

SAP Intelligent Asset Management

SAP Asset Strategy and Performance Management

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PUBLIC

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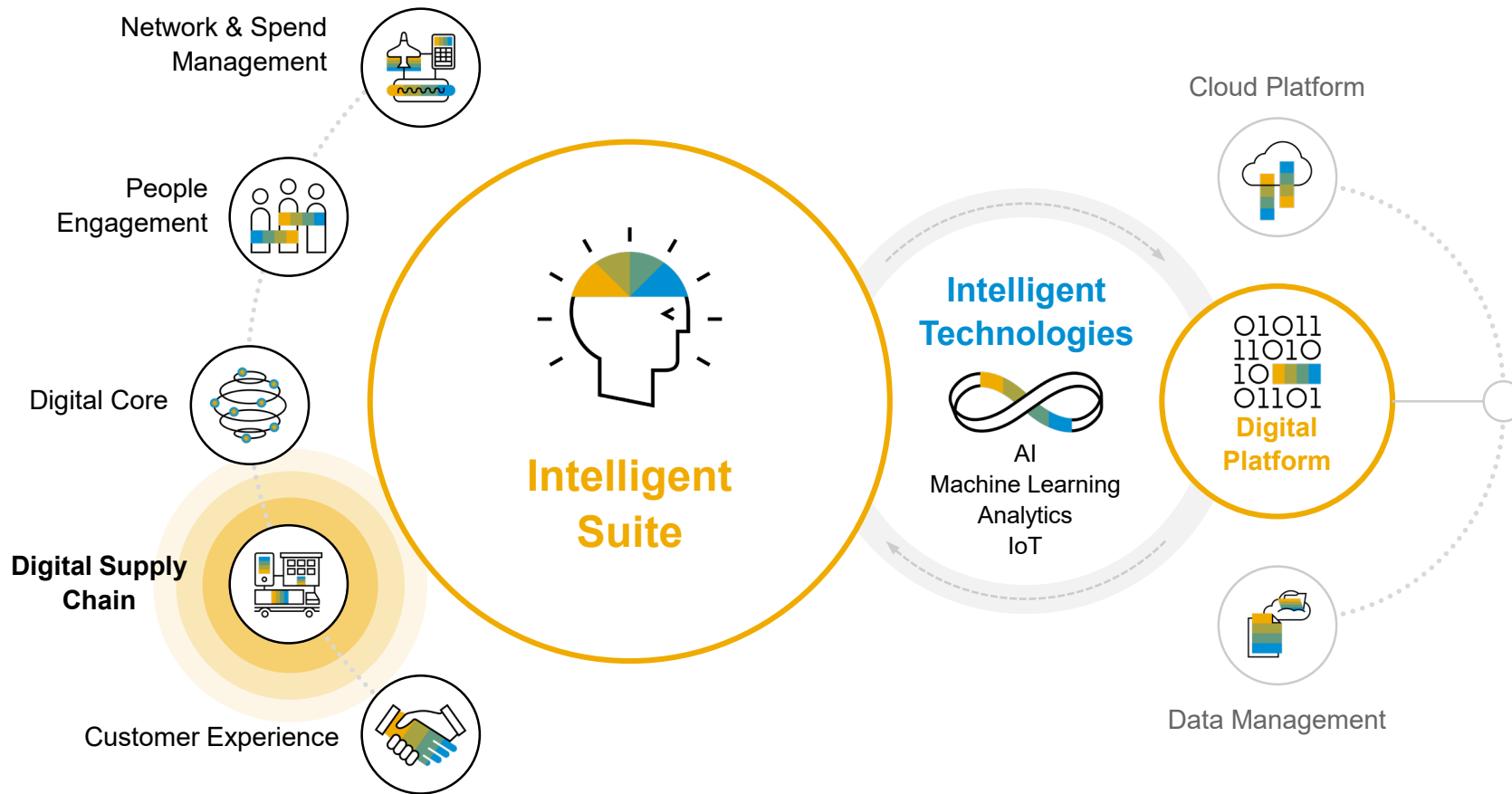
Agenda

- Business Background and Drivers
- Solution Overview
- Summary

Business Background and Drivers

The Intelligent Enterprise

The Foundation of a Digital Supply Chain



The Intelligent Enterprise features **3 key components**:

- 1 Intelligent Suite
- 2 Intelligent Technologies
- 3 Digital Platform

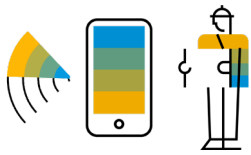
Digital Supply Chain

Enabling a Digitally Connected Product Lifecycle

Digital Supply Chain



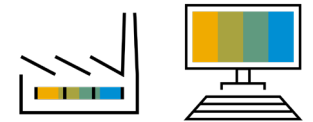
Operator



Asset Intelligence

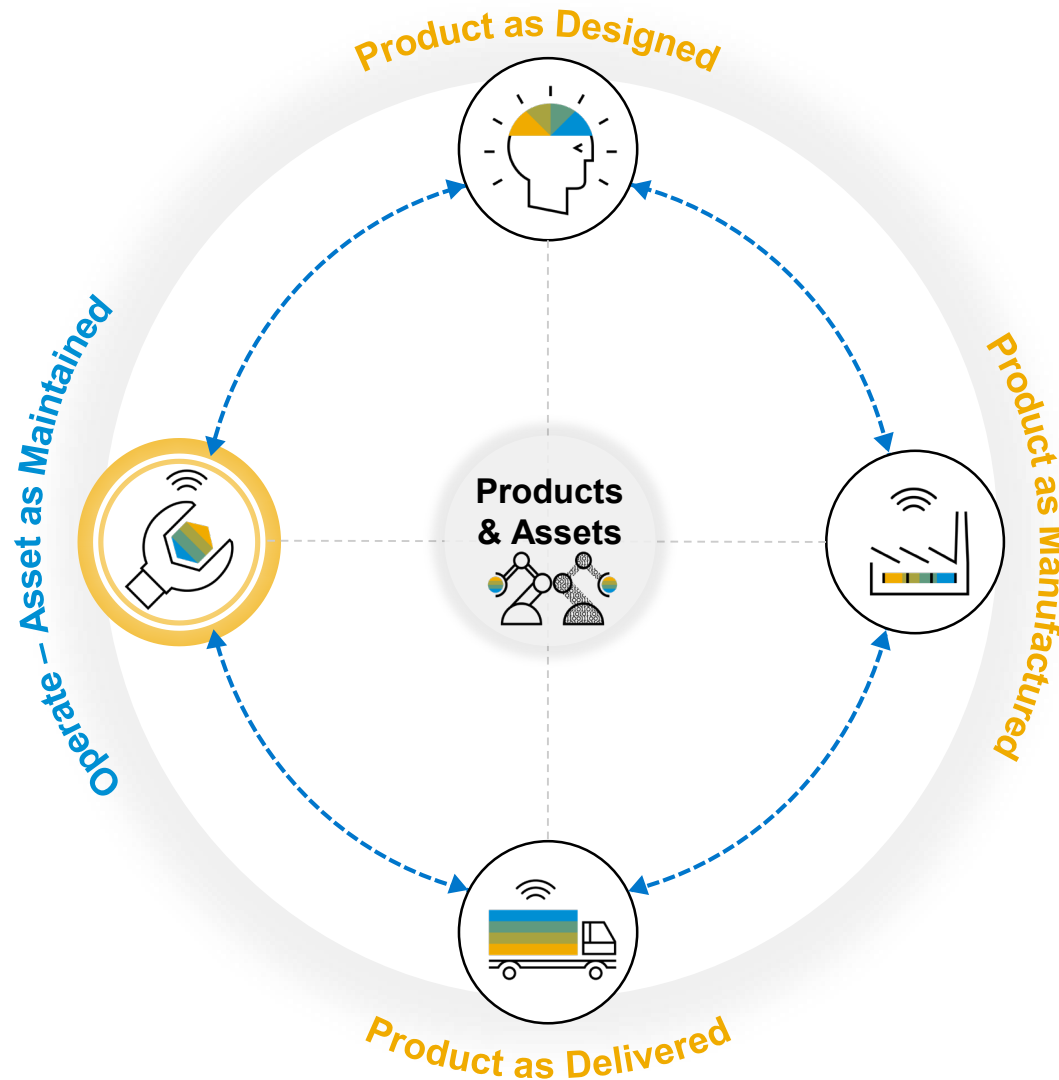
Enterprise Asset Management
Asset Performance Management
Asset Information Management

Manufacturer



Product Intelligence

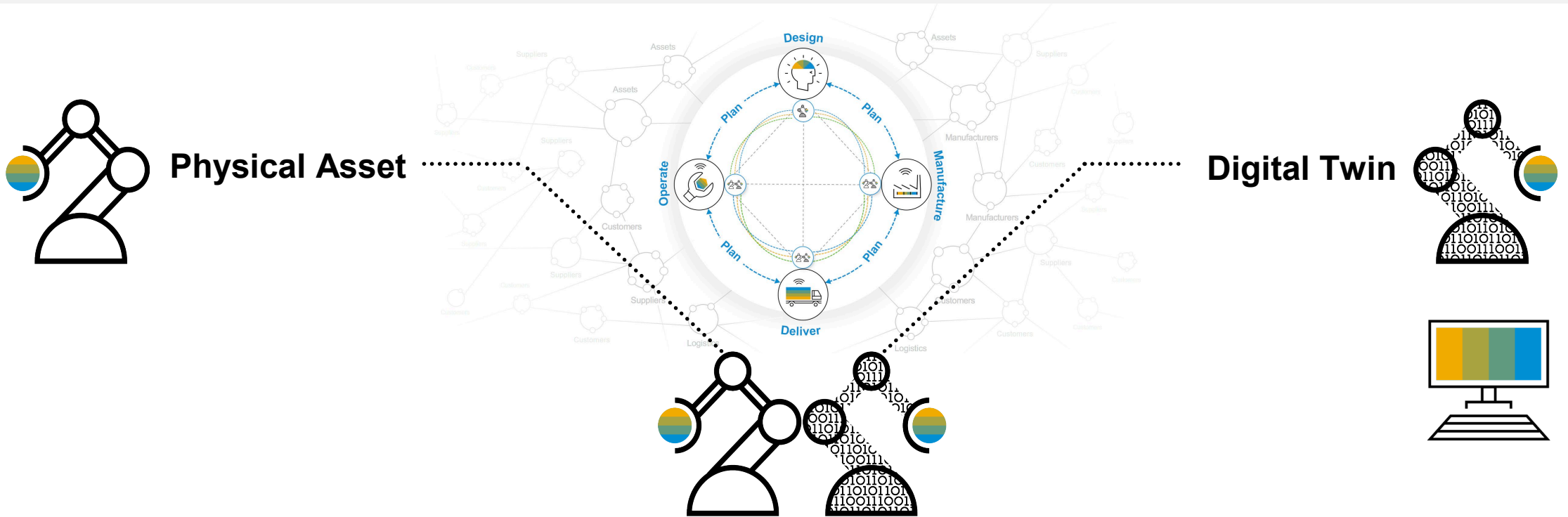
R&D
Engineering
Manufacturing



The Physical Asset and the Digital Twin

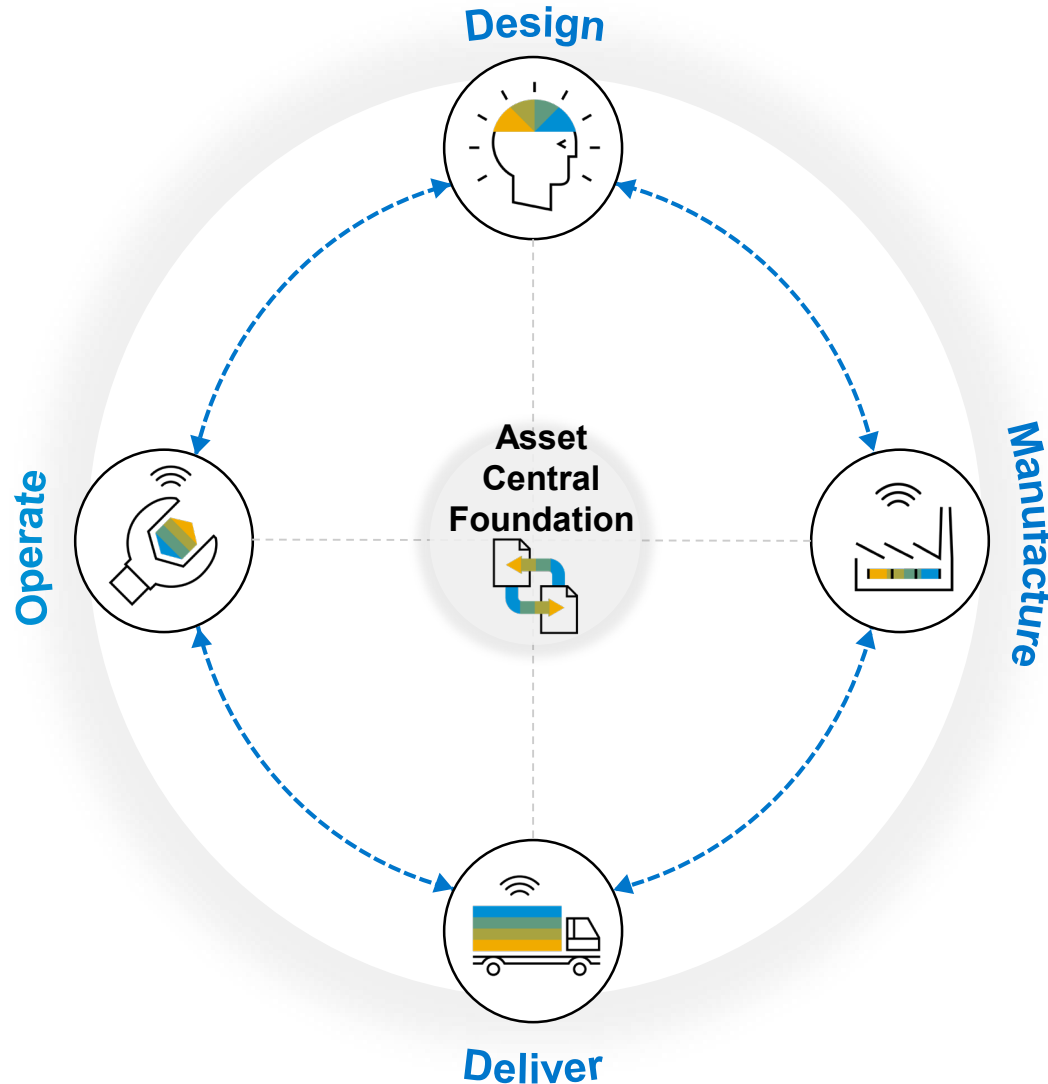
Connect Digitally to Perfect Reality for Your **Asset Management**

Full digital representation of connected assets along their lifecycle delivering an embedded, collaborative and real-time set of next generation processes and systems

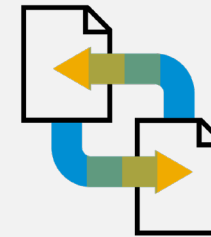


Intelligent Asset Management

Asset Central Foundation as One Common Data Set



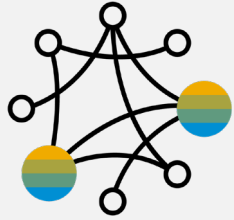
Asset Central Foundation One Common Data Set



Connect to Assets

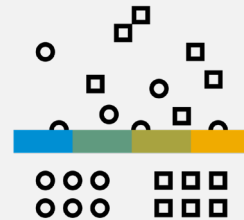
Asset Central Foundation: SAP's **digital twin** for physical assets, is the foundation layer across the SAP portfolio.

Technology Enablers for Intelligent Asset Management



The Internet of Things

Provide sensor-enabled condition monitoring for real-time insights and new value-added services.



Big Data and analytics

Enable real-time analysis of data streaming from assets that are getting smarter and can communicate status and performance data.



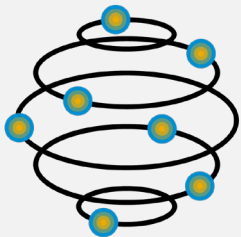
Cloud computing

Reduce IT operations and maintenance effort while providing scalability to support changing business needs and growth.



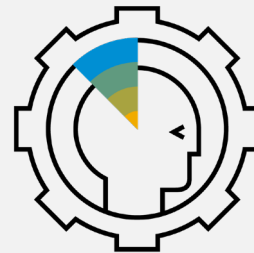
Mobile solutions

Provide workers in the field with easy access to necessary information they would otherwise need to access in the office.



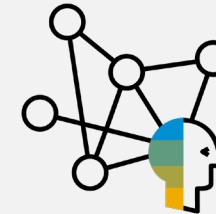
Augmented reality and virtual reality

Provide unmatched situational awareness and enhanced perception for better decision-making.



Artificial intelligence and machine learning

Bring unprecedented insights and automation of knowledge work across the enterprise.



Business networks

Simplify collaboration and sharing of information among asset management stakeholders and their equipment and service providers.



Real-time engineering simulation

Use physics-based digital twins for predictive engineering analysis in product development and operations

Asset Strategy and Performance Management



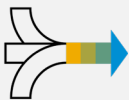
Risk-based maintenance approach enables better decision making for maintenance planning and to reduce the probability of asset failure.



Adopt Reliability Centered Maintenance (RCM) processes, including Failure Modes and Effects Analysis (FMEA).



Manage performance to optimize return on assets across lifecycles. Monitor, review, and improve maintenance strategies.



Reduce bottlenecks, improve decision making, and prevent incidents using a holistic view of asset types and maintenance strategies.



SAP Asset Strategy and Performance Management

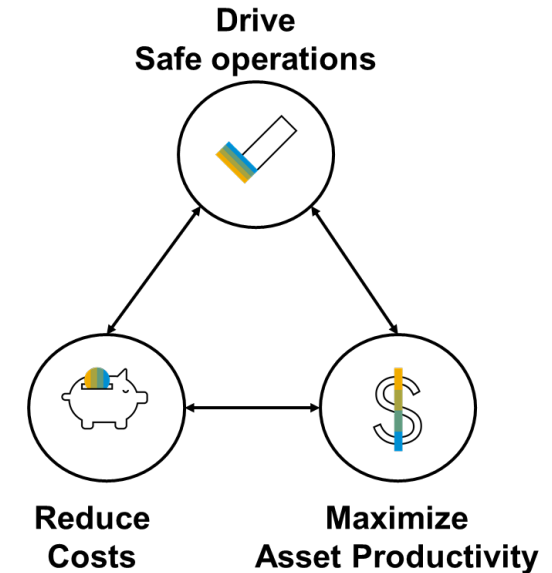
Determining the Correct Maintenance Strategy

Asset Strategies:

- Preventive
- On-Condition
- Predictive
- Failure Finding
- Run to Failure
- Modification

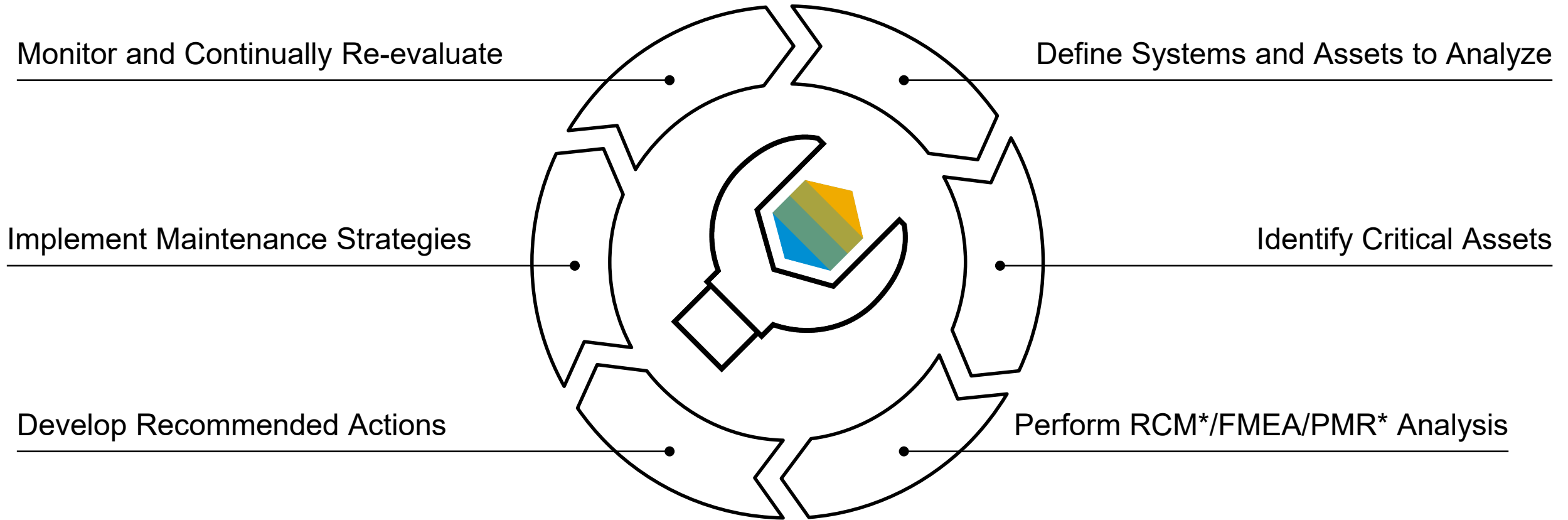
Methodologies:

- Risk & Criticality Analysis (RCA)
- Reliability Centered Maintenance (RCM)
- Failure Modes and Effects Analysis (FMEA)
- Structured Review (PM Review)
- Root Cause Analysis (RCA)
- ...



Solution overview

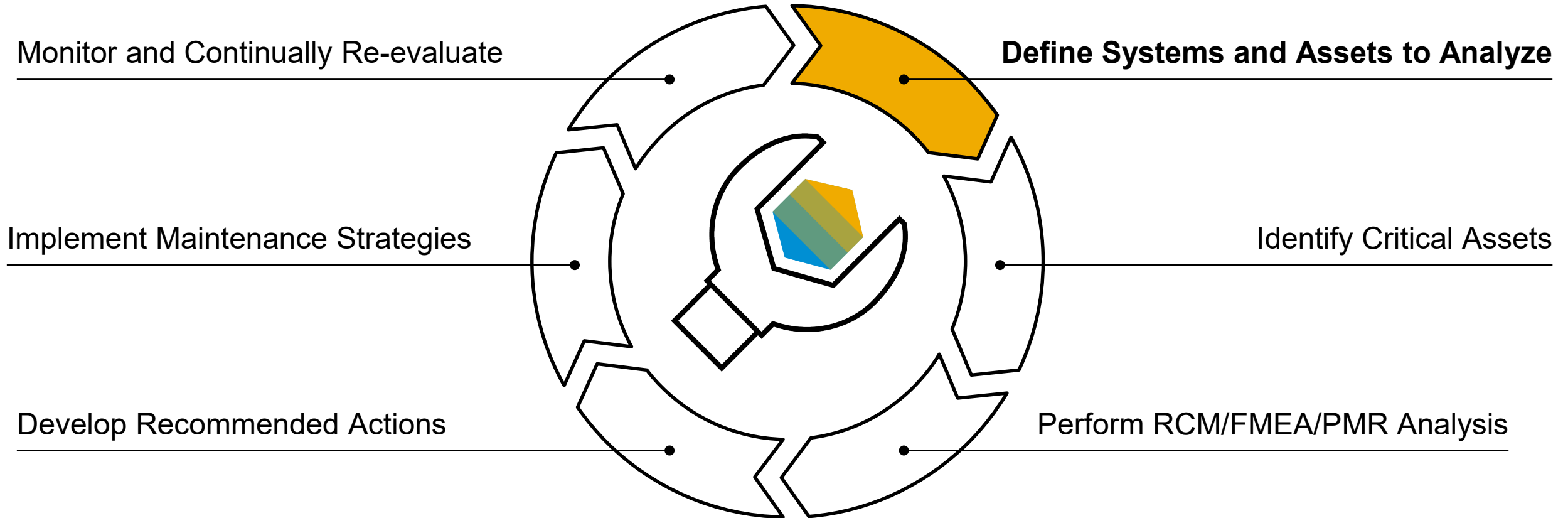
SAP Asset Strategy and Performance Management Solution Overview



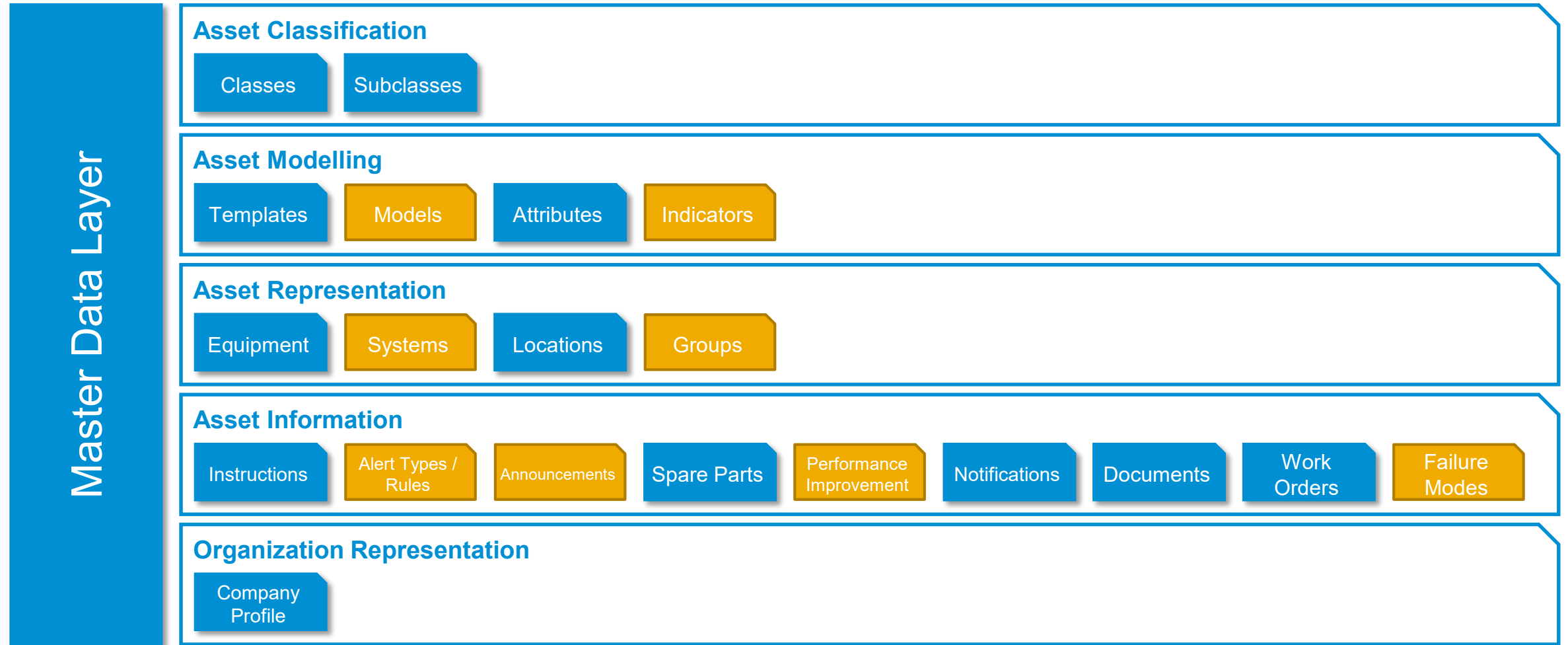
*planned

SAP Asset Strategy and Performance Management helps companies achieve good asset management. It provides (Asset) Risk and Criticality Analysis and proven methodologies like RCM* and FMEA to develop recommended maintenance strategies e.g. preventive or corrective tasks actions.

SAP Asset Strategy and Performance Management Solution Overview

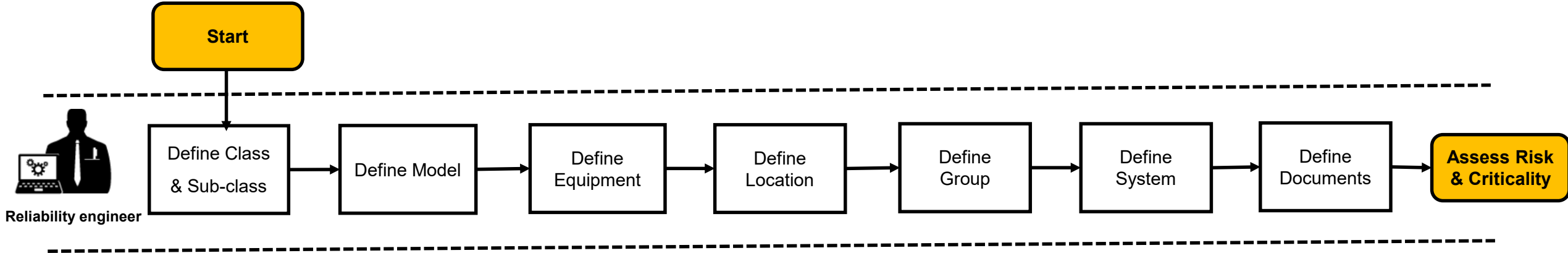


SAP Asset Central - Next-Generation Master Data Layer



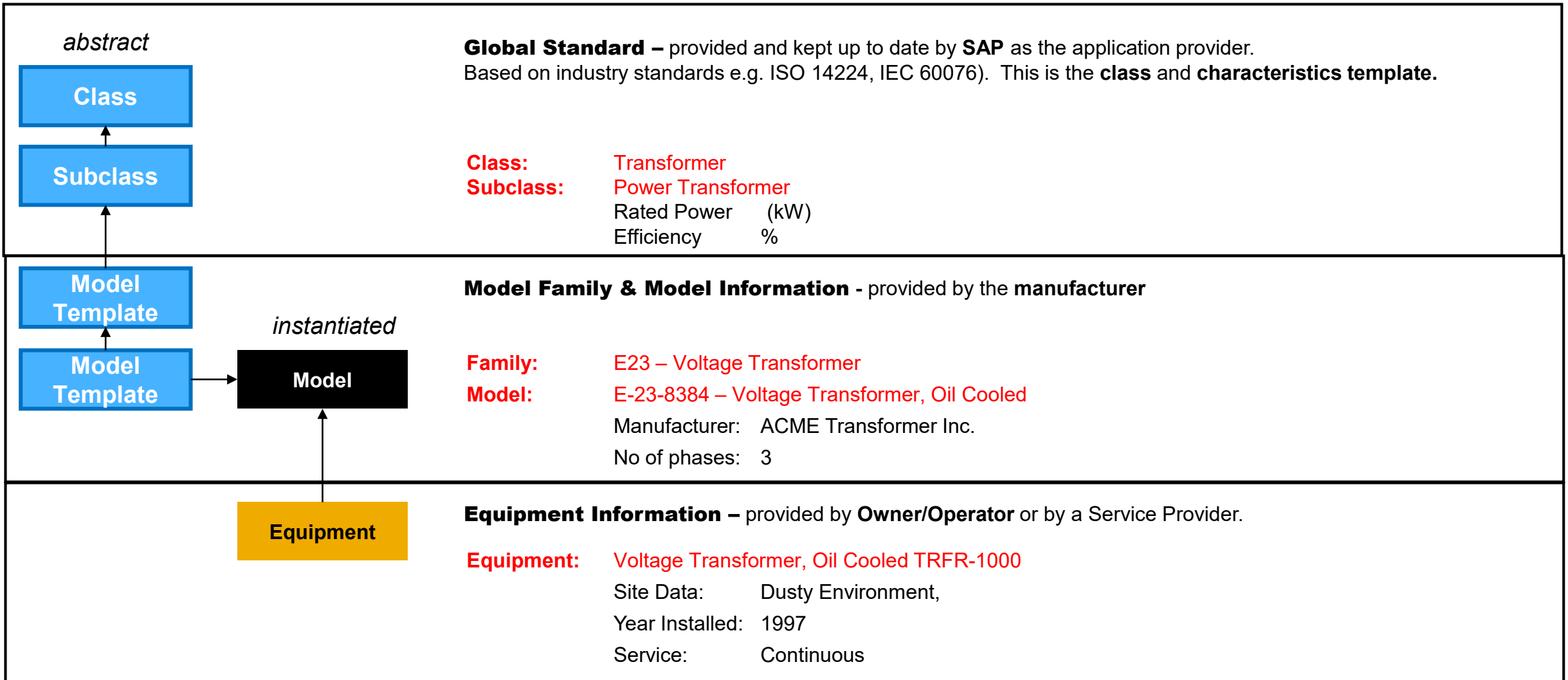
New Innovations

SAP Asset Strategy and Performance Management Process: Define Asset Information and Scope



- Asset Classes & Subclasses are used to utilise Templates based on ISO standards and also assist in defining the asset model
- An asset model represents a specific product or object identified by the manufacturer. The entire model information will be used as template when creating a new equipment.
- Equipment in ASPM represents an individual maintainable object that requires asset strategy maintenance
- Location in ASPM is used to structure Equipment in a hierarchical manner to support the analysis of the asset maintenance strategy
- Group in ASPM is used to group multiple objects to support the assessment of Risk and Criticality and the FMEA analysis, e.g. a group of transformers in a certain location, a group of poles/towers & under ground structures built from a certain capital project
- System in ASPM is used to link or connect objects in a logical way for additional analysis purposes, e.g. the under ground transmission system on a certain geographical zone.
- Risk and Critical Assessment and FMEA can be processed at any level above
- Documents can be used to support store asset information, firmware, instructions and failures to support the entire ASPM process

Template Concept: Class, Subclass and Model Template



SAP Asset Strategy and Performance Management

Equipment: Features

SWITCHING_DEVICE / MECHANICAL_SWITCHING_DEVICE / EQ-CB-1000 /

Circuit Breaker - Type 1000 EQ-CB-1000-1000

Manufacturer: SAP Manufacturer External IDs Phase: Fully Operational Status: Published Risk/Criticality: ● Medium Maintenance Strategy Languages: EN IoT Sync: No Connection Status: Not Available

INFORMATION ▾ STRUCTURE & PARTS ▾ DOCUMENTATION ▾ MONITORING ▾ MAINTENANCE & SERVICE ▾ ASSESSMENT ▾ TIMELINE

Highlights Settings

Attribute Changes
October 2018 - November 2018

By Month Highest: 6

Risk and Criticality
Updated By Fitt, Dean (Nov 5, 2018)

Risk/Criticality: ● 8.25 B "Medium"
Normalized Risk: 48.33%
Action: PM review

Model Information

Manufacturer: SAP Manufacturer	Model ID: EQ-CB-1000	AIN Global ID:
Class: SWITCHING_DEVICE	Tracking: Serial Number Tracking at Model Level	Model Release Date:
Subclass: MECHANICAL_SWITCHING_DEVICE	Safety Risk:	Description: Circuit Breaker - Type 1000
Template: RESIDUAL_CURRENT_CIRCUIT_BREAKER	Generation:	

Equipment Information

Source Business Partner Role: For My Operations	Operator: SAP Operator	Location:
Serial Number:	Dealers:	Installation Date:
Batch Number:	Service Providers:	Tag Number:

Information

- Highlights
- Attributes
- Model Information
- Installation Information
- Life Cycle Information

Structure and Parts

- Structure
- Spare Parts

Documentation

- Documents
- Instructions
- Announcements

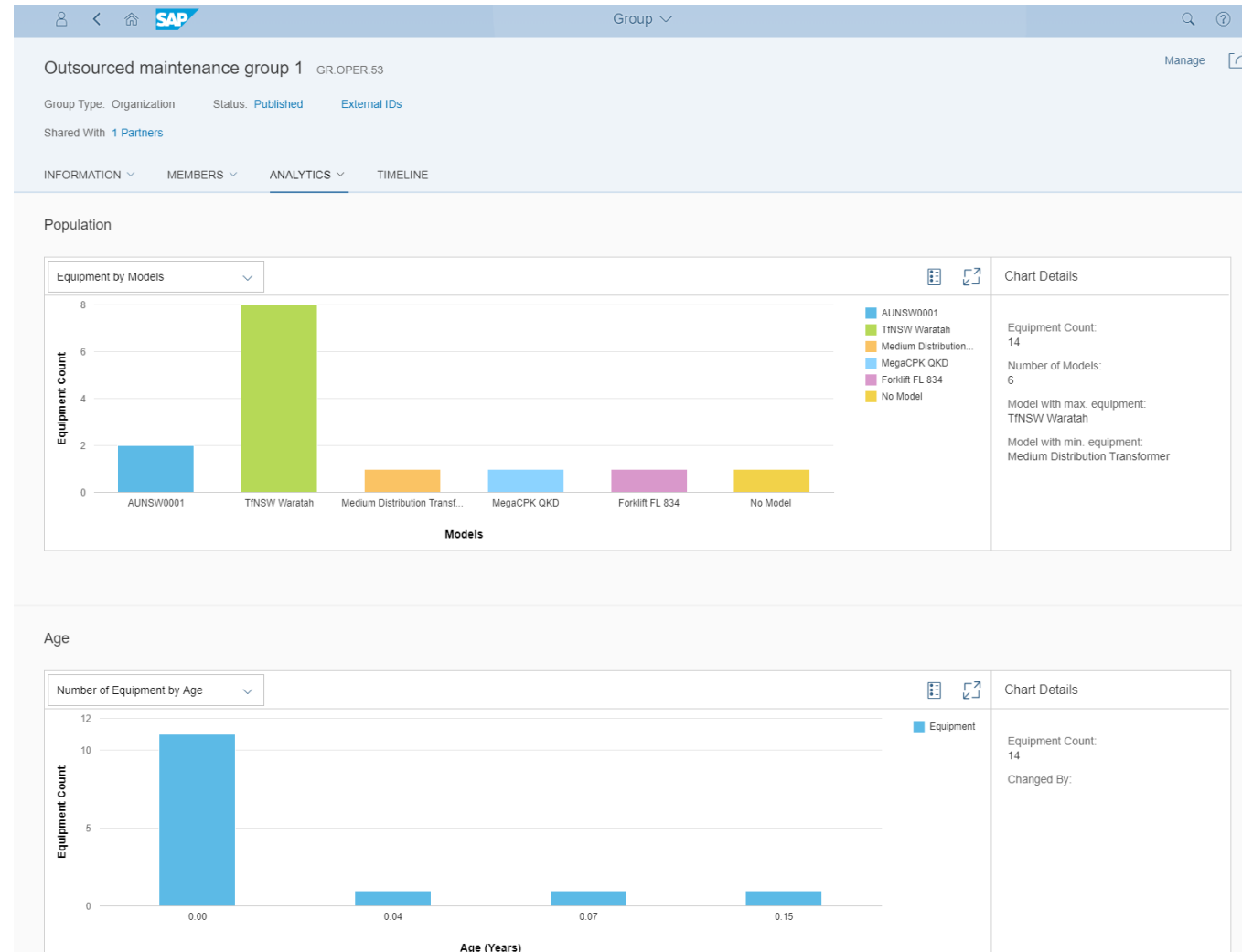
Monitoring

- Measuring Points
- Error Codes
- Improvement Cases

Time Line

Groups

- Models, Equipment and Locations can be arranged in Groups
- There are different types of groups e.g. assign equipment into different groups based on risk and criticality assessment.
- Objects that are grouped can be analyzed by population or age. You can filter by all kinds of objects (Equipment, Model, Subclass, Manufacturer etc.)
- An FMEA Assessment can be performed on a group



Location - Asset Hierarchies

The screenshot displays the SAP S/4HANA Asset Management interface. On the left, a navigation pane shows a hierarchy of locations: Eagle Ford Field (P1), North Field (P1-C4), Well Cluster 3 (P1-C4-U3), Centrifugal Pump (P1-C4-U3-A1), and various sub-locations like Location 4, Location 1, and Location 2. The selected asset is 'Rotating Equipment / Pump 00554 (Pump 00554)', which has sub-assets including Drivetrain Assembly, Hydraulics Assembly, Foundation, Baseplate, and Casing. The main view shows key metrics: Risk and Criticality (7.0 A 'High'), Phase (Fully Operational/Standby), and Next Work Order (WO.PDMS.7690). A Data Sheet summary shows 9 attributes, 0 changed values, and 0 attributes without values. Two tables at the bottom show attributes on Equipment Level and Model Level.

Attribute	Value
Model Year	2010
Installation Year	2010
Spared	No

Attribute	Value
Model	200 Series
Manufacturer	Pumps Ltd
Maximum Flow	100 m3/h

- Flexible configuration of naming conventions for master data standardization
- Parent/child relationships for master data inheritance

Documents

Document List

Standard * Search Show Filter Bar Filters (1) Go

Documents (1,069) Standard

Add Edit Assign View Image Delete Group Download

Document	File Name	File Type	Confidentiality	Language	Phase	Category	Source
<input type="checkbox"/> jlg5 D.OPER.1211 Hotspot Exists: Assignments: Yes Created On: Aug 25, 2018 Data Sensitivity: No Sensitive Information	jlg5.jpg	Image		English Add Another Language		Identification	SAP Operator
<input type="checkbox"/> jlg4 D.OPER.1210 Hotspot Exists: Assignments: Yes Created On: Aug 25, 2018 Data Sensitivity: No Sensitive Information	jlg4.jpg	Image		English Add Another Language		Others	SAP Operator
<input type="checkbox"/> jlg3 D.OPER.1209 Hotspot Exists: Assignments: Yes	jlg3.jpg	Image		English Add Another Language		Drawings / Schemes	SAP Operator

The Document application stores and shares multiple documents across objects

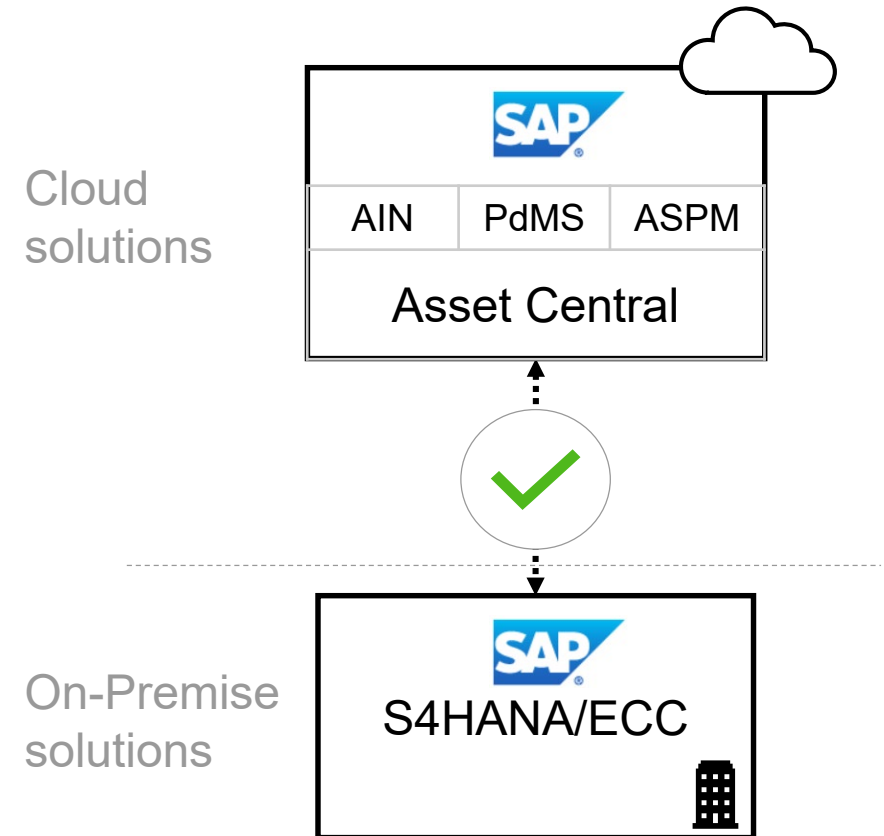
Asset Central Foundation

ERP Integration

[Checkout the new integration](#) guide!

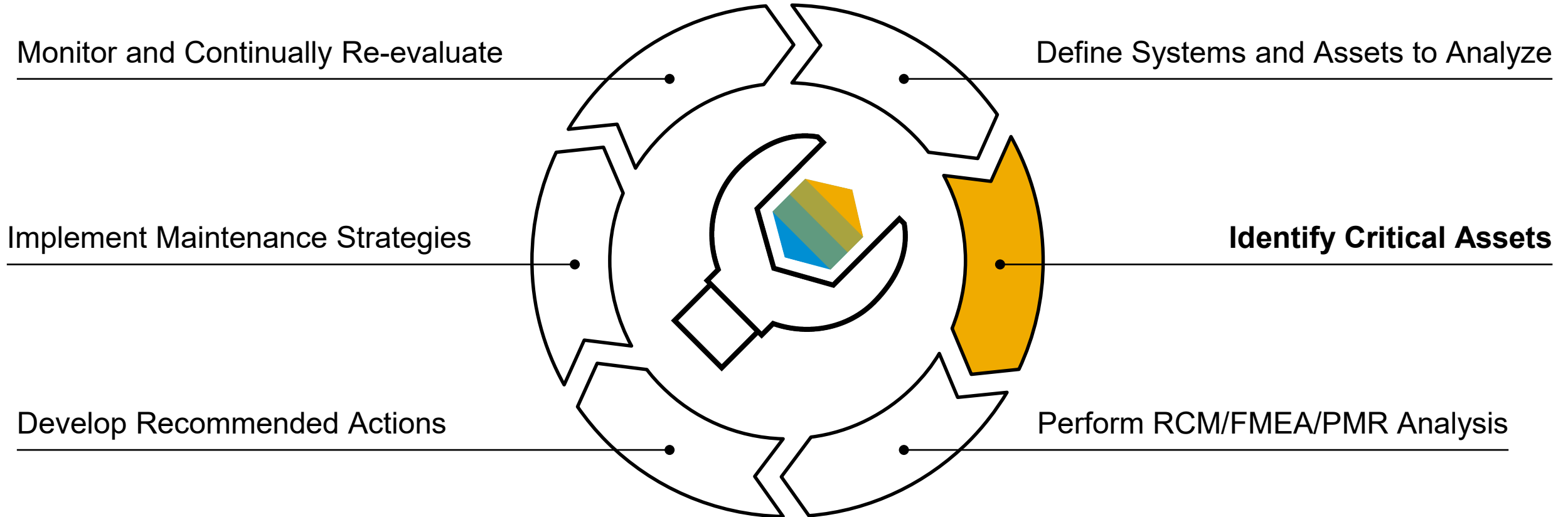


- Integration scenario ensures asset information is kept current between Asset Central (AC) and Enterprise Asset Management (EAM).
- Integration between AC & EAM, covers both data and user experience improvements.
- Integration provides Bi-directional synchronization of asset information for technical objects –
 - Equipment
 - Functional Location
 - Documents
 - Notifications
 - Work orders



Supported Releases – **S/4 HANA On Premise 1709 & above, ERP Enhancement package 6 & above.**

SAP Asset Strategy and Performance Management Solution Overview



Risk and Criticality Assessment: Questions & Answers

Equipment

SWITCHING_DEVICE / MECHANICAL_SWITCHING_DEVICE / EQ-CB-1000 /

Circuit Breaker - Type 1000 EQ-CB-1000-1000

Manage ☆ 📦 ⚙️ 📄

INFORMATION ▾ STRUCTURE & PARTS ▾ DOCUMENTATION ▾ MONITORING ▾ MAINTENANCE & SERVICE ▾ **ASSESSMENT ▾** TIMELINE

Matrix

🔍 Operations (2/2) 🏭 Production (2/2) 🌿 Environment (2/2) 🛡️ Safety (2/2) 📊 📄

Dimensions (2)

Question	Question Text	Answer
✓	What is Category of Failure Consequence?	Moderate
✓	What is the consequence to Operations?	XII

Answers (4)

Answers	Description
<input type="radio"/> Catastrophic	Failure resulting in death - system loss
<input type="radio"/> Severe	Severe injury. Damage < 100000 USD
<input checked="" type="radio"/> Moderate	Minor injury or illness. Damage < 250000
<input type="radio"/> Minor	Very minor Injury. Damage < 50000 USD

Note:

Risk & Criticality Assessment: Matrix

Equipment

SWITCHING_DEVICE / MECHANICAL_SWITCHING_DEVICE / EQ-CB-1000 /
Circuit Breaker - Type 1000 EQ-CB-1000-1000

Manage ☆ 📦 ⚙️ 📄

INFORMATION ▾ STRUCTURE & PARTS ▾ DOCUMENTATION ▾ MONITORING ▾ MAINTENANCE & SERVICE ▾ **ASSESSMENT ▾** TIMELINE

Matrix

🔍 Operations (2/2) 🏭 Production (2/2) 🌿 Environment (2/2) 🛡️ Safety (2/2) 📊 📄

🔍 Operations Swap Axis 📄

What is Category of ... 3 ⓘ
 What is the consequ... 3 ⓘ






What is the consequence to Opera...
 What is Category of Failure Consequence?











	Catastrophic	Severe	Moderate	Minor
IV	1.00	2.00	3.00	4.00
VIII	2.00	4.00	6.00	8.00
XII	3.00	6.00	9.00	12.00
XVI	4.00	8.00	12.00	16.00

Equipment List: Showing Risk, Criticality, RPN and Recommended Action

Standard * Show Filter Bar Filters (1) Go

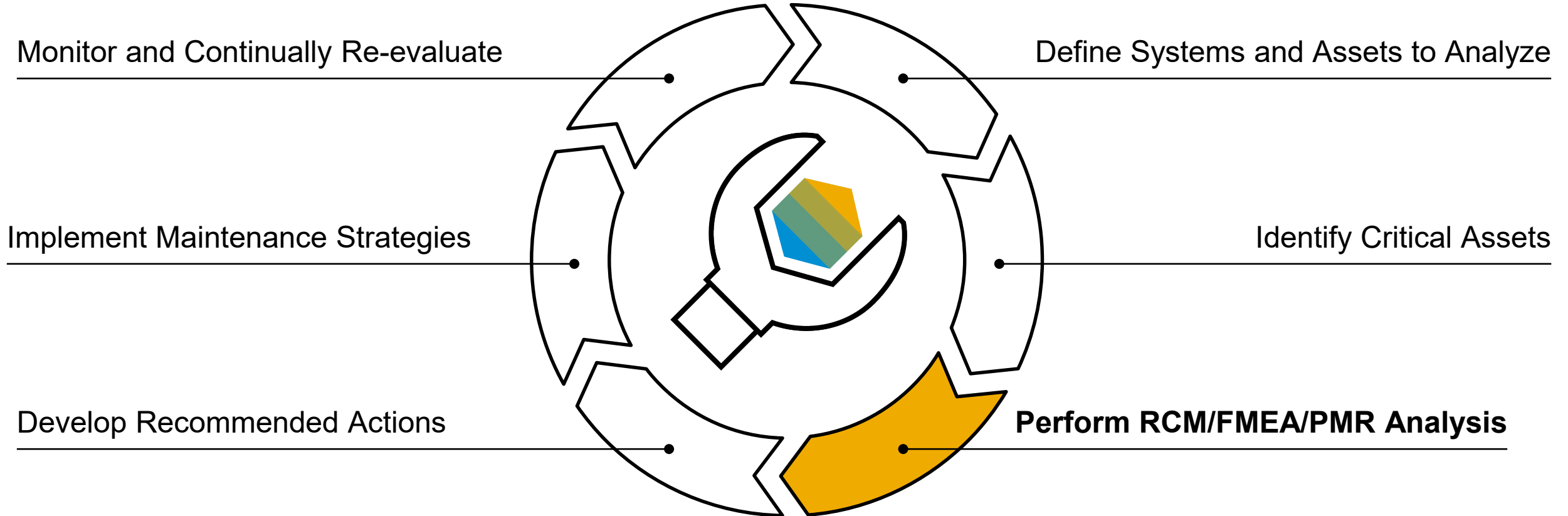
Equipment (2,584) | Standard *

New Request Model Publish Group Assess     

<input type="checkbox"/>	Equipment	Action	Criticality	Normalized Risk	RPN	Risk Score	
<input type="checkbox"/>	 EQ-CB-1000-1000 Circuit Breaker - Type 1000	OEM guidelines	A "High"	70.00%	35	11.50	>
<input type="checkbox"/>	 JLG1255-2016.EVERETT.200023c JLG1255 - Telescopic Handler	PM review	B "Medium"	18.18%	240	9.00	>
<input type="checkbox"/>	 Voltage_Transformer_10KV A_CMFSL Voltage_Transformer_10KVA						>
<input type="checkbox"/>	 cmfsl-Equipment cmfsl						>
<input type="checkbox"/>	 AZBIL Flowmeter-3298241155 AZBIL Vortex Flowmeter-Flowmeter						>
<input type="checkbox"/>	 Pump 00554 OKD-6371 Pump 00554	OEM guidelines	B "Medium"	34.82%	0	11.70	>
<input type="checkbox"/>	 AC-HD-4711 AC-HD-4711 Pump WKF125/6 N						>
<input type="checkbox"/>	 COIL/FIELD Pump-Equipment COIL Pump						>
<input type="checkbox"/>	 CHS 3U65 - 3298221155 CHS Trailer	PM review	B "Medium"	38.48%		217.00	>
<input type="checkbox"/>	 430000021212 Centrifugal Pump - 43000						>

Use case: Get list of all safety critical assets, select and create a group for follow-up activities

SAP Asset Strategy and Performance Management Solution Overview



Reliability Centered Maintenance (RCM) – a brief history

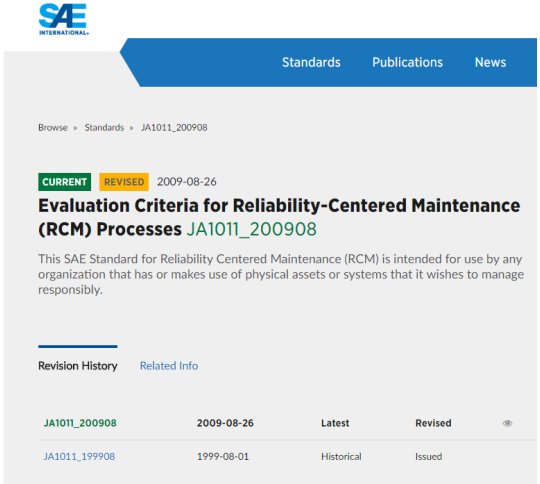
Efforts to understand non-structural aircraft components failure patterns led **Stanley Nowlan and Howard Heap**, both from United Airlines, to develop a new approach towards maintenance. They documented their methodology for developing failure consequence management policies in a report published by the U.S. Department of Defense in 1978.

Their process was called Reliability Centered Maintenance (RCM) and was based on a common-sense procedure with a decision diagram for creating Maintenance strategies to protect assets functions. RCM is defined as a process to determine what must be done to keep assets doing what their operators want them to do in their current operating context. Since its origins, RCM has been used in many industries, and in almost every industrialized country in the world. There have been many individual interpretations of Nowlan and Heap's report leading to the creation of a variety of methods that differ widely from the original Process.

The purpose of the standard SAE JA1011, published in 1999, is to set out the criteria that any process must comply with in order to be called “RCM.” The twelve pages' document, revised in August 2009, describes the minimum criteria for a process to be considered an RCM-compliant method. The standard provides the criteria to establish if a given process follows the creeds of RCM as originally proposed. It can also serve as a guide for organizations seeking RCM training, facilitation or consulting.

Document SAE JA1011, AUG 2009, establishes that **for a Process be acknowledged as RCM it must follow the seven steps in the order shown below:**

1. What are the functions and associated desired standards of performance of the asset in its present operating context (**functions**)?
2. In what ways can it fail to fulfill its functions (**functional failures**)?
3. What causes each functional failure (**failure modes**)?
4. What happens when each failure occurs (**failure effects**)?
5. In what way does each failure matter (**failure consequences**)?
6. What should be done to predict or prevent each failure (**proactive tasks and task intervals**)?
7. What should be done if a suitable proactive task cannot be found (**default actions**)?



The screenshot shows the SAE International website page for the standard SAE JA1011_200908. The page features a blue header with navigation links for Standards, Publications, and News. Below the header, the standard is identified as 'CURRENT' and 'REVISED' on 2009-08-26. The title is 'Evaluation Criteria for Reliability-Centered Maintenance (RCM) Processes JA1011_200908'. A brief description states: 'This SAE Standard for Reliability Centered Maintenance (RCM) is intended for use by any organization that has or makes use of physical assets or systems that it wishes to manage responsibly.' Below this, there are links for 'Revision History' and 'Related Info'. A table at the bottom shows the revision history:

Standard Number	Revision Date	Status	Version
JA1011_200908	2009-08-26	Latest	Revised
JA1011_199908	1999-08-01	Historical	Issued



Reliability Centered Maintenance (RCM**)

7 + 1 Leading Questions

↓ Which Assets or Systems do I want to Analyze?

Scope – Boiler System

↓ What are the desired functions and performance in it's operating context?

Functions – Generate Steam at 60% Efficiency

↓ In what ways does it fail to fulfil its functions?

Functional Failures – Operating below 60% Efficiency

↓ What causes each functional failure?

Failure Modes – Scale Formation inside Boiler water Tubes

↓ What happens when each failure occurs?

Failure Effects – For the same output more Fuel is consumed, adding to the fuel cost

↓ In what way does each failure matter?

Failure Consequences – Production Impacted, 3 Hr Down time required for Repair

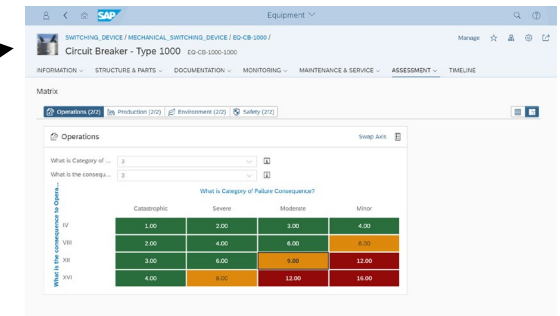
↓ What can be done to predict or prevent each failure?

Proactive Tasks & Task Intervals – Regular Boiler Blow down to avoid Scale Deposit

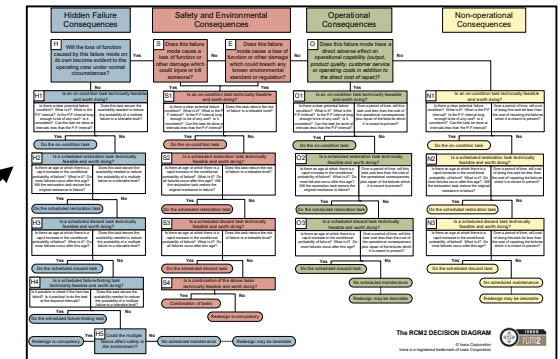
↓ What can be done if the failure cannot be predicted or prevented?

Default Actions – Take Shutdown of Boiler & Shift the load to other Boiler

Risk & Criticality Assessment



RCM2* Decision Diagram



Recommended Tasks (Instructions)

Description	Activity	Estimated Cost (Calendar Week)	Estimated Frequency (Months)	Risk Rating (Calendar Week)
Device Control Calibration	Adjust	100	1	50
Wear Inspection	Inspect	50	12	50

*RCM2 and RCM3 are TM by Aladon

** Based on SAE JA1011 Evaluation Criteria for Reliability Centred Maintenance (RCM) Processes

Failure Modes

- The optimal maintenance strategy can be defined at the level of single failure mode
- Failure Modes can be assigned to Models, Equipment, Locations, Spare Parts and Groups.
- They are based on a subclass and have different categories and types.
- RAMS Figures (Reliability, availability, maintainability and safety) and KPIs (MTTF, MTTR, MTBF).

The screenshot shows the SAP Failure Mode configuration interface. At the top, the SAP logo and navigation icons are visible. The page title is 'Failure Mode' with a dropdown arrow. Below the title, the failure mode is identified as 'EQ-CB-1000-1000 / FM.OPER.69 / Circuit Breaker Fails to Close FM.OPER.69'. There are tabs for 'External IDs', 'INFORMATION', 'EFFECTS', 'CAUSES', 'MAINTENANCE STRATEGY', and 'INSTRUCTIONS'. The 'INFORMATION' tab is active, showing a 'Highlights' section with FMEA details: 'Updated By Fitt, Dean (Oct 22, 2018)', 'RPN: 75', 'Preventive Activities: 1', and 'Corrective Activities: 0'. Below this is the 'Failure Mode Information' section, which includes: 'Subclass: OIL_CIRCUIT_BREAKER', 'Types: 1 - Designed Function is not obtained', 'Categories: Fails to close on demand', 'Long Description: Circuit Breaker Fails to Close', 'Detection Methods: Periodic maintenance', and 'Relevant To Equipment 'EQ-CB-1000-1000': YES'. The bottom section, 'RAMS Figures', contains four charts: 'Failure Pattern E' (a line graph showing Failure Rate vs Lifetime), 'Mean Time To Failure: 1 Years', 'Mean Time To Repair: 5 Hours', and 'Mean Time Between Failures: 6 Months'. Each chart has a 5-star rating below it.


FMEA Assessment

CB FMEA AS.OPER.474
Validate
Publish
...

INFORMATION ▼
 ASSIGNMENTS ▼
 DOCUMENTATION

Equipment

Search Q ...

- Equipment
-  **Circuit Breaker - Type 1000**
EQ-CB-1000-1000 ↻ >

Locations

Search Q ...

- Locations
There is no data available.

Models

Search Q ...

- Model
There is no data available.

FMEA Assessment ▼
?

! **Circuit Breaker Fails to Close** ▼
FM.OPER.69
i
^
1/1
▼
↗
×

INFORMATION
 EFFECTS
 CAUSES ▼

Causes Scale Info. Assign Remove Edit ↕

<input type="checkbox"/> Cause	RPN	Effect	Detectability	Occurrence	Instructions
<input type="checkbox"/> Cement Growth CS.OPER.57	● 20	Loss of Power	2	2	0 >
<input type="checkbox"/> Impurities in Raw Material CS.OPER.56	● 5	Outage	1	1	0 >
<input type="checkbox"/> Relay Chatter CS.OPER.58	● 5	Outage	1	1	0 >

FMEA Assessment

Failure Mode

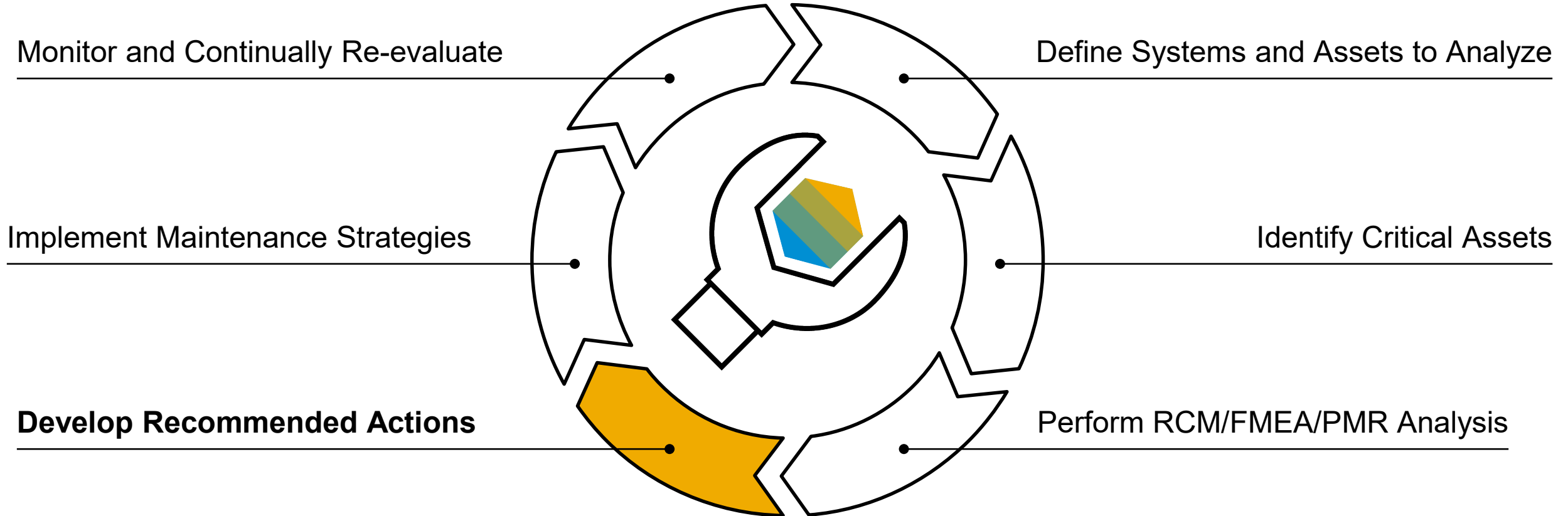
The screenshot displays the SAP FMEA Assessment interface. The top navigation bar includes the SAP logo and the text 'FMEA Assessment'. Below this, the main header shows 'CB FMEA AS.OPER.474' with 'Validate' and 'Publish' buttons. The left sidebar contains sections for 'Equipment', 'Locations', and 'Models'. The 'Equipment' section is active, showing a list with 'Circuit Breaker - Type 1000' selected. The main content area is titled 'Circuit Breaker Fails to Close' and shows a 'CAUSES' tab with a table of causes. A callout box on the right explains the RPN calculation: RPN = Severity x Occurrence x Detectability. Arrows point from the callout boxes to the 'Failure Mode' and 'Equipment' labels.

Cause	RPN	Effect	Detectability	Occurrence	Instructions
<input type="checkbox"/> Cement Growth CS.OPER.57	20	Loss of Power	2	2	0 >
<input type="checkbox"/> Impurities in Raw Material CS.OPER.56	5	Outage	1	1	0 >
<input type="checkbox"/> Relay Chatter CS.OPER.58	5	Outage	1	1	0 >

Equipment

Risk Priority Number (RPN = Severity x Occurrence x Detectability)

SAP Asset Strategy and Performance Management Solution Overview



Instructions

- Instructions describe how to execute maintenance
- There are different types of Instructions e.g. Breakdown, Installation, Operations, Planned Maintenance
- Instructions can be assigned to Models, Equipment and Groups
- Failure Modes can only be assigned to Breakdown Instructions.
- You can define the number of steps, duration, criticality, safety rules, tools and required spare parts.
- Additionally you can define preconditions, the steps themselves and post checks.
- You can add different documents. If you added an animated 3D file (.vds) the end user can view the sequences.

The screenshot displays the SAP interface for a 'Planned Maintenance Instruction'. The title is 'Oil Change' and it is marked as 'In Revision'. Key details include: Subclass: Demo subclass, Source: SAP Operator, External IDs, Published On, Instruction Revision: 2, and Instruction ID: I.OPER.16. A summary bar shows: Number of Steps: 3, Expected Duration: 4 Hours, People Required: 1, and Criticality: Moderate. Below this is a navigation menu with tabs for Information, Safety Rules, Tools and Spare Parts, Roles, Models, Equipment, and Groups. The 'Information' tab is active, showing: Activity: Service, Short Description: Oil Change, Long Description: (empty), Failure Mode Category: Unknown, Frequency: 12 Months, Primary Document: 3D Visual: Centrifugal pump parts 6.vds, and Relevant to Warranty: Yes. At the bottom, there are tabs for Preconditions, Steps, and Post Checks. The 'Steps' tab is selected, showing a 3D model of a centrifugal pump and a 'Play Step' button.

Develop Recommended Actions

Assign Preventive, Corrective or Placeholder Instructions

Relay Chatter CS.OPER.58

PREVENTIVE INSTRUCTIONS CORRECTIVE INSTRUCTIONS

Preventive Instructions

Description	Activity	Estimated Cost (Colombian Peso)	Estimated Frequency (Months)	Risk Reduction (Color)	Instruction
There is no data available.					

Assign Remove Edit

Instruction Placeholder Instruction

Select Instructions

All Equipment Failure Mode Recommended

Search Instructions

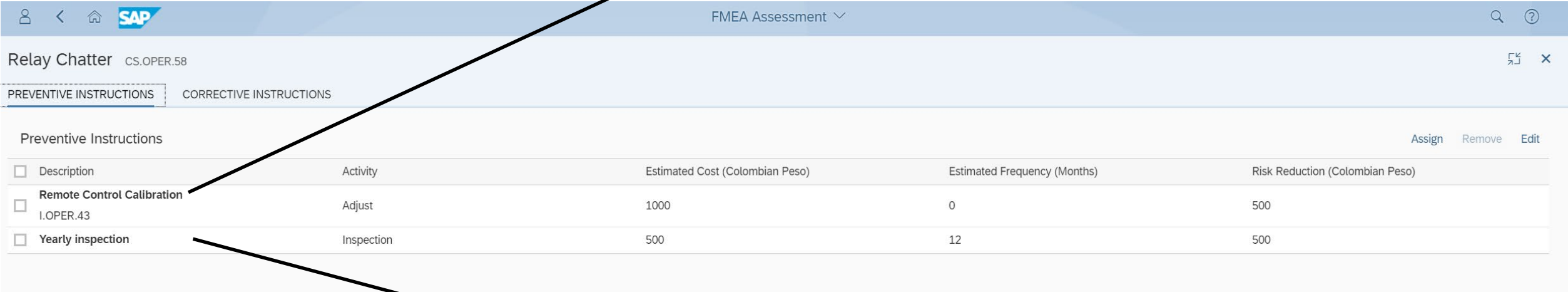
Instruction	Instruction Type	Activity	Duration	Source	Status
<input checked="" type="checkbox"/> Remote Control Calibration I.OPER.43	Planned Maintenance	Adjust	1 Minutes	SAP Operator	Published
<input type="checkbox"/> disassembly_bearing I.OPER.36	Planned Maintenance	Repair		SAP Operator	Published
<input type="checkbox"/> Replace Insulator I.OPER.48	Planned Maintenance	Replace	3 Days	SAP Operator	Published
<input type="checkbox"/> 43000-MT Instruction I.OPER.33	Planned Maintenance	Adjust	2 Hours	SAP Operator	In Revision
<input type="checkbox"/> Oil Change I.OPER.16	Planned Maintenance	Service	2 Hours	SAP Operator	Published
<input type="checkbox"/> Oil Quality Tests	Planned Maintenance	Check	2 Hours	SAP Operator	Published

Assign Cancel

Develop Recommended Actions

Assign Preventive, Corrective or Placeholder Instructions

Preventive Instruction



The screenshot shows the SAP FMEA Assessment interface for 'Relay Chatter' (CS.OPER.58). It features a table of Preventive Instructions with columns for Description, Activity, Estimated Cost, Estimated Frequency, and Risk Reduction. Two lines from the 'Preventive Instruction' label point to the 'Remote Control Calibration' and 'Yearly inspection' rows. The 'Placeholder Instruction' label is also present but has no lines pointing to it.

Preventive Instructions		Assign	Remove	Edit
Description	Activity	Estimated Cost (Colombian Peso)	Estimated Frequency (Months)	Risk Reduction (Colombian Peso)
<input type="checkbox"/> Remote Control Calibration I.OPER.43	Adjust	1000	0	500
<input type="checkbox"/> Yearly inspection	Inspection	500	12	500

Placeholder Instruction

Develop Recommended Actions

Publish Assessment

The screenshot displays the SAP FMEA Assessment interface. The main window shows the 'CAUSES' tab for 'Circuit Breaker Fails to Close' (FM.OPER.69). A table lists causes with their RPN, Effect, Detectability, Occurrence, and Instructions. A callout box with a black border and the text 'Publish Assessment' is positioned in the lower center, with an arrow pointing to the 'Publish' button in the left sidebar's 'Equipment' section.

Cause	RPN	Effect	Detectability	Occurrence	Instructions
<input type="checkbox"/> Cement Growth CS.OPER.57	20	Loss of Power	2	2	0 >
<input type="checkbox"/> Impurities in Raw Material CS.OPER.56	5	Outage	1	1	0 >
<input checked="" type="checkbox"/> Relay Chatter CS.OPER.58	35	Outage	7	1	0 >

Equipment

- Equipment
- Circuit Breaker - Type 1000**
EQ-CB-1000-1000

Locations

Locations
There is no data available.

Models

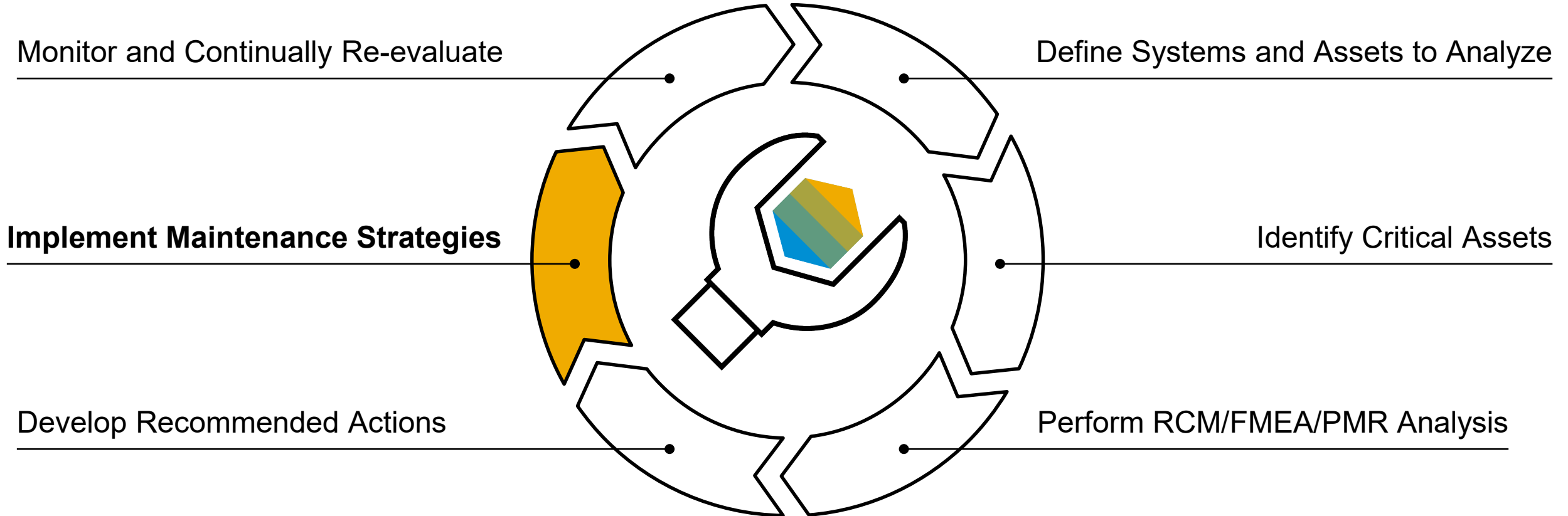
Model
There is no data available.

Relay Chatter CS.OPER.58

Preventive Instructions

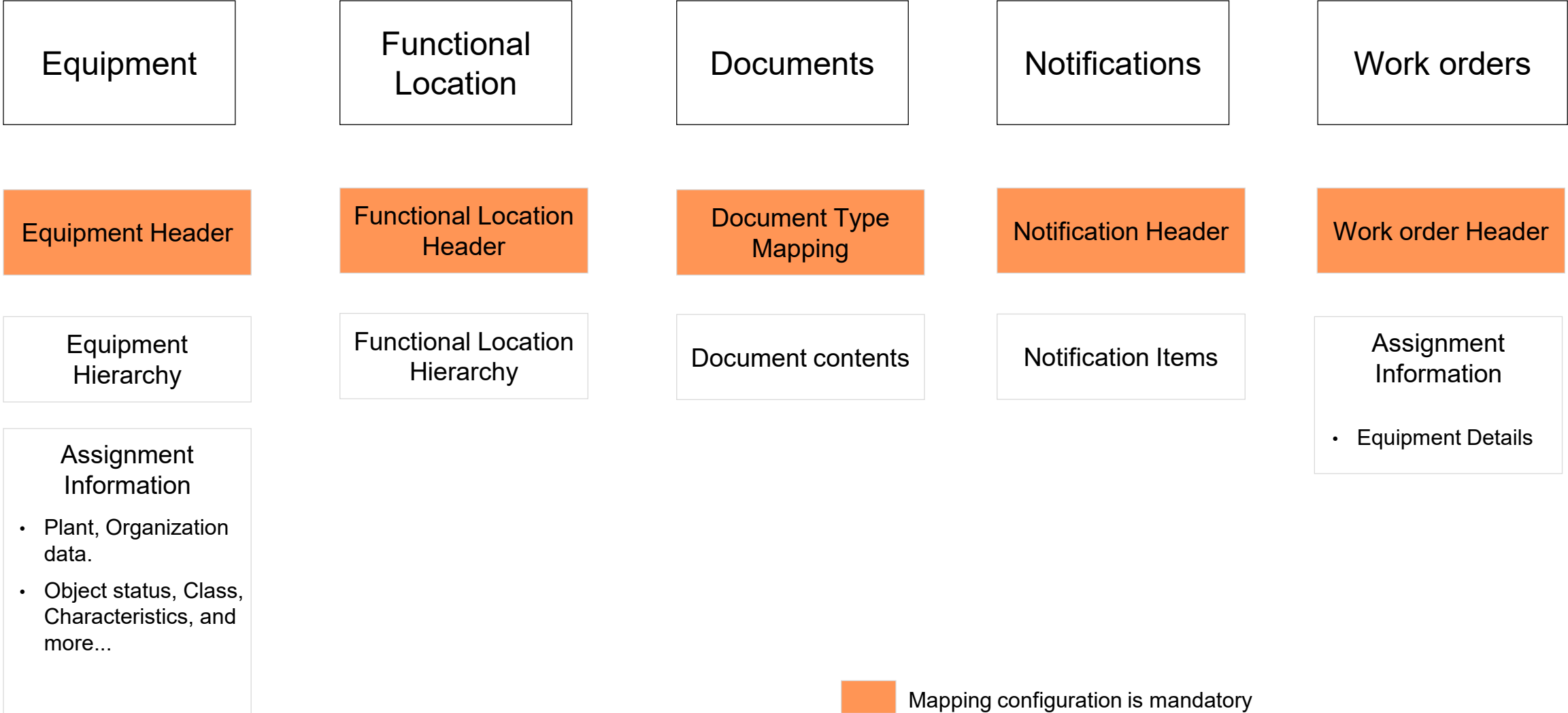
Description	Activity
<input type="checkbox"/> Remote Control Calibration I.OPER.43	Adjust
Estimated Cost (Colombian Peso): 1000	
Estimated Frequency (Months): 0	
Risk Reduction (Colombian Peso): 500	
<input type="checkbox"/> Yearly inspection	Inspection
Estimated Cost (Colombian Peso): 500	
Estimated Frequency (Months): 12	
Risk Reduction (Colombian Peso): 500	

SAP Asset Strategy and Performance Management Solution Overview



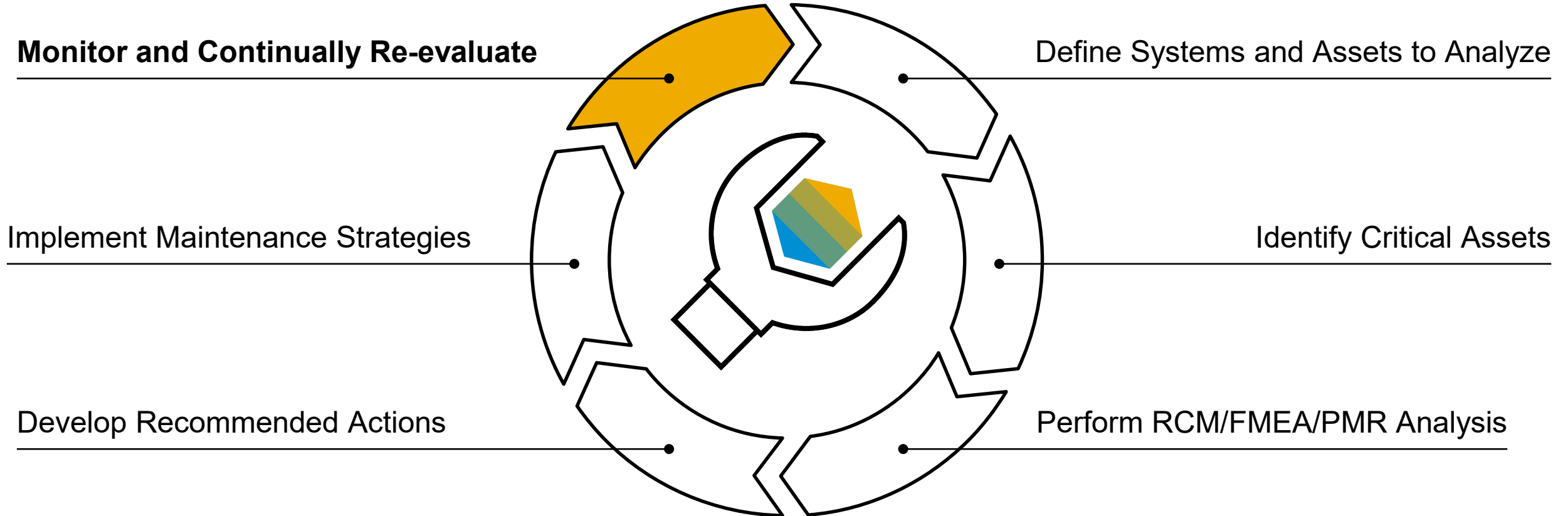
Asset Central – ERP Integration

Asset data involved in the integration



 Mapping configuration is mandatory

SAP Asset Strategy and Performance Management Solution Overview

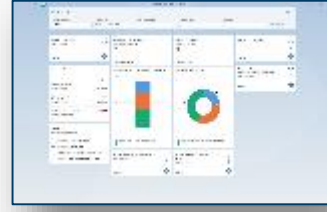


Analytical Apps and BW Extractors for S/4HANA Asset Management



Object Page

- Find Technical object
- Find Notifications
- Find Orders and Operation
- Find Task list and Operation
- Find Documents
- Find Class



Overview Page

- Maintenance Planning Overview
- Scheduling Overview



Analytics List Page

- Breakdown Analysis
- Damage Analysis
- Actual Cost Analysis*



BW extractors

- Equipment*
- Functional locations*
- Maintenance order*
- Maintenance order/Operation*
- Maintenance notification*
- Maintenance Notification Items*
- Preventive Maintenance Item*



CDS views for Strategic analysis

- Location Analysis +
- Damage Analysis +
- Maintenance order Analysis +
- Breakdown Analysis +

Analytical List Page

Actual Cost Analysis

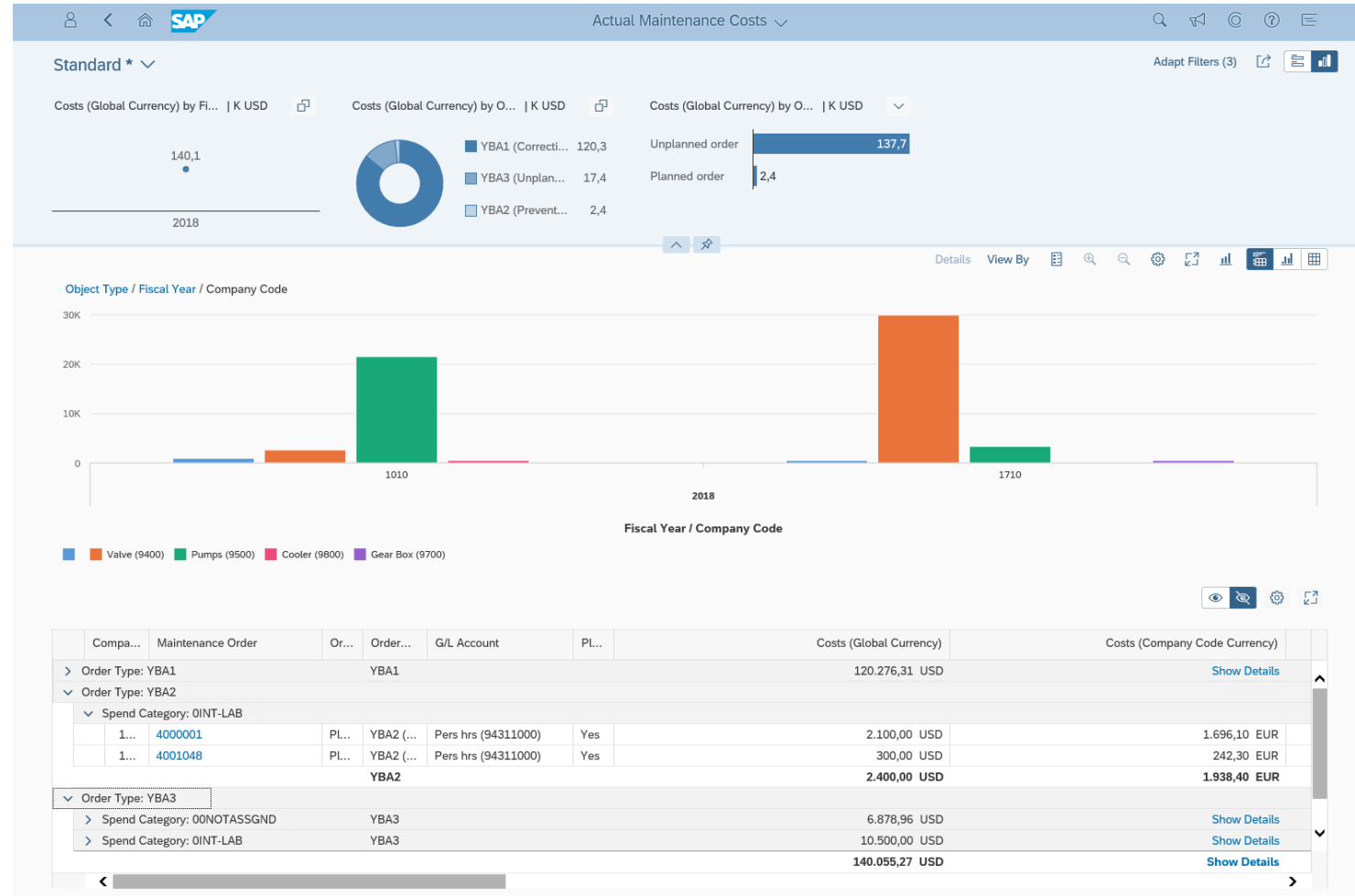
The SAP Fiori app *Actual Cost Analysis* supports the *Maintenance Planner* in monitoring and evaluating actual costs resulting from current maintenance orders.

Value Proposition

- Easily identify the maintenance activities leading to the highest costs or parts of the asset that were particularly costly on inspections
- Evaluate actual maintenance costs stored in the Universal Journal Entry
- Seamless navigation within one page that combines transactional and analytical data using chart and table visualization

Capabilities

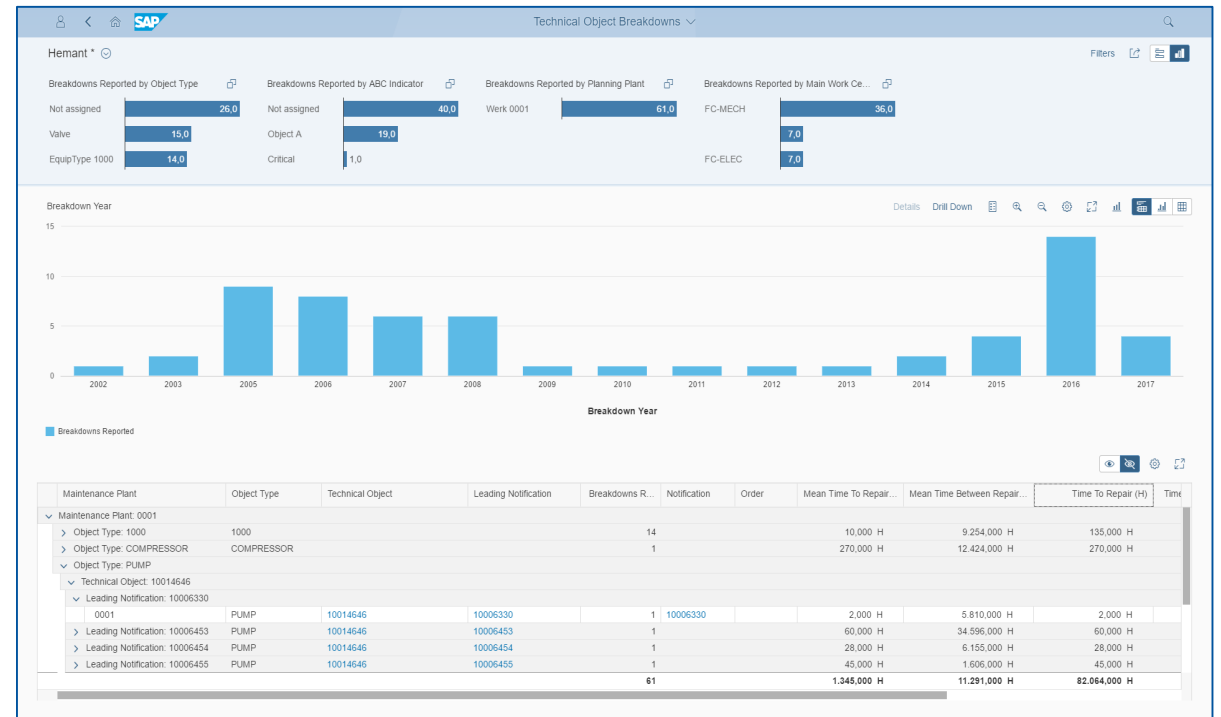
- Analyze the actual costs for materials and labor in maintenance
- Compare the total maintenance cost for unplanned, corrective and preventive maintenance activities
- Filters allow you to analyze critical costs in a fiscal year from different perspectives, such as the order type, the construction type, the location, the planner group or the manufacturer



Analytical List Page

Technical Object Breakdowns

- Analyze Breakdown and its impact on Reliability
- Evaluate effective time to repair and time between repair
- Evaluate Mean and Total time between repair as well time to repair
- Real time evaluation of statistical KPIs without storing aggregates
- identify where the equipment was installed if the breakdown is identified after the equipment was dismantled.
- Identify equipment that fails often or long time to repair
- Identify location where equipment fails quite often
- Compare reliability of the equipment from different manufacturers
- Identify repair frequencies for a type or make of an equipment



Analytical List Page

Damage Analysis

Main KPIs

- Detailed failure mode analysis
- Number of damages recorded, related causes and activities
- Covers all the features covered by MCI5 / IW69

High-level innovation description

For malfunction report and activity reports, it is critical to records parts that were observed as damaged. Number of damages and corresponding causes could help in analyzing reliability of equipment.

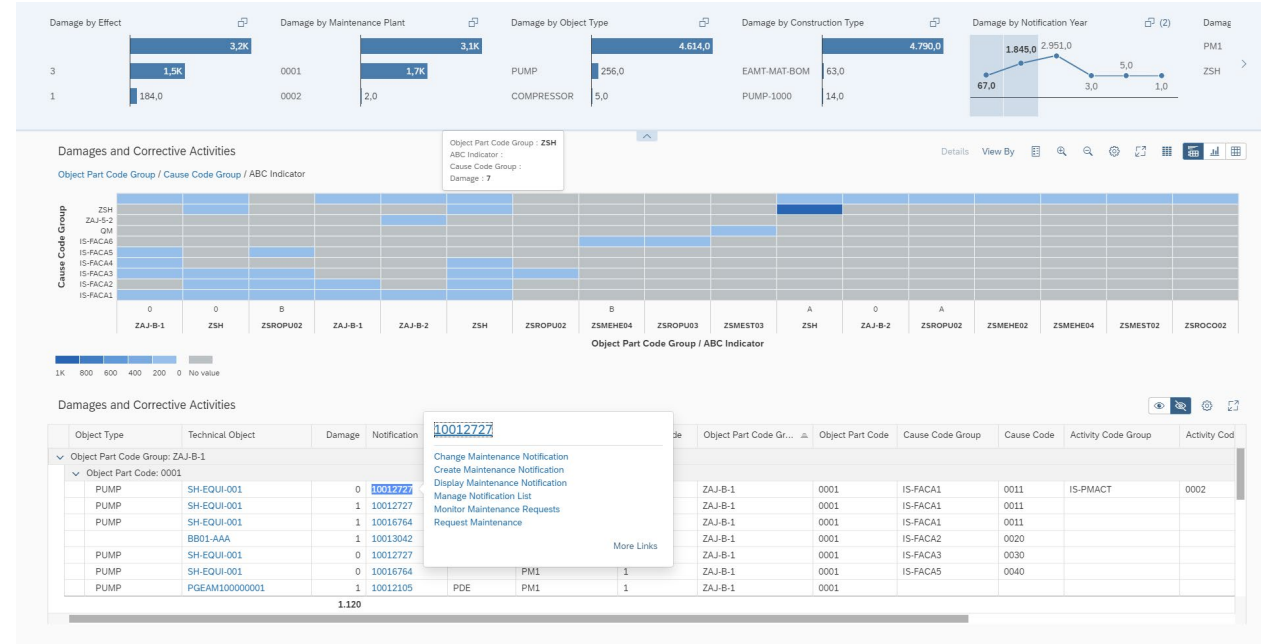
Value Proposition

Increased reliability due to

- Identify failure modes of an equipment
- Identify parts that gets damaged and activities that are needed to repair or replace them
- Identifying main causes observed by technicians and plan preventive or inspections activities to avoid future unplanned breakdown.
- Identify parts that are over maintained and remove them from preventive activities.

Capabilities

- Analyze frequent offenders that create reliability issues for an equipment
- Identify relation between Failure mode, damages, causes and effect it has on operation of asset



Improvements over PMIS

- Calculation and aggregation is in real time with transactional data and not stored in S-structure.
- KPIs can be aggregated at equipment type, manufacturer, model or any other critical attributes.
- Much easy navigation that lets user drill down to notification or order and get better visibility for historical failures.



Rotating_Equipment / Pump / 200 Series /

Pump 00554 Pump 00554

Manage



STRUCTURE AND PARTS

DOCUMENTATION

MONITORING

MAINTENANCE & SERVICE

ASSESSMENT

ANALYTICS

TIMELINE

2D Chart

2D Chart - Regular Aggregation

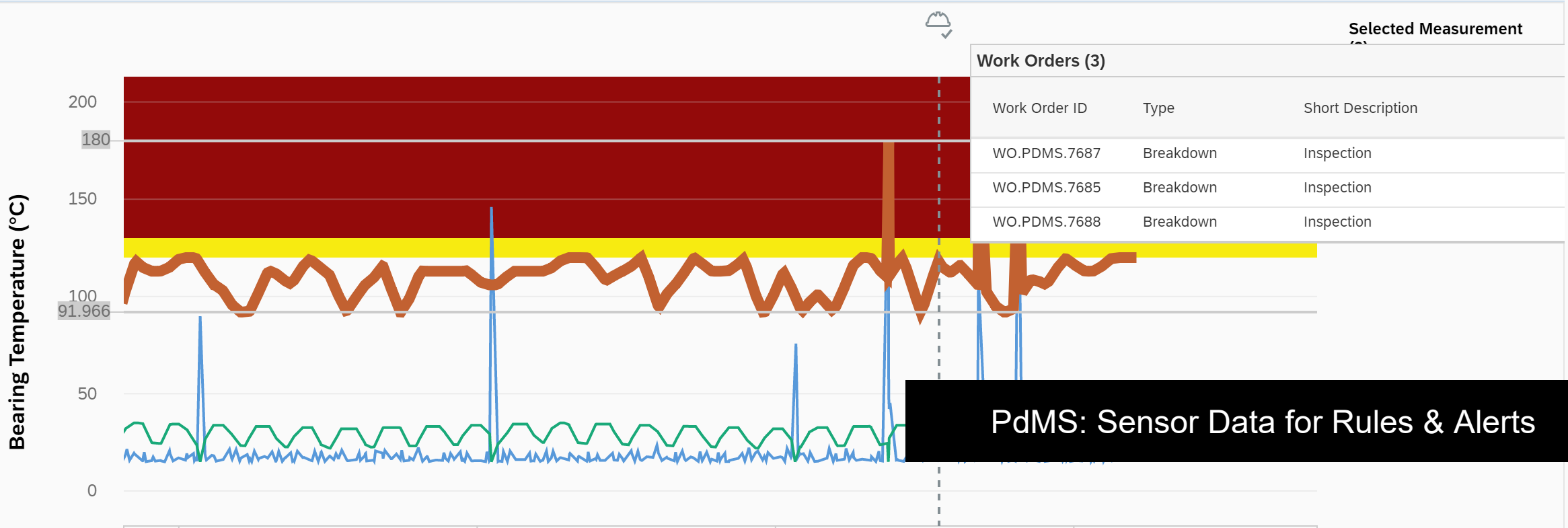
Duration

4 Weeks

Multi Chart

Add Evidence

Select Measurements

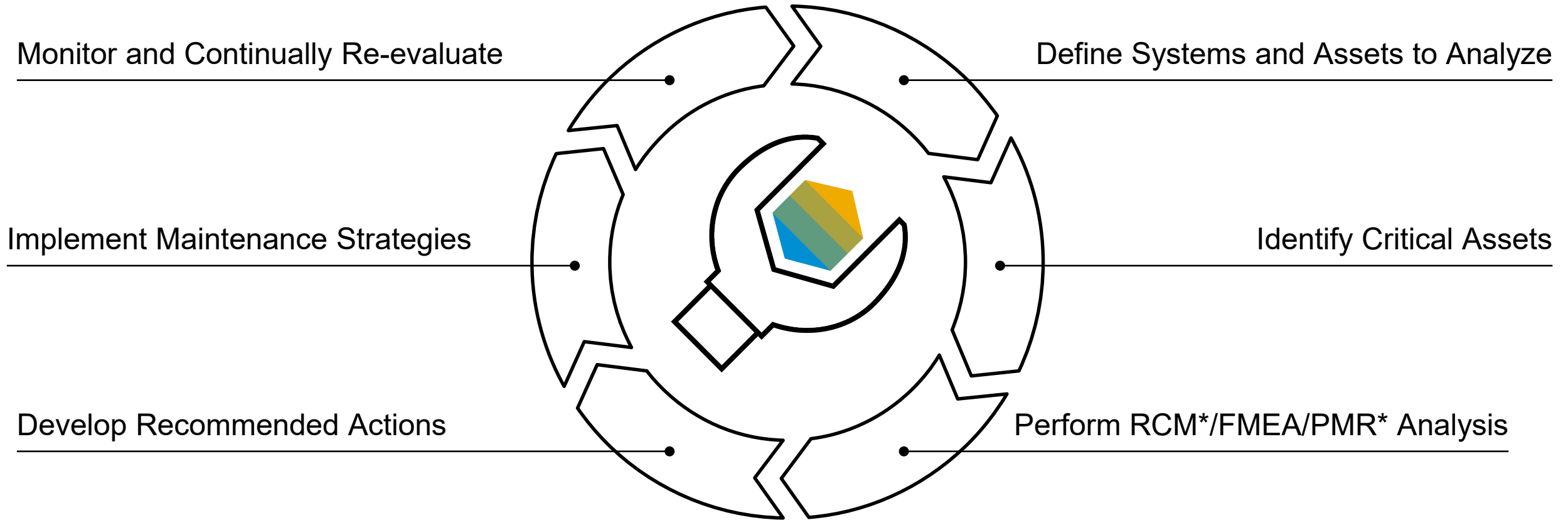


PdMS: Sensor Data for Rules & Alerts

Summary

SAP Asset Strategy and Performance Management

Solution Overview



*planned

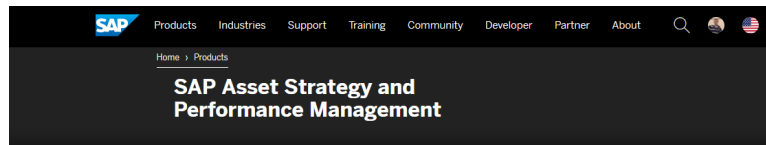
SAP Asset Strategy and Performance Management helps companies achieve good asset management. It provides (Asset) Risk and Criticality Analysis and proven methodologies like RCM* and FMEA to develop recommended maintenance strategies e.g. preventive or corrective tasks actions.

How do I get further information?

[SAP.com](https://www.sap.com)

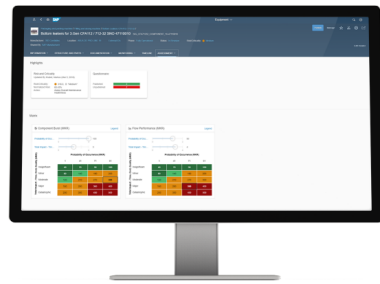
[SAP Help Portal](https://help.sap.com)

[Roadmap](#)



- Menu
- Product Overview
- Key Benefits
- Key Capabilities
- Technical Information
- Pricing and Packaging
- Business Services
- Contact Us

Optimize asset performance management and maintenance strategies



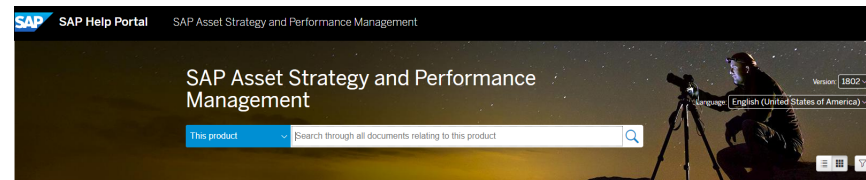
Enlarge

SAP Asset Strategy and Performance Management

Measure and improve the performance of your assets and enhance maintenance strategies. With the SAP Asset Strategy and Performance Management application, you can enable asset owners, managers, plant managers, and reliability engineers to improve control, while making maintenance planning easier and more accurate.

- Cloud deployment
- Streamlined planning and monitoring of maintenance strategies
- Flexible, customizable, and scalable functionality

Contact us



What's New

What's New for SAP Asset Strategy and Performance Management 1802
A high-level overview of new features in this release

Administration

Administrator's Guide for SAP Asset Strategy and Performance Management 1802 (PDF)
Provides information on on-boarding of users, configuration tasks, and business process integration

Reference

API Files: Information about REST APIs in SAP Asset Strategy and Performance Management 1802

- Announcement API
- Assessment Template API
- Causes and Effects API

View All

Feature Scope Description

Feature Scope Description
Provides an overview of the available features

Security

Security information for SAP Asset Strategy and Performance Management 1802 (PDF)
Everything you want to know about security-related information for SAP Asset Strategy and Performance Management

Integration

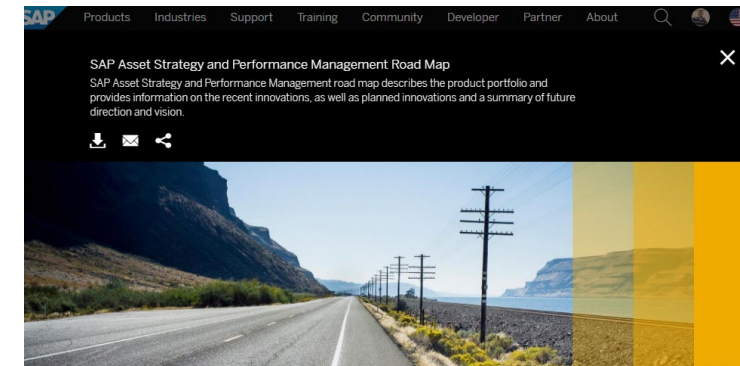
Integration Guide for SAP Asset Strategy and Performance Management (PDF)
Starting point for the technical implementation of SAP Asset Strategy and Performance Management. Describes how the SAP Asset Strategy and Performance Management is integrated with SAP Enterprise Asset Management

Development

API Tutorial for SAP Asset Strategy and Performance Management 1802
Tutorial that provides you pointers on how to create business objects using APIs in SAP Asset Intelligence Network

Application Help

Application Help for SAP Asset Strategy and Performance Management



SAP Asset Strategy and Performance Management Road Map

March 2018
CUSTOMER



Thank you.

Contact information:

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