream	Augmented Reality
.dib	application/octet-stream	Image
.csv	application/vnd.ms-excel	SpreadSheet
.slk	application/vnd.ms-excel	SpreadSheet
.xlsb	application/vnd.ms-excel.sheet.binary.macroenabled.12	SpreadSheet
.xlsm	application/vnd.ms-excel.sheet.macroenabled.12	SpreadSheet
.xltx	application/vnd.openxmlformats-officedocument.spreadsheetml.template	SpreadSheet
.ods	application/vnd.oasis.opendocument.spreadsheet	SpreadSheet
.xls	application/excel	SpreadSheet
.xlsx	application/vnd.openxmlformats-officedocument.spreadsheetml.sheet	SpreadSheet
.html	text/html	HTML
.htm	text/html	HTML
.avi	video/avi	Video
.mp4	video/mp4	Video
.dif	video/dv	DIF
.dif	video/x-dv	DIF

File Extension	MIME Type	MIME Group
.wav	audio/wav	Audio
.mp3	audio/mpeg3	Audio
.mp3	audio/mp3	Audio
.xml	text/xml	XML
.deb		
.tar		
.tgz		
.msz		

3.7.2 Maintaining Different Language Versions of a Document

Prerequisites

- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `DOCUMENT_DELETE` or `DOCUMENT_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- The document you want to upload is among the supported document formats and the configured file size. For more details see Documents [page 141]

Procedure

1. Open the *Documents* application.
2. Select the desired document for which you want to maintain a different language version.
3. Choose *Add* > *New Language Version*.
4. Choose *Add*.
5. In the *New Document* pop-up, browse for a file.
6. Select the language from the dropdown that corresponds to the document.
7. Enter a description.
8. Choose *Upload*.

3.7.3 Editing Document Attributes

Prerequisites

Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `DOCUMENT_DELETE` or `DOCUMENT_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Documents* application.
2. Search for the document that you want to assign to a business object.
3. Select one or more documents from the search results.
4. Choose *Edit*.
5. In the *Edit Documents* pop-up, add or update the phase and category attributes for a document.
6. Choose *Save*.

3.7.4 Updating a Document

Prerequisites

Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `DOCUMENT_DELETE` or `DOCUMENT_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Documents* application.
2. Search for a document that you want to assign to a business object.
3. Select the document from the search results.
4. To replace an existing file upload a new file in the *File* section.

5. To update the attributes, update the phase and category attributes in the *File Information* section
6. Choose *Save*.

   The following table lists the MIME types and the MIME groups.

   MIME Groups

File Extension	MIME Type	MIME Group
.txt	text/plain	Text Document
.jpg	image/jpeg	Image
.jpeg	image/jpeg	Image
.jpe	image/jpeg	Image
.jfif	image/jpeg	Image
.jpg	image/jpeg	Image
.doc	application/msword	Word Document
.pdf	application/pdf	PDF
.png	image/png	Image
.bmp	image/bmp	Image
.dib	image/bmp	Image
.bmp	image/x-windows-bmp	Image
.gif	image/gif	GIF
.tif	image/tiff	Image
.tiff	image/tiff	Image
.bmp	image/x-ms-bmp	Image
.ppt	application/mspowerpoint	PowerPoint
.ppt	application/powerpoint	PowerPoint
.docx	application/vnd.openxmlformats-officedocument.wordprocessingml.document	Word Document
.docm	application/vnd.ms-word.document.macroenabled.12	Word Document

File Extension	MIME Type	MIME Group
.dotx	application/vnd.openxmlformats-officedocument.wordprocessingml.template	Word Document
.odt	application/vnd.oasis.opendocument.text	Open Document
.rtf	application/msword	Word Document
.xps	application/vnd.ms-xpsdocument	XPS
.pptx	application/vnd.openxmlformats-officedocument.presentationml.presentation	PowerPoint
.vds	application/octet-stream	VDS
.dif	application/octet-stream	DIF
.prn	application/octet-stream	PRN
.bag	application/octet-stream	Augmented Reality
.hdf5	application/octet-stream	Augmented Reality
.fbx	application/octet-stream	Augmented Reality
.dib	application/octet-stream	Image
.csv	application/vnd.ms-excel	SpreadSheet
.slk	application/vnd.ms-excel	SpreadSheet
.xlsb	application/vnd.ms-excel.sheet.binary.macroenabled.12	SpreadSheet
.xlsm	application/vnd.ms-excel.sheet.macroenabled.12	SpreadSheet
.xltx	application/vnd.openxmlformats-officedocument.spreadsheetml.template	SpreadSheet
.ods	application/vnd.oasis.opendocument.spreadsheet	SpreadSheet
.xls	application/excel	SpreadSheet
.xlsx	application/vnd.openxmlformats-officedocument.spreadsheetml.sheet	SpreadSheet

File Extension	MIME Type	MIME Group
.html	text/html	HTML
.htm	text/html	HTML
.avi	video/avi	Video
.mp4	video/mp4	Video
.dif	video/dv	DIF
.dif	video/x-dv	DIF
.wav	audio/wav	Audio
.mp3	audio/mpeg3	Audio
.mp3	audio/mp3	Audio
.xml	text/xml	XML
.deb		
.tar		
.tgz		
.msz		

3.7.5 Assigning Documents to Business Objects

Prerequisites

- You have the identified the business object that you want to assign to and the business object is in either an Unpublished state, or in In Revision state.
- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `DOCUMENT_DELETE` or `DOCUMENT_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Context

You can assign a document to the following objects:

- Models

- Announcements
- Equipment
- Instruction steps
- Locations
- Improvement cases
- Spare Parts
- Systems

> **i Note**
>
> You can assign multiple documents to a spare part using this application. The where used list of a document displays the assigned spare part.

Procedure

1. Open the *Documents* application.
2. Search for a document that you want to assign to a business object.

   For this activity, we are assigning the document to Models.
3. Select one or more documents from the search results.
4. To assign the document to a model, choose *Assign* > *Models* .
5. In the *Assign Models* pop-up, select one or more models.
6. Choose *Assign*.

3.7.6 Deleting a Document

Prerequisites

Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the role `DOCUMENT_DELETE` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Documents* application.
2. Search for a document that you want to delete.

3. Select one or more documents from the search results.
4. Choose *Delete*.

> **i Note**
>
> - When you choose to delete a document, the system deletes the document from the SAP Asset Strategy and Performance Management permanently.
> - When you choose to delete a document that is assigned to an improvement case, the document gets deleted from the improvement case without a warning.

3.7.7 Creating Hotspots

A hotspot is an area on the visual image that is of more interest. A hotspot allows you to view detailed information of a model component in a pictorial way. You can assign additional information to a hotspot such as model, equipment, and instruction to which users can navigate to. A published object can be tagged to a hotspot, allowing you to tag supported objects without the need to create a new revision for the object. You can assign hotspots to models, equipment, instruction steps, documents, locations, spare parts, and szstems and include relevant specifications.

Prerequisites

Your user ID belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `DOCUMENT_DELETE`, or `DOCUMENT_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the image.

   System opens the file in the image viewer.

   > **i Note**
   >
   > You can also select multiple images while editing. All the images you have selected queue up in the image viewer for editing.

2. Choose *Manage Hotspot*.
3. Choose *Create* from the toolbar.
4. Click on the area of the image where you want to create a hotspot, drag and drop the pointer to a next point in the image. Continue to drag and drop the previous pointers until you have covered a hotspot area on the image. Finally, end the hotspot area with a double click.
5. In the *Maintain Hotspot* pop-up, fill in:

a. Name, description and color under *Basic info*
b. Assign the model, equipment, step or document under *Assignment Info* as necessary.

6. Choose *Save*.

   System adds the image file that has the hotspots to the *Document* section of the above mentioned objects.

   > **i Note**
   >
   > If you want to unassign the image files that has the hotspots from the *Document* section of these objects, you must remove the hotspot attributes.

3.8 Announcements

An announcement is the information that a manufacturer communicates to all his equipment owners or operators. For example: an existing instruction has been updated, or spare parts of an item of an equipment has been updated.

An announcement in SAP Asset Strategy and Performance Management can be any of the following types:

- **Availability**: An announcement to communicate about the availability or non-availability of an item of equipment or location.
- **Instruction Change**: An announcement from the manufacturer to communicate that an instruction has changed.
- **Service Bulletin**: An announcement from the manufacturer to communicate information when unanticipated problems occur with a model.
- **Recall**: An announcement from the manufacturer to request the operator to return equipment related to certain models due to the discovery of safety issues to prevent the risk of legal action.
- **New Policy**: An announcement from the manufacturer to the operator to communicate the new policy of usage for certain models.
- **New Model**: An announcement from the manufacturer to the operator on the news of a new model.
- **Document Change**: An announcement from the manufacturer when the document related to a model has changed.
- **Spare Parts Change**: An announcement from the manufacturer to the operator when the spare parts have changed.
- **Model Information Change**: An announcement from the manufacturer to the operator when the information related to the model specification or maintenance has changed.
- **New Firmware**: An announcement from the manufacturer to the operator to communicate that a new firmware version is available for a model.

An announcement moves from one state to another during its process of creation and maintenance. The different states that an announcement goes through are listed below:

- **Unpublished**
- **Published**
- **In Revision**

For more information, see State Transitions [page 51] .

3.8.1 Managing Announcements

You can perform various operations on an announcement such as creating an announcement, viewing an announcement, updating an announcement, deleting an announcement, and assigning documents, models, items of equipment and locations (of type Availability) to an announcement.

Context

You use the *Announcements* application to work with an announcement. You can perform the following operations using the *Announcements* application:

- Create an announcement (see, Creating an Announcement [page 154])
- View and publish an announcement (see, Viewing and Publishing an Announcement [page 157])
- Update an announcement (see, Updating an Announcement [page 158])
- Delete an announcement (see, Deleting an Announcement [page 159])
- Assign business objects to an announcement (see, Assigning a Model to an Announcement [page 160])
- Display report cards on the header and view the count of `<Equipment Impacted>` and `<Customers Impacted>`.
- Maintain serial number ranges and build date ranges for announcement types `<Service Bulletin>` and `<Recall>`. You can add serialization ranges on the service bulletin or recall by:
  - Enabling `<Serialization Ranges>` (in announcement header)
  - Maintaining the serialization ranges (serial numbers, batch date) and also comments in the`< Serialization Ranges>` section on announcement
- Add announcement to a group.

3.8.1.1 Creating an Announcement

You use this procedure to create an announcement and assign entities such as documents, instructions, and models to an announcement.

Prerequisites

- If you want to assign a new or an existing document, you have identified the file that you want to attach.
- Your user ID either belongs to thegroup `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `ANNOUNCEMENT_DELETE` or `ANNOUNCEMENT_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Announcements* app.
2. From the *Announcements* window, choose *New*.
3. In the *New Announcement* pop-up, perform the following tasks:
    a. In the *Information* section, enter details as described in the table below:

Field	Description
Name	Enter a unique name for the announcement.
Type	Select an announcement type. The following list provides the descriptions for each of the types of announcements: ○ *Availability* ○ *Instruction Change* ○ *Service Bulletin* ○ *Recall* ○ *New Policy* ○ *New Firmware* ○ *New Model* ○ *Document Change* ○ *Spare Parts Change* ○ *Model Information Change*
Priority	Select a priority of the announcement
Description	Enter a description for the announcement

4. For an announcement of type *Availability*, you must assign an equipment or location. To assign an item of equipment, follow these steps:
    a. In the *Equipment* section, choose *Assign*.
    b. From the *Select Equipment* pop-up, select the relevant equipment.
    c. Choose *Assign*.

> **i Note**
>
> You now have the **Fully Available** for the announcement type **Availability**. You can now announce if a piece of equipment is available or not available.

5. To assign a location, follow these steps:
    a. In the *Locations* section, choose *Assign*.
    b. From the *Select Location* pop-up, select the relevant location.
    c. Choose *Assign*.
6. For an announcement of type *Instruction Change* you must assign an instruction. To assign an instruction follow the tasks:

a. In the *Assign Instructions* pop-up, search for an appropriate instruction using the filters *Instruction Type* and *Activity*.
b. From the *Instructions* search list, select an instruction.
c. Choose *OK*.

> **Note**
>
> To unassign an instruction that is assigned to the announcement, select an appropriate instruction from the instructions list in the *New Announcement* screen, and choose *Unassign*.

7. In the *Documents* section, you can add a new document or assign an existing document. To add a new document, choose *Add* > *New* and perform the following tasks:
   a. In the *Add Document* pop-up, enter values for the fields as described in the table below:

Field	Description
File Name	Browse for a file name that you want to upload.
Phase/Category	Select a phase and category corresponding to the phase that the document is relevant to in the lifecycle of an item of equipment. Category is mandatory, whereas Phase is optional.
Language	Select the language of the document you want to add.
Description	Enter an announcement description

   b. Choose *Upload*.

> **Note**
>
> To unassign a document, select an appropriate document from list choose *Remove*.

8. In the Documents section, if you want assign an existing document, choose *Add* > *Assign* and perform the following tasks:
   a. In the *Assign Documents*pop-up, search for an appropriate document using the filters *Phase*, or *Category*.
   b. From the search results list, select an appropriate document.
   c. Choose *OK*.
9. To add a hotspot to image file, see Creating Hotspots [page 152].
10. In the *Models* section, to assign a model to the announcement choose *Assign* and perform the following tasks:
   a. In the *Assign Models* pop-up, search for an announcement using the filters *Class Name*, *Subclass Name*, *Manufacturer*, or *Source*.
   b. From the search results list, select a model.
   c. Choose *OK*.
11. To save the announcement, choose *Save*.
12. To publish the announcement, choose *Save and Publish*.

13. To create a revisions of an announcement, or to work with the last published or last revision announcement, see Creating Revisions and Switching Between Revisions and Published State [page 52].

3.8.1.2 Viewing and Publishing an Announcement

You can view an announcement to verify if the information contained in an announcement is appropriate or not.

Prerequisites

- To publish an announcement, your user ID either belongs to thegroup `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `ANNOUNCEMENT_DELETE` or `ANNOUNCEMENT_EDIT` assigned.
- To view an announcement, your user ID either belongs to the group `AIN_ORG_DATA_READ`, or has the role `ANNOUNCEMENT_READ` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Context

When you create many announcements using public APIs provided by SAP AIN, you can view these announcements using the Announcements app and perform a mass publish of such announcements. In addition, if you have assigned a model to an announcement, or an instruction to an announcement, you can navigate to the model details or the instruction details and work with a model or an instruction.

The following procedure applies to all types of announcements (*Instruction change*, *Service Bulletin*, *RecallNew Policy*, *New Model*, *Document Change*, *Spare Parts Change*, *Model Information Change*, *New Firmware, Availability*). For simplicity, we only describe the *Instruction Change* procedure.

Procedure

1. Open the *Announcements* application.
2. In the *Announcements* window, search for an appropriate announcement using the filters - *Announcement Type*, *Status*, *Read Status*, *Change On Date* and *Priority*.

   > **i Note**
   >
   > To publish one or more unpublished announcements that are created either using APIs, or using the Announcements application, select the announcements from the list and choose *Publish*.

3. Choose an announcement from the search list and select *View Details*.
4. In the *Announcement* screen, choose the *Information* tab to view the details that are specific to the announcement. These details can include *Name*, *Type*, *Priority*, and *Description*.

5. In the *Announcement* screen, choose the *Instructions* tab to view the instructions assigned to the announcement.

   For more information on working with instructions, see Instructions [page 130].
6. In the *Announcement* screen, choose the *Documents* tab to view the relevant documentation available for an announcement.

   You can also view the confidentiality of the assigned documents.
7. In the *Announcement* screen, choose the *Assignments* tab to view the models to which the announcements are relevant.

   If you want to view details of a model, select the model and choose *View Details*.

   For more information on working with models, see Models [page 118].

3.8.1.3 Updating an Announcement

You update an announcement to correct the information within an announcement, or add any missing information.

Prerequisites

- You have identified the announcement that you want to update.
- To update an announcement, your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `ANNOUNCEMENT_DELETE`, or `ANNOUNCEMENT_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18]

Context

You can update an announcement to change any of the following:

- Properties of an announcement such as - type of an announcement, name of an announcement, or priority of an announcement.
- Model assigned to an announcement
- Instruction assigned to an announcement
- Document assigned to an announcement
- Add the numbers of affected models and related serial number ranges or build date ranges to certain announcement type

Procedure

1. Open the *Announcements* app.
2. In the *Announcements* app, search for an appropriate announcement using the filters – *Announcement Type*, *Priority*, *Status*or statuses, as such, *Read Status*, and *Changed On* and *Source*.
3. From the search results list in the *Announcements* section, select an appropriate announcement.
4. Choose *View Details*.
5. If you have opened the announcement that is published, in the *Announcement* window, choose *New Revision*.
6. To update all relevant details to an announcement, select the *INFORMATION* section.

   For more information, see Creating an Announcement [page 154] .
7. To update an instruction assigned to an announcement, select the *INSTRUCTIONS* section.

   For more information, see Creating an Announcement [page 154].
8. To add a new document, select *DOCUMENTS* section.

   For more information, see Creating an Announcement [page 154].
9. To update any models assigned to the announcement, select the *ASSIGNMENTS* section.

   For more information, see Creating an Announcement [page 154].
10. To save the announcement, choose *Save*.
11. To publish the announcement, choose *Save and Publish*.

3.8.1.4 Deleting an Announcement

You can delete an announcement that you no longer want to have on the network. For simplicity, we only describe the procedure to delete an instruction change announcement.

Prerequisites

To delete an announcement, your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the role `ANNOUNCEMENT_DELETE` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Announcements* application.
2. In the *Announcements* screen, search for an announcement.
3. Choose an announcement from the search list and select *View Details*.

4. In the *Announcement* screen, choose *Delete*.

3.8.1.5 Assigning a Model to an Announcement

You use this procedure to assign a model to an announcement.

Prerequisites

- You must have created an announcement, to which you want to assign a model. (see Creating an Announcement [page 154].)
- You must have created a model that you want to assign to the announcement. (see Creating a Model [page 120])
- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `ANNOUNCEMENT_DELETE` or `ANNOUNCEMENT_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Announcements* application.
2. In the *Announcements* screen, search for an appropriate announcement using the filters – *Announcement Type*, *Priority*, or *Status*.
3. In the *Announcements* screen, select a model using the check box and choose *Assign Models*.
4. In the *Assign Models*, search for an appropriate model using the search filters – *Class Name*, *Subclass Name*, *Source* and *Manufacturer*.
5. From the search list, select an appropriate model using the check box and choose *Assign*.

3.9 Spare Parts

Spare parts are components that are kept in your inventory as spare. Typically, these components are not fitted into your item of equipment, but can be fitted into the item of equipment when needed.

With SAP Asset Strategy and Performance Management, you can create and maintain a record of these spare parts. Also, if these spare parts are fitted into the physical item of equipment, you can assign these spart parts to the corresponding model on the network.

In SAP Asset Strategy and Performance Management, you can record the spare part's manufacturing information, dimensions, quantity, shelf life, to name a few. A spare part inherits attributes from a subclass. You can assign a spare part to a model.

i Note

After the spare part is assigned to a model, we refer to the spare part as "Part".

Using the *Spare Parts* application, you can:

- Create spare parts (see Creating Spare Parts [page 162])
- Delete spare parts (see Deleting Spare Parts [page 164])

3.9.1 Managing Spare Parts

You can perform various operations on a spare part such as creating spare parts, viewing spare parts, and deleting spare parts

Context

You can use the Spare Parts application to perform the following operations:

- Creating Spare Parts [page 162]
- Deleting Spare Parts [page 164]
- Assign new spare parts or maintain existing spare parts for an equipment using the Edit and Remove buttons.
- Assign more than one spare part template to a spare part. You can also remove the templates that have already been assigned and assign more templates.
- View and maintain the attributes and values for a spare part.
- Assign or remove documents for a spare part.
- Dispalys the break down instructions details such as `<Expected Duration>`, `<Number of Steps>`, `<Criticality>`, `<Activity>`, `<Primary Document>`, and `<Long Description>`.

i Note

Spare parts can only be optionally assigned to one sub-class.

3.9.1.1 Creating Spare Parts

You perform this procedure to maintain manufacturing information, technical data, and assignment information pertaining to spare parts.

Prerequisites

- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `PART_DELETE` or `PART_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- You have identified the subclass for creating the spare part.

Procedure

1. Launch the *Spare Parts* application.
2. To create a single spare part, navigate to *New* > *Single Spare Part*. To create spare parts by mass upload, follow these substeps:
   a. Navigate to *New* > *Mass Upload of Spare Parts*.
   b. From the *Mass Upload of Spare Parts* dialog box, download the template.
   c. Fill in the necessary details and upload the template.
3. In the *New* dialog box, enter the following details:

Field	Description
Spare Part ID (*)	Provide a unique name
Subclass	Choose the appropriate subclass from the dropdown
Template	Select a spare part template
Short (*) and Long Description	Provide a description for the spare part
Unit of Measure (*)	Choose the appropriate unit of measure
Phase	Choose if the spare part is in Planned or Released phase
Manufacturer (*)	Choose the name of the manufacturer of the spare part
Manufacturer Part Number (*)	Provide the manufacturer part number

4. Choose *Save*.
5. In the *Spare Parts* details screen, to add the unit of measure and long description perform the following steps:
   a. Go to the *INFORMATION* section and choose *Edit*.
   b. Select the unit of measure from *Unit of Measure*.
   c. Choose *Save*.
6. In the *Spare Parts* details screen, to update manufacturer information perform the following steps:

a. Go to the *INFORMATION* › *Part Number* section and choose *Edit*.
b. Enter the details.
c. Choose *Save*.

7. In the *Spare Parts* details screen, to update availability and procurement information perform the following steps:
   a. Go to the *INFORMATION* › *Availability and Procurement* section and choose *Edit*.
   b. Enter the required details like delivery time, manufacturer stock level, shelf life, quality, contract, and standard. You can also specify if the spare part is hazardous or is 3D printable.
      You can view the date when the manufacturer stock level information was last updated.
   c. Choose *Save*.
8. In the *Spare Parts Details* screen, to maintain information about dimensions of the spare part, perform the following steps:
   a. Go to the *DIMENSIONS AND WEIGHT DATA* section and choose *Edit*.
   b. Provide the appropriate dimensions for size, length, width, height, and weight.
   a. Choose *Save*.
9. In the *Spare Parts Details* screen, to maintain attributes pertaining to the spare part, perform the following steps:
   a. Go to the *INFORMATION* › *Data Sheet* section and choose *Edit*.
   b. Choose *Add Templates*. The attributes are derived from the selected templates. You can also edit or remove templates.
   c. You can select a template and choose *Remove Template* to remove the template.
   d. You can display the alternate unit of measure using *Show Alternate UoM*.

      You can set the default unit of measurement system in the *Unit of Measure Variant* under *User Account(icon on the left corner of the launchpad)* › *Settings* › *Unit of Measure*.
   e. Choose *Save*.

   In the *ASSIGNMENTS* section, you can view the details of models, equipment, locations, or instructions that are assigned to the spare part.
   ○ By assigning models to the spare part, the model owner can provide specific information about *Default Delivery Quantity* and *Advised Stock Quantity*of the spare part.
   ○ Instructions are for the operator about the spare part use.
10. In the *Spare Parts Details* screen, to add the spare part to a group perform the following steps:
   a. Go to *INFORMATION* section.
   b. Choose *Add* and select if you want to add a spare part to a new group or to an existing group. Similarly, you can remove a spare part from a group by using *Remove*.
   c. Choose *Save*.
11. In the *Spare Parts Details* screen, to view or assign spare part successor information about, perform the following steps:
   a. Go to the *INFORMATION* › *Life Cycle Information* › *Successor Spare Part* section and choose *Assign*.
   b. Select one or more spare parts in the **Assign Successor** dialog box.
   c. Choose *Assign*.
   d. You can edit the spare part successor information by choosing *Edit* on the selected spare part in the *Successor Spare Part*section.

e. Enter the date until when the spare part can be ordered in the `<Valid From>` of the **Edit Successor Information** dialog box.
f. Choose *Save*.

12. In the *DOCUMENTS* section, you can view the list of documents assigned to the spare part. You can also add, remove, or download a document from the list.

    When uploading a new document, you can:
    - Upload a document without a duplicate check using the *Upload* button.
    - Run a duplicate check and if no duplicates, only then upload a document using the *Check and Upload* button.
13. In the *ASSIGNMENTS* section, you can view all the business objects to which the spare part is assigned.
14. In the *FAILURE MODES* section, you see details of failure modes assigned to the spare part. You can also assign a failure mode to the spare part using *Assign*.

    If you have write access to the spare part even though you do not have write access to the failure mode, you can edit the failure mode instance page of the spare part.

    When you copy a failure mode and *Save & Publish* it:
    - A new failure mode is created with the same causes and instructions from the source failure mode
    - The newly created failure mode is directly assigned to the object
    - The new failure mode is in published state
    - You navigate to the new failure mode instance page that includes all the copied failure mode instances: effects, causes, instructions, and detection method
    - The new failure mode appears in the failure mode section list

Results

You have created a spare part.

If you have integration with SAP Hybris Commerce, then you can also view the *Add to Cart* icon on the page.

3.9.1.2 Deleting Spare Parts

You perform this activity when you want to remove a spare part from the network.

Prerequisites

Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the role `PART_DELETE` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Spare Parts* application.
2. Search for the spare part you want to delete.
3. Select the spare part from the search results.
4. Choose *Delete*.

3.9.1.3 Uploading of Spare parts from Visual Design Stream Document

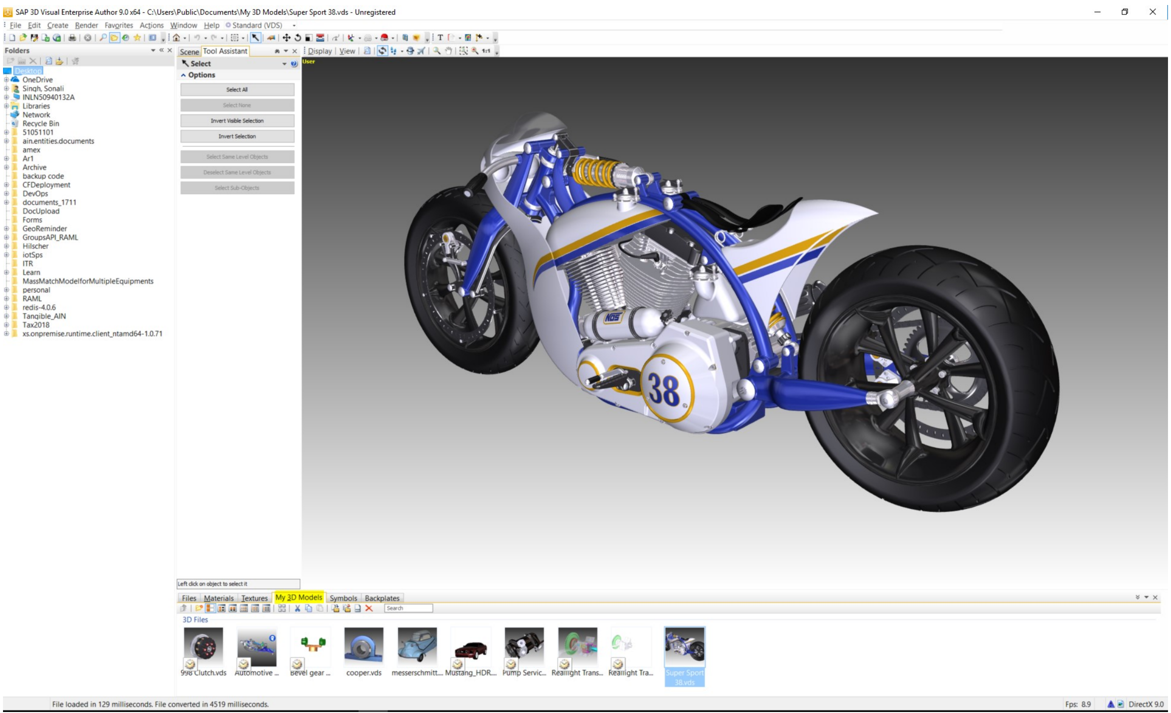
Context

To get familiar with SAP 3D Visual Enterprise Author tool. Please refer https://help.sap.com/viewer/8e4c65bb3a6c4ef6b56dc27d1d95cde6/9.0.0.4/en-US

To maintain spare part metadata according to the relevant product standards, please go through following steps:

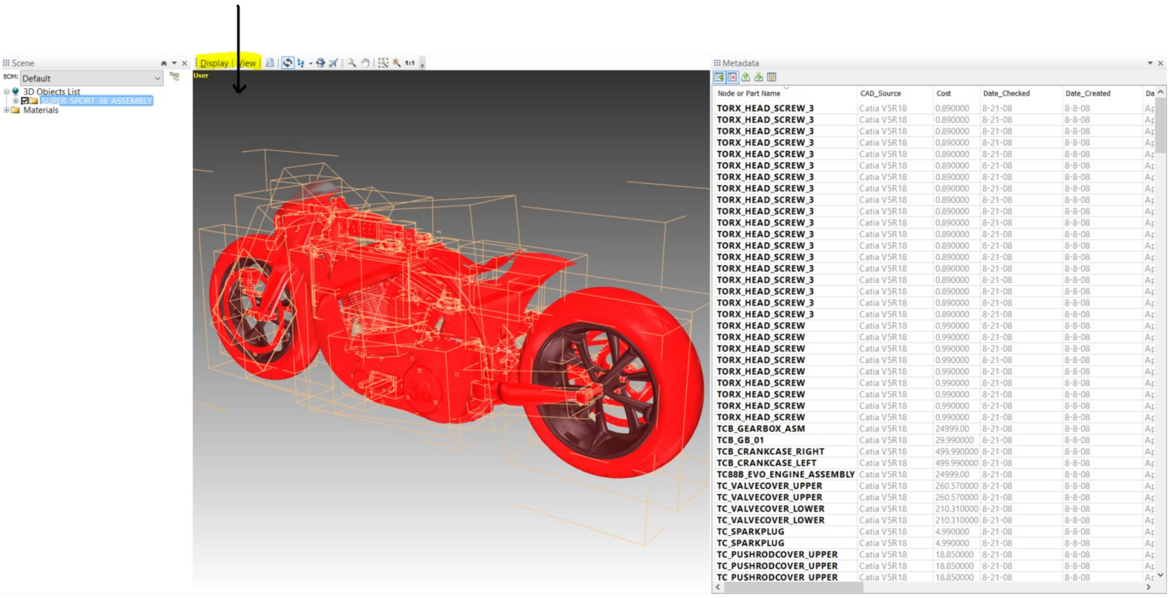
Procedure

1. Open SAP 3D Visual Enterprise Author.
2. Open *Metadata* panel, refer to https://help.sap.com/viewer/67c291fba1bd10148bea8dce7b0caa3e/9.0.0.4/en-US/a46817d5f0874720bff566b9c7e68990.html



3. Export the current metadata of VDS Viewer to maintain spare parts metadata according to product standards. Refer to https://help.sap.com/viewer/67c291fba1bd10148bea8dce7b0caa3e/9.0.0.4/en-US/0fd8ec37c0574419bb7a7487f5f47741.html

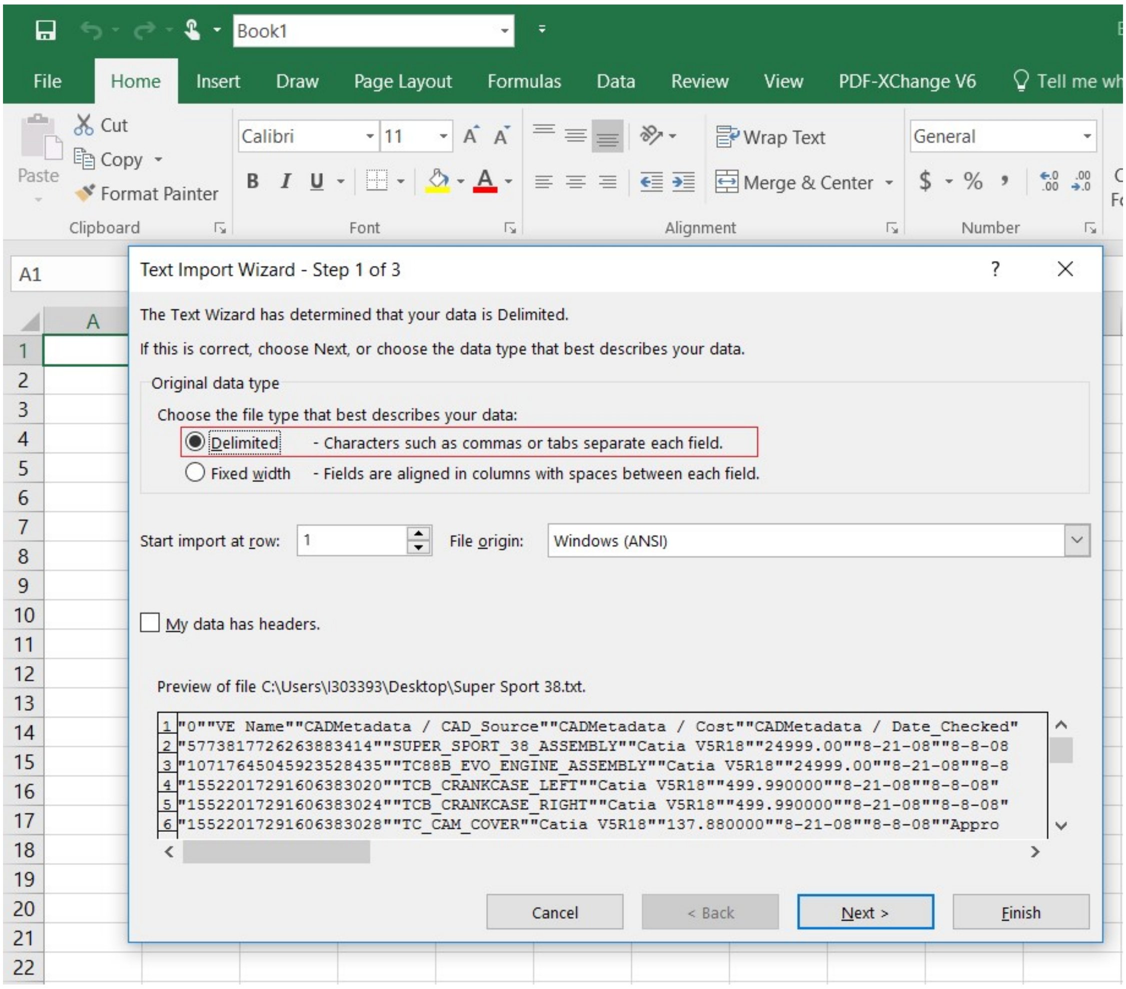
> **Note**
>
> Before exporting select all the spare parts of the VDS to see all the metadata with respect to each node by moving to *Display* panel and pressing `CTRL+A`.



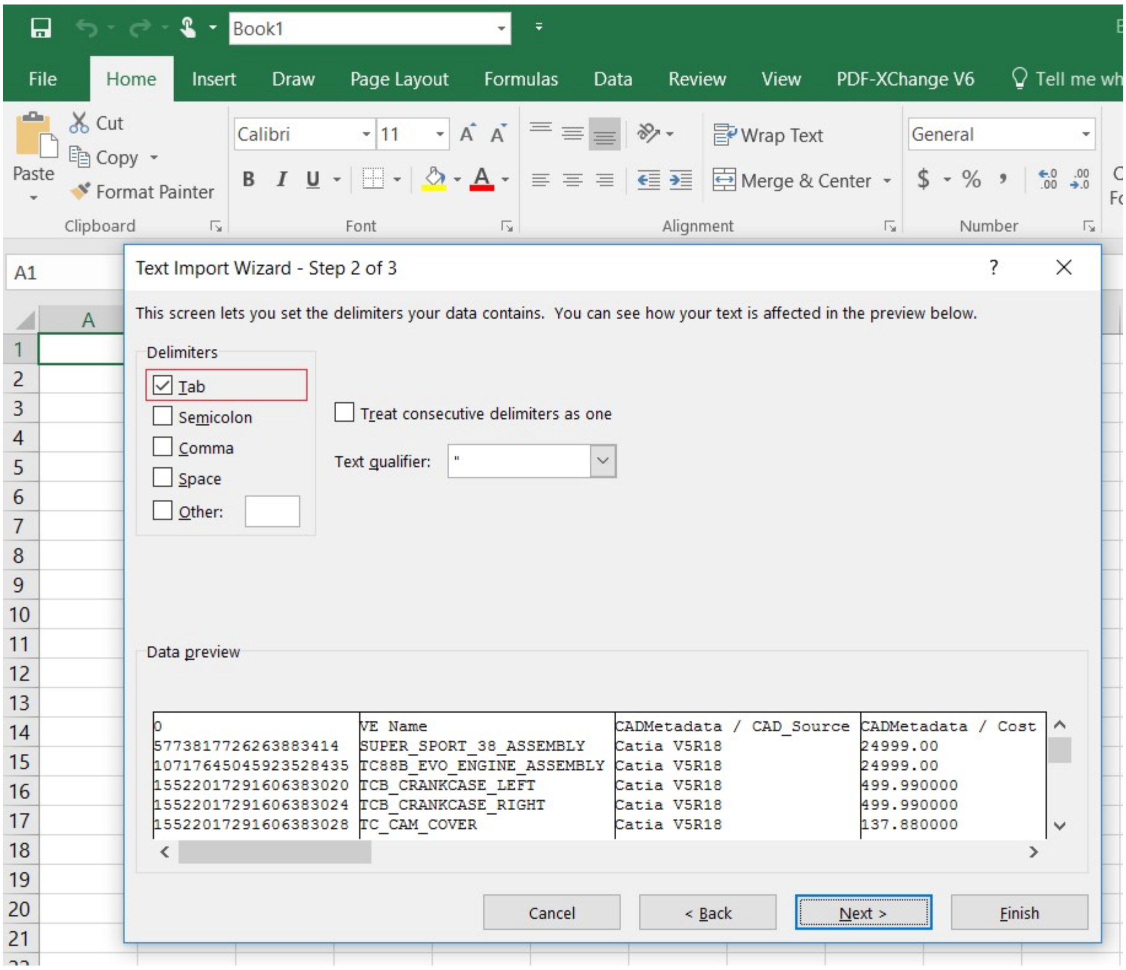
4. Open excel and try to open the file, which you have just exported as .txt file.

On opening .txt file in excel following should be marked:

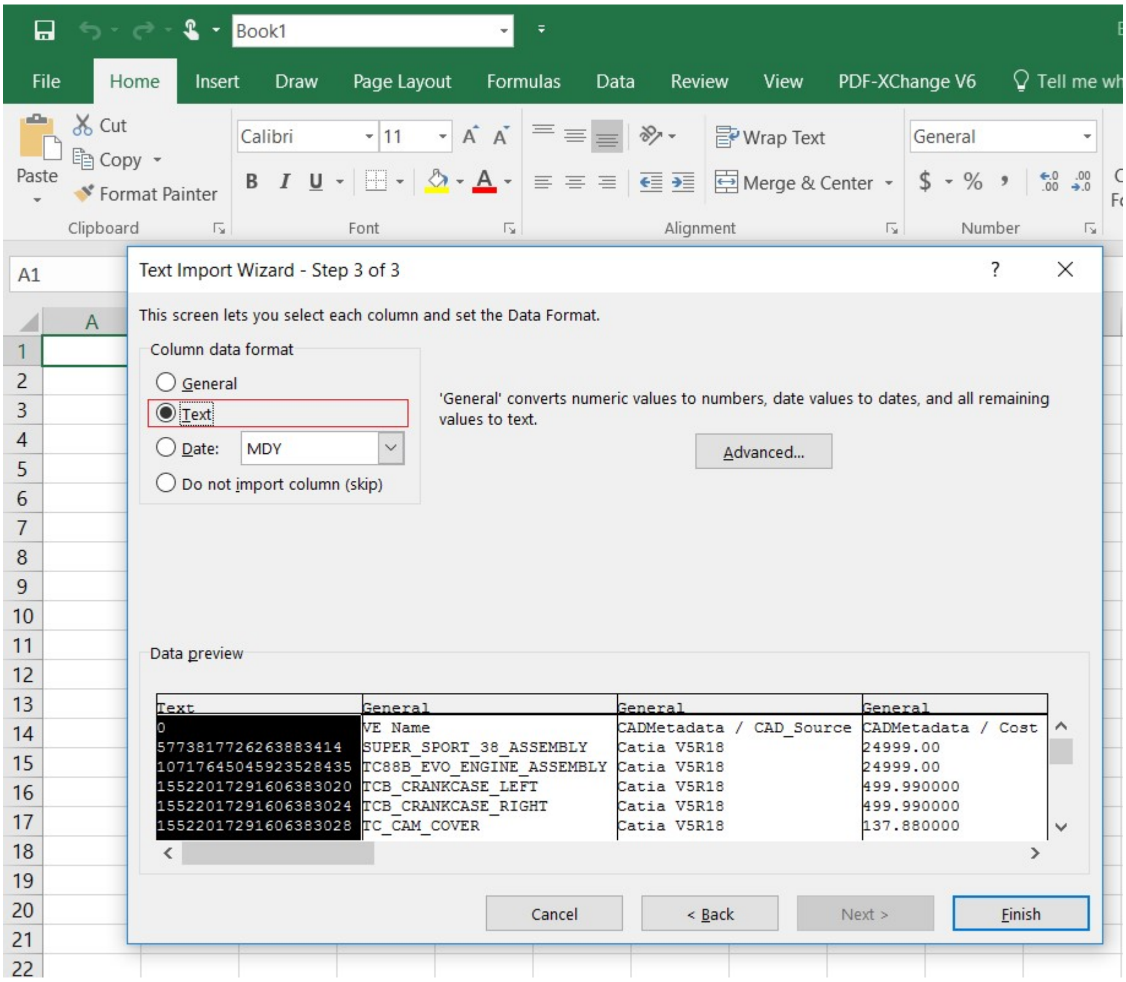
a. Choose the *Delimited* file type that best describes your data and click *Next*.



b. Set the *Tab* as the delimiters your data contains.



c. Set the data format of each column to *Text*.

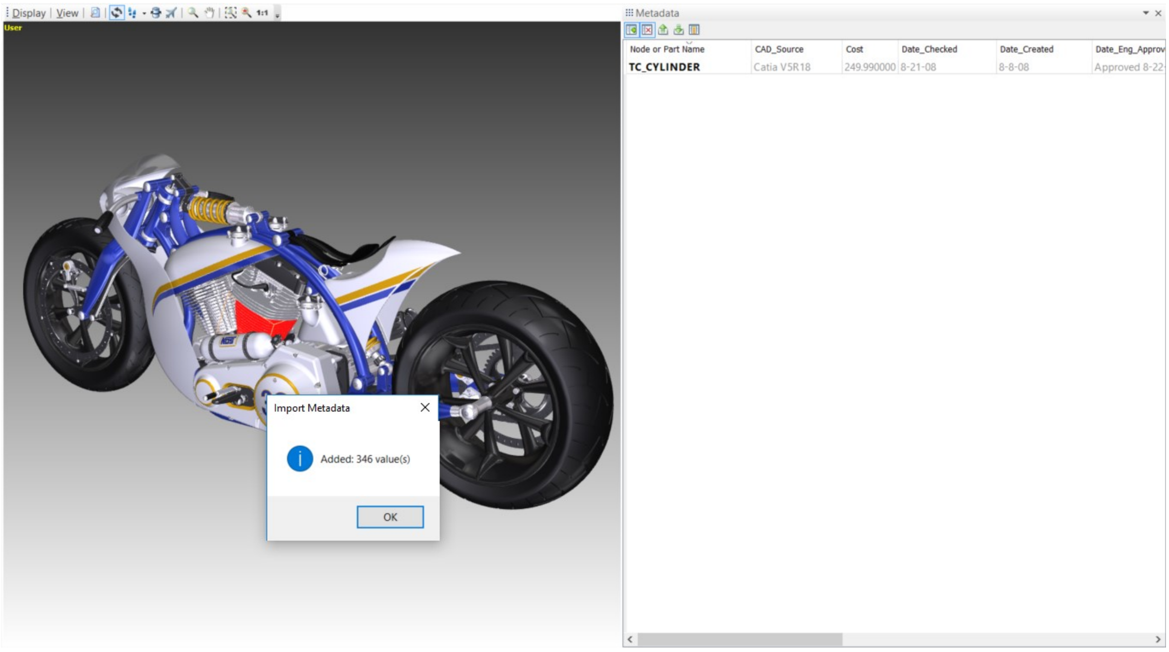


5. Please add following columns in the excel:

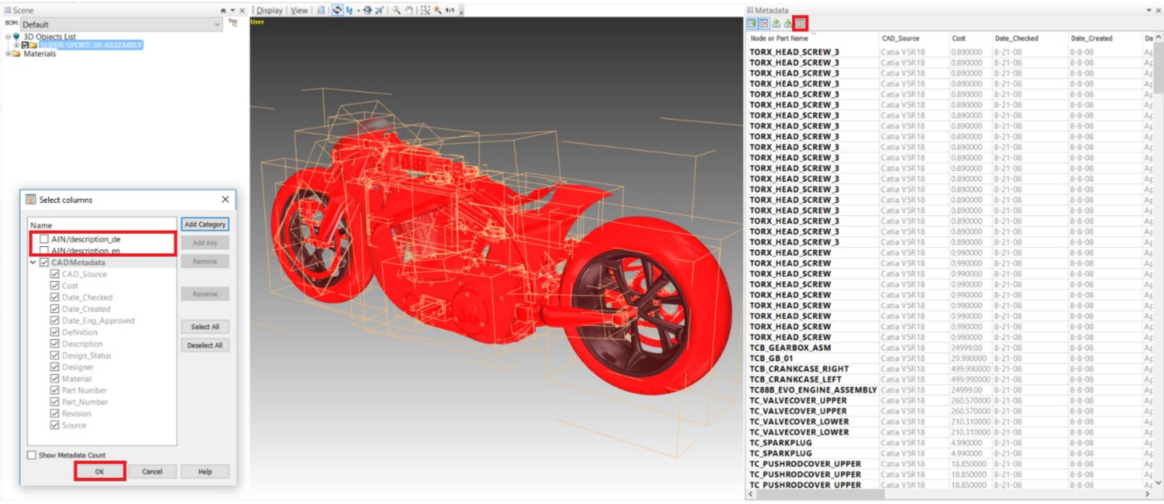
Column Name	Description
0	These are the unique Locator ID for each spare part of the VDS. This is already provided as part of the VE document.
VE Name	This is the Name of the spare part and is already provided as part of the VE document.
AIN / Manufacturer	It describes the manufacturer of the spare part and will also play vital role in mapping these spare part to any AIN object.
AIN / ManufacturerDescription	This describes any additional description about the Manufacturer of the spare part.
AIN / ManufacturerPartID	It describe the Part ID given by the manufacturer to the spare part. This will also play a vital role in mapping these to any AIN object.

Column Name	Description
AIN / EANNumber	It describes the standard bar code symbology and numbering system used in global trade to identify a specific spare part in VDS.
AIN / PartName	It describes any other part name given to the spare part
AIN / Quantity	It describes how many of these spare parts are used in a certain VDS.
AIN / UOM	It describes what will be the unit of measure for this spare part.
AIN / ShortDescription_XX	It describes the short description for spare parts. Here XX can be any valid language code. Example: en, de
AIN / LongDescription_XX	It describes the long description for spare parts. Here XX can be any valid language code. Example: en, de

6. Import the excel created with SAP Asset Strategy and Performance Management specific data to the same VDS. Refer to https://help.sap.com/viewer/67c291fba1bd10148bea8dce7b0caa3e/9.0.0.4/en-US/3569c3003f0f443da3f702a2c25268ee.html



To validate if your metadata is successfully added to the VDS, click *Select Metadata Keys To Show* on *Metadata* menu panel and select the new columns and click *OK*.



3.10 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.

- *Installation information*:
  An operator maintains installation information related to an equipment such as serial number of the equipment, tag number of the equipment, installation date of the equipment, and build date of the equipment.
- *Installation location*:
  An operator maintains geographical coordinates of the item of an equipment to locate the location of an item of an equipment.
- *Documents*
  An operator maintains some best practices information while using the item of an equipment using unstructured documents.

An equipment can be in any of the following states:

- *Unpublished*
- *In Revision*
- *Published*

For more information, see State Transitions [page 51].

3.10.1 Managing Equipment

You can create an item of equipment, view and update an item of equipment, and delete an item of equipment.

Context

You use the Equipment application to work with an item of equipment. You can perform the following operations using the Equipment application:

- Create an item of equipment and assign additional information such as installation information, location information, and attach documents.
  For more information, see Creating a Piece of Equipment [page 173].
- Add and remove equipment components.
  For more information, see Adding Equipment Components [page 181].
- View details of an existing equipment and update an existing equipment.
  For more information, see Viewing and Updating a Piece of Equipment [page 182].
- You can delete the item of equipment.
  For more information, see Deleting a Piece of Equipment [page 186].

> **i Note**
>
> In addition, you can use the *Equipment Lookup* application to scan the barcode, or the QR code of an item of equipment to view the details related to an item of equipment and perform actions such as update equipment phase, or edit header information for an item of equipment.

- Add and remove location to equipment.
  When location is added or removed, equipment structure is adjusted based on the location.
- Assign new spare parts or maintain existing spare parts for an equipment using the *Edit* and *Remove* buttons. Similarly, you can view the associated documents when a spare part is being shared.
- Maintain comments or tags for a timeline event.
  If a comment is owned by your organization, you can delete it. You can also see the person's name if the user belongs to your organization, otherwise the company name is displayed as the creator of the comment.
- Old and new images are shown on the `<Timeline>` if image relevant fields have been updated in the **Model** and the **Equipment**.
- Field names are displayed in the logon language with English as default language in the `<Timeline>`.
- Change the order of equipment subcomponents in the structure.
- Link equipment to an existing location hierarchy. You can do this by selecting a location and equipment relationship. The status of the assignment to a location is saved with a future or past date. This is used for calculating the due date status.
- View the different assessments to which the equipment is assigned.
- A piece of equipment can be part of one or more systems. The equipment page now displays the associated system information.
  - *Equipment* > *Information* > *Systems*: All parent systems are displayed.

  For example, a compressor can be a part of the compressed air system in a plant.

3.10.1.1 Creating a Piece of Equipment

You use this procedure to create a piece of equipment based on an existing model, and add additional information such as operator, equipment installation information, equipment location information, and assign documents relevant to the equipment.

Prerequisites

- You have created an operator .
- You have identified your organizations profile on the SAP Asset Strategy and Performance Management.
- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `EQUIPMENT_DELETE` or `EQUIPMENT_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Context

You use the *Equipment* application to:

- Create a piece of equipment for your own operations purposes
- Create a piece of equipment for another customer
  For simplicity purpose, we describe the procedure to create a piece of equipment for your own operations.

Procedure

1. Open the *Equipment* application.
2. Choose *New*.
3. In the *New Equipment* dialog box, enter the following details:
   a. You can optionally assign a model template for the equipment. Select the model template in the *Model ID*.
   b. In the *Model ID* dropdown, select an existing model from which you want to inherit the properties for the item of the equipment.
   c. In the *Equipment ID* field, enter a unique name for an item of equipment.
   d. In the *Short Description* field, enter a short description for an item of equipment.
   e. In the *Equipment Template* dropdown, choose the equipment template you have created and want to assign to the equipment.

      For more information about creating an equipment template, see Creating an Equipment Template [page 78].
   f. In the *Long Description* field, enter a long description for an item of equipment.
   g. In the *Operator* field, enter an operator for the equipment. Your company is selected as default value.

h. In the *Phase*, select
   - *Fully Operational* or *Partially Operational* status if a piece of physical equipment exists.
   - *Planned* if a piece of physical equipment does not exist, or you have chosen to update the physical equipment details later.
   - *Not Operational*
i. Choose *Save* to create a single piece of equipment. Enable the *Create Components* switch to create equipment hierarchy from the model template. In the *Set Components* tab, you can define the individual subequipment. *Create Components* creates the individual items of equipment, use *Save* to finalize the activity.

> **i Note**
>
> Component hierarchy is added to the equipment when a model is assigned to it.

4. To add values to the attributes of the underlying templates, choose *INFORMATION* > *Data Sheet* and perform the following steps:
   a. Choose *Edit* and enter values for the attributes as defined by the underlying templates.
   b. You can reorder the attribute groups using *Reorder Groups*.
   c. If you have not assigned any equipment template while creating the equipment, you can add it later using *Add Template*. You can add or remove multiple equipment templates.
   d. You can display the alternate unit of measure using *Show Alternate UoM*.

   You can set the default unit of measurement system in the *Unit of Measure Variant* under *User Account(icon on the left corner of the launchpad)* > *Settings* > *Unit of Measure*.
   e. Choose *Save*.
5. To view the model-related information, select *INFORMATION* > *Model Information*
6. To add installation information, select the *INFORMATION* > *Equipment Information* tab and perform the following tasks:
   a. Choose *Edit* and enter the fields as described in the table:

Field	Description
Serial Number	Update the serial number issued by the manufacturer. **i Note** Serial number is not mandatory for equipment with model assigned to them. Serial numbers can be added at a later lifecycle phase of the equipment.
Equipment Tag Number	Specify the tag number issued by your organization when the manufacturer has not specified any serial number or batch number.
Batch Number	Specify the batch number issued by the manufacturer, if applicable.

Field	Description
Technical Identification Number	Enter the Technical Identification Number for the equipment
Operator Equipment ID	Enter an alternative key for stakeholder equipment identification.
Procurement Number	Enter Purchase Order Number to reference purchasing process or Order Code.
Long Description	Enter a description for the piece of equipment.
Manufacturer Part Number	Enter manufacturer part number.
Model ID	Enter a model ID.
Subclass	Select a subclass.
Build Date	Specify the date of manufacture issued by the manufacturer.

b. To assign the equipment location, proceed as follows:
   1. Choose *Assign/Unassign* > *Location*.
   2. In the *Assign/Unassign* popup, enter the location if you have created from the Locations application.
      For more information about creating a location, see Creating a Location [page 193]

> **Note**
> - When a location is assigned or unassigned to a piece of equipment, the location is adjusted based on parent equipment.
> - You can now inherit the address from the location to the equipment.

c. Choose *Save*.

- To assign a tag, choose *Assign/Unassign* > *Tag* and type in your tag.

You can use tags to help you logically categorize activities, information, or reminders about your equipment. You can now inherit the address from the location to the equipment.

7. To add business partner information, select the *INFORMATION* > *Business Partners* tab and perform the following tasks:
   a. Choose *Edit* and enter the fields as described in the table:

Field	Description
Source Business Partner Role	Update the source business partner role, if necessary.
Manufacturer	Select the manufacturer.

Field	Description
Service Providers	Select the name of the service provider for the piece of equipment.
Regulators/Authority	Select the official who certifies if the equipment is installed or assembled correctly.
Insurers	Select the name of the insurer for the piece of equipment.
Suppliers/Dealers	Select the name of the dealer for the piece of equipment.
Sold-to Party	Select the name of the party to which the equipment is sold.
Ship-to Party	Select the name of the party to which the equipment is shipped to.
Bill-to Party	Select the name of the party to which the equipment is billed.

8. To add installation location information, select *INFORMATION* > *Installation Location* tab and perform the following tasks:
   a. Choose *Edit* and enter the fields as described in the table:

Field	Description
Object Address	Enter an address at which the equipment is installed and any additional information.
Contact Person	Enter the contact person details for the location.
Geospatial Data	Specify the latitude, longitude coordinates of the installed location. **Note** Optionally you can specify the geo coordinates using the visual map.

   b. Choose *Save*.

9. You can view the successor to the current model information under *INFORMATION* > *Life Cycle Information*.
10. You can view the list of systems to which the equipment is assigned under *INFORMATION* > *Systems*.
11. To add the equipment to a group, go to *INFORMATION*→ *GROUPS* → *Add*.

You can view the list of groups to which the equipment is added.

12. To add equipment components, navigate to *STRUCTURE AND PARTS* > *Structure* > *Edit* and perform the following tasks:
    a. To add equipment, choose *Assign* > *Equipment*
    b. From the *Select Component* dialog box, select the appropriate component.
    c. Choose *Add*.
    d. To add systems, choose *Assign* > *Systems*
    e. From the *Select Systems* dialog box, select the appropriate system.
    f. Choose *Assign*.
    g. Choose *Save*.

    > **i Note**
    >
    > You can now inherit the address from the locationYou can publish a component directly from the *Structure* section. Select the component and use the *Publish* button.

13. To add equipment spare parts, navigate to *STRUCTURE AND PARTS* > *Spare Parts* > *Assign* and perform the following tasks:
    a. From the *Assign Spare Parts* dialog box, select the appropriate spare parts.
    b. Choose *Provide Quantity* to specify the quantity of each spare part. You can also enter a comment if necessary.
    c. Choose *Assign*.

    > **i Note**
    >
    > If you have integration with SAP Hybris Commerce, then you can also view the *Add to Cart* button for each spare part. Currently, you can only add one spare part for each order request.

14. To view *Visual Parts* for an item of equipment, upload a relevant 3D visual file in the *DOCUMENTATION* > *DOCUMENTS* section and view them under *STRUCTURE AND PARTS* > *Visual Parts*.

    Shopping cart enabled on VE file for mapped visual parts.

    The viewer search is extended to search for part name, description, manufacturer part number, and EAM number. You can select search result and display it in the viewer window.

15. To work with documents relevant to a piece of equipment, select *DOCUMENTATION* > *DOCUMENTS* and perform the following tasks:
    a. To add a document, choose *Add* > *New* and perform the following tasks:
        1. In the *Add Document* dialog box, browse for a file or provide a link.
        2. Select a *Category*.
        3. Select a *Phase*.
        4. Select the type of data in *Data Sensitivity*.
        5. Select your *Language*.
        6. Enter a *Description*.
        7. Choose the *Confidentiality* of the document
        8. Choose *Upload* to upload a document without a duplicate check.

i Note

When uploading a new document, you can run a duplicate check and if no duplicates, only then upload a document using the *Check and Upload* button.

b. To add an existing document, choose *Add* > *Assign* and perform the following tasks:
   1. In the *Select Documents* dialog box, search for a document using the filters - *Phase*, *Source*, or *Category*.
   2. Select a document from the search results.
   3. Choose *Assign*.
c. To edit the properties of an assigned document, perform the following tasks:
   1. Select a document from the *Documents* section, and choose *Edit*.
   2. In the *Edit Document* popup, change the relevant fields - *Phase*, *Category*, or *Description*.
   3. Choose *OK*.

16. To add instructions to the equipment, go to *DOCUMENTATION* > *INSTRUCTIONS* and perform the following tasks:
    a. Choose *Assign*.
    b. From the *Select Instructions* dialog box, select the appropriate instruction.
    c. Choose *Assign*.
17. To assign failure modes to the equipment, go to *DOCUMENTATION* > *Failure Modes* and perform the following tasks:
    a. Choose *Assign*.
    b. Select a failure mode.
    c. Choose *Assign*.

    If you have write access to the equipment even though you do not have write access to the failure mode, you can still edit the failure mode instance page of the equipment.

    When you copy a failure mode and *Save & Publish* it:
    - A new failure mode is created with the same causes and instructions from the source failure mode
    - The newly created failure mode is directly assigned to the object
    - The new failure mode is in published state
    - You navigate to the new failure mode instance page that includes all the copied failure mode instances: effects, causes, instructions, and detection method
    - The new failure mode appears in the failure mode section list

    You can view the failure mode instance which is inherited and directly assigned (at the same time), you can now view different object icons in the `<From>` field of the failure mode section if the failure mode is inherited or assigned directly to the equipment.

    You can now flag inherited failure modes to not relevant using the *Not Relevant* button. This excludes the failure modes from any assessments relevant to the equipment.
18. You can view the alert types associated with the equipment under *DOCUMENTATION* > *Alert Types*
19. To view announcements assigned to the equipment, choose *DOCUMENTATION* > *Announcements*
20. To create an improvement request for the equipment, perform the following tasks:
    1. Choose *New Improvement Request*.
    2. Enter the relevant details in the *New Improvement Request* dialog box.

3. Choose *OK*.

21. You can view and configure the list of indicators inherited from the model or equipment templates assigned to the equipment under *Monitoring*.

    You can add/remove an indicator to the favorites list using the star icon in the `<My Favorites>`.

    For numeric and numeric flexible datatypes, `<Reset>`, `<Normal>`, `<Max>`, and `<Min>` fields are available while definition the threshold. You can also define threshold value range for these datatypes (only threshold value not range is available for other data types). The *Reset* button is functional only for these two datatypes and will delete all the existing values and insert the reset value wherever applicable.

    > **i Note**
    >
    > - In the case of indicators of data type Boolean, the maximum number of thresholds selected must be 2 with values **True** and **False**. By default, its set to 0. Anything else can lead to inconsistency.
    > - You can personalize the indicator filters and columns in the *Indicator* section. When you login again the same filters and columns are displayed.

    If the same indicator is assigned to the model and also to the equipment, you can define different threshold values for the indicator at the model level and at the equipment level. If the values are defined both at the equipment and model level, the values defined at the equipment level will be considered. If not, the values defined at the model level are considered.

    To map the indicators of your item of equipment with an external system, follow the procedure in Mapping Indicators with an External System [page 187].

22. You can also view *Alerts* and *Indicator Chart* under *Monitoring*.

23. In the *Maintenance & Service* section, you can:
    - View *Notifications*

      > **i Note**
      >
      > You can also create notifications using the *New* button. You can also create new notifications using *Manage* > *New Notifications*.

    - View the *Work Orders* assigned to the equipment.

24. To view changes on the performance improvement cases, attributes, components, documents, announcements, functional locations, status, equipment header, and firmware for the selected equipment, choose the *Timeline* tab.

    > **i Note**
    >
    > You can maintain comments or tags for a timeline event. If a comment is owned by your organization, you can delete it.

25. View the following types of assessments assigned to the equipment:
    - *Risk and Criticality*
      View the risk and criticality assessment assigned to the equipment.
    - *Questionnaire*
      View the questionnaire assessment assigned to the equipment.
    - *FMEA*
      You can view the FMEA assessments assigned:

- At equipment level
  View the published FMEA assessment assigned to the equipment.
- At model level
  View the published FMEA assessment assigned to the model. You can use the *Apply to Equipment* to accept the FMEA for the respective equipment.

- *Checklist*
  You can create checklists for the equipment by selecting a checklist and choosing *Fill Checklist*.
  You can download the checklist template by choosing *Download*.
  You can view the number of checklist records (of the selected type) created by choosing *View Records*.
  You can also view all the checklist records created for the equipment using *View All Records*. It displays the *View Records* screen. You can also compare a maximum of three checklist assessments by selecting the assessments and choosing *Compare Assessments* button on this screen.
- *RCM*
  You can view the Reliability Centered Maintenance (RCM) assessments assigned to the equipment. An overview of the following are displayed as a card view:
  - Functions
  - Cost of Corrective Tasks
  - Cost of Preventive Tasks
  - Distribution by Activity
  - Recommendation Count
  - Placeholder Instructions

  Choose any card to view the details in the *Recommendations* dialog box.
  Choose *View Assessments* to view a list of RCM assessments.
  Choose an assessment from the list to view the details of the assessment.

You can also view the matrix of environment getting affected under *Matrix* for risk and criticality assessments.

For Risk and Criticality and Questionnaire assessments, you can now compare a minimum of two and maximum of three assessments using *Compare Assessments*.

In the *Analytics* section, you can:
- View risk distribution across all equipment.
- View risk distribution across equipment in the same subclass.
- Visualize to compare current risk.

26. To publish an item of equipment, choose *Publish*.

    System publishes the item of the equipment and creates a first revision of the item of the equipment in SAP Asset Strategy and Performance Management.
27. To create revisions of an item of an equipment and to switch between the published and revision states, see the steps provided in the procedure Creating Revisions and Switching Between Revisions and Published State [page 52].

3.10.1.1.1 Adding Equipment Components

You perform this activity when you need to alter equipment components to suit your equipment needs.

Prerequisites

- You have already created an item of equipment in SAP Asset Strategy and Performance Management. For information about creating an item of equipment, see Creating a Piece of Equipment [page 173].
- The item of equipment is in status **Unpublished** or **In Revision**.
- Ensure that the component you want to add already is created in the network as equipment.

Procedure

1. Launch the *Equipment* application.
2. Open your item of equipment.
3. From the *Equipment* object page, choose *New Revision*.
4. Choose the *Structure* section.
5. Choose *Assign*.
6. In the *Select Component* dialog box, select the component you want to add.
7. Choose *Add*.
8. Choose *Save*.

Results

The equipment components have been added.

- To remove component, proceed as follows:
  - From the *Structure* section, choose *Edit*.
  - Select the components from the list, choose *Remove*.
  - Choose *Save*.
- To publish a component directly from the *Structure* section, select the component from the list that is in **Unpublished** or **In Revision** state and choose *Publish*.
- To replace a component, proceed as follows:
  - From the *Structure* section, choose *Edit*.
  - Select the components from the list, choose *Replace*.
  - Select a component from the dialog box and choose *Replace*.
  - Choose *Save*.

3.10.1.2 Viewing and Updating a Piece of Equipment

You use this procedure to update information such as installation information, installation location, and documents that relate to an existing item of equipment.

Prerequisites

- To view an item of equipment, your user ID either belongs to the group `ORG_DATA_READ`, or has the roles `EQUIPMENT_READ` assigned.
- To update an item of equipment, your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `EQUIPMENT_DELETE` or `EQUIPMENT_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Equipment* app.
2. You can perform the following tasks by selecting one or more items of equipment from the list:
   - *Request Model*
   - *Publish*
   - *Group*
   - *Assess*
   - *Delete*
3. Search for an item of equipment that you want to update using the search filters.
4. Select the item of equipment from the search results.
5. You can perform the following actions using the *Manage* button in the published equipment:
   - New Revision
   - View Lifecycle Changes
   - Delete
   - Request Model
   - Sync with IoT Services:

     > **i Note**
     >
     > Note: This option is available only if the equipment is in **Published** state, the `<IoT Sync Flag>` is set to **Yes** and IoT Services 4.0 system is configured.
6. If you choose an item of equipment that is in a published state, choose *Manage* > *New Revision* from the *Equipment* screen.
7. View and navigate to the open model request for the equipment from the icon in the `<Model ID>` under *INFORMATION* > *Model Information*

- You can view only the icon in <Model ID> for a piece of equipment if it not assigned to any model.
- If the equipment is assigned to a model or if you have entered a free text, you can view the icon together with the model ID or free text.

> **i Note**
>
> You can only assign model request for items of equipment that are published at least once.

8. To update additional attributes related to an item of equipment, select tab *INFORMATION* > *Data Sheet* and perform these substeps.
    a. Choose *Edit*.
    b. You can reorder the attribute groups using *Reorder Groups*.
    c. You can assign equipment templates using *Add Template* after the equipment is created.
    d. You can select templates from the list and choose *Remove Template* to remove the template.
    e. You can display the alternate unit of measure using *Show Alternate UoM*.

        You can set the default unit of measurement system in the *Unit of Measure Variant* under *User Account(icon on the left corner of the launchpad)* > *Settings* > *Unit of Measure*.
    f. Choose *Save*.
9. To update attributes such as installation information, select tab *INFORMATION* > *Equipment Information* and perform the following tasks:
    a. Choose *Edit* in the *Equipment Information* section.

        For more information about the fields, see Creating a Piece of Equipment [page 173]
    b. Choose *Save*.
10. To view the parent systems associated with the equipment, select tab *INFORMATION* > *Systems*.
11. To assign *Documents*, *Instructions*, and *Announcements*, choose the *DOCUMENTATION* tab.
    a. To add documents related to the item of the equipment, choose the tab *DOCUMENTATION* > *DOCUMENTS* and perform the following tasks:
        1. Choose *Add* > *New* to add a document to the equipment.
        2. Choose *Add* > *Assign* to assign an existing document to the equipment.
        3. Choose *Edit* to edit the properties of the document.
        4. To remove a document, select the document or documents from the list and choose *Remove*.
    b. To assign existing planned maintenance instructions, or troubleshooting and breakdown instructions to the equipment; or to unassign the instructions related to the equipment, choose the *DOCUMENTATION* > *INSTRUCTIONS* tab and perform the following tasks:

        > **i Note**
        >
        > You must have instructions created .

        1. Choose *Edit* in the *Instructions* section.
        2. To assign an instruction, choose *Assign*.

            > **i Note**
            >
            > If you are unable to see the *Assign* button, change your browser zoom and retry.

3. To remove an instruction, choose *Remove*.

c. To view announcements assigned to the equipment, choose *DOCUMENTATION* > *Announcements*
d. View the list of failure modes assigned to the equipment. You can also assign failure modes by choosing *Failure Modes* > *Assign*.

You can view the causes and effects of the failure modes assigned to the equipment in this section.

If you have write access to the equipment even though you do not have write access to the failure mode, you can edit the failure mode instance page of equipment.

When you copy a failure mode and *Save & Publish* it:
- A new failure mode is created with the same causes and instructions from the source failure mode
- The newly created failure mode is directly assigned to the object
- The new failure mode is in published state
- You navigate to the new failure mode instance page that includes all the copied failure mode instances: effects, causes, instructions, and detection method
- The new failure mode appears in the failure mode section list

You can view the failure mode instance which is inherited and directly assigned (at the same time), you can now view different object icons in the `<From>` field of the failure mode section if the failure mode is inherited or assigned directly to the equipment.

You can now flag inherited failure modes to not relevant using the *Not Relevant* button. This excludes the failure modes from any assessments relevant to the equipment.

e. View the improvement requests assigned to the equipment.

To create an improvement request for the equipment, perform the following tasks:
1. Choose *New Improvement Request*.
2. Enter the relevant details in the *New Improvement Request* dialog box.
3. Choose *OK*.

f. You can view the alert types associated with the equipment under *DOCUMENTATION* > *Alert Types*

12. You can perform the following activities in the *MONITORING* tab:
a. View the indicators related to the equipment in the *Indicators* section.
To define, model, and edit additional properties of the indicators and their thresholds, select an indicator and choose *Configure*.

You can also view the aggregated indicator value and trend for the indicators in this section.
b. View indicators related to the equipment components in the *Component Indicators* section.
13. You can perform the following activities in the *MAINTENANCE & SERVICE* tab:
a. View notifications related to the equipment in the *Notifications* section.
b. View work orders related to the equipment in the *Work Orders* section.
14. View the modifications made on the equipment data in the *Timeline* tab.

You can view the update statistics based on:
- Updates By Type
- Time Range
- Updates by Partner
- Updates on model or equipment data

You can click the equipment time range to perform the following the *Filter By* dialog box:

- *Show Timeline Events for*: Select if you want to view the changes only on the equipment or the model associated with the equipment or all the changes made on the equipment data.
- *Time Range*: Select a time range to view only the changes during that timeframe.

> **i Note**
>
> You can track addition and removal of component and parent equipment. Sharing activities are also tracked in the timeline.

15. View the risk value of the equipment derived from the following assessments:
    - *Risk and Criticality*
      View the risk and criticality assessment assigned to the equipment.
    - *Questionnaire*
      View the questionnaire assessment assigned to the equipment.
    - *FMEA*
      You can view the FMEA assessments assigned:
      - At equipment level
        View the published FMEA assessment assigned to the equipment.
      - At model level
        View the published FMEA assessment assigned to the model. You can use the *Apply to Equipment* to accept the FMEA for the respective equipment.
    - *Checklist*
      You can create checklists for the equipment by selecting a checklist and choosing *Fill Checklist*.
      You can download the checklist template by choosing *Download*.
      You can view the number of checklist records (of the selected type) created by choosing *View Records*.
      You can also view all the checklist records created for the equipment using *View All Records*. It displays the *View Records* screen. You can also compare a maximum of three checklist assessments by selecting the assessments and choosing *Compare Assessments* button on this screen.
    - *RCM*
      You can view the Reliability Centered Maintenance (RCM) assessments assigned to the equipment. An overview of the following is displayed:
      - Functions
      - Cost of Corrective Tasks
      - Cost of Preventive Tasks
      - Distribution by Activity
      - Recommendation Count
      - Placeholder Instructions

      Choose *View Assessments* to view a list of RCM assessments.
      Choose an assessment from the list to view the details of the assessment.

    You can also view the matrix of environment getting affected under *Matrix*.

    For Risk and Criticality and Questionnaire assessments, you can now compare a minimum of two and maximum of three assessments using *Compare Assessments*.

    In the *Analytics* section, you can:
    - View risk distribution across all equipment.
    - View risk distribution across equipment in the same subclass.
    - Visualize to compare current risk.

16. Choose *Publish* to publish the updated equipment.

3.10.1.3 Publishing a Piece of Equipment

When you have more items of Equipment created using public APIs provided by SAP Asset Strategy and Performance Management, you can view these items of equipment using the Equipment application and perform a mass publish of such items of equipment.

Prerequisites

- Your user ID either belongs to thegroup `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `EQUIPMENT_DELETE` or `EQUIPMENT_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- You have created an item of equipment and the item of equipment is in any of the following states:
  - *Unpublished*
  - *Published*
  - *In Revision*

Procedure

1. Open the *Equipment* application.
2. Search for items of equipment that are either in unpublished, or in revision state.
3. Select one or more items of equipment from the search results.
4. Choose *Publish*.

3.10.1.4 Deleting a Piece of Equipment

You can delete an item of equipment that you do not want to have on the network.

Prerequisites

- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the role `EQUIPMENT_DELETE` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- You have created an item of equipment and the item of equipment is in any of the following states:
  - *Unpublished*

- *Published*
- *In Revision*

Procedure

1. Open the *Equipment* application.
2. Search for an item of equipment.
3. Select an item of equipment from the search results.
4. Choose *Delete*.

3.10.1.5 Mapping Indicators with an External System

You perform this activity to retrieve the indicator values of your equipment from an external system of type SAP Cloud Platform Internet of Things for the Cloud Foundry Environment or SAP Cloud Platform Internet of Things for the Neo Environment. When you have equipment data or machine data existing in an external system, you can retrieve that data by mapping your equipment with the external system.

Prerequisites

- The external system in question is already configured with SAP Asset Intelligence Network. For more information, see Configuring External Systems [page 30].
- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `EQUIPMENT_DELETE` or `EQUIPMENT_EDIT` assigned.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18]
- You have created an item of equipment. Equipment must be in **Fully Operational** or **Partially Operational** phase. For more information, see Creating a Piece of Equipment [page 173]
- You have created indicators from the *Templates* app, and the equipment in question has inherited this template. For more information, see Adding Indicator Groups and Indicators [page 63].

Context

In this procedure, you map indicators of equipment between an external system and SAP system.

Procedure

1. Launch the *Equipment* application.

2. Open the item of equipment in question.
3. In the *Monitoring* tab, go to *Indicators* section.
4. Select the relevant indicator and click *Map Indicators*.
5. In the *Map Indicators* window, enter the following:

Field	Description
System Name	Choose the name of the external system. For example: PdMS
Equipment	The corresponding equipment name in the external system.

6. Under the *Indicators* section, select an indicator and choose the corresponding indicator from the listed equipment indicators (external system) by choosing *Map*.
7. Choose *Save*.

   You see that the new indicator values appear on the Equipment object page.

> **i Note**
>
> In order to unmap an indicator go to, *Monitoring* > *Indicators* > *Map Indicators* select the indicator form the indicator list, and choose the corresponding delete/close icon.

3.10.1.6 Viewing Work Orders of an Equipment

You can use this procedure to view a list of work orders related to an equipment.

Prerequisites

To view a piece of equipment, your user ID belongs to the group `ORG_DATA_READ`, or it has the roles `EQUIPMENT_READ` assigned to it.

Context

You can view the following work orders details: work order ID, order short description, order status, order type, order priority, order long description, start date, end date, actual duration, or planned duration.

Click a work order ID to view more details of the same in the object page.

You can perform the following actions:

- Sort the work orders by - **Ascending**, **Descending**, **Type**, **Priority**, **Start Date**, or **End Date**.
- Group work orders by- **Ascending**, **Descending**, **Type**, or **Priority**.
- Filter work orders by - **Type** or **Priority**.

You can have more than one service provider for a piece of equipment. Multiple business partners can have the same role.

> **Note**
>
> If the order status is `<TECO>` or closed, then the actual duration is displayed, otherwise the planned duration is displayed.

Procedure

1. Open the *Equipment* application.
2. From the *Equipment* screen, select an equipment for which you want to view work orders.
3. To view information related to work orders, go to *MAINTENANCE & SERVICE*→ *Work Orders* section.

   You can view the list of work orders associated with the equipment. Select and open a work order to view more details of work order.

3.10.1.7 Viewing Notifications of Equipment

You use this procedure to visualize all the notifications associated with an equipment.

Prerequisites

You must have the roles EQUIPMENT_READ assigned to your user ID in the SAP Cloud Platform account.

Context

Using this option, it is also possible to sort, filter, group notifications, and create new notifications. Click the respective icons to perform these actions. Depending on the action performed on these notifications, the progress statuses - completed, planned, and pending displays against each notification. It is also possible to create an improvement request or edit an improvement request using the *Add Evidence* button. Also, create a notification using the `<New>` option.

Click a notification ID to view more details of the same in the object page.

To view the details of notification, click the respective notification ID. The progress of notifications is as below:

- Completed - All notifications with status **Completed** or **Closed**.
- Planned - All notifications that have start date equal or greater than the current date.
- Pending - All notifications that have end date greater than current date or all notifications that have the start date lesser than the current date.

Procedure

1. Open the *Equipment* application.
2. From the **Equipment** list screen, select an equipment for which you want to view notifications.
3. In the *MAINTENANCE & SERVICE* tab, select *Notifications*.

Results

You can view all the notifications related to the equipment.

Related Information

Performance Improvement [page 235]

3.10.1.8 Viewing and Editing Indicators

You use this procedure to visualize all the indicators associated with an item of equipment and its relevant components.

Context

Using this option, it is also possible to visualize as well as edit an indicator and add additional properties to it.

> **i Note**
>
> Component indicators display all the indicators associated with the equipment components and cannot be edited.

Procedure

1. Open the *Equipment* application.
2. From the **Equipment** list screen, select a piece of equipment for which you want to view the indicators.
3. In the *Monitoring* tab, select *Indicators*.
4. To add additional properties to the indicator, select an indicator and choose *Edit*.

   You can maintain the following properties for an indicator:

- Unit of Measurement (UoM)
- Threshold Range
- Indicator Category
  The following values are valid:
  - Continuous
  - Discrete
  - Level
- Indicator type: Following values are valid:
  - Calculated
  - Measured
  - Assessed

You can maintain values for the indicators for which you have defined the properties by using *New Manual Indicator*.

5. To view indicators associated with the equipment component, go to *Component Indicators*section.

> **i Note**
>
> *Component Indicators* are displayed only if any indicators are assigned to the equipment component and cannot be edited.

3.10.1.9 Viewing Alert Type Groups of Model Assigned to Equipment

You can view the alert type assigned to a model of an equipment.

Prerequisites

Your user ID either belongs to the role name `AssetCoreReader` or has the role `EQUIPMENT_READ` assigned.

Context

> **i Note**
>
> It is not possible to assign or unassign alert type groups to an equipment template or an equipment.

Procedure

1. Open the *Equipment* application.
2. Select an equipment for which you want to view the assigned alert type group.
3. Click *Alert Types* from the *Documentation* tab.

   List of assigned alert types display.

Related Information

Adding Alert Types [page 70]
Adding Alert Type Groups [page 73]
Assigning Alert Type Groups to a Model [page 129]

3.11 Locations

A location in SAP Asset Strategy and Performance Management corresponds to a virtual record of the location where an equipment is installed.

Using the **Locations** application, you can create a location and assign it to your item of equipment. This assignment is made based on the functionality of the items of equipment.

A location is based on a template and allows users to add values to the definitions used in the underlying template.

A location can be in any of the following states:

- **Unpublished**
- **In Revision**
- **Published**

For more information, see State Transitions [page 51]

You can perform the following operations using the **Locations** app:

- Create a Location and add location information and location attributes.
  For more information, see Creating a Location [page 193].
- View details of an existing location and update an existing location.
  For more information, see Updating a Location [page 197].
- Delete a location to clean up the data that is not required to be on the network.
  For more information, see Deleting a Location [page 198].
- View the `<Completeness>` status. This is calculated based on values in header,`< Location Information>`, and `<Installation Location>` section
- Create `<Extensions>` for a location.
  A new tab `<Extensions>` is displayed. This provides the custom specific information that you created

- View the list of child locations under *STRUCTURE* > *Locations*

> **Note**
>
> You can remove a child location from a parent location and assign it to a different location.

  Assign child locations to existing locations from the *Structure* section.
- Add or remove inherited address.
- RFID is enabled in *Lookup* application for devices that support RFID.
  If the `<Prefix>` and `<Suffix>` are defined in the *Bar Code Configurations* under *Application Settings* > *General Application Settings*, then RFID feature can be used to scan the RFID tag.
- View the risk value of the equipment derived from the folllowing assessments under *ASSESSMENTS*:
  - *Risk and Criticality*
  - *Questionnaire*

  You can also view the matrix of environment getting affected under *Matrix*.

3.11.1 Creating a Location

You use this procedure to create a location where an item of equipment is installed, and add location-specific attributes to the location.

Prerequisites

- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- You have already created a location template from the **Templates** application.
  For more information, see Creating a Location Template [page 80]

Procedure

1. Launch the **Locations** application.
2. From the *Locations* landing page, choose *New*.
3. In the *Create New Location* dialog box, enter the location ID, address, description, template, and parent details.

> **Note**
>
> `<Parent>` And address is optional.

Field	Description
Name	Enter a unique name for the functional unit.
Short and Long Description	Provide a description denoting the functional nature of the unit.
Template	Select a location template if you want the functional unit to inherit the location template attributes. **i Note** You can inherit subclass information from location template.
Subclass	Select a subclass. You can classify a location based on class or subclass. It enables you to perform location object classification through location template inheritance or manual assignment. **i Note** You can change the subclass by using *Manage* > *Change Subclass*.
Parent	Choose the organization name.
Street/Number	Provide the location details.
Postal Code/City	Enter the postal code or city.
Country	Enter country name.
State/Region	Specify state/region.

> **i Note**
> - The `<Address>` field autopopulates by inheriting the address from the functional unit or organization. You can retain the same address or modify as necessary.
> - In the **Template** dropdown, choose the location template you have created. For more information, see Creating a Location Template [page 80].

4. To update additional attributes related to a location, select *INFORMATION* > *Data Sheet* tab and perform these substeps.
    a. Choose *Edit*.
    b. You can assign templates using *Add Template*.
    c. You can select the assigned templates and choose *Remove Template* to remove the template.
    d. You can display the alternate unit of measure using *Show Alternate UoM*.

You can set the default unit of measurement system in the *Unit of Measure Variant* under *User Account(icon on the left corner of the launchpad)* > *Settings* > *Unit of Measure*.

e. Choose *Save*.

5. In the *Locations* object page, navigate to *INFORMATION* > *Location Information* and choose *Edit*.
    a. In the *Location Information* field autopopulates by inheriting the address from the section, enter details as necessary.

        In the `<Designed Operating State>` dropdown, specify the operational state of the location.

        You can also specify the `<Criticality>` and `<Safety Risk>` for the location.
    b. Choose *Save*.
6. To update the installation information about the location, choose *INFORMATION* > *INSTALLATION LOCATION* and choose *Edit*.
    a. In the *Installation Location* section, enter details as necessary.

        You can enter the relevant `<Object Address>`, `<Contact Person>`, and `<Geospatial Data>`.

        In the *Geospatial Data* section, specify the latitude and longitude coordinates of the location.
    b. Choose *Save*.
7. To add the location to a group, go to *INFORMATION* > *GROUPS* > *Add*.

    You can view the list of groups to which the location is added.
8. To assign a piece of equipment to the functional location, choose *STRUCTURE* > *Equipment* > *Assign*.
    a. From the *Select Equipment* dialog box, select the equipment. You can also inherit the address of the location to the equipment. Choose *Assign*.
9. To assign a location to the functional location, choose *STRUCTURE* > *Locations* > *Assign*.
    a. From the *Select Locations* dialog box, select the location. Choose *Assign*.
10. To add a new document, choose *Documentation* > *Documents* > *Add* > *New* and perform the following tasks:
    1. In the *Add Document* dialog box, browse for a file or provide a link.
    2. Select a *Category*.
    3. Select a *Phase*.
    4. Select the type of data in *Data Sensitivity*.
    5. Select your *Language*.
    6. Enter a *Description*.
    7. Choose the *Confidentiality* of the document
    8. Choose *Upload* to upload a document without a duplicate check.

    > **i Note**
    >
    > When uploading a new document, you can run a duplicate check and if no duplicates, only then upload a document using the *Check and Upload* button.
11. To assign existing documents to the location, choose *DOCUMENTATION* > *Documents* > *Add* > *Assign* and perform the following tasks:
    a. In the *Select Documents* dialog box, select the relevant document.
    b. Choose *Assign*.

12. To add instructions to the location, choose *DOCUMENTATION* > *Instructions* > *Assign* and perform the following tasks:
    a. From the *Select Instructions* dialog box, select the appropriate instruction.
    b. Choose *Assign*.
13. To add Failure Modes to the location, choose *DOCUMENTATION* > *Failure Modes* > *Assign* and perform the following tasks:
    a. From the *Select Failure Modes* dialog box, select the appropriate failure modes.
    b. Choose *Assign*.

    If you have write access to the location even though you do not have write access to the failure mode, you can edit the failure mode instance page of the location.

    When you copy a failure mode and *Save & Publish* it:
    - A new failure mode is created with the same causes and instructions from the source failure mode
    - The newly created failure mode is directly assigned to the object
    - The new failure mode is in published state
    - You navigate to the new failure mode instance page that includes all the copied failure mode instances: effects, causes, instructions, and detection method
    - The new failure mode appears in the failure mode section list

    You can now flag inherited failure modes to not relevant using the *Not Relevant* button. This excludes the failure modes from any assessments relevant to the location.
14. To publish the location, choose *Publish*.

Results

You have created a location and published it.

- You can view the list of child locations under *Structure* > *Locations*
- You can view all the assessments associated with the location under the *Assessments* section. A location can be assigned to the following types of assessment:
    - Risk and Criticality
    - Questionnaire
    - FMEA
    - Checklist
      You can create checklists for the location by selecting a checklist and choosing *Fill Checklist*.
      You can download the checklist template by choosing *Download*.
      You can view the number of checklist records (of the selected type) created by choosing *View Records*.
      You can also view all the checklist records created for the location using *View All Records*. It displays the *View Records* screen. You can also compare a maximum of three checklist assessments by selecting the assessments and choosing *Compare Assessments* button on this screen.
    - RCM (Reliability Centered Maintenance)
      You can view the Reliability Centered Maintenance (RCM) assessments assigned to the location. An overview of the following are displayed as a card view:
        - Functions
        - Cost of Corrective Tasks

- Cost of Preventive Tasks
- Distribution by Activity
- Recommendation Count
- Placeholder Instructions

Choose any card to view the details in the *Recommendations* dialog box.
Choose *View Assessments* to view a list of RCM assessments.
Choose an assessment from the list to view the details of the assessment.

> **i Note**
>
> For Risk and Criticality and Questionnaire assessments, you can now compare a minimum of 2 and maximum of 3 assessments using *Compare Assessments*.
>
> You can also view the matrix of environment getting affected under *Matrix*.
>
> In the *Analytics* section, you can:
> - View risk distribution across all locations.
> - View risk distribution across locations in the same subclass.
> - Visualize to compare current risk.

- You can view notifications and work orders, which are associated with the location under *Maintenance and Service*. Notifications and work orders can be uploaded from an external system using available public APIs.

3.11.2 Updating a Location

You use this procedure to update information such as location information, installation location, and documents that relate to an existing location.

Prerequisites

Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Launch the **Locations** application.
2. Search the location you want to update using search filters.
3. Select the location from the search results.
4. If you choose a location that is in status *Published*, choose *Manage* > *New Revision* from the *Locations* object page.
5. Edit the *Location Information* section, *Installation Location* section and the *Documents* section as necessary.

For more information about field descriptions in each section, see Creating a Location [page 193].

6. Choose *Save*.
7. Choose *Publish*.

3.11.3 Deleting a Location

You use this procedure to delete a location that you do not want to have on the network.

Prerequisites

- Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- You have created a location and the location is in any of the following states:
  - *Unpublished*
  - *Published*
  - *In Revision*

Procedure

1. Launch the *Locations* application.
2. Using search filters, search for the location you want to delete.
3. Select the relevant location.
4. Choose *Delete*.

3.11.4 Viewing Work Orders of a Location

You can use this procedure to view a list of work orders related to a location.

Prerequisites

To view a location, your user ID belongs to the group `ORG_DATA_READ`, or it has the roles `FUNCTIONAL_LOCATION_READ` assigned to it.

Context

You can view the following work orders details: work order ID, order short description, order status, order type, order priority, order long description, start date, end date, actual duration, or planned duration.

Click a notification ID to view more details of the same in the object page.

You can perform the following actions:

- Sort the work orders by - **Ascending**, **Descending**, **Type**, **Priority**, **Start Date**, or **End Date**.
- Group work orders by- **Ascending**, **Descending**, **Type**, or **Priority**.
- Filter work orders by - **Type** or **Priority**.

You can have more than one service provider for a location. Multiple business partners can have the same role.

> **i Note**
>
> If the order status is `<TECO>` or closed, then the actual duration is displayed, otherwise the planned duration is displayed.

Procedure

1. Open the *Locations* application.
2. From the *Location* screen, select a location for which you want to view work orders.
3. To view information related to work orders, go to *MAINTENANCE & SERVICE*→ *Work Orders* section.

   You can view the list of work orders associated with the location. Select and open a work order to view more details of work order.

3.11.5 Viewing Notifications of Location

You use this procedure to visualize all the notifications associated with alocation.

Prerequisites

You must have the roles FUNCTIONAL_LOCATION_READ assigned to your user ID in the SAP Cloud Platform account.

Context

Using this option, it is also possible to sort, filter, group notifications, and create new notifications. Click the respective icons to perform these actions. Depending on the action performed on these notifications, the progress statuses - completed, planned, and pending displays against each notification. It is also possible to create an improvement request or edit an improvement request using the *Add Evidence* button. Also, create a notification using the `<New>` option.

Click a work order ID to view more details of the same in the object page.

To view the details of notification, click the respective notification ID. The progress of notifications is as below:

- Completed - All notifications with status **Completed** or **Closed**.
- Planned - All notifications that have start date equal or greater than the current date.
- Pending - All notifications that have end date greater than current date or all notifications that have the start date lesser than the current date.

Procedure

1. Open the *Locations* application.
2. From the **Location** list screen, select a location for which you want to view notifications.
3. In the *MAINTENANCE & SERVICE* tab, select *Notifications*.

Results

You can view all the notifications related to the location.

3.12 Failure Modes

A failure mode is a probable failure that could occur to piece of equipment. In case SAP Asset Intelligence Network is available, the manufacturer shares the failure modes with the operator; else the operator has to upload or enter the failure modes on their own. The failure mode keeps the operator informed about possible failures and helps them to handle the failure modes efficiently.

A failure mode is always associated with a subclass and may have more than one category.

The following types of failure modes can occur to any of the following business objects associated with a piece of equipment (equipment, models, spare parts, locations, groups):

- Design function is not obtained
- Specified function lost or outside accepted operational limit
- Non-Critical failures

You can now view the Reliability, Availability, Maintainability, and Safety (RAMS) figures for the failure modes.

3.12.1 Managing Failure Modes

You can perform various operations; such as creating a failure mode, viewing a failure mode, updating a failure mode, deleting a failure mode, and assigning models, pieces of equipment, spare parts, groups, and locations to a failure mode.

Context

You use the Failure Modes application to perform the following operations:

- Creating a Failure Mode [page 201]
- Viewing and Publishing a Failure Mode [page 204]
- Updating a Failure Mode [page 205]
- Deleting a Failure Mode [page 206]
- Copying a Failure Mode [page 207]
- Assigning Failure Modes to Business Objects [page 207]
- View the causes associated with a failure mode

You can change the following assignments in failure modes:

- Model assigned to the failure mode
- Equipment assigned to the failure mode
- Location assigned to the failure mode
- Spare part assigned to the failure mode
- Group assigned to the failure mode

> **i Note**
>
> A failure mode can be in any status when you assign a business object to it.

3.12.1.1 Creating a Failure Mode

You use this procedure to create a failure mode and assign business objects such as models, items of equipment, spare parts, groups, and locations to the failure mode.

Prerequisites

Your user ID has the roles FAILURE_MODE_DELETE or FAILURE_MODE_EDIT assigned to it.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Failure Modes* app.
2. From the *Failure Mode List* window, choose *New*.
3. In the *Failure Modes* dialog box, perform the following tasks:
   a. Enter the following details as described in the table :

Field	Description
Description (*)	Enter a short description for the failure mode.
Long description	Enter a short description for the failure mode.
Subclass (*)	Select a subclass for the failure mode.
Category (*)	Select one or more categories relevant for the failure mode.
Type (*)	Select the type of failure mode. The following list provides the descriptions for each type of failure mode: ◦ 1 - Designed function is not obtained ◦ 2 - Specified function lost or outside accepted operational limit ◦ 3 - Non critical failures
Detection Method	Select a detection method to support detectability. You can select from thr following list: ◦ Periodic maintenance ◦ Functional testing ◦ Inspection ◦ Periodic condition monitoring ◦ Continuous condition monitoring ◦ Production interference ◦ Casual observation ◦ Corrective maintenance ◦ On demand ◦ Other

> **i Note**
>
> All the mandatory fields are marked as (*) in the table.

4. Choose *Save* to create the failure mode.
5. To add the RAMS figures, follow these steps:
   a. In the *RAMS Figures* section, choose *Edit*.
   b. Select a *Failure Pattern*.

c. Enter the *KPI* values for mean time to failure, mean time to repair, and mean time between failures.
d. Save your entries.

6. To assign a model, follow these steps:
    a. In the *ASSIGNMENTS* > *Models* section, choose *Assign*.
    b. From the *Select Model* dialog box, select the relevant equipment.
    c. Choose *Assign*.
7. To assign a piece of equipment, follow these steps:
    a. In the *ASSIGNMENTS* > *Equipment* section, choose *Assign*.
    b. From the *Select Equipment* dialog box, select the relevant equipment.
    c. Choose *Assign*.
8. To assign a location, follow these steps:
    a. In the *ASSIGNMENTS* > *Locations* section, choose *Assign*.
    b. From the *Select Location* dialog box, select the relevant location.
    c. Choose *Assign*.

    i Note

    You can only assign a maximum of 50 locations to a failure mode.
9. To assign a spare part, follow these steps:
    a. In the *ASSIGNMENTS* > *Spare Parts* section, choose *Assign*.
    b. From the *Select Spare Parts* dialog box, select the relevant spare part.
    c. Choose *Assign*.
10. To assign a group, follow these steps:
    a. In the *ASSIGNMENTS* > *Groups* section, choose *Assign*.
    b. From the *Select Group* dialog box, select the relevant group.
    c. Choose *Assign*.
11. To assign a system, follow these steps:
    a. In the *ASSIGNMENTS* > *Systems* section, choose *Assign*.
    b. From the *Select System* dialog box, select the relevant system.
    c. Choose *Assign*.
12. To add causes, follow these steps:
    a. In the *CAUSES* section, choose *Add*.

        You can choose *New* to add new causes or *Assign* to add existing causes.
    b. From the *Select Causes* dialog box, select the relevant cause or create a new cause using the *Create Cause* dialog box.
    c. Choose *Assign*.
13. To add instructions, follow these steps:
    a. In the *INSTRUCTIONSAssign*.

        You can choose *New* section, choose to add new causes or *Assign* to add existing causes.
    b. From the *Select Causes* dialog box, select the relevant cause or create a new cause using the *Create Cause* dialog box.
    c. Choose *Assign*.

14. To publish the failure mode, choose *Publish*.
15. To create a revision of a failure mode or to work with the last published failure mode, or last revision of failure mode, see section, choose Creating Revisions and Switching Between Revisions and Published State [page 52].

Results

The failure mode is published.

When you copy a failure mode and *Save & Publish* it:

- A new failure mode is created with the same causes and instructions from the source failure mode
- The newly created failure mode is directly assigned to the object
- The new failure mode is in published state
- You navigate to the new failure mode instance page that includes all the copied failure mode instances: effects, causes, instructions, and detection method
- The new failure mode appears in the failure mode list

3.12.1.2 Viewing and Publishing a Failure Mode

You can view a failure mode to verify whether the information contained in a failure mode is appropriate.

Prerequisites

- To publish a failure mode, your user ID belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or it has the roles `FAILURE_MODE_DELETE` or `FAILURE_MODE_EDIT` assigned to it.
- To view a failure mode, your user ID belongs to the group `ORG_DATA_READ`, or it has the role `FAILURE_MODE_READ` assigned to it.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Context

If you have assigned a business object to a failure mode, you can navigate to the business object details and work on the business object.

Procedure

1. Open the *Failure Modes* application.
2. In the *Failure Mode List* window, use the filters to search for an appropriate failure mode.
3. Choose a failure mode from the search list and double-click to view details.
4. On the *Failure Mode* screen, choose the *Assignments* tab to view the details of all the business objects assigned to the failure mode. On the Assignments tab:
    a. Choose *Models* to view the models assigned to the failure mode.

        For more information about working with models, see Models [page 118].
    b. Choose *Equipment* to view the pieces of equipment assigned to the failure mode.

        For more information about working with equipment, see Equipment [page 171].
    c. Choose *Locations* to view the locations assigned to the failure mode.

        For more information about working with locations, see Locations [page 192].
    d. Choose *Spare Parts* to view the spare parts assigned to the failure mode.

        For more information about working with spare parts, see Spare Parts [page 160].
    e. Choose *Groups* to view the group assigned to the failure mode.

        For more information about working with groups, see Groups [page 208].
5. On the *Failure Mode* screen, choose the *Causes* tab to view all the possible causes related to the failure mode.

    Choose *Add* to add a new cause to the failure mode.
6. Choose *Publish* to publish the failure mode.

    If you want to view details of the relevant business object, double-click it.

3.12.1.3 Updating a Failure Mode

You can delete or update existing information within a failure mode or add missing information to a failure mode.

Prerequisites

- You have identified the failure mode that you want to update.
- To update a failure mode, your user ID belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT` or it has the roles `FAILURE_MODE_DELETE` or `FAILURE_MODE_EDIT` assigned to it.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18]

Context

You can add possible causes or create new causes for a failure mode.

Procedure

1. Open the *Failure Modes* app.
2. In the *Failure Modes* app, search for an appropriate failure mode using the filters.
3. From the search results list in the *Failure Modes* section, select an appropriate failure mode.
4. Double-click the failure mode to view details.
5. If you have opened a failure mode that has been published, choose *Manage*->*New Revision*.
6. To update all the relevant business objects assigned to a failure mode, select the different sections on the *ASSIGNMENTS* tab.

   For more information, see Creating a Failure Mode [page 201].
7. To add a new cause, select the *CAUSES* tab.

   For more information, see Creating a Failure Mode [page 201].
8. To publish the failure mode, choose *Publish*.

3.12.1.4 Deleting a Failure Mode

You can delete a failure mode that you no longer want to have on the network.

Prerequisites

To delete a failure mode, your user ID belongs either to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the role `FAILURE_MODE_DELETE` assigned to it.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Failure Modes* application.
2. In the *Failure Mode List* screen, search for a failure mode.
3. Choose a failure mode from the search list.

   You can select more than one failure mode for deletion.

4. On the *Failure Mode List* screen, choose *Delete*.

3.12.1.5 Copying a Failure Mode

You can copy a failure mode to create a new failure mode similar to the existing failure mode.

Prerequisites

To copy a failure mode, your user ID belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or it has the role `FAILURE_MODE_DELETE` and `FAILURE_MODE_EDIT` assigned to it.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Failure Modes* application.
2. In the *Failure Mode List* screen, search for a failure mode.
3. Choose a failure mode from the search list.
4. In the *Failure Mode List* screen, choose *Copy*.

3.12.1.6 Assigning Failure Modes to Business Objects

You can use this procedure to assign a business object to a failure mode.

Prerequisites

- You have identified the business object that you want to assign.
- Your user ID belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`.
  For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Context

You can assign a failure mode to the following objects:

- Models

- Announcements
- Equipment
- Instructions
- Locations
- Improvement Cases
- Spare Parts

> **i Note**
>
> - You can only assign a maximum of 50 locations to a failure mode.
> - All the equipment belonging to a group or model will also inherit the failure modes assigned to that model or group.
> - All the locations belonging to a group will also inherit the failure modes from that group.
>
> For simplicity's sake, we will describe the procedure for assigning a failure mode to a model.

Procedure

1. Open the *Failure Modes* application.
2. In the *Failure Mode List* screen, use the filters to search for an appropriate failure mode.
3. In the *Failure Mode* screen, go to *ASSIGNMENTS*-> *Models* section.
4. Choose *Assign*.

   You can select one or more models from the list and choose *Assign*.

3.13 Groups

You can group together different business objects for multiple purposes.

A group in SAP Asset Strategy and Performance Management can be any of the following types:

- Fleet
  Allowed object types: Equipment
- Training
  Allowed object types: Equipment, Models, Instructions, Locations, Spare Parts, Templates, Documents, Announcements
- FMEA (Failure Mode Effect Analysis)
  Allowed object types: Equipment, Locations
- Organization
  Allowed object types: Equipment, Locations
- Variant
  Allowed object types: Models, Spare Parts
- Handover and Commissioning
  Allowed object types: Equipment, Models, Instructions, Locations, Spare Parts, Templates, Documents, Announcements

- Project
  Allowed object types: Equipment, Models, Instructions, Locations, Spare Parts, Templates, Documents, Announcements
- Criticality Assessment
  Allowed object types: Equipment, Locations
- Spare Parts Kit
  Allowed object types:Spare Parts

A group moves from one state to another during its process of creation and maintenance. The different states that a group goes through are listed here:

- Unpublished
- Published
- In Revision

For more information, see State Transitions [page 51].

3.13.1 Managing Groups

You can perform various operations on a group such as creating, viewing, updating, and deleting a group. You can also assign equipment, models, instructions, locations, spare parts, templates, documents, and announcements to a group.

Context

The following group types are available:

- Risk and Criticality
- Fleet
- FMEA
- Training
- Handover and Commissioning
- Maintenance Planner
- Organization
- Project
- Spare Parts Kit
- Variant
- Work Center

You can perform the following operations using the *Groups* application:

- Creating a Group [page 210]
- Viewing and Publishing a Group [page 212]
- Updating a Group [page 213]
- Deleting a Group [page 214]

- Copying a Group [page 215]
- Assigning Business Objects to a Group [page 215]

3.13.1.1 Creating a Group

You use this procedure to create a group and assign business objects such as equipment, models, instructions, locations, spare parts, templates, documents, and announcements to the groups.

Prerequisites

Your user ID has the roles `GROUP_DELETE` or `GROUP_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Groups* app.
2. From the type of group from the card view, choose *New*.
3. In the *Create Group* dialog box, perform the following tasks:
    a. Enter the following details as described in the table:

Field	Description
Short description(*)	Enter a short description for the group.
Long description	Enter a long description for the group.
Allowed Member Types(*)	Lists the type of business objects that can be assigned to the group type.

> **Note**
> Mandatory fields are marked as (*) in the table.

4. Choose *Ok* to create the group.
5. To assign a model, follow these steps:
    a. In the *Members* > *Models* section, choose *Assign*.
    b. From the *Select Models* dialog box, select the relevant model.
    c. Choose *Assign*.
6. To assign a piece of equipment, follow these steps:

a. In the *Members* > *Equipment* section, choose *Assign*.
b. From the *Select Equipment* dialog box, select the relevant equipment.
c. Choose *Assign*.

7. To assign a location, follow these steps:
    a. In the *Members* > *Locations* section, choose *Assign*.
    b. From the *Select Locations* dialog box, select the relevant location.
    c. Choose *Assign*.
8. To assign a spare part, follow these steps:
    a. In the *Members* > *Spare Parts* section, choose *Assign*.
    b. From the *Select Spare Parts* dialog box, select the relevant spare part.
    c. Choose *Assign*.
9. To assign a template, follow these steps:
    a. In the *Members* > *Templates* section, choose *Assign*.
    b. From the *Select Templates* dialog box, select the relevant templates.
    c. Choose *Assign*.
10. To assign an instruction, follow these steps:
    a. In the *Members* > *Instructions* section, choose *Assign*.
    b. From the *Select Instructions* dialog box, select the relevant instructions.
    c. Choose *Assign*.
11. To assign documents, follow these steps:
    a. In the *Members* > *Documents* section, choose *Assign*.
    b. From the *Select Documents* dialog box, select the relevant documents.
    c. Choose *Assign*.
12. To assign announcements, follow these steps:
    a. In the *Members* > *Announcements* section, choose *Assign*.
    b. From the *Select Announcements* dialog box, select the relevant announcements.
    c. Choose *Assign*.
13. To assign failure modes to a group, follow these steps:
    a. In the *Failure Modes* section, choose *Assign*.
    b. From the *Select Failure Modes* dialog box, select the relevant failure modes.
    c. Choose *Assign*.

    You can view the RPN, preventive and corrective activities, and maintenance strategy. in the failure mode instance page.

    If you have write access to the group even though you do not have write access to the failure mode, you can edit the failure mode instance page of the group.

    When you copy a failure mode and *Save & Publish* it:
    - A new failure mode is created with the same causes and instructions from the source failure mode
    - The newly created failure mode is directly assigned to the object
    - The new failure mode is in published state
    - You navigate to the new failure mode instance page that includes all the copied failure mode instances: effects, causes, instructions, and detection method

- The new failure mode appears in the failure mode section list

You can view the failure mode instance which is inherited and directly assigned (at the same time), you can now view different object icons in the `<From>` field of the failure mode section if the failure mode is inherited or assigned directly to the equipment.

14. To publish the group, choose *Publish*.

    To create a revision of a group or to work with the last published group, or last revision of group, see Creating Revisions and Switching Between Revisions and Published State [page 52].

3.13.1.2 Viewing and Publishing a Group

You can view a group to verify whether the information contained in a group is appropriate.

Prerequisites

- To publish a group, your user ID belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `GROUP_DELETE` or `GROUP_EDIT` assigned.
- To view a group, your user ID belongs to the group `ORG_DATA_READ`, or has the role `GROUP_READ` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Context

If you have assigned a business object to a group, you can navigate to the business object details and work on the business object.

Procedure

1. Open the *Groups* application.
2. In the *Groups* window, use the filters to search for an appropriate group.

   To publish one or more unpublished groups, select the groups from the list and choose *Publish*.
3. Choose a group from the search list and double-click to view details.
4. In the *Group* screen, choose the *Group Information* tab to view the details that are specific to the group.
5. In the *Group* screen, choose the *Members* tab to view the business objects assigned to the group.
6. View the risk value of the business objects assigned to the group derived from the following assessments under *Assessment*:
   - *Risk and Criticality*

- *Questionnaire*
- *FMEA*

You can also view the matrix of environment getting affected under *Matrix*.

For Risk and Criticality and Questionnaire assessments, you can now compare a minimum of 2 and maximum of 3 assessments using *Compare Assessments*.

7. In the *Group* screen, choose the *Analytics* tab to view the graphical representation of equipment assigned to the group based on population and age.
8. View the failure modes assigned to a group under *Failure Modes*.

   You can view RPN, Preventive and Corrective activities, and maintenance strategy in the failure mode instance page.

   > **i Note**
   >
   > Relevant for **Risk and Criticality** and **FMEA** group types.

9. In the *Group* screen, choose the *Timeline* tab to view the relevant changes made on the group.

3.13.1.3 Updating a Group

You can correct the information within a group, or add any missing information to a group.

Prerequisites

- You have identified the group that you want to update.
- To update a group, your user ID belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles `GROUP_DELETE` or `GROUP_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Context

You can update a group to change any of the following:

- Properties of a group such as – group type, group ID, created by, or allowed object types.
- Business objects assigned to the group.

Procedure

1. Open the *Groups* app.

2. In the *Groups* app, search for an appropriate group using the filters.
3. From the search results list in the *Groups* section, select an appropriate group.
4. Double-click the selected group to view details.
5. If you have opened the group that has been published, in the *Group* window, choose *Manage*->*New Revision*.
6. To update all relevant details to a group, select the *GROUP INFORMATION* section.

   For more information, see Creating a Group [page 210].
7. To update business objects assigned to a group, select the *OBJECT* section.

   For more information, see Creating a Group [page 210].
8. To save the group, choose *Save*.
9. To publish the group, choose *Publish*.

3.13.1.4 Deleting a Group

You can delete a group that you no longer want to have on the network.

Prerequisites

To delete a group, your user ID belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the role `GROUP_DELETE` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Groups* application.
2. In the *Groups List* screen, search for a group.
3. Choose a group from the search list.

   You can select more than one group for deletion.
4. In the *Group* screen, choose *Delete*.

3.13.1.5 Copying a Group

You can copy a group to create a new group similar to an existing group.

Prerequisites

To copy a group, your user ID belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or it has the role `GROUP_DELETE` and `GROUP_EDIT` assigned to it.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Groups* application.
2. In the *Groups List* screen, search for a group.
3. Choose a group from the search list.
4. In the *Groups List* screen, choose *Copy*.

3.13.1.6 Assigning Business Objects to a Group

You can use this procedure to assign business objects, such as equipment, models, instructions, locations, spare parts, templates, documents, and announcements to a group.

Prerequisites

- You have created a group to which you want to assign a business object.
- You have created a business object that you want to assign to the group.
- To copy a group, your user ID belongs either to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or it has the role `GROUP_DELETE` and `GROUP_EDIT` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Context

You can assign failure modes to different business objects.

i Note

You can only assign a maximum of 50 items of each business object type to a group. The different business object type includes announcements, templates, instructions, and documents.

Procedure

1. Open the *Groups* application.
2. In the *Groups List* screen, use the filters to search for an appropriate group.
3. Select a group and in the *Group* screen, go to *Members* section, depending on the business object that you want to assign, choose *Assign* in the relevant section.
4. In the selection window, use the search filters to find an appropriate business object.
5. Select the appropriate business objects and choose *Assign*.

3.14 Systems

A system is defined as a set of interrelated equipment or subsystems that regularly interact or are interdependent. In a defined context, they are considered whole and separated from their environment serving a common purpose. For example, control system, transmission system, brake system, and so on.

You can define a system based on a system model and assign system template to it.

- Information
  You can view the following information in this section:
  - Data Sheet
  - Model Information
  - Installation Information
  - Installation Location
  - Lifecycle Information
- Structure
  You can view a list of subsystems and equipment associated with the system.
- Documentation
  You can view the documents and instructions assigned to a system.
- View the risk value of the equipment derived from the following assessments under *ASSESSMENTS*:
  - *Risk and Criticality*
  - *Questionnaire*

  You can also view the matrix of environment getting affected under *Matrix*.

3.14.1 Managing Systems

You can create, view, update, and delete a system. You can share a system using the *Authorizations* app.

Context

You can perform the following operations using the *Systems* app:

- Create a system and assign additional information such as installation information, location information, and attach documents and instructions to it.
- Assign or remove equipment or subsystems.
- Add and remove documents or instructions.
- Publish a system.
- Delete a system.

3.14.1.1 Creating a System

You use this procedure to create a system based on an existing system model, and add additional information such as system installation information, and related equipment and subsystems to the system. You can also assign documents and instructions relevant to the system.

Prerequisites

Your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles SYSTEM_DELETE or SYSTEM_EDIT assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Context

You use the *Systems* application to:

- Create a system for your own operations purposes.
- Create a system for another customer.

For simplicity purpose, we describe the procedure to create a system for your own operations.

Procedure

1. Open the *Systems* application.
2. Choose *New*.
3. In the **New System** dialog box, enter the following details:
   a. In the <Model ID> dropdown, select an existing system model from which you want to inherit the properties for the system.

      You can now create a system without assigning a model to it. You can also remove a model assigned to a system by using *Manage* > *Remove Model*.
   b. In the <System ID> field, enter a unique name for a system.
   c. In the <Short Description> field, enter a short description for the system.
   d. In the <System Templates> dropdown, choose the system template you have created.

      For more information about creating an equipment template, see Creating a System Template [page 83].
   e. In the <Long Description> field, enter a long description for the system.
   f. In the <Operator> field, select an operator for the equipment. Your company is selected as default value.
   g. In the <Phase> field, select:
      - An Operation status if a physical system exists.
      - Planned if a physical system does not exist, or you have chosen to update the physical system details later.
   h. Choose *Save* to create a single system.
4. To update additional attributes related to a system, select *INFORMATION* > *Data Sheet* tab and perform these substeps.
   a. Choose *Edit*.
   b. You can add a template using *Add Template*.
   c. You can select a template and choose *Remove Template* to remove the template.
   d. You can display the alternate unit of measure using *Show Alternate UoM*.

      You can set the default unit of measurement system in the *Unit of Measure Variant* under *User Account(icon on the left corner of the launchpad)* > *Settings* > *Unit of Measure*.
   e. Choose *Save*.
5. To add installation information, select the *INFORMATION* > *Installation Information* tab and perform the following tasks:
   a. Choose *Edit* and enter the fields as described in the table:

Field	Description
Source Business Partner Role	Update the source business partner role, if required.
Build Date	Specify the date of manufacture issued by the manufacturer.

Field	Description
Dealer	Select the name of the dealer for the system.
Service Provider	Select the name of the service provider for the system.
Regulators/Authority	Select the official who certifies if the system is installed or assembled correctly.
Insurers	Select the name of the insurer for the system.
Long Description	Enter a description for the system.

To assign a tag, choose *Add/Remove Tags* and enter your tags. You can use tags to help you logically categorize activities, information, or reminders about your system.

6. To add system components, navigate to *STRUCTURE* > *Structure* tab and perform the following tasks:
   a. To add systems:
      1. Go to **Systems** tab.
      2. Choose *Assign* > *Systems*.
      3. Select the systems in the **Select Systems** dialog box.
      4. Choose *Assign*.
   b. To add equipment:
      1. Go to **Equipment** tab.
      2. Choose *Assign* > *Equipment*.
      3. Select the equipment in the **Select Equipment** dialog box.
      4. Choose *Assign*.

   You can reorder the system components by using the ordering buttons on the structure in the edit mode.
      1. In the *Structure* section, choose *Edit*.
      2. Select a system or equipment from the list.
      3. Choose *Move to Top*, *Move Up*, *Move Down*, or *Move to Bottom* to reorder.
7. To add instructions to the system, go to *DOCUMENTATION* > *Instructions* and perform the following tasks:
   a. Choose *Assign*.
   b. From the **Select Instructions** dialog box, select the appropriate instruction.
   c. Choose *Assign*.
8. To assign documents relevant to the system, select *DOCUMENTATION* > *Documents*:
   a. To add a document, choose *Add* > *New* and perform the following tasks:
      1. In the **Add Document** dialog box, browse for a file.
         - Select a Phase.
         - Select a Category.
         - Select your Language.
         - Enter a Short Description.
         - Set the confidentiality for the document, if required.

- Choose *Upload*.

> ℹ Note
>
> When uploading a new document, you can run a duplicate check and if no duplicates, only then upload a document using the *Check and Upload* button.

2. Enter a document link in the **Add Document** dialog box.

b. To add an existing document, choose *Add* > *Assign* and perform the following tasks:
   1. In the **Select Documents**, search for a document using the filters - Phase, Category, or Source.
   2. Select a document from the search results.
   3. Choose *Assign*.

9. You can assign, copy, or remove failure modes relevant to the system in the *DOCUMENTATION* > *Failure Modes* section.
   a. To assign failure modes:
      1. Choose *Assign*.
      2. Select the failure modes from the *Select Failure Modes* dialog box.
      3. Choose *Assign*.
   b. To copy a failure mode, select the failure mode from the list and choose *Copy*.

      A confirmation message is displayed. Choose *Copy*.
   c. To remove failure modes that are assigned to the system, select the failure modes and choose *Remove*.

      A confirmation message is displayed. Choose *OK*.

   If you have write access to the system even though you do not have write access to the failure mode, you can edit the failure mode instance page of the system.

   When you copy a failure mode and *Save & Publish* it:
   - A new failure mode is created with the same causes and instructions from the source failure mode
   - The newly created failure mode is directly assigned to the object
   - The new failure mode is in published state
   - You navigate to the new failure mode instance page that includes all the copied failure mode instances: effects, causes, instructions, and detection method
   - The new failure mode appears in the failure mode section list

   You can view the failure mode instance which is inherited and directly assigned (at the same time), you can now view different object icons in the `<From>` field of the failure mode section if the failure mode is inherited or assigned directly to the system.
10. View the following types of assessments assigned to the system:
    - *Risk and Criticality*
      View the risk and criticality assessment assigned to the system.
    - *Questionnaire*
      View the questionnaire assessment assigned to the system.
    - *FMEA*
      You can view the FMEA assessments assigned to the system.
    - *Checklist*
      You can create checklists for the system by selecting a checklist and choosing *Fill Checklist*.
      You can download the checklist template by choosing *Download*.
      You can view the number of checklist records (of the selected type) created by choosing *View Records*.

You can also view all the checklist records created for the checklist using *View All Records*. It displays the *View Records* screen. You can also compare a maximum of three checklist assessments by selecting the assessments and choosing *Compare Assessments* button on this screen.

- *RCM*
  You can view the Reliability Centered Maintenance (RCM) assessments assigned to the system. An overview of the following are displayed as a card view:
  - Functions
  - Cost of Corrective Tasks
  - Cost of Preventive Tasks
  - Distribution by Activity
  - Recommendation Count
  - Placeholder Instructions

  Choose any card to view the details in the *Recommendations* dialog box.
  Choose *View Assessments* to view a list of RCM assessments.
  Choose an assessment from the list to view the details of the assessment.

You can also view the matrix of environment getting affected under *Matrix*.

For Risk and Criticality and Questionnaire assessments, you can now compare a minimum of two and maximum of three assessments using *Compare Assessments*.

In the *Analytics* section, you can:
- View risk distribution across all systems.
- View risk distribution across systems in the same subclass.
- Visualize to compare current risk.

11. To publish a system, choose *Publish*.

    The system is published and a first revision of the system is created.
12. To create revisions of a system and to switch between the published and revision states, see the steps provided in the procedure Creating Revisions and Switching Between Revisions and Published State [page 52].

3.14.1.2 Viewing and Updating a System

You use this procedure to view and update information such as installation information, instructions, and documents that are related to a system.

Prerequisites

- To view a system, your user ID has the roles SYSTEM_READ assigned.
- To update a system, your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles SYSTEM_DELETE or SYSTEM_EDIT assigned. For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Systems* application.
2. Search for a system that you want to update using the search filters.
3. Select the system from the search results.
4. If you choose a system that is in a published state, choose *Manage* > *New Revision* from the **System** object page.
5. To update attributes such as installation information, select *INFORMATION* > *Installation Information* tab and perform the following tasks:
    a. Choose *Edit* in the **Installation Information** section.
    b. Enter the required details.
    c. Choose *Save*.
6. To add or remove systems (subsystems) or equipment to a system, go to *Structure* tab.
7. To assign documents and instructions, choose the *DOCUMENTATION* tab.
    a. To add a document, choose *DOCUMENTATION* > *Documents* and perform the following tasks:
        1. Choose *Add* > *New* to add a new document to the system.
        2. Choose *Add* > *Assign* to assign an existing document to the equipment.
        3. To remove a document, select the document or documents from the list and choose *Remove*.
    b. To assign existing planned maintenance instructions, or troubleshooting and breakdown instructions to the system, or to remove the instructions related to the system, choose *DOCUMENTATION* > *Instructions* tab and perform the following tasks:
        1. To assign an instruction, choose *Assign*.
        2. To remove an instruction, choose *Remove*.
8. View the modifications made on the system data in the *Timeline* tab.

    You can view the update statistics based on:
    - Updates By Type
    - Time Range
    - Updates by Partner
    - Updates on model or system data

    You can view any changes in the sharing activities in the timeline section. You can also selecta time period to view only the changes during that timeframe using the *Filter By* dialog box.

    You can also choose to view all the changes or only changes made on the associated model or system data using the *Filter By* dialog box. By default, it shows changes on system data only in the timeline.
9. View the system toplogy under the *Topology* section. You can also save a topology for future reference.
10. View the risk value of the equipment derived from the folllowing assessments
    - *Risk and Criticality*
    - *Questionnaire*
    - *FMEA*

    You can also view the matrix of environment getting affected under *Matrix*.

    For Risk and Criticality and Questionnaire assessments, you can now compare a minimum of 2 and maximum of 3 assessments.

11. Choose *Publish* to publish the updated system.

3.14.1.3 Publishing a system

Prerequisites

- To update a system, your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles SYSTEM_DELETE or SYSTEM_EDIT assigned. For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- You have created systems in any of the following states:
  - Unpublished
  - Published
  - In Revision

Context

You can view the list of systems using the Systems app and perform a mass publish when you have to publish many systems.

Procedure

1. Open the *Systems* application.
2. Search for systems that are either in unpublished, or in revision state.
3. Select one or more systems from the search results.
4. Choose *Publish*.

3.14.1.4 Deleting a System

You can delete a system that you do not want to have on the network.

Prerequisites

- To update a system, your user ID either belongs to the group `ORG_ADMIN` or `ORG_DATA_EXPERT`, or has the roles SYSTEM_DELETE or SYSTEM_EDIT assigned. For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].
- You have created systems in any of the following states:
  - Unpublished
  - Published
  - In Revision

Procedure

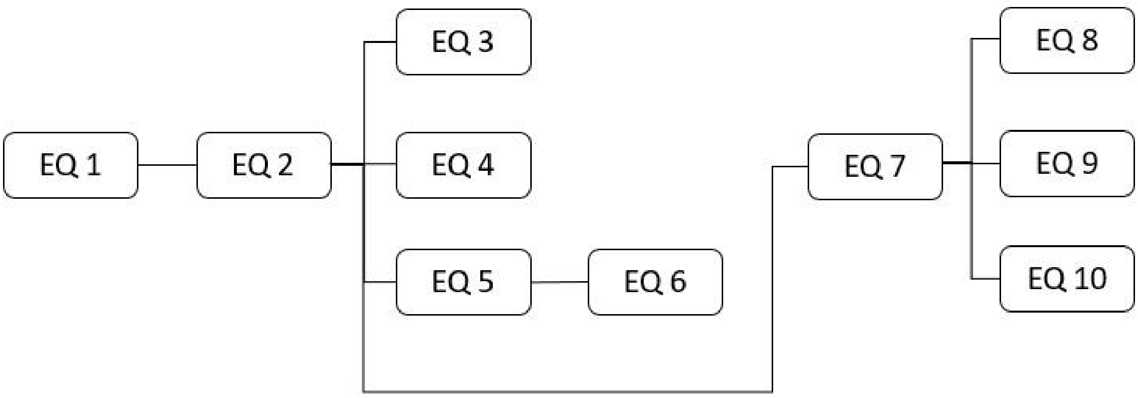
1. Open the *Systems* application.
2. Search for systems.
3. Select one or more systems from the search results.
4. Choose *Delete*.

3.14.1.5 Viewing System Topology

The system topology displays the network of equipment and subsystems, and how these are connected within this specific system.

Example:

EQ1 to EQ10 are part of a system called Bottling Machine and are displayed in the topology according to their connections.



The topology feature allows you to:

- View how your digital assets are connected.
- Drilldown to individual equipment or subssytem to get detailed information on the equipment or susbsystem itself as well as how interfaces and ports are connected.
- Visually identify newly added equipment, removed equipment and – in general – equipment where there was a discrepancy when comparing the reference structure and the actual structure.

Prerequisites:

- You have created a system.

> **i Note**
>
> To display the Topology tab, the system must have a model assigned which is based on a model template which inherits from subclass INDUSTRIAL_COMMUNICATION_SYSTEM.

- You must have the SYSTEM_EDIT or SYSTEM_DELETE roles assigned to configure and manage the topology.
- You must have – at least – the SYSTEM_READ role assigned to view the topology, and – at least – the EQUIPMENT_READ role assigned to view the Equipment Details, the Connection Details as well as to navigate to the Equipment object page.

Procedure

1. Use the delivered System APIs (/systems(systemId)/topologyConfiguration, and /systems(systemId)/topologyConnections to initially post data to the topology of a system.
   For more details, see the Systems API under API Tutorial for SAP Asset Intelligence Network documentation .
   1. First use the /systems(systemId)/topologyConfiguration API to load the interface and port information for your pieces of equipment.
   2. Then use the /systems(systemId)/topologyConnections API to create the connections between the configured interfaces and ports of your loaded pieces of equipment.

   > **i Note**
   >
   > - Ports communicated in the configuration API call are considered active, any ports that were defined in a previous configuration API call, but have removed ports in a subsequent configuration API call are considered inactive.
   >   Example:
   >   configuration API call 1 communicates: Interface 1 – Port 1 and Port 2 (i.e. Port 1 and Port 2 are considered active);
   >   configuration API call 2 communicates: Interface 1 – Port 1 (i.e. Port 1 is considered active, and Port 2 is now considered inactive)
   > - You cannot assign a piece of equipment to 2 different industrial communication systems.

2. Go to the *Systems* app and open the system into which you loaded the topology data.
3. Select the *Topology* tab to view the topology after initial load.
   1. View the Connection Details by clicking on a connection line between 2 pieces of equipment.
      This will show you:
      - the Equipment ID and Equipment Short Description
      - the interface and port information for each of the connected pieces of equipment for the selected connection

2. Open the detailed information in the side panel by clicking on an equipment in the topology.
   This will show you:
   - the Equipment ID and Equipment Short Description
   - Equipment Status
   - Manufacturer
   - Path information of parent objects of the Equipment
   - List of all interfaces and all (that is, connected as well as disconnected) ports for each interface for the selected equipment.

   > **i Note**
   >
   > By clicking on the Equipment links in the side panel you open the Equipment Details quick view where you can get additional information for the selected equipment.
   >
   > You can also navigate to the Equipment object page from quick view (via Display Equipment Details).

4. Save Initial Reference Structure.
   Click *Save as Reference* to save the actual loaded structure as reference structure, that is, this saved topology structure will be considered as **planned** structure until you save a new reference structure.
5. Comparison of Reference Structure with Actual Structure.
   The next time you upload the actual data via the /topologyConfiguration and actual /topologyConnection APIs, this actual structure will be compared to the reference (= planned) structure and changes will be visualized in the topology display.
   As general information, you will see either **Actual is same as planned** (if there was no change to the network since the last upload) or **Actual is different from planned** (if there was a change to the network since the last upload).
   For the latter, you will get additional information on the changes directly in the topology visualization:
   - All new equipment (= equipment that is not in the planned/reference topology, but in the actual topology) and their connections are displayed in green.
   - All removed equipment (= equipment that is in the planned/reference topology, but not in the actual topology) are displayed in red.
6. Save new Reference Structure.
   Click *Save as Reference* to save the actual structure as new reference structure.

You can save a planned topology for future reference using the *Save as Reference* button. The API always refer to the actual topology. The APIs always compare an actual topology with a planned/reference topology that was saved as reference and display the differences between the two topologies. The following legends are used to depict the differences:

- All the new equipment and their networks are displayed in green.
- All the equipment in the planned/reference topology that are removed in the actual are displayed in red.

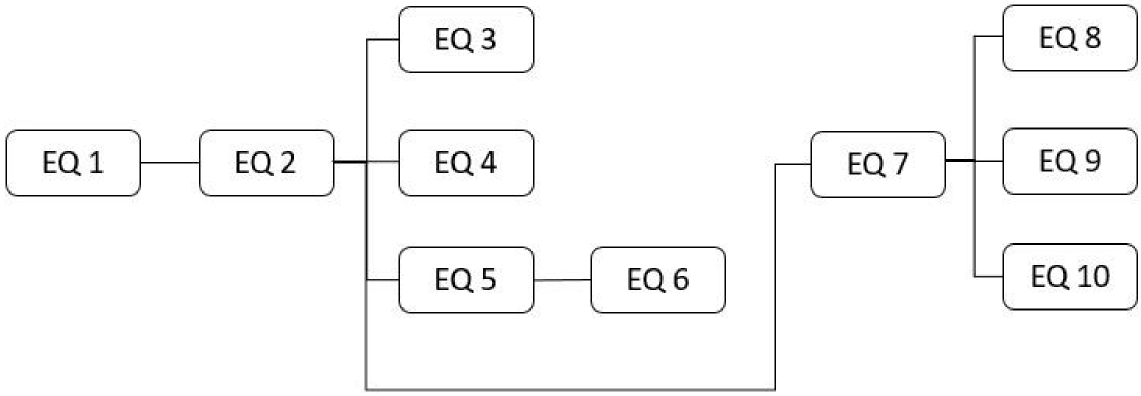
3.14.1.5.1 Add Subsystems to Topology View

Context

By default the uploaded topology structure is displaying the topology **objects**, that is, pieces of equipment, and the connections between the pieces of equipment.

Example:

EQ1 to EQ10 are part of a system called Bottling Machine and are displayed in the topology according to their connections.

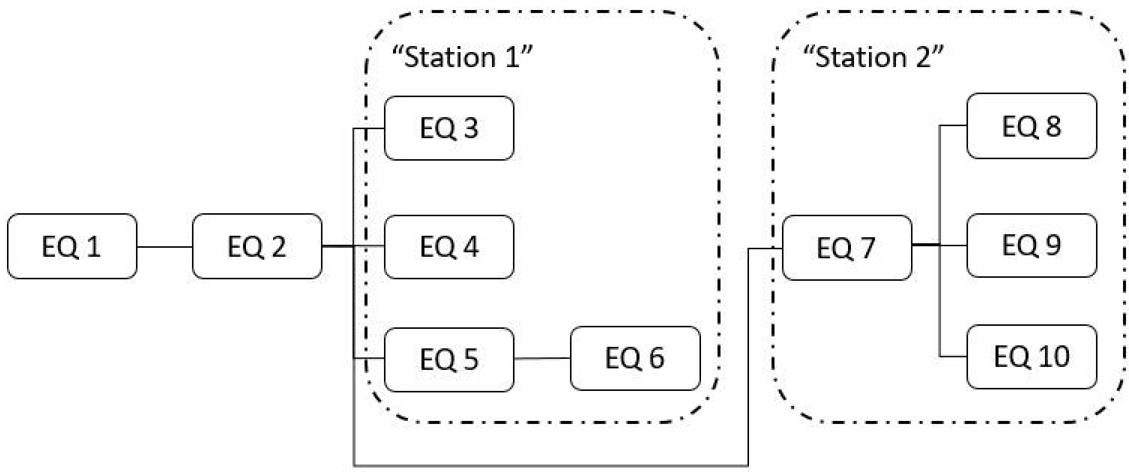


You can also add subsystems to enhance the structuring of the topology display.

Example:

EQ1 to EQ10 are part of a system called Bottling Machine (as in the example above), and – on the shop floor – this system is arranged by sections **Station 1** and **Station 2**. Therefore, the topology should also reflect these additional structural elements.

EQ3, EQ4, EQ5, and EQ6 are part of a subsystem called **Station 1**, and EQ7, EQ8, EQ9, and EQ10 are part of a subsystem called **Station 2**.



Procedure

1. Go to the Systems app and create the subsystems that you require.

   For more detail on the creation of a system, refer to the Creating a System [page 217] documentation.
2. On tab *Structure* select *Structure*, and then select tab *Equipment*. Assign the respective pieces of equipment for this system

   Example:

   EQ3, EQ4, EQ5, and EQ6 would be assigned to system **Station 1**.

   EQ7, EQ8, EQ9, and EQ10 would be assigned to system **Station 2**.
3. In the *Systems* app, select the system which shall contain the subsystems.
4. On tab *Structure* select *Structure*, and then select tab *Systems*. Assign the respective systems that you want to have as subsystems for the respective system.

   Example:

   System **Bottling Machine** would have systems **Station 1** and **Station 2** assigned.
5. Go to *Topology* tab.

   The topology will now also reflect the maintained subsystems.

   > i Note
   >
   > By default the subsystems are displayed closed. By clicking on *Group Detail* you get a list of the pieces of equipment that are part of the subsystem. Click + to expand the subsystem and to get the pieces of equipment that are part of the subsystem also in the topology view.

3.15 Functions

Functions are used to define how the assigned objects are intended to operate. You can assign functions to equipment, models, locations and systems.

You can currently use this feature in the Reliability Centered Maintenance (RCM) assessment.

Generally, in asset central foundation, it takes you to the list page. Only in case you have subscribed to SAP Asset Strategy and Performance Management, it opens to a landing page from where you can access both **Functions** and **Functional Failures**.

> i Note
>
> - Functions once saved are published.
>
> You can also create failures for the functions using Functional Failures. If the objects assigned to a function do not perform as per the specifications mentioned in the function, then a functional failure can be created for the same.

Related Information

[Functional Failures [page 230]]
[Reliability Centered Maintenance (RCM) Assessment [page 260]]

3.15.1 Creating and Editing Functions

You can use this procedure to create a function.

Context

Procedure

1. Open the *Functions* app.
2. Choose *New*.
3. Enter the following details in the *New Function* dialog box:

Field	Description
Short Description (*)	Enter a short description for the function.
Long Description	Enter a long description for the function, if necessary.
Type (*)	Select the type for the function from the list. These are the categories that the functions have an impact on.
Type Description	Enter a collective description for the type, if necessary.

4. Choose *Save*.
5. Once saved, the function is listed in the list page.

   There is no status for functions, once saved the function is directly published.
6. Choose the function from the list, the *Basic Information* section lists all the details that you have entered while creating a function.

   You can choose to edit the information using *Edit*.
7. In the Documents section, you can use *Add* to add any relevant document.

   You can use *Remove* to remove any existing document and download the documents using *Download*.
8. In the *Assignments* section, you can assign equipment, models, locations, or systems to the function.

3.15.2 Deleting Functions

You can use this procedure to delete a function.

Procedure

1. Open the *Functions* app.
2. Select the functions to be deleted from the list.
3. Choose *Delete*.

3.15.3 Functional Failures

You can create functional failures and assign it to a function during RCM assessment or delete an existing functional failure.

Creating and Editing Functional Failures

1. Open *Functions* > *Functional Failures*.
2. Choose *New*.
3. Enter the following in the *Create Functional Failure* dialog box:

Field	Description
Description (*)	Enter a short description for the functional failure.
Long Description	Enter a long description, if necessary.
Failure Event (*)	Select a failure event: ◦ Notifications ◦ Service Ticket ◦ Alert

4. Choose *Save*.
   The functional failure is created and available in the list.

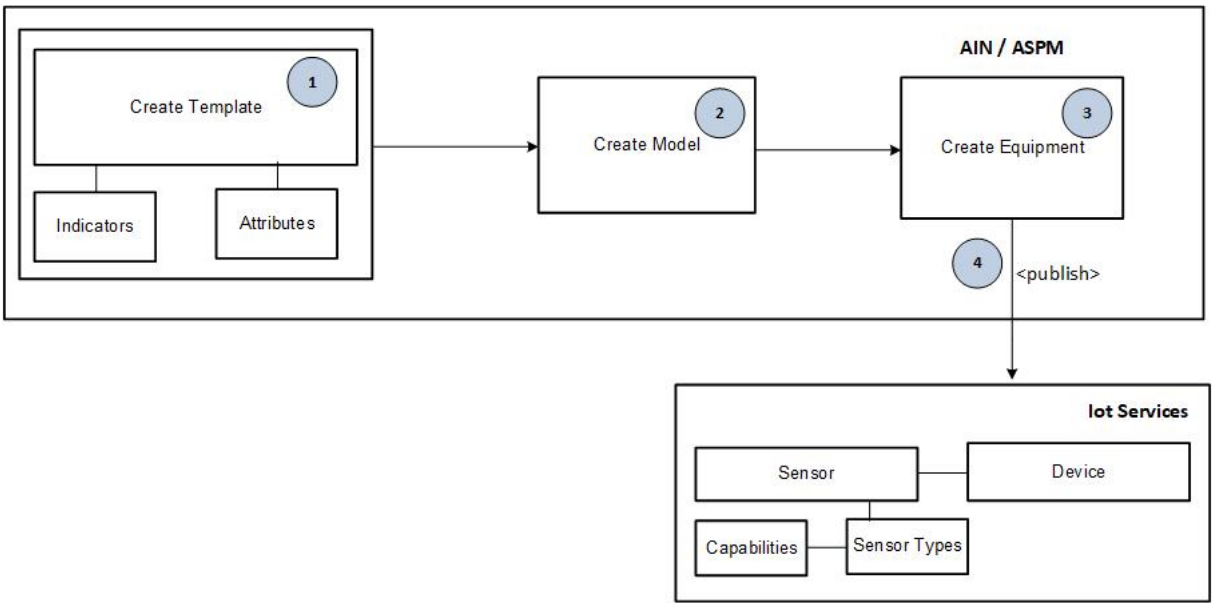
Deleting Functional Failures

1. Open *Functions* > *Functional Failures*.
2. Select a functional failure from the list.
3. Choose *Delete*.
   A confirmation message is displayed. Choose *OK* to delete the functional failure.

4 Processes

4.1 Automatic Device onboarding - SAP Cloud Platform Internet of Things

Modeling and creation of equipment has to be followed as per the document here. Once the equipment is created and published, it is synchronized with IoT Application Enablement, subsequently it is also synchronized and objects are created in SAP Cloud Platform Internet of Things for the Cloud Foundry Environment (IoT Services).



IoT Sync Flag:

- *IoT Sync* flag allows a user to enable sync to IoT Services and automatically map indicators to corresponding properties.

Behaviour:

- By default, the flag will be visible only when an IoT Services system is configured .

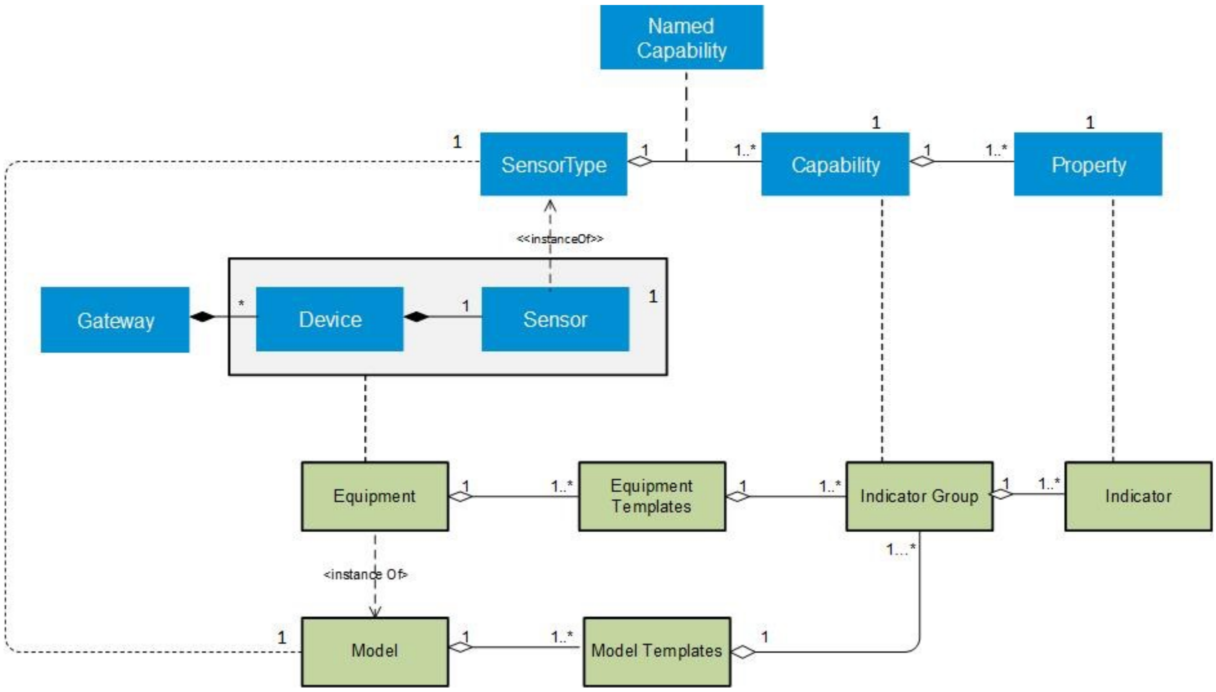
> **i Note**
>
> Sync to IoT Services is available only if the equipment is in **Published** state and the *IoT Sync Flag* is set to **Yes** and IoT Services 4.0 system is configured.

- Flag can be toggled to switch the behavior.
  If the flag is switched from Yes to No and the objects were created in external systems, they will be retained and the same can be reused by switching the flag.
  If the flag is switched from No to Yes, the manual mapping of indicators, if configured, will be invalidated.

Following points need to be considered while publishing to IoT Services:

- Only Equipment with Model in Asset Central is synchronized with IoT Services. This means that Lean Equipment will not be synchronized with IoT Services.
- For every Equipment a Sensor Type is created which will be associated with Capabilities corresponding to Indicator Groups – Indicators coming from both Model Template and Equipment Templates in Predictive Data Maintenance and Services.
- Each Device will have only one Sensor created from SAP Predictive Data Maintenance and Services.
- Since automatic mapping between a Thing and a Sensor will be established based on the matching named Property Set Types, replicated Capabilities are not reused across Sensor Types in IoT Services. Each Sensor Type will have its own set of Capabilities with names matching with the named PSTs of the thing in Application Enablement.
- Addition of Indicator Groups and addition of Indicators in already synchronized Indicator groups in Asset Central will be considered for further synchronization with IoT Services.
- A default capability IG_DEFAULT will be created to support update of capabilities with new properties from Asset Central and should not be removed.
- A capability, IG_EDGE_CONFIG will be created and associated with every Sensor Type to support configuration push from asset central to the edge.
- In 1808 SAP Predictive Data Maintenance and Service release, only connection to MQTT Cloud Gateway is supported.
- Each indicator group can have only one indicator of type Date for a successful Sync.

The mapping between objects is as follows (AIN, ASPM):



1. Steps to enable synchronization across IoT Application Enablement and IoT Services:

1. Follow the steps as mentioned here.
2. To add IoT Services system:

> **i Note**
>
> Create a tenant specific user with **Administrator** role, as explained here: https://help.sap.com/viewer/91d9184adbe941e68aafb8724005a479/Cloud/en-US/5f6b0e6caf414dff82080b35908f8868.html#loio5f6b0e6caf414dff82080b35908f8868. You can use this user while configuring the system.

   1. On the SAP Fiori launchpad, choose the tile *Application Settings*.
   2. Choose *External Systems*.
   3. Choose *Add*.
   4. Choose the external system: SAP Cloud platform Internet of Things 4.0.

Field	Description
System Name	<Any name>
System Status	Active
URL Information	Example: https://<tenant details>.cp.iot.sap
User name	User that will be used to make API calls to the system
Password	<password>
Additional Information	As required
Primary system?	Use Toggle

2. Fetching mapping information from Asset central
   A mapping API will be provided which provides information about the objects in IoT Services mapped to objects in SAP Predictive Data Maintenance and Services.
   API: **Application_URL/api/v1/equipment/<equipmentId>/iot/external/map**

Sample response:


```
[
{
        systemId: "E678E8FAA3A14F2F8AA269F2B70FDF37",
        id: "C599F2063C654CA0A50EF3FF68E8603A",
        equipmentId: "EC8F2F2EE3DC400491BB48208A82CC35",
        modelId: "33F29F4F35BC423A8715AC6D73AB3C48",
        templateId: "DBD5AB5AE8656F44E10000000A78416B",
        indicatorGroupId: "48D9AB5AE8656F44E10000000A78416B",
        indicatorId: "5F4B979615F6420EBC8A0154495E5885",
        deviceId: "553",
        deviceAlternateId: "a29bedec963c67e2",
        capabilityId: "3b04fc7c-0797-4320-ac93-fb4ac6de5f9c",
        capabilityAlternateId: "IG_48D9AB5AE8656F44E10000000A78416B",
        propertyId: "I_INDI_GRP_16_2_INDI",
        sensorId: "977",
        sensorAlternateId: "ce1fc34ac4a0c948",
        sensorTypeId: "5decbea2-ea5a-4fb3-9bdd-6a5d3e65c76a",
        sensorTypeAlternateId: "2018050617"
},
{
        systemId: "E678E8FAA3A14F2F8AA269F2B70FDF37",
        id: "EDF773A22B0142258DD5C5B56B4119D6",
        equipmentId: "EC8F2F2EE3DC400491BB48208A82CC35",
        modelId: "33F29F4F35BC423A8715AC6D73AB3C48",
        templateId: "DBD5AB5AE8656F44E10000000A78416B",
        indicatorGroupId: "48D9AB5AE8656F44E10000000A78416B",
        indicatorId: "E44A1E94821F4D9AA9F59FA029F6DD4C",
        deviceId: "553",
        deviceAlternateId: "a29bedec963c67e2",
        capabilityId: "3b04fc7c-0797-4320-ac93-fb4ac6de5f9c",
        capabilityAlternateId: "IG_48D9AB5AE8656F44E10000000A78416B",
        propertyId: "I_INDI_GRP_16_3_INDI",
        sensorId: "977",
        sensorAlternateId: "ce1fc34ac4a0c948",
        sensorTypeId: "5decbea2-ea5a-4fb3-9bdd-6a5d3e65c76a",
        sensorTypeAlternateId: "2018050617"
}
]
```

4.2 Performance Improvement

While using an equipment, you could face issues with regard to its process or maintenance. To get suggestions or a solution, you can create an improvement request. By creating this request, you involve the relevant stakeholders who can collaborate and provide you with a suggestion or even a solution.

If stakeholders within your organization can resolve your request, create an internal improvement request. If you want to involve stakeholders outside your organization, create an external improvement request.

The parties involved in this workflow are:

- **Requester**: The user who requests for a suggestion or a solution by creating an improvement request.
- **Reviewer**: The user who reviews the improvement request sent by the improvement requester.
- **Provider**: The user who suggests a solution for the improvement request sent by the requester.

> **i Note**
>
> The user who is currently processing the improvement request is referred to as the **Processor**. The processor can be the requester, reviewer or the provider.

Using the **Performance Improvement** application, you can perform the following tasks:

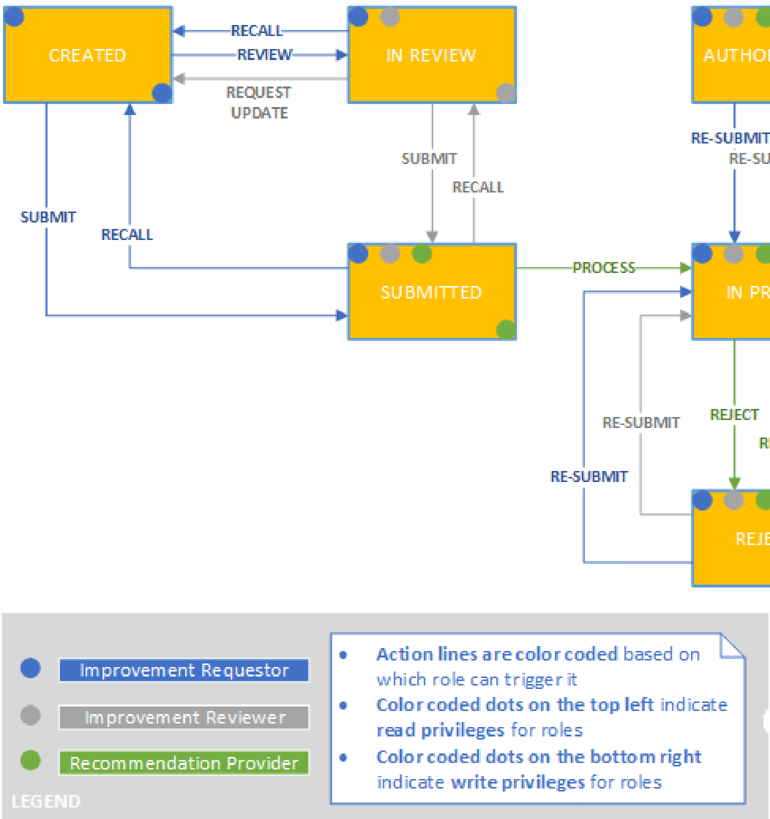
- Create, Review and submit an improvement request
  Creating an Improvement Request [page 237]
  Reviewing an Improvement Request [page 238]
- Complete or reject an improvement request
  Completing an Improvement Request [page 238]
- Resubmit an improvement request
  Resubmitting an Improvement Request [page 239]
- Confirm an improvement request
  Confirming an Improvement Request [page 239]
- Reopen a confirmed improvement request
  Reopening a Confirmed Improvement Request [page 240]

The following table describes the statuses of an improvement request:

Status	Description
Draft	The requester has created an improvement request.
In Review	The requester has created an improvement request and sent it to the reviewer for review.
Submitted	The requester has submitted the improvement request to the provider; OR The reviewer has submitted the improvement request (created by the requester) to the provider.

Status	Description
In Process	The improvement request is being processed by the provider.
Author Action	The provider sends the improvement request to the reviewer or requester for more details.
Rejected	The provider has rejected the case as invalid.
Completed	The provider has provided a suggestion or a solution.
Confirmed	The reviewer has closed the case after it was processed by the provider.

The following figure illustrates the process flow of an improvement request between an requester, reviewer and the provider:



4.2.1 Creating an Improvement Request

You create an improvement request when you want suggestions or solutions about a piece of equipment, its process, or maintenance.

Procedure

1. Open the **Performance Improvement** application.
2. To create an internal improvement request, choose *New* > *Internal*.

   The system displays the *Improvement Request* window.
3. To define a case, enter the following details in the *New Improvement Request* dialog box:
   a. Enter a request description
   b. Choose a reference object type (Model, Equipment, Location)
   c. Choose a reference object ID, based on reference object type chosen.
   d. Select an improvement category
   e. Choose a priority
   f. Select a reviewer to review your improvement request.
   g. Select a provider who can provide a resolution to your improvement request.
   h. Choose *OK*.
4. To add one or more items of equipment, choose *Edit*→ *Affected Equipment* and perform the following tasks:
   a. Choose *Add*
   b. Select one or more items of equipment
   c. Choose *Assign*
5. To add additional information to the case, choose *Request* > *Description* and provide the necessary description of the case in the *Description* text box.
6. To assign instructions to the case, choose *Request* > *Instructions* and perform the following tasks:
   a. Choose the *Assign Instructions* dropdown.
   b. Select one or more instructions from the *Select Instructions* popup.
   c. Choose *Assign*.
7. To add additional information to the case using documents, choose *Request* > *Documents* and perform the following tasks:
   a. Choose *Add* > *Assign*.
   b. Select the relevant document.
   c. Choose *Assign*.
8. Choose *Save*.
9. Choose *Send for Review* to submit the case to the reviewer.
   - Choose *Submit* to submit the request directly to the provider.

4.2.2 Reviewing an Improvement Request

As an reviewer, you perform this procedure to review an improvement request created by an requester.

Context

You have a case assigned to you for review by an requester.

Procedure

1. Open the **Performance Improvement** application.

   The system displays the **Improvement Requests** window with a list of existing cases.
2. Choose a request from the improvement requests list, or search for a request that you want to review.
3. You can modify information in the request as necessary and add comments in the comments section to enhance the information required for the processing the request.
4. To submit the request to a provider, choose *Submit*.
   - To request additional information from the requester, choose *Send to Requester for Update*.

4.2.3 Completing an Improvement Request

You perform this task to provide a suggestion or a solution to an improvement request created by a requester, or submitted by a reviewer.

Context

As a provider, you have a request assigned to you that requires resolution either by the reviewer or by the requester.

Procedure

1. Open the **Performance Improvement** application. The system displays the improvement requests window with a list of existing requests.
2. Choose a request from the improvement requests list, or search for a request that you want to resolve.
3. To process the improvement request, choose *In Process*.

4. To provide a solution for the request, add comments or documents, as required, in the *Recommendation* section.
5. Choose *Completed*.
   - To request additional information from the requester, choose *Author Action*.
   - To reject the request as an invalid request, choose *Reject Improvement Request*.

4.2.4 Resubmitting an Improvement Request

As an requester or a reviewer, you can resubmit an improvement request to the provider for further processing.

You can resubmit an improvement request in the following scenarios:

- When the provider sends the improvement request for **Author Action** asking for additional details from the requester or reviewer.
- When the provider has already provided the recommendation for the improvement request.
- When the provider has rejected the improvement request.

4.2.5 Confirming an Improvement Request

As an reviewer, you can confirm a request after the provider has provided a recommendation or rejected the improvement request.

Context

You have received an improvement request that either has a recommendation from a provider, or has been rejected by the provider.

Procedure

1. Open the **Performance Improvement** application.

   The system displays the *Improvement Cases* window with a list of existing cases in statuses **Recommendation Provided** or **Rejected**.
2. To add any additional comments, choose *Edit*.
3. For an improvement request in status **Recommendation Provided**, choose *Confirm* to close the request.
   - For a rejected improvement request, you can perform either of the following:
     - Choose *Confirm Rejection* to close the rejected request.
     - Choose *Resubmit to Provider* to resubmit the request.

4.2.5.1 Reopening a Confirmed Improvement Request

You perform this activity if you need more information about an improvement request after a recommendation has been provided or the case has been rejected by the provider.

Prerequisites

- You are either the requester or the reviewer.
- You have an improvement request in the status **Confirmed** in your *Improvement Cases* window. For more details about statuses of improvement cases, refer to the table in Performance Improvement [page 235].

Procedure

1. Open the *Performance Improvement* application.
2. Choose the improvement request in the status **Confirmed**.
3. Choose *Reopen Request*.
4. Choose *Yes*.
5. Add comments and edit the improvement request as necessary.
6. Click the **More** icon and choose *Resubmit to Provider*.
7. Add a comment and choose *OK*.

   The reopened improvement request is sent to the provider.

4.2.6 Viewing the List of Improvement Requests

As a reviewer, provider or requester you might want to see the improvement requests based on certain filters.

Context

The user has an easier way to see the requests based on different statuses and roles.

Procedure

1. Open the **Performance Improvement** App and view the list of the requests. Now, you want to see the requests that you need to process as a requester.

2. Choose *For Processing* in the drop down next to the table.
3. Choose `<My Processing Role>` from the filter bar. Automatically, the request list will be filtered out based on the statuses set on the filter bar.

4.2.7 Deleting an Improvement Request

You can delete an improvement request that you no longer want to have on the network.

Prerequisites

Your user ID either belongs to the group `AIN_ORG_ADMIN` or `AIN_ORG_DATA_EXPERT`, or has the roles `IMPROVEMENT_DELETE` assigned.

For more information, see Roles for SAP Cloud Platform - Neo Environment [page 18].

Procedure

1. Open the *Performance Improvement* app.
2. Select the *Improvement Request* which is one of the following status: **Draft**, **Rejected**, **Completed**, **In Review** or **Author Action** and go to the details screen.
3. Select *Delete Request*.

   You get a confirmation message. Choose *OK* to delete the request.

Results

You can view the improvement request in the list screen with status as **Deleted**.

> i Note
>
> You can still submit the deleted requesst to external providers.

4.3 Lookup

You use this app to search the error code and look-up related information for an equipment or a model.

Lookup application also allows you to find troubleshooting information for an equipment or a model. You can use the *Scan Bar Code* option to find the equipment and its details.

Due to the common pattern across manufacturer, field technicians and engineers in the field can look up error codes much faster using this app. Regardless of the manufacturer, operating, and service providing, companies will always find error codes and solutions to it in the same place.

You can use the look-up option to search for a model or a piece of equipment. Manufacturers can maintain error codes on the model level:

- Error code descriptions and failure modes for a particular error code can be provided
- Breakdown instructions assigned to the respective model and failure mode are automatically displayed for each model

For more information, refer to Managing Lookup [page 242].

In devices that support RFID, in addition to scanning of QR/barcodes you can also scan NFC tags to identify equipment (SAP Fiori client needed). Set up the bar code configurations under *General Application Settings* > *Bar Code Configurations*, you have to define the `<Prefix>` and `<Suffix>` in order to use this feature.

4.3.1 Managing Lookup

You can perform various operations on lookup such as lookup and error code-related information for an equipment or a model.

Context

You can use this app to search for `<Error Code>` and `<Lookup>`. You can perform the following operations using the lookup application:

- Lookup a model using it's `<ShortDescription>` or `<Model ID>` or `<PrimaryExternalID>` or `<ExternalID>`
- Lookup an equipment using its `<ShortDescription>` or `<Equipment ID>` or `<PrimaryExternalID>` or `<ExternalID>` or `<SerialNumber>`
- Search for specific:
    - Lookup of equipment
    - Error code of equipment
    - Lookup of Model
    - Error code of model
- Scan bar code on devices for equipment
- Publish equipment details
- Search by both Equipment ID and Model ID irrespective of whether the equipment has been assigned to a model
- Display *Alert Types* of type error code for the selected equipment or model.
- NFC enabled for devices that support RFID.

4.4 Personal Dashboard

This app is personalized to be a one-stop point to navigate to the applications, your frequently viewed items of equipment, favorites and unread announcements.

Personal Dashboard has the following sections:

- *Overview*: Contains a search bar to find objects from applications such as Equipment, Models, Templates and Instructions.
- *Applications*: Allows you to navigate directly to applications from this section.
- *Frequently Viewed*: Displays your frequently viewed items of equipment as thumbnails. You can navigate to an item of equipment through these thumbnails.
- *My Favorites*: Shows up to 20 items of equipment that you have marked as favorites on the Equipment object page.
- *Suggested Tasks*: Displays unread announcements.

4.5 Obsolescence Management

A report that graphically illustrates deadlines for manufacturer support for a model or a piece of equipment. These deadlines pertain to:

- Support for repair
- Accepting model or equipment orders
- Calibration services
- Availability of spare parts

This application allows timely tracking of the model or equipment lifecycle.

For more information, refer to Viewing the Obsolescence Management [page 243].

4.5.1 Viewing the Obsolescence Management

You use this application to visualize models that will be obsolete in the next 3 years and affected equipment.

Procedure

1. Launch the *Obsolescence Management* application.
2. In the *Obsolescence Management* details page, you can set the following filters:
    a. In the *Expiry Date* dropdowns, choose the option for which you want to view the items due for expiry.

> **i Note**
>
> The report displays information for every month in the time period that you have selected.

b. Choose the manufacturer.
c. Choose the relevant expiry date.
d. Choose *Class* and *Subclass* from the filters as necessary.

Results

You see a graphical representation of the number of models and items of equipment that are due for expiry for your given time period.

> **i Note**
>
> The tabular view below the graphical representation displays information about the *Model Count* and *Equipment Count* that are clickable links. Clicking on the *Equipment Count*, you can navigate to the equipment list. You can select equipment from the list to view the details page.

You have an option in the chart tool bar to view this data in the following views:

- *Chart and Tabular View*
- *Chart View*
- *Tabular View*

For chart view, you can use *Select Chart Type* to visualize the data in different chart types, for example, line chart, bar chart, and so on.

By default, the chart view displays data based on month/year dimension. You can also add additional dimensions to drill down the data using the *View By* option on the chart tool bar.

You can select a segment from the interactive chart and use the *Details* option on the chart tool bar to view details of the selected option. You can personalize the data in the chart using the *Settings* option from the chart tool bar.

You can opt to view all the details in the tabular view or details of only the selected segment from the interactive chart by using the options from the table tool bar. You can personalize the data in the table using the *Settings* option from the table tool bar.

4.6 Smart Matcher

Operator can use this information during their maintenance processes.

Manufacturer provides the information on the model level. The operator in turn synchronizes installed base information from **SAP Plant Maintenance** (SAP PM) to **SAP Asset Strategy and Performance Management**. With this, operator owns a significant amount of equipment from SAP PM in SAP Asset Strategy and Performance Management. If the data quality of the equipment is sufficient enough, the smart matcher can help you link a lean equipment (equipment with no model assignment to it) to the respective model it belongs to.

The above is based on an algorithm that involves fuzzy search. In case of poor or incomplete data on equipment level, the smart matcher application provides a card view in which you can match recommended models to equipment. The recommendation is again based on the same algorithm. The output of the algorithm is a match factor between 0.6 (60%) and 1 (100%).

For more information, refer to Performing a Smart Match [page 245].

4.6.1 Performing a Smart Match

You can perform various operations on smart matcher such as matching an equipment to model or updating the model details in model app and checkin Smart Matcher application.

Context

You use the Smart Matcher application to assign models to a lean (equipment with no model assignment to it) equipment. You can perform the following operations using the Announcements application:

- Assign model to a lean equipment
  All equipment that have an active model request associated with it will not be visible in the equipment list. Equipment in `<Sold>` and `<Retired>` are not displayed.
- Identify lean equipment without a fitting model to create model requests
- Update the equipment details using the Equipment application and check this using Smart Matcher
- Search for a model in the Equipment application and check the equipment for a given matching factor
- View the count on the smart matcher tile. This depicts the probable matches for lean equipment
- Remove visibility of equipment for a particular model by choosing the *NO MATCH* button
- Display equipment both in list and grid view
- Match equipment to a model by choosing the Match button on the equipment file
- Remove the visibility of equipment for a particular model by selecting No Match button
- You can *Match*or *No Match* model assignments for multiple equipment.

4.7 Assessment

You use this application for assessing risks for selected business objects and viewing the calculated scores. This can be of the following types:

- Risk and Criticality
- Questionnaire
- FMEA

> **i Note**
>
> - The assessment overview screen allows you to search in both risk and criticality as well as questionnaire objects.
> - Sharing feature is enabled only in the SAP Cloud Platform - Neo environment.
>   - In SAP Cloud Platform - Neo environment, in case SAP Asset Intelligence Network is available, assessment is always shared from the assigned objects. Assessment can also be shared in the unpublished state. Assessment cannot be shared explicitly/individually. The relevant assessment template is also shared implicitly.
>   - In case SAP Asset Intelligence Network is available and assessment is shared with another organization, the assessment header will also display the `<Shared With>` field.

Prerequisite

Roles:

- ASSESSMENT_DELETE
- ASSESSMENT_EDIT

4.7.1 Risk and Criticality Assessment

You use this feature for the risks and criticality assessment on selected business objects. This allows you to:

- Search for existing assessments
- Execute risk and criticality assessment
    - Create criticality assessment from the assessment tile
    - Create assessment from the assessment template page
- View the risk assessment list
- Display risk assessment in groups, equipment and system applications
- Sort existing assessments
- Verify variant

4.7.1.1 Creating an Assessment of Type Risk and Criticality

Context

You use this procedure to create risk and criticality assessment using the assessment tile.

Procedure

1. Open the *Assessment* application.
2. Navigate to *Risk and Criticality*.

   The **Assessments** screen appears.
3. Choose *New*.

   The **Create Assessment** window appears.
4. Select the **Assessment Template**.

   The required type of business objects is displayed. This information is fetched from the assessment template.
5. Enter *Assignments*.

   You can select one or more assignments and select *Quick View* to display the overview. The *Quick View* is available for equipment, locations, systems, and models.

   If equipment with model and location is already assigned to an assessment and you want to assign more equipment, then a new *Recommended* tab is displayed in the *Assign* > *Select Equipment* dialog box. You can view and assign the matching models and locations in this tab.

   You can view and navigate to the location of an equipment assigned to the assessment from the *Location* column.
6. Enter the `<Description>` information
7. Select the `<Risk Type>`.
8. Save your entries.

   The assessment has been created.
9. Enter the required information in the following sections:
   - Information
   - Assignments
     You can assign one or more equipment, locations, groups, or systems to the assessment.
     You can select one or more assignments and select *Quick View* to display the overview. The *Quick View* is available for equipment, locations, and systems.
     If equipment with model and location is already assigned to an assessment and you want to assign more equipment, then a new *Recommended* tab is displayed in the *Assign* > *Select Equipment* dialog box. You can view and assign the matching models and locations in this tab.
   - Documentation
     When uploading a new document, you now have the option to upload the document without running a duplicate check using *Upload* button. You can also run a duplicate check for the new document and if no duplicates exist only then upload the document using *Check and Upload* button.
   - Question and Answer
     Select the answer to the questions and choose *Save*.
     You can view the question and answers as *List View* or as *Matrix*. Matrix will display a heat map of the data.

> **i Note**
>
> When viewing a risk matrix for a published assessment or a technical object, you can dynamically swap the x and y risk dimensions to include other risk dimensions using *Swap Axis*.

10. Save your entries.

> **i Note**
>
> - A newly created assessment of type risk and criticality will be in the Unpublished status. You can publish the assessment once finalized and no changes are to be made.
> - You cannot change the assessment of type risk and criticality once published.

Results

Risk score is calculated and displayed once assessment is published. Risk score will be displayed on all the business objects. Answer overview is updated with the answers.

> **i Note**
>
> Heat map under matrix also gets updated.

4.7.1.2 Viewing the Risk and Criticality Assessment Details

Context

You use this procedure to view the risk and criticality details.

Procedure

1. Open the *Assessment* application.

   The Assessment screen appears.
2. Select the *Risk and Criticality*.
3. Select the required risk and criticality assessment.
4. Click anywhere on the selected assessment

Results

You can view the details of the selected risk and criticality assessment

4.7.1.3 Deleting the Risk and Criticality Assessment

Context

You use this procedure to delete the risk and criticality assessments that are in the **Unpublished** state.

Procedure

1. Open the *Assessment* application.

   The Assessment screen appears.
2. Select the *Risk and Criticality*.
3. Choose required assessment and choose the *Delete* button.

   The system displays the **Confirmation** window.
4. Choose *OK* to confirm your entries

Results

The selected risk and criticality is successfully deleted.

4.7.2 Questionnaire

You use this feature to create an assessment of type Questionnaire. You can:

- Create a questionnaire
- Verify questionnaire score
- Verify variant

4.7.2.1 Creating an Assessment of Type Questionnaire

Context

You use this procedure to create an assessment of type questionnaire.

Procedure

1. Open the *Assessment* application.

   The **Assessments** screen appears.
2. Select the *Questionnaire*.
3. Choose *New*.

   The **Create Assessment** window appears.
4. Enter *Description*.
5. Select the **Assessment Template**.

   The required type of business objects is displayed. This information is fetched from the assessment template.
6. *Save* your entries.

   The assessment screen is displayed.
7. Enter the required information in the following sections:
   - Information
   - Assignments
     You can assign one or more equipment, locations, groups, or systems to the assessment.
     You can select one or more assignments and select *Quick View* to display the overview. The *Quick View* is available for equipment, locations, and systems.
     If equipment with model and location is already assigned to an assessment and you want to assign more equipment, then a new *Recommended* tab is displayed in the *Assign* > *Select Equipment* dialog box. You can view and assign the matching models and locations in this tab.
     You can view and navigate to the location of an equipment assigned to the assessment from the *Location* column.
   - Documentation
     When uploading a new document, you now have the option to upload the document without running a duplicate check using *Upload* button. You can also run a duplicate check for the new document and if no duplicates exist only then upload the document using *Check and Upload* button.
   - Question and Answer
     Select the answer to the for each of the questions and choose *Save*.
     You can view the question and answers as *List View* or as *Matrix*.
8. Save your entries.

Results

The questionnaire score is calculated and displayed and once assessment is published. Questionnaire score is shown on all the business objects. The answer overview is also updated with relevant answers.

> **i Note**
>
> Heat map under matrix also gets updated.

4.7.2.2 Viewing Questionnaire and its Details

Context

You use this procedure to view the list of the existing assessment and its details.

Procedure

1. Open the *Assessment* application.

   The **Assessments** screen appears.
2. Select the *Questionnaire*.
3. Select the required questionnaire assessment.
4. Click anywhere on the selected assessment.

Results

You can view the assessment details of the selected questionnaire.

4.7.2.3 Deleting a Questionnaire

Context

You use this procedure to delete the questionnaire that are in the **Unpublished** state.

Procedure

1. Open the *Assessment* application.

   The **Assessments** screen appears.
2. Select the *Questionnaire*.
3. Choose the required questionnaire and choose the *Delete* button..

   The system displays the **Confirmation** window.
4. Choose *OK* to confirm your entries.

Results

The selected questionnaire is successfully deleted.

4.7.3 FMEA Assessment

You use this feature for the failure mode effects analysis assessment on selected business objects. This allows you to:

- Search for existing assessments
- Execute FMEA assessment
  - Create FMEA assessment from the assessment tile
  - Create FMEA assessment from the assessment template page
- View the FMEA assessment list
- Display RPN in groups, equipment, and system applications
- Sort existing assessments
- Verify variant

4.7.3.1 Creating an Assessment of Type FMEA

Context

You use this procedure to create FMEA assessment using the assessment tile.

Procedure

1. Open the *Assessment* application.
2. Navigate to *FMEA*.

   The **Assessments** screen appears.
3. Choose *New*.

   The **Create Assessment** window appears.
4. Enter the following details

Field	Description
Description	Enter a description for the assessment.
Risk Type	You can select the risk type: ◦ Current Risk ◦ Mitigated Risk ◦ Unmitigated Risk
Show Risk Reduction as	Select how you want to display the risk reduction as currency or percentage.
Estimated Cost	Enter the cost involved in an activity selected during FMEA assessment
Estimated Frequency	Enter the frequency of an activity selected during FMEA assessment
Risk Reduction	Enter the reduction in cost due to FMEA assessment

5. Select the **Assessment Template**.

   The required type of business objects is displayed. This information is fetched from the assessment template.
6. Choose *Save*.
7. In the assessment object page, enter the *Assessment Information* and *Roles* under *Information* tab
8. Enter *Assignments*.
   - You can select one or more assignments and select *Quick View* to display the overview. The *Quick View* is available for equipment, locations, systems, and models.
   - If equipment with model and location is already assigned to an assessment and you want to assign more equipment, then a new *Recommended* tab is displayed in the *Assign* > *Select Equipment* dialog box. You can view and assign the matching models and locations in this tab.
     You can view and navigate to the location of an equipment assigned to the assessment from the *Location* column.
   - You can *View Maintenance Strategy* for each of the assigned objects. In order to view the maintenance strategy, you have to:
     - Assign failure mode to the selected object, if one does not exist.
     - Assign the relevant effects and define severity for the failure mode.

- Assign the causes and define values to calculate RPN. You must also assign preventive or corrective instructions and define the estimated cost, estimated frequency and risk reduction for each of the causes.

> **i Note**
>
> Recommended instructions are displayed while assigning preventive and corrective instructions. This tab displays the instructions assigned to the same cause and failure mode for other objects in the same assessment.

You can view the `<Total Estimated Cost>` and `<Total Risk Reduction>` for the selected assignment.

> **i Note**
>
> When assigning equipment with subequipment and model with submodels to an FMEA assessment, the system prompts a message whether to include the immediate subequipment or submodels to the assessment.

9. Add documents to the assessment under `<Documentation>`.

   When uploading a new document, you now have the option to upload the document without running a duplicate check using *Upload* button. You can also run a duplicate check for the new document and if no duplicates exist only then upload the document using *Check and Upload* button.
10. Save your entries.

    The assessment has been created.
11. Save your entries.

> **i Note**
>
> - A newly created assessment of type FMEA will be in the Unpublished status. You can publish the assessment once finalized and no changes are to be made.
> - You cannot change the assessment of type FMEA once published.

Results

RPN is calculated for the cause once assessment is published. The highest RPN for the causes assigned to a failure mode is displayed for the failure mode, the highest RPN for the failure modes assigned to the equipment is displayed for the equipment.

4.7.3.2 Viewing the FMEA Assessment Details

Context

You use this procedure to view the FMEA details.

Procedure

1. Open the *Assessment* application.

   The Assessment screen appears.
2. Select the *FMEA*.
3. Select the required FMEA assessment.
4. Click anywhere on the selected assessment

Results

You can view the details of the selected FMEA assessment

4.7.3.3 Deleting the FMEA Assessment

Context

You use this procedure to delete the FMEA assessments that are in the **Unpublished** state.

Procedure

1. Open the *Assessment* application.

   The Assessment screen appears.
2. Select the *FMEA*.
3. Choose required assessment and choose the *Delete* button.

The system displays the **Confirmation** window.

4. Choose *OK* to confirm your entries

Results

The selected FMEA is successfully deleted.

4.7.4 Checklists

You use this application to create checklists for various operations and maintenance processes. You can generate blank checklists as templates for operations/maintenance purposes. These templates can vary depending on the class and type of assets. Checklists help to keep your master data synchronized with changes that occur as part of maintenance operations.

You can create checklists of the following types:

- Environment
- Safety
- Operation
- Brand
- Finance
- Production
- Schedule
- Health
- Society
- Quality
- Security
- Shutdown
- Purchasing
- Installation or Uninstallation

4.7.4.1 Creating a Checklist

Context

You use this procedure to create a checklist.

Procedure

1. Open the *Assessment* application.
2. Select *Checklists*.
3. Choose *New*.

   Create Assessment dialog box is displayed.
4. Enter *Description* for the checklist.
5. Select the type of checklist that you want to create in the *Type* field.
6. Choose *Save*.

   The checklist object page appears.
7. You can define the business partners for various roles in the *Roles* section. Choose *Edit*.

   Currently you can define business partners for the following roles:
   - Requestor
   - Moderator
   - Approver
   - Maintenance Engineer
   - Maintenance Planner
   - Reliability Engineer
   - Subject-Matter Expert
   - Operator
   - Maintenance Technician
8. Choose *Save*.
9. You can assign objects to checklist in the *Assignments* tab.
   a. You can assign or remove equipment to the checklist in the *Assignments* > *Equipment* section.
   b. You can assign or remove locations to the checklist in the *Assignments* > *Locations* section.
   c. You can assign or remove models to the checklist in the *Assignments* > *Models* section.
   d. You can assign or remove systems to the checklist in the *Assignments* > *Systems* section.
10. You can use the *Checklist* tab to fill in the checklist.

    You can view the number of objects assigned to the checklist. To view a list of equipment assigned to the checklist, choose the object icon like equipment. If there are a number of equipment assigned, select equipment from the list and choose *Show Templates*.

    You can then fill in the checklist.

    For each question, you can select the answer and also maintain the attribute and indicator values, if any. You can view the current value maintained for the attribute or indicator with respect to that object (like equipment, location).
11. You can add, remove, or download documents assigned to the checklist using the *Documents* tab.
12. To publish the checklist, choose *Publish*.

    > **Note**
    > - Complete the checklist template for all the assigned objects to publish a checklist.

- If the *Update Master Data* option is set to yes in the assessment templates, then on publishing the assessment, the master data is also updated.

4.7.4.2 Viewing a Checklist and its Details

Context

You use this procedure to view the selected checklist and its details.

Procedure

1. Open the *Assessment* application.

   The Assessments screen appears.
2. Select *Checklists*.

   List of checklist is displayed.
3. Click on the checklist that you want to view.

   The checklist assessment object page is displayed.

Results

You can view the details of the selected checklist.

4.7.4.3 Deleting a Checklist

Context

You use this procedure to delete the selected checklists that are in the **Unpublished** state.

Procedure

1. Open the *Assessment* application.

   The **Assessments** screen appears.
2. Select *Checklists*.
3. Choose the required checklist and choose *Manage* > *Delete*.

   The system displays the **Confirmation** window.
4. Choose *OK* to confirm your entries.

Results

The selected checklist is successfully deleted.

4.7.5 Searching an Existing Assessment

Context

You use this procedure to search existing assessments. This allows you to verify filters such as risk type and risk score.

Procedure

1. Open the *Assessment* application.

   The **Assessments** screen appears.
2. Enter the search text in the *Search* field.

   The search list will be segregated based on the assessment type; Risk and Criticality, Questionnaire, FMEA, or Checklists.
3. Select the *Risk and Criticality*, *Questionnaire*, *FMEA*, or *Checklists*.

   You can go into each list page and select the relevant assessment.

   You can also further filter the results based on different criteria using the *Show Filter Bar*.

Results

All the assessments that match the search text are displayed.

4.7.6 Reassessing a Published Assessment

Context

You use this procedure to re-assess a published assessment. This allows the basic information, documentation, object assignments and the assessment template details to be copied.

> **Note**
>
> The selected answers from the published assessment is not copied.

Procedure

1. Open the *Assessment* application.

   The **Assessments** screen appears.
2. Select an assessment with status **Published**.
3. Choose *Manage* > *Reassessment*.

Results

The new assessment is created along with the necessary details.

4.8 Reliability Centered Maintenance (RCM) Assessment

Reliability Centered Maintenance (RCM) is a process standardized through the SAE JA 1011. The process is used to determine what must be done to ensure that any physical asset continues to do what its users want it to do in its present operating context.

SAP Asset Strategy and Performance Management supports asset-centric companies to apply this standard and allow partners & customers to enrich, extend, and configure the process - complying with different variations of the process like RCM2 or RCM-Light.

1. Launch the *RCM Assessment* application.
2. Choose *New*.
   Enter the following details in the **Create Assessment** dialog box:

Field	Description
Description (*)	Enter a short description for the assessment.
Assessment Templates (*)	Select an RCM template. Only published templates are displayed.

3. Choose *Save*.
   The assessment object page is displayed.
4. You can choose *Edit* under *Information* > *Scope*, to enter a scope for the assessment. Choose *Save*.
5. Enter the mandatory or optional roles in the *Roles* section.
   This section is displayed only if any role is marked as mandatory/optional in the RCM template, else it is not displayed.
6. You can assign the following objects (based on the RCM assessment template selected) in the *Assessment* section by choosing *Assign*:
   - Equipment
   - Systems
   - Models
   - Locations

   You can also remove any assigned objects by selecting the objecting and choosing *Remove* in the relevant sections.
7. When you select an object, you can view and assign the following:

   > **i Note**
   >
   > You must have the write role for the relevant objects to proceed.

   1. You can view the following info:
      - Equipment Name
      - Class
      - Subclass
      - Manufacturer
      - Operational Context: If the object is in **In Revision** state, you can assign documents for the object assigned to the assessment by choosing *Assign*.
   2. You can assign/remove functions to the object in the *Functions* section.
      1. Choose *Assign* in the *Functions* section.
      2. Select the functions from the list. Choose *Assign*.

      Select a function to view further details of the function including functional failures.
   3. You can assign/remove functional failures to each function using *Assign* or *Remove* buttons in the *Functional Failures* section.
   4. You can assign failure modes to functional failures by selecting a functional failure and choosing *Assign* in the *Failure Modes* section.

5. If you have set the *Display Failure Modes and Causes together* flag as **Yes** in the assessment template that is assigned to the assessment.
    1. Select a failure mode and you can assign or remove cause for the failure mode by choosing *Manage Cause* > *Assign* or *Manage Cause* > *Remove*.
    2. Choose a failure mode from the list to view details of the failure mode including associated cause, RAMS, and effects. You can assign effects to the failure mode in the *Effects* section.
    3. On the left-hand side of the page, each failure mode and cause combination are listed. For example, if a failure mode FM_1 has 2 causes assigned to it C1 and C2. The list includes two entries:
        - FM_1 + C1
        - FM_1 + C2
    4. You can assign the effects by choosing *Assign* in the *Effects* section.

    > **i Note**
    >
    > Here the consequence evaluation is performed for each effect and each cause assigned to the failure mode.
6. If you have set the *Display Failure Modes and Causes together* flag as **No** in the assessment template that is assigned to the assessment.
    1. Choose a failure mode from the list to view details of the failure mode including Causes, RAMS, and effects. The causes for the failure mode are displayed in the details section.
    2. You can assign the effects by choosing *Assign* in the *Effects* section.

    > **i Note**
    >
    > Here the consequence evaluation is performed for each effect assigned to the failure mode.
7. Choose an effect and you can view the details of the effects. You can view the *Consequence Evaluation* and enter your observations for the same.
   If you want to save your progress/answers in the *Consequence Evaluation* section without publishing the assessment, you can use the *Save* button.

   > **i Note**
   >
   > This is displayed only if a checklist template is assigned to the RCM assessment template. The questions are derived from the associated advanced checklist template.
8. You can also assign/remove preventive or corrective instructions in the *Preventive / Corrective Instructions* section. You can assign instructions or placeholder instructions.
   If you have assigned instructions, you can edit the values for the instructions using *Edit* button.

Result:

You can publish the assessment using *Publish*.

> **i Note**
>
> Once published, you cannot edit or delete the assessment.

After publishing, a summary of the corrective or preventive instructions is available under *Assessment* > *Recommendations*.

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