

Meter reading data processing

This workflow automates the processing of smart meter reading data to validate consumption patterns, detect anomalies, and update customer billing systems. It reduces manual data verification effort by 80% and identifies potential equipment issues or theft within hours.

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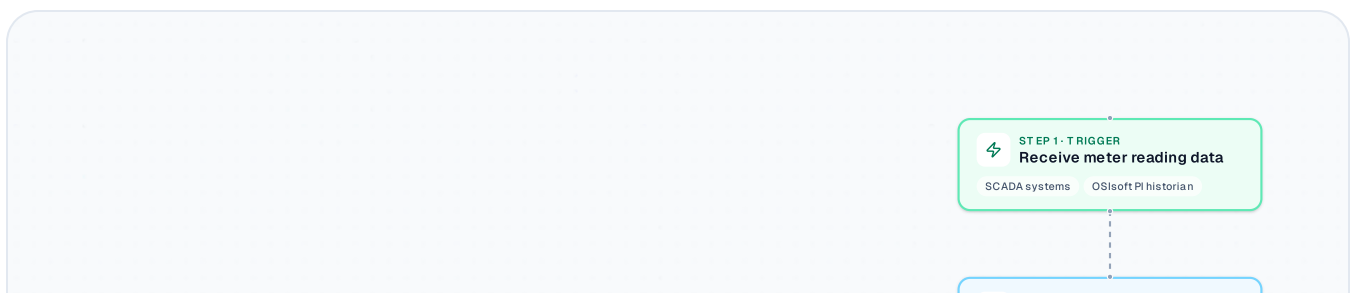


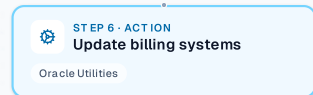
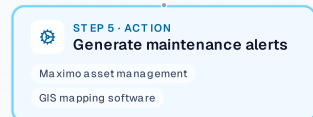
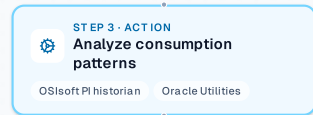
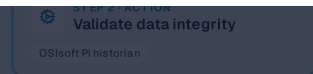
WORKFLOW TRIGGER

Smart meters upload hourly consumption data to central collection system

Visual Flow

Each node represents an automated step. Connections show how data and decisions move through the workflow.





Step-by-Step Breakdown

Detailed explanation of each automated stage in the workflow.

1

⚡ TRIGGER

Receive meter reading data

Smart meters automatically transmit hourly energy consumption readings to the central data collection system. Data includes meter ID, timestamp, consumption values, and meter status indicators.

2

 ACTION

Validate data integrity

System performs automated checks on incoming meter data for completeness, format consistency, and reasonable value ranges. Missing or corrupted readings are flagged for manual review.

OSIssoft PI historian

3

 ACTION

Analyze consumption patterns

Historical consumption data is compared against current readings to identify usage trends and seasonal variations. The system calculates baseline consumption profiles for each customer segment.

OSIssoft PI historian

Oracle Utilities

4

 DECISION

Detect usage anomalies

Algorithm identifies abnormal consumption patterns such as sudden spikes, drops to zero, or readings outside statistical norms. Anomalies trigger different processing paths based on severity level.

OSIssoft PI historian

5

 ACTION

Generate maintenance alerts

For detected anomalies indicating potential equipment failure or tampering, work orders are automatically created in the asset management system. Field technicians receive prioritized inspection assignments.

Maximo asset management

GIS mapping software

6

 ACTION

Update billing systems

Validated consumption data is transferred to customer information and billing systems for invoice generation. Rate calculations are applied based on customer tariff schedules and time-of-use pricing.

Oracle Utilities

7

 OUT PUT

Deliver processed consumption reports

Final reports containing validated meter readings, anomaly summaries, and billing data are distributed to operations, customer service, and finance teams. Dashboard updates provide real-time consumption monitoring.

Oracle Utilities

OSIsoft PI historian



Outputs

AI Business OS

- Validated meter reading database
- Automated work orders for anomalous meters

- Updated customer billing records
- Consumption pattern analysis reports



Key Metrics

- Data validation accuracy rate
- Anomaly detection precision
- Time to process meter readings
- Reduction in manual data reviews



Tools & Integrations

- SCADA systems
- OSIsoft PI historian
- Oracle Utilities
- Maximo asset management
- GIS mapping software

AI Business OS

AI Business OS

Actionable AI implementation strategies for business leaders ready to transform their operations.

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