

Heavy Equipment OEM – Predictive Maintenance for G-Series Machines

About the Client

A global heavy equipment manufacturer operated over 400 CNC and forging machines across plants. They are a trusted supplier to leading renewable energy solutions providers, delivering precision-engineered components critical to wind and solar infrastructure. With high-volume production and complex multi-site operations, the company sought to reduce unplanned downtime, extend asset life, and enhance maintenance efficiency across its global fleet.

The Problem

- Traditional schedule-based maintenance failed to detect early signs of equipment failure.
- Unplanned downtime between service windows caused production disruptions.
- Disconnected **PLCs** and historian data restrict visibility into machine health and operations, delaying critical decisions.



Solution: NexOps Predictive Maintenance Framework



Automated Machine Intelligence

NexOps automated ML pipelines provisions training and inference for each new machine. Using MQTT and Kafka, live data is processed by NexOps edge and hub services, generating real-time failure probabilities and asset reliability scores, giving maintenance teams immediate actionable insights.



Intelligent Alerts and Workflow Automation

NexOps ML detect anomalies and trigger context-aware alerts (SMS, Buzzer, Andon) while automatically logging interventions. Logs feed continuous learning pipelines, allowing models to adapt over time, reduce unplanned downtime, and optimize maintenance schedules.



Fleet-Level Analytics

NexOps enables cross-machine reliability comparisons, helping engineers prioritize high-risk assets and optimize spare parts inventory. Enterprise analytics support proactive maintenance strategies and operational efficiency.

Powered by Snowflake

NexOps consolidates PLC data, historian records, and maintenance logs while predictive algorithms run in real-time, hosted on the Snowflake, ensuring secure, scalable analytics and enterprise-wide visibility for benchmarking and reporting.

Key Highlights

- **NexOps predictive maintenance:** Automated ML pipelines, edge-to-hub processing, fleet analytics
- **Real-time alerts:** Proactive notifications and automated intervention logging
- **Optimized operations:** Prioritization of high-risk assets and spare parts planning
- **Snowflake foundation:** Secure Data Cloud with in-database ML execution and enterprise visibility

The Result

Downtime events Reduced by 75% | Saved Maintenance time by 25%

Outcome: The pilot demonstrated how predictive insights could transform maintenance from reactive firefighting to proactive foresight- maximizing uptime, optimizing maintenance schedules, and improving workforce efficiency. With Snowflake as the unified foundation, the OEM gained trustworthy, real-time visibility into machine health, paving the way for enterprise-scale deployment and measurable improvements in reliability, productivity, and asset longevity.