



Intelligent Asset Management

SUGRail/RAM Virtual Event 2021

Dirk Kempf, May, 5th 2021

Intelligent Asset Management with SAP

Maximize Return on Assets:

Highest Asset Availability - Resilient and Safe Operations - Reduced Costs

- **Closed-loop** integration of **maintenance strategy** and **maintenance execution**: optimize asset performance, continuous learning and improvement.
- Connected assets with **Industry 4.0**: real-time health monitoring, predictive and prescriptive maintenance.
- Business partner **network** for asset management: Collaborate with 3rd party service providers and equipment manufacturers.
- Embedded **Environment, Health and Safety**: Ensure safety and sustainability in maintenance planning and operations.
- **Mobile and augmented reality**: Empower maintenance workers at their place of work – anytime and anywhere.



SAP Intelligent Asset Management

Capabilities & Solutions



Maintenance Management (aka “PM”)

Plan, schedule and execute maintenance activities to ensure optimal operations



Asset Health Prediction and Optimization

Bring together information from operational and business systems using IoT to predict and simulate asset failure



Asset Strategy and Performance

Drive smarter decisions, improve reliability, and optimize maintenance strategies



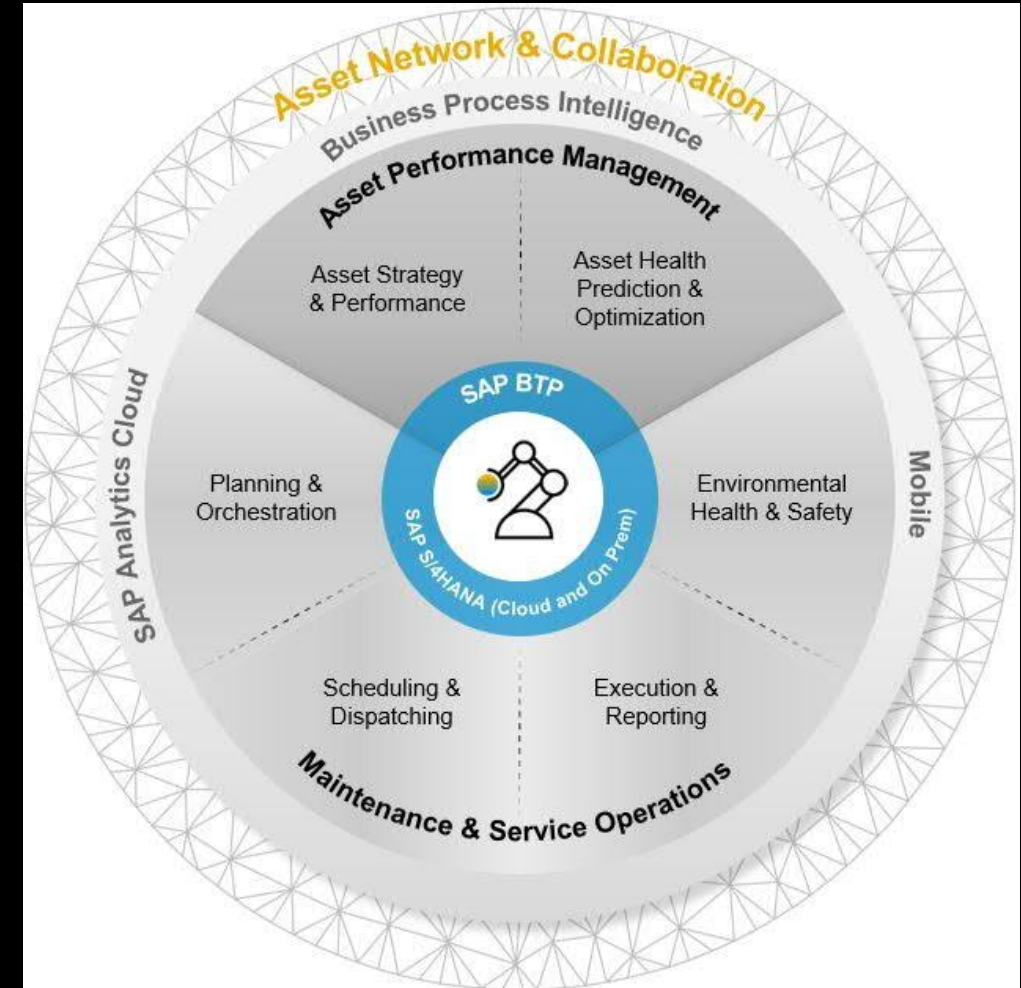
Asset Network and Collaboration

Share asset information, access one version of the truth, and collaborate on a cloud-based business network

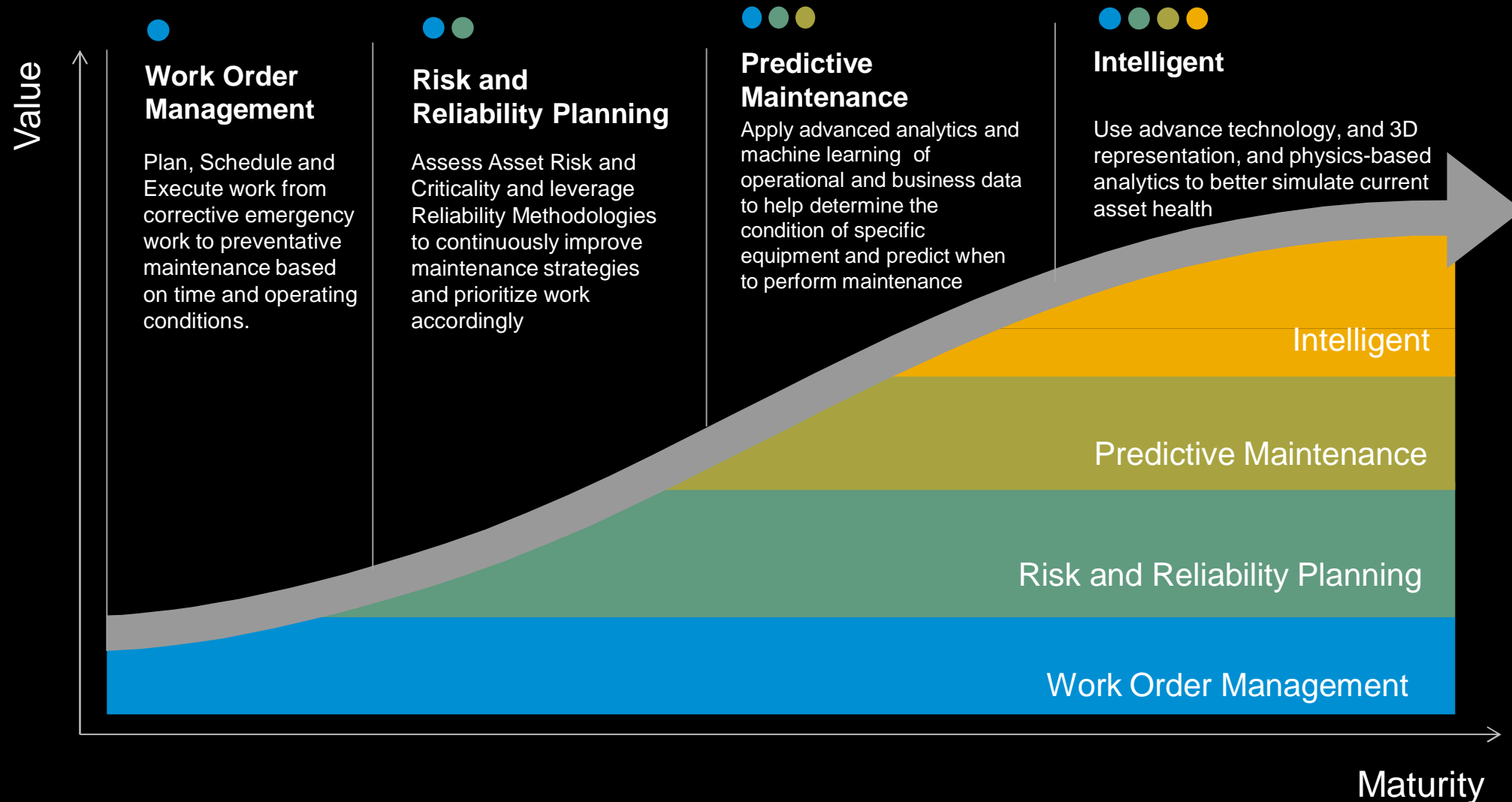


Mobile Asset Management

Leverage mobile technologies to enable new asset management business processes anywhere and anytime



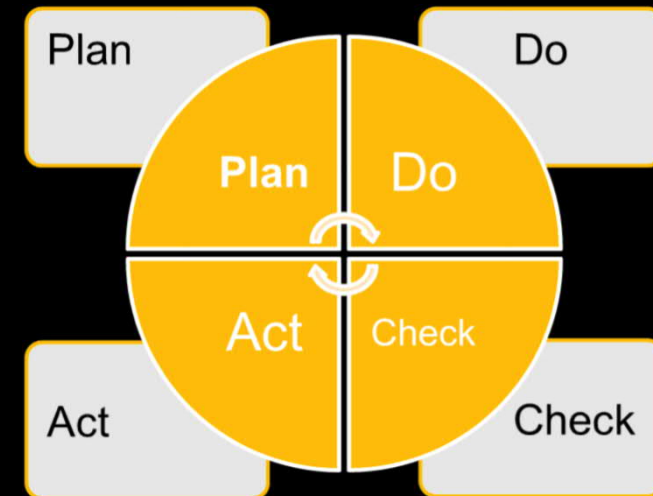
Digital Transformation of Enterprise Asset Management



Strategy of Asset Management going forward

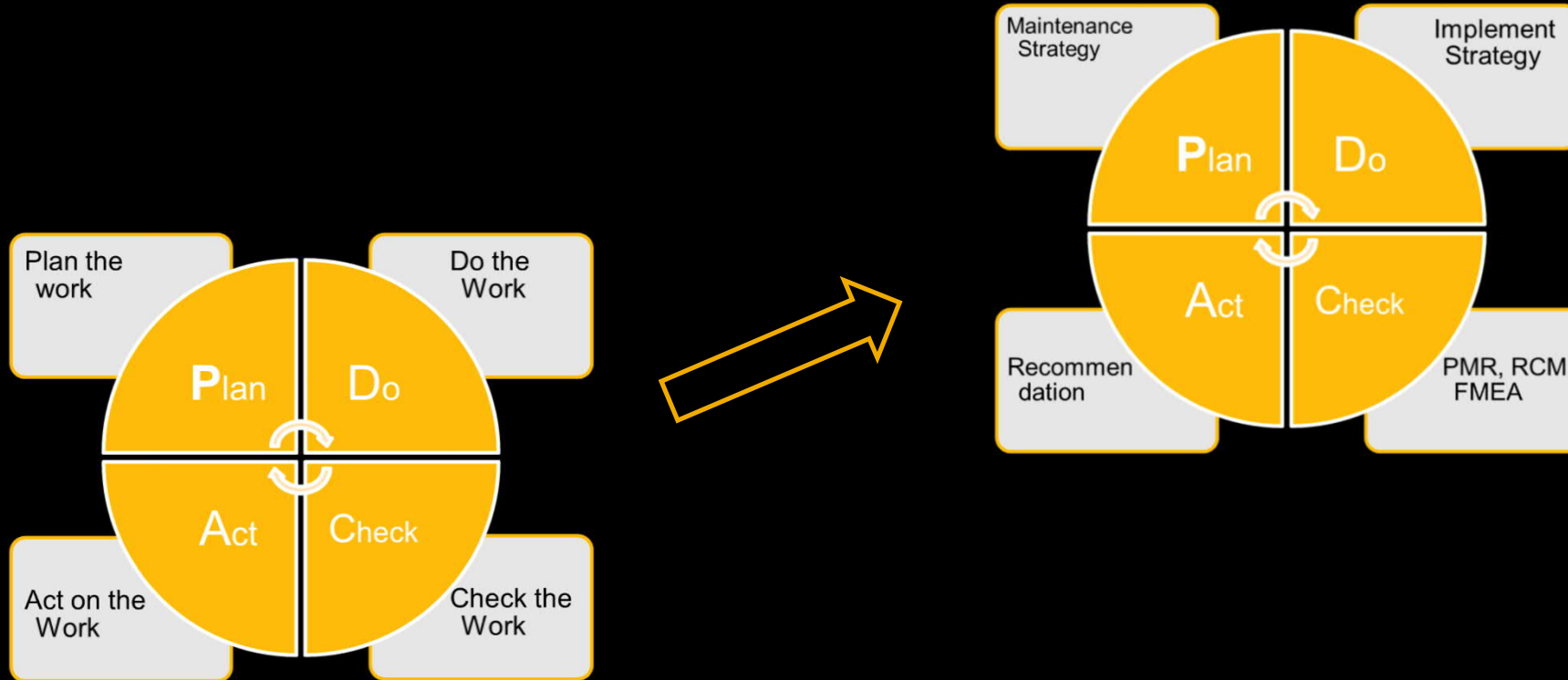
Closing the loops

- From sensor to Technician
- From Strategy to Execution
- From S/4HANA to BTP



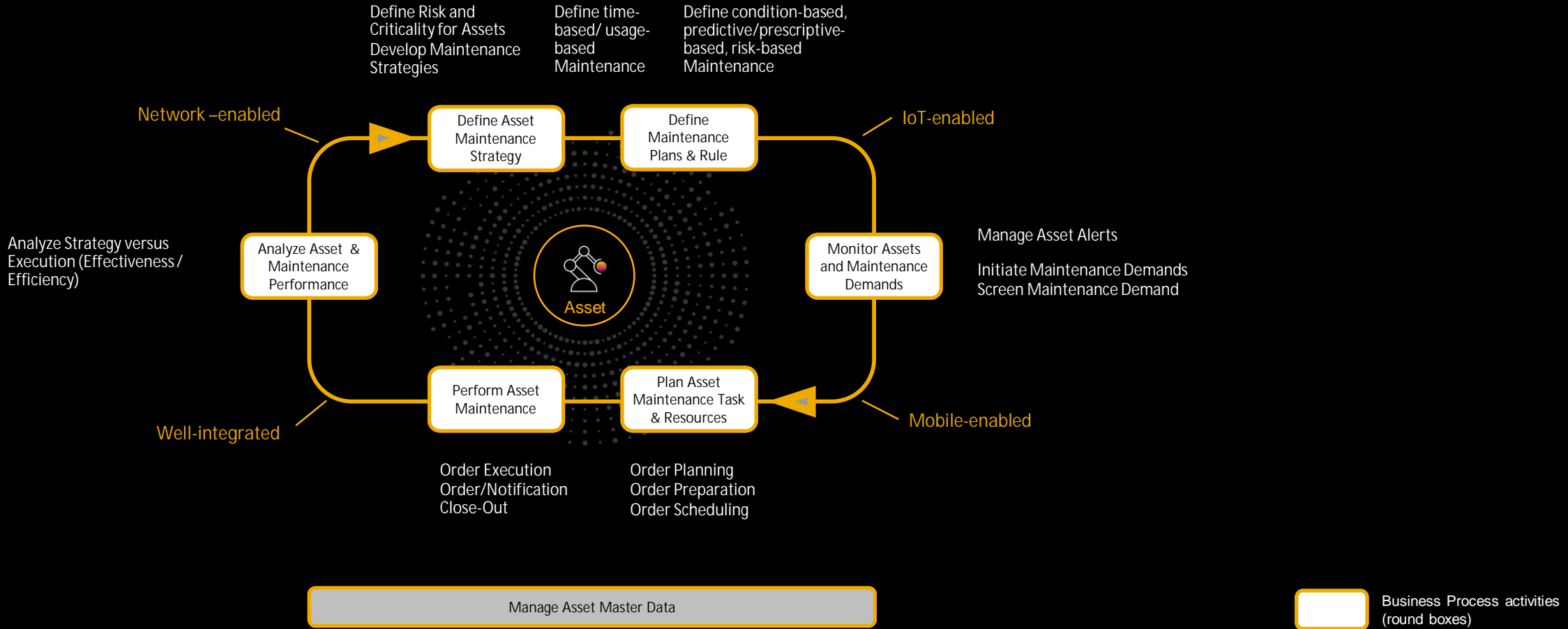
Asset Performance Management and Maintenance Management


Continuous Improvement on operational and strategic Level



Asset Performance Management and Maintenance Management

Converge Maintenance Strategy and Execution



 Business Process activities (round boxes) with respective Business Capabilities

Release Planning

Planned Key Innovation for Asset Performance Management

2111 – Planned Q4/2021*

Asset Strategy & Performance

Improved UX for risk and criticality enhancements

- Reorder questions, display text questions and values in matrix, configure colors

RCM assessments to include attachments for scope descriptions

- Upload and preview attachments (images, docs, links)

Asset Prediction and Optimization

Built-in embedded, live analytics

Customizable process for handling machine alerts

- Create and update machine-generated alarms with custom attributes

Display of functional locations on the explorer map

Enhanced contextual information in alerts

Extensions of machine learning algorithms using in SDK

- New SDK using the Python language to support

Monitor time-series data for indicators assigned to the function-location hierarchy

REST API for deletion of time-series data

- New abstract time-series REST API to delete time-series data

Analysis of the oil quality of transformers for utilities

2202 – Planned Q1/2022*

Asset Strategy & Performance

Capabilities to create stand-alone recommendations

- User ability to create new recommendations directly from the preventive maintenance review (PMR) application

Capability to perform reassessments in reliability centered maintenance (RCM)

- Reassess reliability centered maintenance (RCM) by copying the assigned technical object and respective function, functional failure, failure mode, and cause and effect

Asset Prediction and Optimization

Configuration variants for indicator charts

Health monitoring of linearly ordered assets for utilities

2205 – Planned Q2/2022*

Asset Strategy & Performance

Ordering of dimensions and impacts in assessments

- User ability to reorder the various categories of an assessment, such as dimensions and impacts, while performing assessments

User experience enhancements to the risk and criticality assessment matrix

- Enable users to change colors and criticality codes in the threshold definition for the risk and criticality assessment matrix

Asset Prediction and Optimization

Improved condition monitoring using enhanced rules

- Support for rule expressions: Compare indicator values; Have simple recommendations; Filter to alert types

Machine learning configuration for business users

- Increased selection of pieces of equipment to be used for training and scoring of health indicators; Better visualization of available models as well as model quality; Enhanced information on training and scoring runs (including log information)

2208 – Planned Q3/2022*

Asset Strategy & Performance

Risk reduction calculation when performing failure mode and effect analysis

- Ability to accurately assess remaining risks by providing a risk and criticality assessment for recommendations; Enable FMEA/FMECA methodologies in RCM assessments

Asset Prediction and Optimization

Correlation analysis between equipment data and failures

- Identify pieces of equipment that show similar failure patterns

Track equipment health with fingerprint analytics

- Benchmark between fingerprints and actual data; Identify fingerprint trends

Roadmap Map Explorer

SAP Intelligent Asset Management

Predictive Asset Insights

Decision Support for Asset Management & Reliability Professionals

A 360 Degree View of Assets

Advanced Analytics for Decision Support

Intuitive and Scalable Machine Learning

Simulation-based Digital Twins

Business Process Integration



A comprehensive view across asset model, master, transactional and performance data



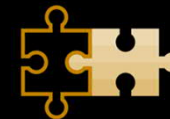
Advanced analytics to support maintenance execution and strategy decisions



Machine learning for maintenance professionals... "machine learning for the masses"



Feed IoT data into system level engineering models to simulate and predict operational performance



Part of a comprehensive asset management portfolio

S/4HANA Maintenance Management

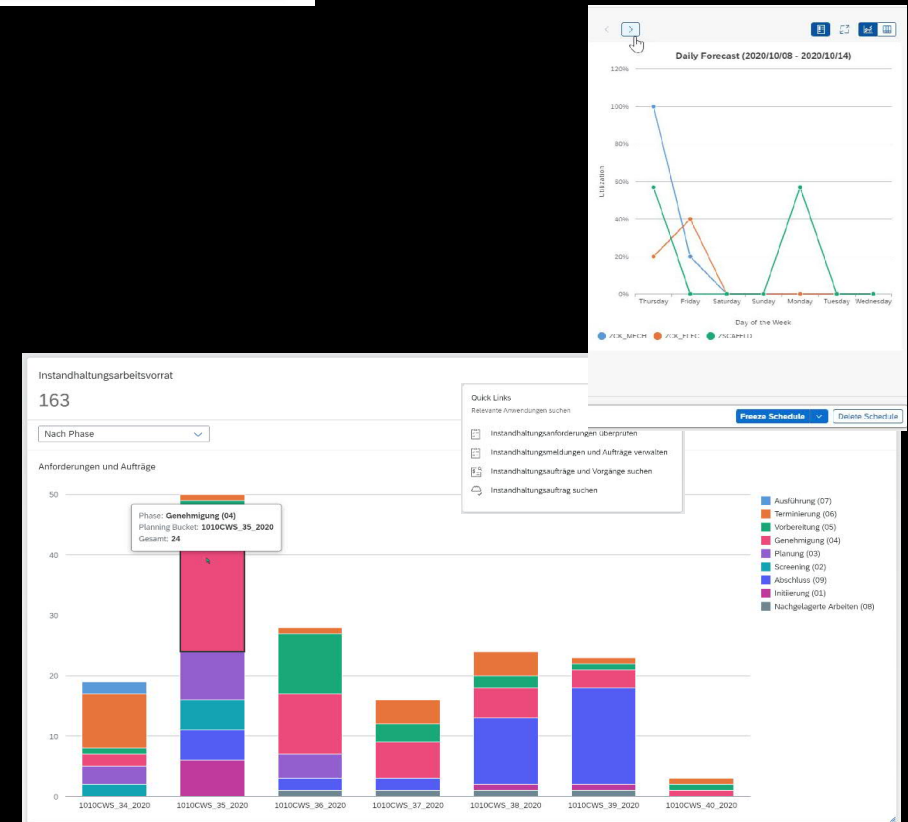
Best Practice with improved process control

Available in Cloud since November 2020



Simplified processes with new Fiori Apps

- Create Maintenance Request
- My Maintenance Requests
- Screen Maintenance Requests
- Manage Maintenance Work (Work Requests & Orders)
- Prepare Maintenance Backlogs
- Manage Maintenance Planning Buckets
- Maintenance Backlog Overview
- Maintenance Job - My Job List
- Analyze Maintenance Costs

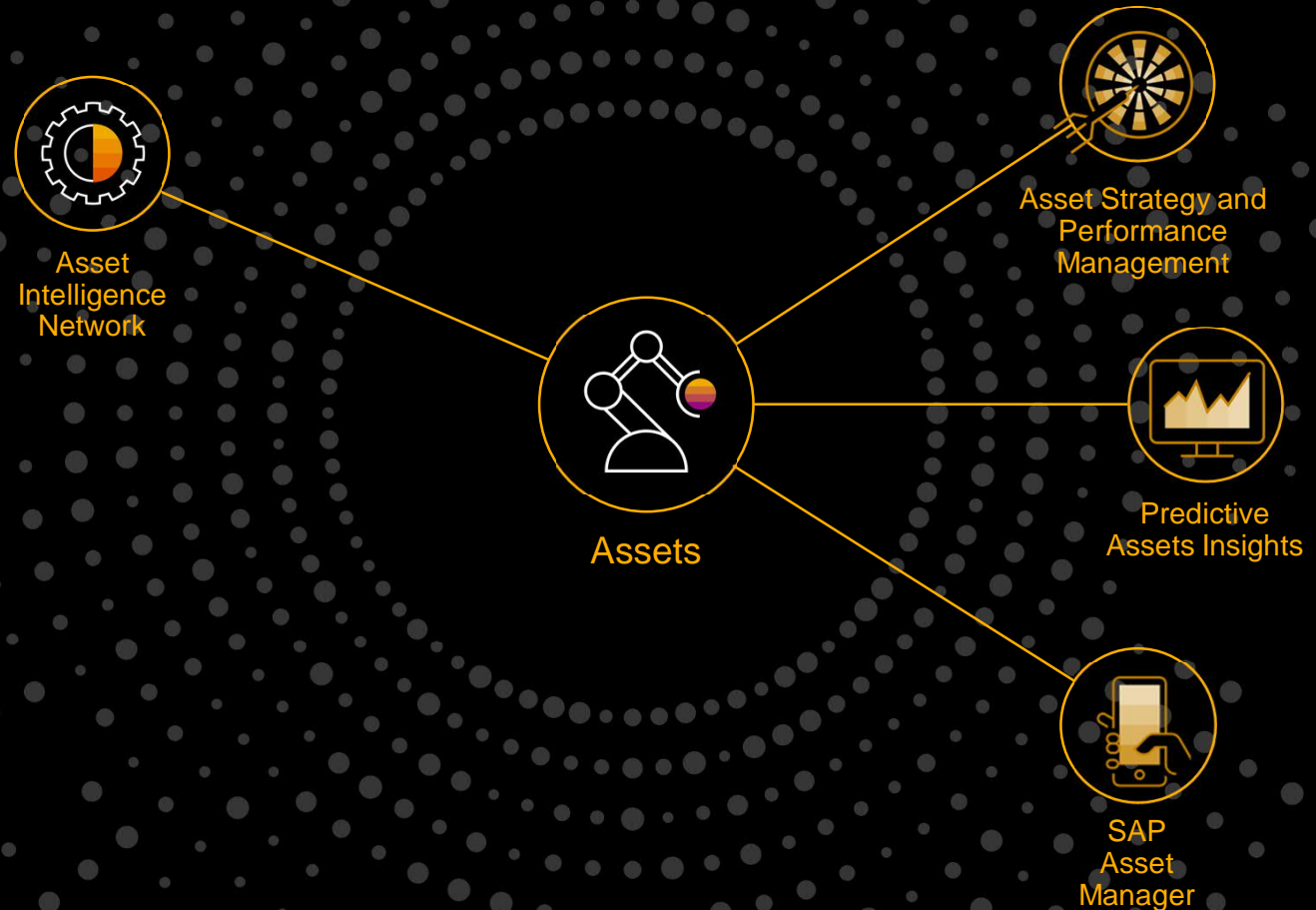


Intelligent Asset Management Solutions

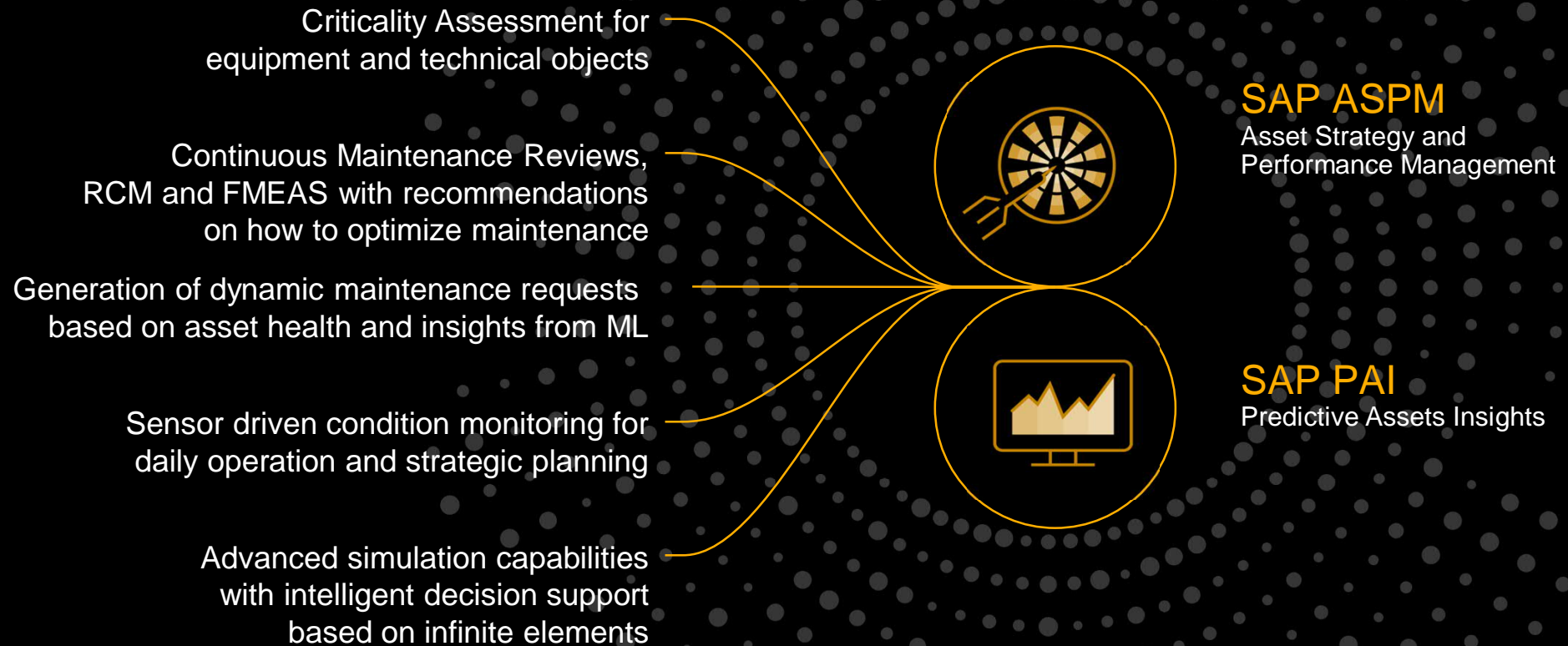
S/4HANA is the Digital Core and manages the asset master data embedded in core applications from procurement, finance, project management, HR etc. across the entire Asset Lifecycle

SAP BTP is the Business Technology Platform in the Cloud enabling for example IoT connectivity with complementary applications and collaborative scenarios

SAP Asset Manager is the native mobile App for technicians and mobile workforce



Asset Performance Management



Closing the loop

- Technically and
- Semantically

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Thank you.





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