

Equipment health monitoring and predictive maintenance

Continuously monitors mining equipment health through sensor data analysis and predictive algorithms to prevent breakdowns and optimize maintenance schedules. Reduces unplanned downtime by 30-40% while extending equipment lifespan through proactive maintenance interventions.

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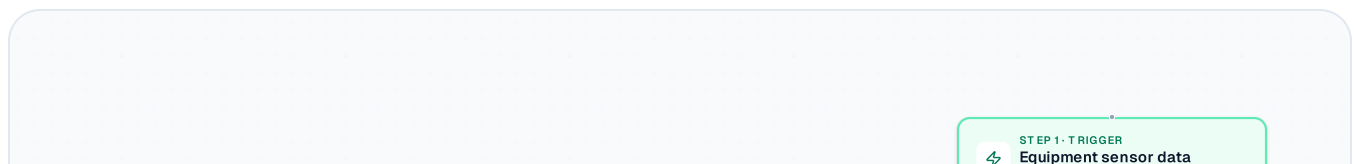
WORKFLOW TRIGGER



Equipment sensor readings exceed normal operating parameters or scheduled monitoring interval reached

Visual Flow

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





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Step-by-Step Breakdown

Detailed explanation of each automated stage in the workflow.

1

⚡ TRIGGER

Equipment sensor data received

Real-time sensor data from mining equipment (temperature, vibration, pressure, oil quality) triggers health assessment workflow. Data includes equipment ID, sensor readings, and timestamp information.

XPAC

Equipment IoT sensors

2

 ACTION

Analyze equipment performance metrics

AI algorithms process sensor data against historical baselines and manufacturer specifications to identify anomalies. Machine learning models detect patterns indicating potential equipment failures.

XPAC

Deswik

3

 DECISION

Evaluate maintenance urgency level

System categorizes equipment condition as normal, requires monitoring, needs scheduled maintenance, or requires immediate intervention. Decision branches workflow to appropriate response path.

Deswik

4

 ACTION

Generate maintenance recommendations

Creates specific maintenance tasks with priority levels, estimated repair times, and required parts/resources. Integrates with production schedules to minimize operational impact.

Deswik

XPAC

5

Update equipment records

Records health assessment results, maintenance predictions, and recommendations in centralized equipment database. Maintains historical trend data for future predictive modeling improvements.

MineSight

Deswik

6

⚙️ ACTION

Schedule maintenance activities

Automatically creates work orders and schedules maintenance tasks based on urgency and resource availability. Coordinates with production planning to optimize equipment downtime windows.

Deswik

MineSight

7

📢 OUTPUT

Dispatch maintenance alerts

Sends prioritized maintenance notifications to maintenance teams, operations managers, and equipment operators. Includes detailed diagnostic information and recommended actions for each piece of equipment.

XPAC

Deswik



Outputs

- Maintenance work orders with priority levels
- Equipment health status dashboard
- Predictive failure alerts and timelines
- Parts and resource requirements list



Key Metrics

- Equipment uptime percentage
- Mean time between failures (MTBF)
- Maintenance cost per operating hour
- Prediction accuracy rate



Tools & Integrations

- XPAC
- Deswik
- MineSight
- Equipment IoT sensors

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