

**SAP (IAM)**

**Intelligent  
Asset  
Management**



## **Execution of a Risk and Criticality Assessment**

## Document Control

### Prepared by:

Version	Date	Name
1.0	01/20/2025	ABHIJIT KUMAR
2.0		

### Reviewed by:

Version	Date	Name
1.0	01/22/2025	NIKHIL KOOLWAL, SRINIVAS RAO PATHI

## Reference Documents

The following section describes relevant documentation:

Document Name	Description	Sharepoint Link
Risk and Criticality Assessment	Execution of a Risk and Criticality Assessment	<a href="#">Risk and Criticality Assessment.pdf</a>

Contents

<b>1. EXECUTION OF A RISK AND CRITICALITY ASSESSMENT....</b>	<b>4</b>
1.1 <i>OBJECTIVE</i> .....	4
1.2 <i>KEY TERMS</i> .....	4
1.3 <i>EXECUTION</i> .....	4
<b>2. CREATING AN ASSESSMENT .....</b>	<b>5</b>
<b>3. ASSIGN ASSESSMENT TEMPLATE(S) TECHNICAL OBJECT(S).....</b>	<b>7</b>
<b>4. ASSESSMENTS TAB AND CHANGING STATUS TO IN PROCESS .....</b>	<b>11</b>
<b>5. VIEWING THE ASSESSMENT ON THE TECHNICAL OBJECT .....</b>	<b>13</b>
<b>6. CONCLUSION .....</b>	<b>15</b>
5.1 <i>STEPS:</i> .....	15
5.2 <i>OUTCOME:</i> .....	16

# 1. Execution of a Risk and Criticality Assessment

## 1.1 Objective

To perform a Risk & Criticality Assessment with proficiency, utilizing the configured templates and effectively analyzing asset failure risks and criticality.

## 1.2 Key Terms

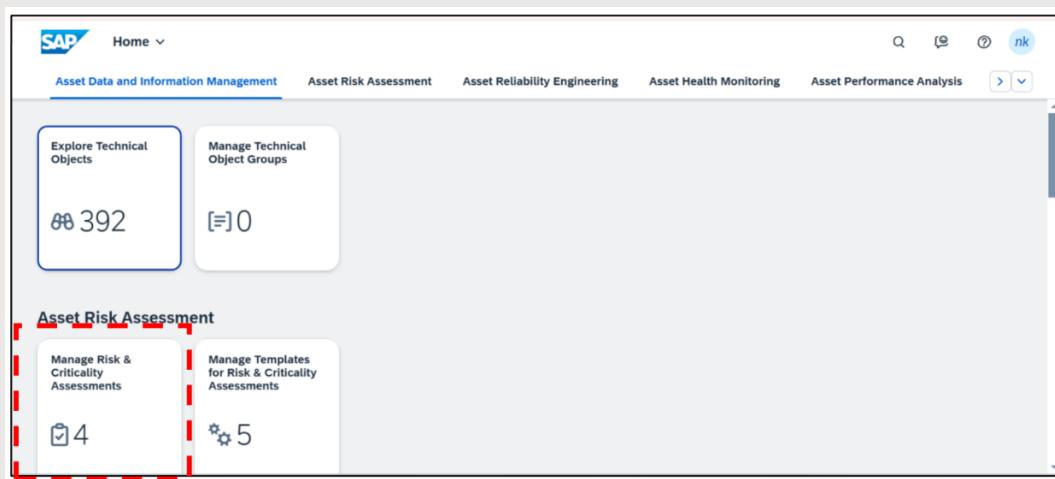
1. **Risk and Criticality Assessments:** The process of evaluating the likelihood and consequence of asset failure.
2. **Current Risk:** The level of risk after all mitigation efforts have been applied to the technical object.
3. **Unmitigated Risk:** The level of risk before any mitigation efforts have been applied.
4. **Dimensions:** Specific factors or questions within an impact category that contribute to the risk assessment.
5. **Impacts:** Categories or groupings of dimensions that are evaluated in the assessment.
6. **Risk Matrix:** A tool used to visualize and determine risk levels based on the combination of different dimensions.
7. **Risk Score:** The quantitative value representing the level of risk associated with a technical object.
8. **Status (Created, In Process, Released):** The stages of the assessment process, indicating the progress and completion state.

## 1.3 Execution

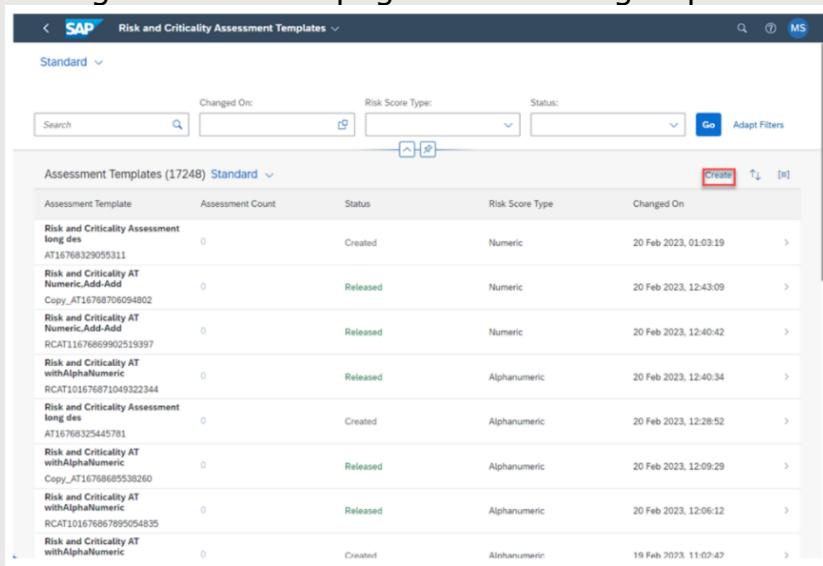
With our Risk and Criticality Assessment Template now created, we can now use this template for an actual Risk and Criticality Assessment. Here, we will assign an actual technical object and go through the exact evaluation setup that we created beforehand. The template created earlier can be used for multiple different Risk and Criticality Assessments if desired. If there are no templates previously made, you will not be able to create an assessment.

## 2. Creating an Assessment

On the main page of APM, choose the Risk and Criticality Assessments tile. The tile is in the **Assessment Management** tab and should be the second tile in the row. If not present, you should also be able to locate the tile by going to the search bar at the top, typing "**Risk and Criticality Assessments**" in the search field, and then hitting the **search** button.



Once in the Risk and Criticality Assessments main page, hit the **Create** button to create a new Risk and Criticality Assessment Template. It should be located on the right side of the page next to the group button and sort button.



You will then be brought to the Create Assessment pop-up on the screen.

**New Assessment**

Assessment:\*

 35/40

Description:\*

 35/256

Long Text:

 0/5000

Risk Type:\*

Current Risk

Unmitigated Risk

Currency\*

**Save**   **Cancel**

- Fill out all required fields. The Assessment and Description fields serve the same purpose as the Assessment Template and Description fields found within the Risk and Criticality Assessment Template creation pop-up.
- For the **Risk Type** option, choose Current Risk rather than Unmitigated Risk. Current Risk is the amount of risk present with the Technical Objects being used in the assessment after all risk mitigation efforts have been expended. Unmitigated risk is the opposite with it representing all present risk associated with a Technical Object before any risk mitigation efforts have occurred.
- For the Currency field, select the currency you wish to use when determining financial impact within the assessment. Long Text is optional to put in and is simply there to allow for additional information relating to assessment.
- Once finished, choose the **Save** button to continue with the actual assessment.

### 3. Assign Assessment Template(s) Technical Object(s)

We can assign one or more Technical Objects within our APM system to perform the assessment on. Choose the **Assignments** tab near the top of the page. Once there, choose the **Assign** button in the row of buttons underneath the Assignments tab or choose the **Assign Technical Object(s)** button in the center of the page.

The screenshot shows the SAP Risk and Criticality Assessments interface. At the top, it displays 'Risk and Criticality Assessments' and the assessment details: 'APM Learning Hub R and C Assessment' (ID: R\_and\_C\_Assessment\_Learning\_Hub\_Demo), 'Status: Created', 'Risk Type: Current Risk', and 'Currency: United States Dollar (USD)'. Below this, there are tabs for 'Information', 'Assignments' (which is selected and highlighted with a red box), and 'Assessments'. Under the 'Assignments' tab, there is a sub-tab 'Assign' (also highlighted with a red box). Further down, there is a large icon of a document with charts and a gear. Below the icon, the text 'There are no entries yet' is displayed, followed by the instruction 'Assign technical object(s) by choosing the Assign button.' At the bottom of the screen, there is a button labeled 'Assign Technical Object(s)' which is also highlighted with a red box.

Select one or more Technical Objects from the list of provided Technical Objects. Feel free to utilize the filters and the search bar present on the top of the page as well to more easily locate the Technical Object(s) that will be used. Make sure that when you want to apply filters, you choose the Go button to reevaluate the list of applicable Technical Objects. For this demonstration, I will select one Technical Object, that being the Pressure Vessel. Once finished, choose the **OK** button at the bottom.

SAP Risk and Criticality Assessments

Select Technical Objects

Search		Go	Hide Filter Bar	Restore	Filters
Technical Object Type:	Category:	Object Type:	Maintenance Plant:		
<input type="button"/>	<input type="button"/>	<input type="button"/>	<input type="button"/>	<input type="button"/>	<input type="button"/>
Planning Plant:	Planner Group:	Criticality:	Cost Center:		
<input type="button"/>	<input type="button"/>	<input type="button"/>	<input type="button"/>	<input type="button"/>	<input type="button"/>
Main Work Center:	Class:	Status:	Superior Functional Location:		
<input type="button"/>	<input type="button"/>	<input type="button"/>	<input type="button"/>	<input type="button"/>	<input type="button"/>
Superordinate Equipment:	Sort Field:	Failure Data Profile:			
<input type="button"/>	<input type="button"/>	<input type="button"/>			

Select Technical Objects

Compressor-BP4C Equip  10000310	Machines (M)	Rotary Compressors (9200)	MOD12234	SIEMENS	Highly Critical (A)	Installed
<input checked="" type="checkbox"/> 10010333						
<input type="checkbox"/> 10231783	Machines (M)				Available	
<input type="checkbox"/> 10231782	Machines (M)				Available	
<input type="checkbox"/> 10211727	Machines (M)				Available	
<input type="checkbox"/> 10211728	Machines (M)				Available	
<input type="checkbox"/> 10211729	Machines (M)				Available	
<input type="checkbox"/> 10211730	Machines (M)				Available	
<input type="checkbox"/> 10211731	Machines (M)				Available	
Pump_Gear						
<input type="checkbox"/> 10211731	Machines (M)					

**OK** **Cancel**

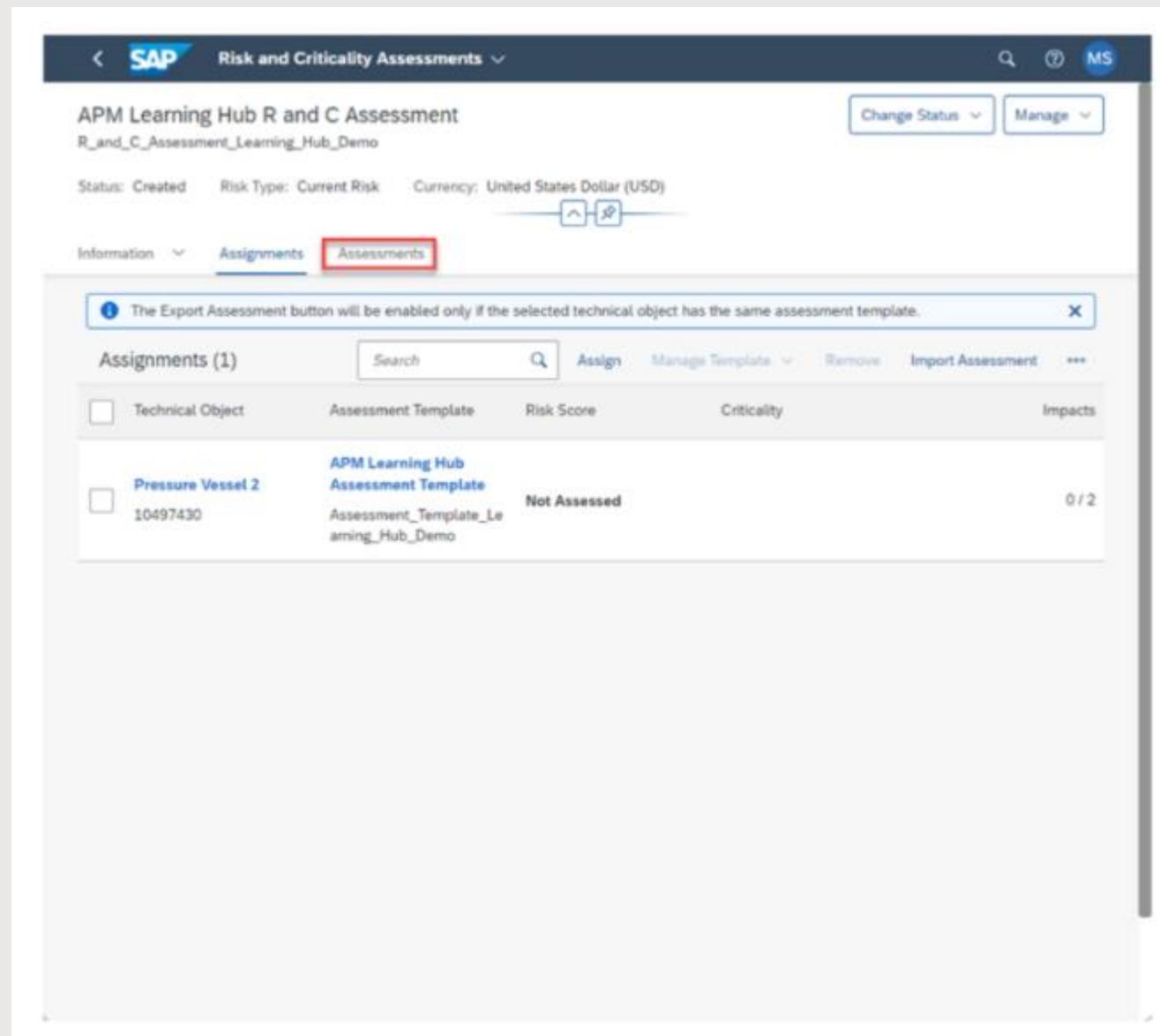
With the Technical Object now assigned to our Assessment, we now need to assign the Assessment Template itself to our Technical Object. We need to assign an Assessment Template for each Technical Object that we are using. To do this, check the Technical Object(s) that we are assigning a particular Assessment Template to. Once checked, choose the **Manage Template** button and the **Assign** sub-button that appears underneath it.

The screenshot shows the SAP Risk & Criticality Assessments interface. At the top, there's a navigation bar with the SAP logo, a search icon, and user profile information. Below the header, the page title is "NK\_Risk\_Criticality\_Assessment\_Demo" and the sub-page title is "NK\_Risk\_Criticality\_Assessment\_Demo". On the left, there are two status cards: "Risk Type: Current Risk" and "Status: Created". Below these are three tabs: "Information", "Assignments" (which is selected), and "Assessments". A message box at the top indicates that the "Export Assessment" button will be enabled only if the selected technical object has the same assessment template. The main content area is titled "Assignments (1)" and contains a table with one row. The table columns are: Technical Object (with a checkbox checked), Assessment Template, Disable Criticality Code Sync to SAP ERP, Risk Score, Criticity (with a dropdown menu open showing "Assign" and "Remove"), Action, and Impacts. The data in the table is: "Compressor- BP4C Equip no - 10000310" under "Technical Object", "Not Assessed" under "Criticity", and "10010333" under "Action".

Either scroll through the list or use the filters to find the Assessment Template you wish to use. Again, make sure if using the filters, you choose the Go button to apply the filters on the page. Choose the **Assign** button to select that Assessment Template for your Technical Object(s).

The screenshot shows the "Assign Assessment Template" dialog box. At the top, there are filter bars for "Risk Score Type:" (with a search input and dropdown), "Changed On:" (with a date input and dropdown), and a "Go" button. Below the filters is a section titled "Assessment Templates (3)". This section lists three templates in a table format. The columns are: Assessment Template, Version, Enable Impact Exclusion for Assessment, Disable Criticality Code Sync to SAP ERP, Risk Score Type, and Changed On. The templates listed are: "Multi\_Stage\_Compressor\_System\_TEMPLATE" (Version 1, Yes, No, Numeric, Dec 03, 2024, 10:21:09 AM), "Assessment\_template\_TESTING" (Version 1, Yes, No, Numeric, Dec 02, 2024, 10:22:03 AM), and "Harsha\_RC\_ASSESSMENT" (Version 1, No, No, Numeric, Dec 01, 2024, 03:40:50 PM). The first two templates are highlighted with a red dashed border. At the bottom right of the dialog are "Assign" and "Cancel" buttons.

With our Assessment Template assigned to our Technical Object, we can now actually perform the assessment itself. Switch to the **Assessments** tab to perform the Risk and Criticality Assessment on our Technical Object.



The screenshot shows the SAP Risk and Criticality Assessments interface. At the top, there is a header with the SAP logo, a search bar, and other navigation icons. Below the header, the title is "APM Learning Hub R and C Assessment" and the subtitle is "R\_and\_C\_Assessment\_Learning\_Hub\_Demo". The status is "Created", the risk type is "Current Risk", and the currency is "United States Dollar (USD)". There are buttons for "Change Status" and "Manage".

The main area has tabs: "Information", "Assignments", and "Assessments". The "Assessments" tab is currently selected and highlighted with a red box. A tooltip message says: "The Export Assessment button will be enabled only if the selected technical object has the same assessment template." Below the tabs, there is a table titled "Assignments (1)". The table columns are: Technical Object, Assessment Template, Risk Score, Criticality, and Impacts. One row is shown for "Pressure Vessel 2" (ID 10497430), which is assigned to the "APM Learning Hub Assessment Template" and has a "Not Assessed" status with 0/2 impacts.

## 4. Assessments Tab and Changing Status to In Process

In the Assessments tab, we can see all the Technical Objects that we assigned to our Assessment. For us to perform an assessment on one of these Technical Objects, we need to check it from the list. Once checked, you will see the Assessment Template that has been assigned to the Technical Object. Now we can perform the actual assessment itself. One thing to do before performing the assessment however is changing the status of our overall assessment from Created to In Process. We will eventually need to change the status to Released, which only is available while the Assessment is In Process. choose the **Change Status** button at the top right of the page and choose the In Process sub-button underneath it. Note that the Delete sub button underneath the **Manage** button will be gone now.

The screenshot shows the SAP Fiori interface for the 'Multistage\_COMpressor\_assessment' application. At the top, there's a header with the SAP logo, a search bar, and a 'Change Status' button. Below the header, the title 'Multistage\_COMpressor\_assessment' and the subtitle 'Multistage\_COMpressor\_assessment' are displayed. The main content area has tabs for 'Information', 'Assignments', and 'Assessments', with 'Assessments' being the active tab. Under 'Assessments', there's a section for 'Assignments (1)' with a table showing one assignment for '1\_Multi\_Stage\_Compressor\_System\_TEMPLATE'. To the right of this, there's an 'Impacts' section with a table titled 'Risk Details' showing impacts for 'General Impact' and 'Environmental Impact', along with an 'Overall' row. The table includes columns for 'Impacts', 'Risk', 'Financial Risk', and 'Exclude Impact from Assessment'. A note at the top right of the impacts section says 'Risk Score/Criticality: 4.00 A - Highly Critical Action: RCM'.

Fill out the Dimensions for Each Impact within your Assessment. You can provide optional notes as well. Also make sure to enter in a Financial Risk for the impact if desired. For each impact, a risk matrix will appear showing how two of the dimensions in the impact compare to each other and what the risk score and threshold level would be given the combination of the two Dimensions. You can choose one of the scores within the matrix and have the respective dimension

values be filled in automatically to the Dimension drop down. Once all necessary values are put in, choose the **Save** button to save all the attributes you've listed. Repeat this process for all other technical objects you need to assess.

The screenshot shows the SAP Fiori interface for the Multistage\_CCompressor\_assessment application. The page title is "Multistage\_CCompressor\_assessment". The navigation bar includes "Information", "Assignments", and "Assessments" (which is selected). A search bar at the top right contains the placeholder "Search In: 'Apps'". On the far right, there are buttons for "Change Status", "Print", and "Help".

The main content area displays an "Assessments (1)" card. The card header includes "Search" and "...". Below the header, it says "Group: Group Order (Ascending), Group By ...". The card lists one item:

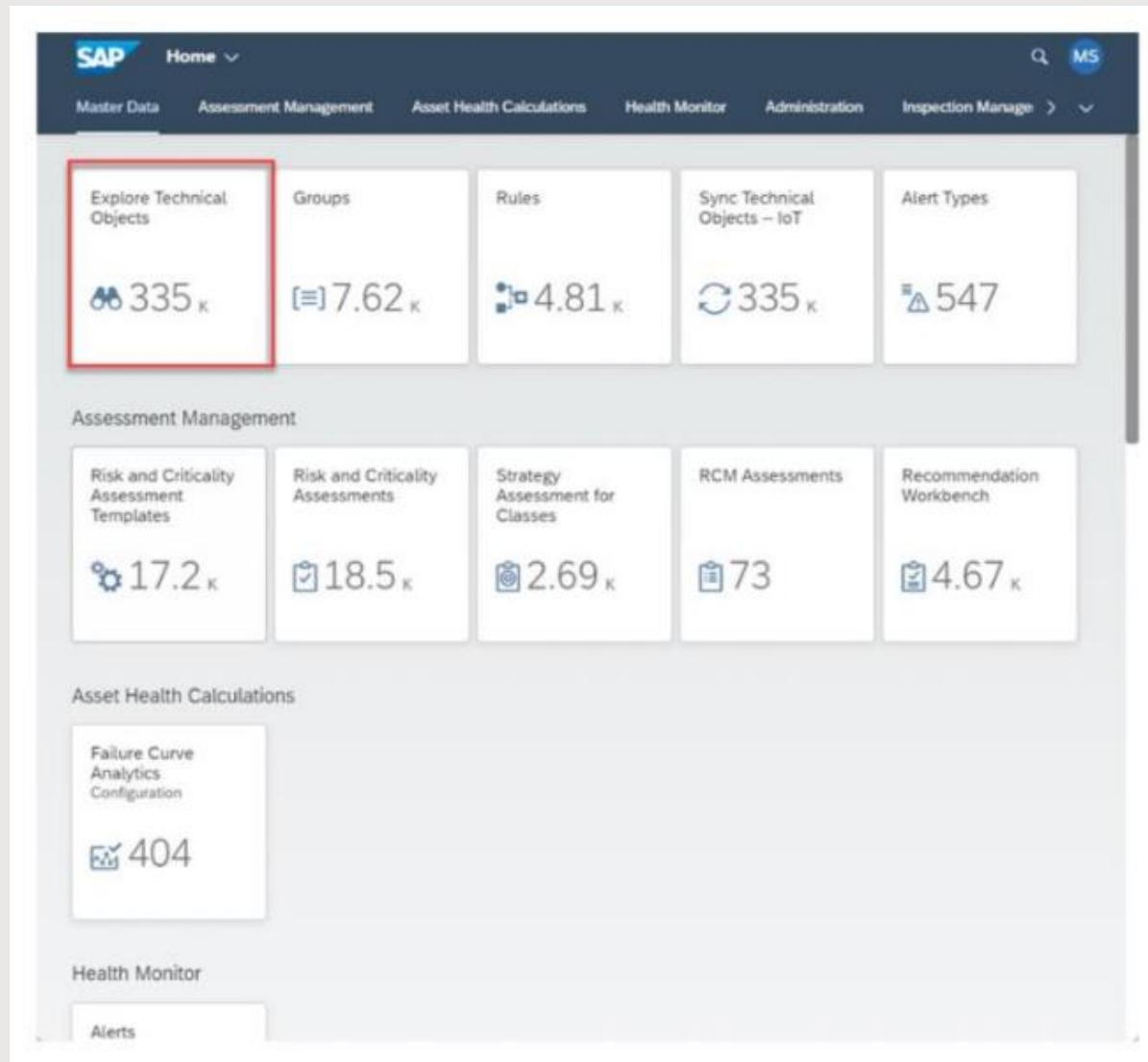
Technical Object	Details
1_Multi_Stage_Compressor_System_TEMPLATE...	Multi-Stage Compressor System (MSC) 10231974 1_Multi_Stage_Compressor_System_TEMPLATE Template Version: 1

To the right of the card is an "Impacts" section. It features a grid titled "What is the consequence of failu...". The columns represent the consequence of failure levels: Very High, High, Medium, Low, and Very Low. The rows represent the risk levels: Very Low, Low, Medium, High, and Very High. The grid contains numerical values and color-coded cells. A risk score of 4.00 is highlighted in red. The overall risk score/criticality is 4.00, labeled as "A - Highly Critical" with an action of "RCM".

With all the Technical Objects assessed here, now we can go ahead and publish our assessment. To do this, choose the **Change Status** button and choose the Released sub-button underneath it. The status can only be set to **Released** if it is in the In Process status. Change the status to In Process, then change it again to Released.

## 5. Viewing the Assessment on the Technical Object

Now, with our assessment completed and released, we can view the assessment on our Technical Object. To do this, go back to the main page and open the Explore Technical Objects tile, which is the first tile in the Master Data section.



The screenshot shows the SAP Industry X master data dashboard. At the top, there is a navigation bar with links for Home, Master Data, Assessment Management, Asset Health Calculations, Health Monitor, Administration, and Inspection Management. Below the navigation bar, there is a grid of tiles. The first tile, 'Explore Technical Objects', is highlighted with a red border. Other tiles include 'Groups', 'Rules', 'Sync Technical Objects – IoT', and 'Alert Types'. In the 'Assessment Management' section, there are five tiles: 'Risk and Criticality Assessment Templates', 'Risk and Criticality Assessments', 'Strategy Assessment for Classes', 'RCM Assessments', and 'Recommendation Workbench'. In the 'Asset Health Calculations' section, there is one tile for 'Failure Curve Analytics Configuration'. In the 'Health Monitor' section, there is a single 'Alerts' tile.

Section	Tile	Description	Value
Master Data	Explore Technical Objects	Explore Technical Objects	335 K
	Groups	Groups	7.62 K
	Rules	Rules	4.81 K
	Sync Technical Objects – IoT	Sync Technical Objects – IoT	335 K
	Alert Types	Alert Types	547
Assessment Management	Risk and Criticality Assessment Templates	Risk and Criticality Assessment Templates	17.2 K
	Risk and Criticality Assessments	Risk and Criticality Assessments	18.5 K
	Strategy Assessment for Classes	Strategy Assessment for Classes	2.69 K
	RCM Assessments	RCM Assessments	73
	Recommendation Workbench	Recommendation Workbench	4.67 K
Asset Health Calculations	Failure Curve Analytics Configuration	Failure Curve Analytics Configuration	404
	Alerts	Alerts	

The screenshot shows the SAP Explore Technical Objects interface. At the top, there's a navigation bar with the SAP logo, a search icon, and a 'MS' button. Below it is a dropdown menu set to 'Standard'. The main area displays a table of 'Technical Objects (335,769)' under the 'Standard' category. The columns include: Technical Object, Category, Object Type, Model Number, Manufacturer, Superior Functional Loc..., Risk Score, and Criticality. A detailed view modal is open for the first object in the list, which is a 'Machines (M)' type object with ID 302221425. The modal shows the following details:

- Functional Location:** APM Automation
- Risk and Criticality:** Updated by Mark Simunov (22 Feb 2023)
- Risk Score / Criticality:** 33 / Low (C)
- Action:** OEM Guidelines
- View** button (highlighted with a red box)

The table below the modal lists other objects, such as 'E2E-EQUIP...' and 'Pressure Vessel 2', with their respective details.

From the Explore Technical Objects page, find the Technical Object that you were previously assessing. You will notice now that in the Risk Score Column here is the final Risk Score we gave within our assessment. If we choose the **Risk Score** from this page or within the **Technical Object's** main page, we can see more information pertaining to the assessment done on it as well as have the option to View the actual assessment from here. Choose the **View** button to see the Assessment.

## 6. Conclusion

### 5.1 Steps:

#### **1. Initiating the Assessment:**

- a. Access the Risk and Criticality Assessments section via the **Assessment Management** tab.
- b. Use the **Create** button to start a new assessment.

#### **2. Creating the Assessment:**

- a. In the pop-up, complete all necessary fields, including Assessment name, Description, and select '**Current Risk**' to factor in mitigations.
- b. Choose the appropriate currency for financial impact assessment.
- c. Optional: Provide additional details in Long Text.

#### **3. Assigning Technical Object(s):**

- a. Use the **Assignments** tab to assign technical objects for the assessment.
- b. Filter and select the desired objects (for example, a Pressure Vessel).

**4. Assigning the Assessment Template:** Check the assigned technical objects and use the Manage Template button to attach the appropriate assessment template.

#### **5. Conducting the Assessment:**

- a. Switch to the **Assessments** tab to view and assess the technical

objects.

- b. Change the assessment status from Created to In Process.
- c. Complete the dimensions for each impact, including financial risk where applicable.

#### 6. Assessment Matrix:

- a. For each impact, utilize the risk matrix to correlate dimensions and determine risk scores and threshold levels.
- b. Save attributes and repeat for all technical objects in the assessment.

#### 7. Publishing the Assessment:

Change the status from In Process to Released to finalize and publish the assessment.

#### 8. Viewing Assessment Results:

- a. Locate the technical object via the **Explore Technical Objects** section.
- b. Review the final Risk Score and additional details of the assessment by viewing the completed assessment.

#### 5.2 Outcome:

Completion of these steps ensures a thorough Risk and Criticality Assessment is conducted, with the final risk score reflecting the comprehensive evaluation of all technical objects involved. The process also details how to transition from template creation to practical assessment execution, crucial for consistent and reliable risk management within APM systems.