

Palantir AIP for AI-Powered Machine Maintenance at Panasonic Energy North America



IT CHALLENGES ⁰¹

- The IT team at Panasonic Energy North America (PENA) was faced with massive data scale of historical maintenance data on their production machines, spanning ~1M tickets, thousands of complex technical machine diagrams and PDFs, and a large volume of machine sensor data.
- All this information was stored across siloed systems— with separate systems for asset management ticketing, asset documentation, equipment sensor data, and machine states/downtime.
- This lack of connectivity resulted in excessive time spent by maintenance technicians manually scanning multiple apps to find the solution to a machine issue, and limited the ability to distill clear, cohesive learnings from the vast quantity of historical data.
- PENA sought to build a technical infrastructure that could house a myriad of structured and unstructured data at high latency, support AI capabilities, and equip them with the dev tools necessary to create a flexible UI frontend that would be intuitive for both new and senior employees to use.

PALANTIR ADVANTAGES ⁰²

- Ontology: The Ontology combines data from all historical and current maintenance data, including correspondence between team members and previous attempts to fix, equipment sensor data and alerts, unstructured documents such as PDFs pertaining to specific machines and repair solutions, and synthesizes it into a common language for users to operationalize on.
- Palantir's Artificial Intelligence Platform (AIP): Palantir AIP empowers maintenance technicians by taking in a prompt, efficiently parsing through all historical data, and providing clear and rapid summarization, along with recommended actions that the technician can use to address the current issue. The platform also enables real-time feedback gathering, continuously learning from technician expertise to enhance recommendations over time.
- Text embedding: Once historical data is ingested (OCR, data cleansing etc.) through Palantir AIP and Pipeline Builder, the cleaned data enables text embedding, which allows teams to use data contained in images and digital documents with semantic search across 100K+ repair tickets, 1400+ PDFs, and SCADA data.
- Ontology software development kit (OSDK): Allows cross-team, universal access to all logic, including open access to the Ontology and tools, allowing the IT team to build a flexible UI using large volume of data and code.
- Low-code/no code UI builder: A flexible UI maps digital representations of machines 1:1 to their physical counterparts, creating a user-friendly interface that allows technicians to more easily identify and repair machine issues— previously impossible with PENA's existing tooling.
- Writeback & improvement: Users can provide feedback on the effectiveness of suggestions generated by the model, either through a thumbs up/thumbs down rating, or through natural language— enabling improvement of suggestions over time.

IMPACT ⁰³

<6 mos.

Between conducting user interviews to on-the-floor value creation

10-15%

Reduction in machine "wrench time" (time required to fix a machine issue) per ticket, across tens of thousands of tickets per month



[This platform] is not a PowerPoint, it helped me solve a real issue this morning. I also believe that this helps in leveling the playing field between a T1 and a T3."

—LEVEL 2 MAINTENANCE TECHNICIAN
PANASONIC ENERGY NORTH AMERICA



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OVERVIEW ⁰¹

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- This lack of connectivity limited their ability to distill clear, cohesive learnings from the vast quantity of historical data, and resulted in excessive time spent by maintenance technicians manually scanning multiple apps to find the solution to a machine issue.



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OUR WORK TOGETHER ⁰²

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- Palantir AIP: Palantir AIP empowers maintenance technicians by taking in a prompt, efficiently parsing through all historical data, and providing clear and rapid summarization, along with recommended actions that the technician can use to address the current issue.
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