AVEVA

Ansaldo Energia takes remote asset monitoring to the next level with AVEVA™ PI System™

Ansaldo Energia - www.ansaldoenergia.com
Industry - Power generation

Goals

- Create a single platform and user experience for the remote monitoring of hundreds of power plant assets across the world

- Help engineers identify issues faster and respond to them before serious failures occur

Challenge

- A complex system of thousands of data sources impeded remote monitoring and maintenance support

Results

- 360-degree view into all the equipment monitored around the world

- Developed a sophisticated early-warning system to prevent equipment failures

Solutions

- AVEVA PI System

- AVEVA™ PI Vision™

Headquartered in Genoa, Italy, Ansaldo Energia is a leading manufacturer of power plants and power generation equipment such as coal and gas turbines. The company has built over 100 power plants and 300 gas turbines around the world and provides remote monitoring services and maintenance solutions for customers in 35 countries.

To monitor the health and reliability of so many pieces of hard-working equipment across the globe, Ansaldo Energia adopted AVEVA PI System. By 2016, the company was operating Integrated plant support (IPS) centers – one in Italy, another in Florida – to deliver 24/7 remote monitoring and maintenance solutions. At the heart of the IPS diagnostic platform is AVEVA PI System, which collects data from hundreds of assets around the world.

Creating a unified data fabric for both centers wasn't an easy task. Faced with thousands of data sources, including equipment from a variety of manufacturers, and many legacy systems, Ansaldo recently implemented a centralized, global approach to real-time data monitoring to accelerate support decisions.

A digital twin of all equipment

Working closely with Ansaldo's integration partner e-matica, the company began by unifying all data collection and monitoring into one centralized system, which could be used by both IPS centers to support customers around the clock. The team used the asset framework feature of AVEVA PI System to create a standard asset hierarchy for the diagnostic platform. Relying on easy-to-use asset framework templates, engineers developed digital twins for over 300 pieces of heavy-duty power plant equipment.

Custom widgets create targeted success

To help engineers identify issues faster and respond to them before serious failures could occur, the team turned its attention to improving visualization for the IPS centers. Experts at e-matica created custom widgets for AVEVA PI Vision, AVEVA PI System's web-based visualization solution.

"A widget is a graphical tool, which is embedded in [AVEVA] PI Vision, and it's made to answer specific requests by users and expand [AVEVA] PI Vision functionalities."

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Michela Carmeli
Product specialist at E-matica

Widgets were implemented for a huge variety of tasks, from graphs showing temperature fluctuations over timed events to Bode plots.

The team even implemented a widget that aggregated the data from the IPS centers' separate ticketing system into AVEVA PI Vision. The data for each asset is easy to see and all in one place. Because support tickets are searchable directly from the dashboards, it's easy for an IPS center to know when an issue needs immediate attention.

Today, support engineers in Italy and the U.S. can receive automatic notifications for event warnings, open a link through their email, and be taken directly to the display with the relevant performance data. Such an early-warning system, combined with ticketing information on the same screen, allows engineers to meet their support goals. All high-performance tickets are solved within 24 hours of being opened, and 85% of all other tickets are solved within 72 hours.

A single steam turbine is easy to manage, with all the data, tickets, and image widgets working in tandem on one easy-to analyze AVEVA PI Vision display.

A strong and united approach with AVEVA PI System

Thanks to AVEVA PI System, the IPS centers gained a single 360-degree view into all the equipment monitored around the world. From there, they can drill down into a single turbine or generator to see its performance data, related support tickets, KPIs, and process events such as out-of-spec parameters. What was originally a tangled and complex system of data sources a few years before is now a centralized platform uniting data with experts for speedy support.

"The result of this is one unique platform for several different technologies for 300 machines condensed into just 18 templates with low and easy maintenance."

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Sandro Gollini
Diagnostic Systems Technical Leader, Ansaldo Energia

For more information about AVEVA PI System please **click here.**

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