SOLUTION BRIEF

Supercharge Maintenance Teams With an AI Assistant

Tap into maintenance records, equipment manuals and sensor data with retrieval-augmented generation (RAG) to instantly troubleshoot equipment issues

Smart Maintenance Assistant

Instant Equipment Insights

AI-Driven Diagnostics

The Issue

Equipment failures lead to unplanned downtime that costs millions of dollars per year. Existing predictive maintenance systems often generate outputs that lack context. Finding the right answers can be difficult, as over 80% of enterprise data is unstructured and not easily searchable, leading to time-consuming manual review of scattered documentation. The alerts begin to pile up and go ignored as maintenance teams are bombarded with vague alerts that are difficult to prioritize and troubleshoot, leading to alert fatigue.

To make matters worse, it is tougher than ever to find and retain skilled technicians. When experienced technicians retire or find a new job, the know-how they've obtained to maintain and troubleshoot assets goes with them.

To address these issues, institutional knowledge must be made instantly available to everyone. This would make it easier to maintain and troubleshoot equipment and minimize the impact on industrial operations. Imagine the right answers right at your fingertips, with no need to manually find and review old equipment documentation or hunt down the right subject matter expertise to troubleshoot issues.

The Challenge

Determining the root cause and corrective action following a vague alert. Modern predictive maintenance systems often provide vague alerts that lack context, leaving technicians to figure out the root cause and determine a resolution plan. Time is money; for example, it takes an average of 6-10 hours to identify the root cause of an issue in a typical gas turbine. A Maintenance AI Assistant capable of reviewing and answering questions related to thousands of pages, dozens of PDFs and years of maintenance records can rapidly accelerate the resolution process.

Closing the skills gap on your maintenance team. The US Bureau of Labor Statistics projects roughly 157,200 job openings annually for maintenance and repair workers from 2023 to 2033 due primarily to workers exiting the workforce. Institutional knowledge is walking out the door each time someone leaves. A Maintenance AI Assistant built with RAG can close the skills gap by making everyone a maintenance expert.

Reducing unplanned downtime. **Eighty-two percent of companies** have experienced at least one unplanned downtime outage over the past three years, with the average outage lasting four hours and costing an average of $2 million per event. A Maintenance AI Assistant speeds time to resolution and minimizes the impact of downtime.

Our Approach

Pinnacle's Maintenance AI Assistant, powered by SAS Retrieval Agent Manager, allows you to level up your maintenance and reliability processes by giving you a massive improvement in the way your teams troubleshoot and resolve maintenance issues.

We approach the problem by providing software and services that enable:

- Human-friendly, chat-based interfaces capable of tapping into your maintenance documents.
- Fast, accurate retrieval of relevant repair and maintenance information that eliminates vague alerts.
- Structured, actionable work orders for technicians.
- Optional integration with existing work order systems to minimize disruption to existing processes.

The results are shorter and less frequent periods of unplanned downtime, which reduces lost production and associated revenue, improves profit margins, lowers maintenance costs and extends asset lifespan, all while improving operational efficiency.

The SAS and Pinnacle Difference

SAS is a global innovator in data and AI and is recognized as an Emerging Leader in the 2025 Gartner Emerging Market Quadrant for Generative AI Engineering.

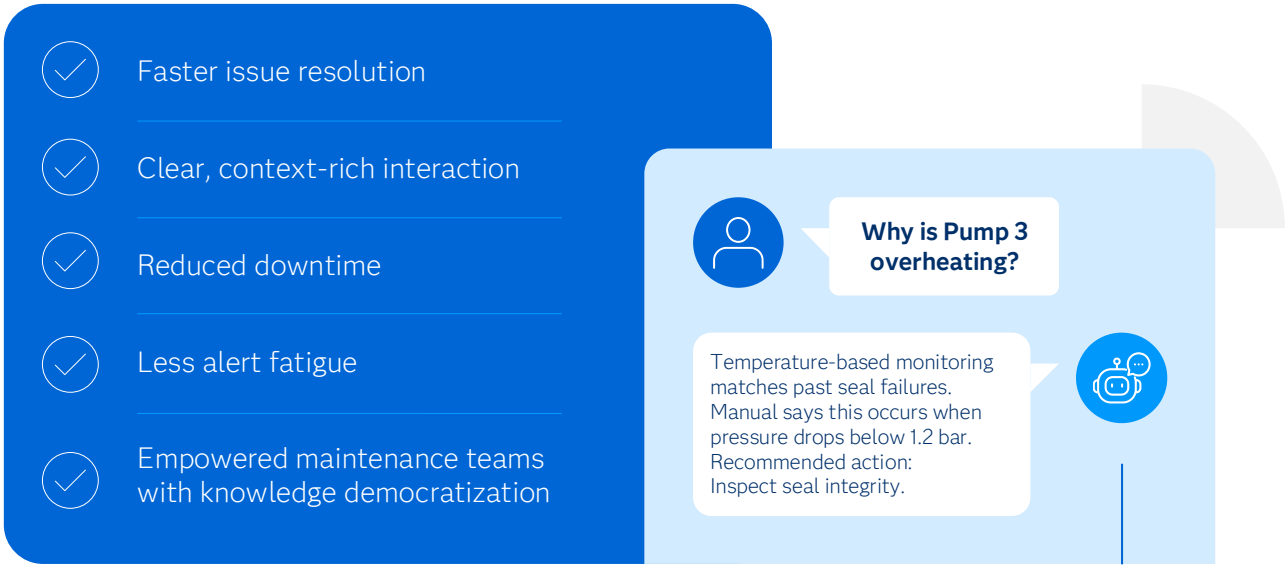
Pinnacle Solutions has been a trusted SAS Partner for 30 years and been recognized multiple times as SAS' North America Solution Provider Partner of the Year.

Together, SAS and Pinnacle bring decades of experience serving manufacturers in their most complex data analytics challenges.

Our software and services help maintenance teams with:

- Faster issue resolution.
- Reduced downtime.
- Less alert fatigue.
- Empowerment and knowledge democratization to close the maintenance team's skills gap.

REAL-WORLD IMPACT



To learn more, watch this presentation.