Sight Machine Maintenance Agent

Real-time agentic insights that improve equipment availability with predictive analytics for maintenance teams

Equipment downtime disrupts manufacturing operations, causing lost production, delayed deliveries, and increased costs. Unplanned equipment failures are difficult to predict due to inadequate real-time monitoring and fragmented data systems. Operations teams struggle with time-intensive root cause analysis of downtimes while needing rapid insights to resolve equipment issues. Many plants still use schedule-based maintenance or reactive maintenance, which are inefficient and expensive.

The Maintenance Agent leverages predictive analytics to forecast equipment failures before they occur, enabling proactive maintenance and increased equipment availability. Maintenance teams can now shift from reactive repairs to proactive prevention, delivering significant cost savings.

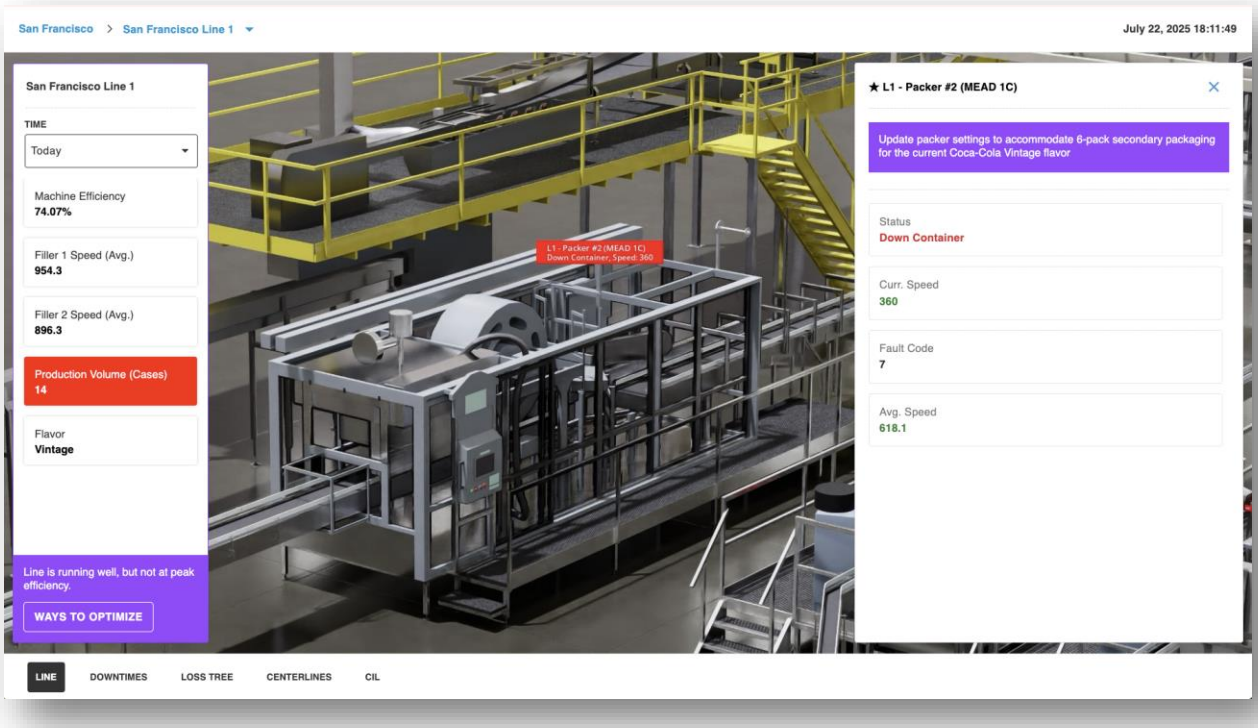
How the Maintenance Agent Works

The Maintenance Agent uses a multi-agent architecture consisting of:

- **Orchestrator Agent** – Coordinates tasks across specialized agents based on current process context
- **Root Cause Analysis Agent** – Identifies the root cause of disruptive equipment downtimes
- **Process Documentation Agent** – Captures Operator inputs on contextual information for equipment downtimes
- **Downtime Predictor Agent** – Predicts equipment downtimes based on process anomalies and suggests corrective actions

Each agent uses pre-validated machine learning (ML) tools to ensure that the results are highly accurate.

Built on Azure AI Foundry Agent Service, this agent delivers real-time insights and predictive analytics to shop floor teams, without requiring data science expertise.



Accessing the Maintenance Agent

The Maintenance Agent is “always on” in the background, monitoring the real-time stream of data from the manufacturing floor, identifying unusual data patterns, running predictive analytics, and sending alerts to machine operators with suggested preventive actions.

The agent is responsible for planning and executing the analytics strategy and communicating the results to the operator or engineer.

All recommendations are surfaced directly in the Sight Machine UI and also integrated into a 3D Digital twin, built with OpenUSD and NVIDIA Omniverse technologies and rendered in real time with NVIDIA A10 RTX GPUs on Azure.