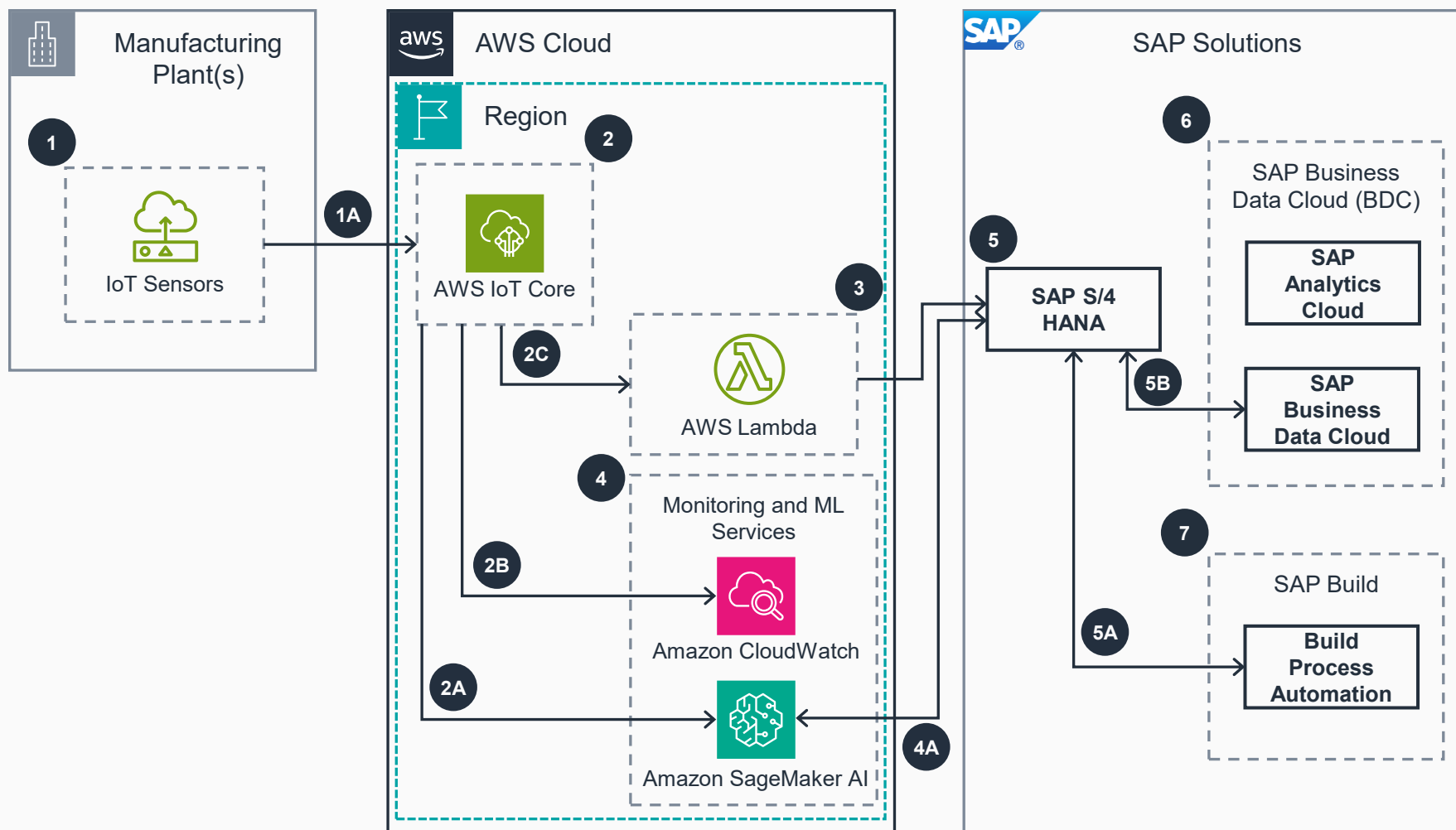


Guidance for Predictive Maintenance with SAP using AWS IoT

This architecture diagram shows how to build a predictive maintenance solution on AWS that processes industrial sensor data and automatically creates maintenance notifications in SAP S/4HANA.



- 1 IoT Sensors generate real-time telemetry (e.g., temperature, vibration) to monitor equipment health.
- 1A Sensor data is securely transmitted to **AWS IoT Core** via MQTT/HTTP.
- 2 **AWS IoT Core** is central service for securely ingesting and routing device data using rules.
- 2A AWS IoT Core sends selected telemetry for real-time inference using ML models in **Amazon SageMaker AI**.
- 2B **Amazon CloudWatch** monitors message flows and logs system health metrics using **AWS IoT Core** data.
- 2C Rules trigger **AWS Lambda** functions to process and act on incoming telemetry from **AWS IoT Core**.
- 3 AWS Lambda filters and transforms data for downstream systems. AWS Lambda sends alerts or enriched data to SAP S/4HANA via OData API, creating maintenance notifications.
- 4 **Amazon CloudWatch** observes ML pipelines; **Amazon SageMaker AI** predicts failures using trained models.
- 4A SAP S/4HANA sends historical data for training to **Amazon SageMaker AI**; predictions are sent back to enrich asset records.
- 5 SAP S/4HANA manages assets and triggers maintenance based on incoming alerts or predictions.
- 5A SAP S/4HANA triggers workflows for maintenance orders, approvals, or technician alerts.
- 5B SAP S/4HANA shares data with SAP BDC for integration, harmonization, and analysis.
- 6 SAP BDC integrates SAP S/4HANA data; SAP Analytics Cloud visualizes KPIs and predictions.
- 7 SAP Build Process Automation is a low-code tool to automate actions based on SAP S/4HANA events.

