



SAP BUSINESS TECHNOLOGY PLATFORM | EXTERNAL

Intelligent Workflows for Aftermarket Service

Intelligent Workflows for Plan to Manufacture

Version: 1.0

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1. Overview

This Aftermarket Service Intelligent Workflow package is developed and maintained by IBM to bring transparency, visibility, efficiency, and integration to the Plan to Manufacture process, spanning across multiple systems like SAP S/4HANA, SAP Predictive Asset Insights, SAP Internet of Things and SAP Field Service Management. This package contains use cases for real-time customer asset health check and end-to-end customer equipment service planning & execution. It helps to understand how the different processes in disparate systems have been re-wired using SAP Workflow Management to automate service execution, which reduces a lot of manual configuration and monitoring effort and speeds up the customer asset service process, with end-to-end performance visibility.

This Aftermarket Service Execution Intelligent Workflow has been developed to automate customer equipment health monitoring and servicing process for service provider in Aftermarket scenario.

It integrates the following business transactions & approval requirements:

- **SAP S/4HANA:** Automatic service order creation, equipment warranty and contract validation, service quotation creation, release service order.
- **SAP Field Service Management:** Handles service call related to service ticket.
- **SAP Business Technology Platform:** Microservices (UI Module, HANA Cloud, Node.js Module) for Service order execution related business logic for Workflow Management Services including business rules and process visibility.
- **SAP Predictive Asset Insights:** Asset Model, Machine Learning Data set for automatic failure prediction.
- **SAP Internet of Things:** Holds digital twin, asset monitoring parameters and its real time value, triggers workflow.
- **Workflow Service:** Intelligent workflow for automatic service order execution process.
- **Business Rule Service:** Holds the rule for quotation limit for additional approval and asset parameter limits to initiate service request.
- **Process Visibility:** End-to-end business process in SAP Workflow Management.

2. Business Scenario and its Challenges

- Lack of real-time visibility on asset operational parameters and inability to automatically predict asset service plan based on asset health condition.
- Difficulty in optimized decision-making for asset service operations.
- Lack of visibility like who is performing what and when in case of asset servicing.
- Provides visibility for no. of breakdown and periodical service cost for each equipment.
- Lack of real-time visibility for identifying the bottleneck of servicing process.
- Lack of end-to-end view of service processing to understand service effectiveness.

3. Business Needs

- To improve service provider's process of customer equipment monitoring and automatic service execution to achieve next level of maturity and readiness for the future.
- Modernization to automate the asset servicing execution process and automate decision-making.
- Clear picture of asset servicing process to improve end-to-end view of service processing to understand service effectiveness.
- Service provider asset manager needs a quick and automated process for the entire end to end servicing process to know the number of breakdown and periodical servicing cost for each customer equipment.
- Needs to identify the bottleneck of the servicing process for optimized service planning and execution.
- Provide visibility to the Business Outcomes through live Key Performance metrics of the end-to-end processes.

4. Solution

Intelligent Workflows to execute business functions across Plan to Manufacture, Service Management & Execution with ability to provide process performance visibility.

Service Execution Intelligent Workflow:

To improve end-to-end view of service execution, understanding service effectiveness and to automate decision-making for asset service operations this intelligent workflow has been developed.

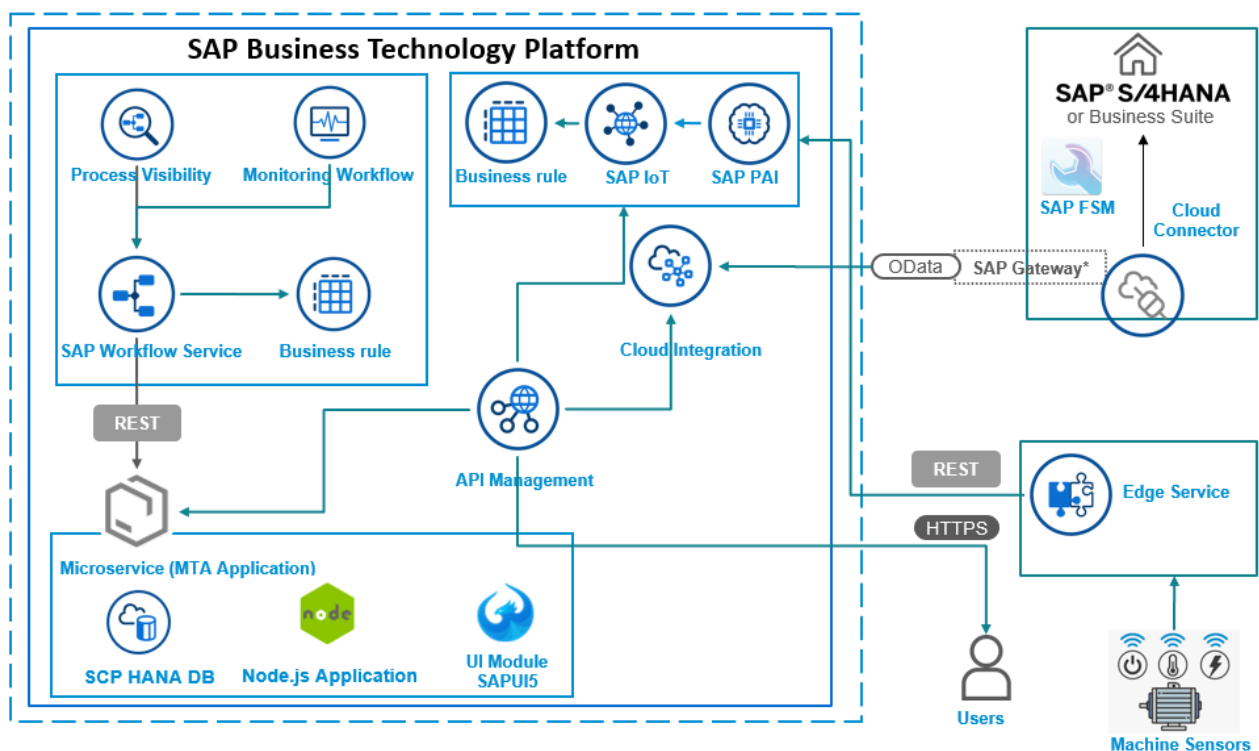
- Service Order Review and modification:
 - Review of auto created S/4 HANA service order from Digital twin.
 - Review the automatically added spare parts list and cost.
 - Add/Modify additional information and confirm.
- Equipment Status Check:
 - Automatically check Equipment warranty validity from S/4 HANA Equipment Model.
 - Automatically check Equipment Contract validity from S/4 HANA Equipment Model.
 - According to equipment Warrant and Contract validity proceed with Quotation generation.
- Quotation Experience:
 - Improve the customer experience during the quotation process. Send automatic mail with quotation details to Customer. Using the same mail link customer can approve/return the quotation after review.
 - Based on Business rule send Quotation details to Customer relationship manager before sending to Customer for review.
 - Reducing Quotation rejection rate by adopting Quotation review process based on Business rule defined.

- Approval Process:
 - Maintenance Service Planner reviews auto-generated Service order from digital twin and confirms to proceed further.
 - Customer Service Manager can accept / reject changes to the Quotation. Once Quotation is accepted, the Quotation will be sent Customer.
 - Customer can can accept / reject the Quotation. Once Quotation is accepted, the service order will be released in S/4 HANA and a Service call will be sent to SAP Field Service Management.
- Service Execution Performance Dashboard
 - End to end process visibility is also provided based on the workflow in SAP Workflow Management to monitor the key process KPIs like mean time for equipment failure, number of service requests, service cost for each equipment and derive strategic insight.

5. Value Proposition

- Improved decision making and real-time visibility of asset servicing.
- Easy and automated process for digital handover and service execution for customer equipment.
- Quick identification of the blockage of the process.
- Reducing Quotation rejection rate by adopting internal automated Quotation review process before sending to customer.
- Modular Intelligent Workflows for key capabilities with SAP Process Visibility.

6. Architecture – Intelligent Workflow Aftermarket Service Execution



7. Artifacts (Processes, Decisions, Visibility Scenarios)

Fiori UI: Simple Fiori Application (hosted on SAP Business Technology Platform) has been developed to monitor customer equipment operational parameters and initiate Aftermarket Service execution workflow by creating Service order.

Aftermarket Service Execution Intelligent Workflow: It covers end to end process for service order review and quotation creation in SAP S/4HANA, taking necessary review and approval from required personas as well as service call creation in SAP Field Service Management leveraging the Workflow and Business Rules of SAP Workflow Management with the SAP Internet of Things and persistency services.

Business KPIs Dashboard (Process Visibility): This Process Visibility Dashboard enables process excellence, process transparency, process transformation by providing KPIs like mean time for equipment failure, number of service requests, service cost for each equipment.

8. Solution Components

- SAP S/4HANA
- SAP Internet of Things
- SAP Business Technology Platform
- SAP Workflow Management
- SAP Predictive Asset Insights
- SAP Field Service Management

9. References

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