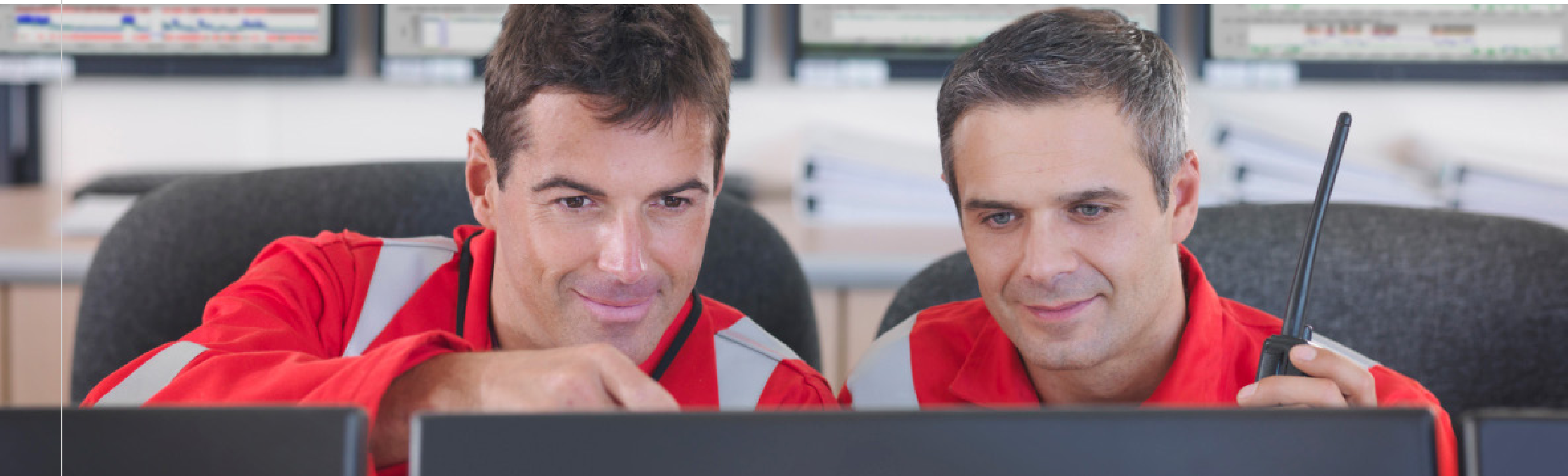# SmartSignal Classic

For more than 16 years, industry leaders have picked SmartSignal Classic to protect critical assets. SmartSignal technology now monitors more than 16,000 assets worth approximately $37B across industries and around the world.

SmartSignal Classic provides early and actionable warnings of impending equipment and process problems—thus allowing your workforce to move from reactive to proactive maintenance and from looking for problems to fixing them.
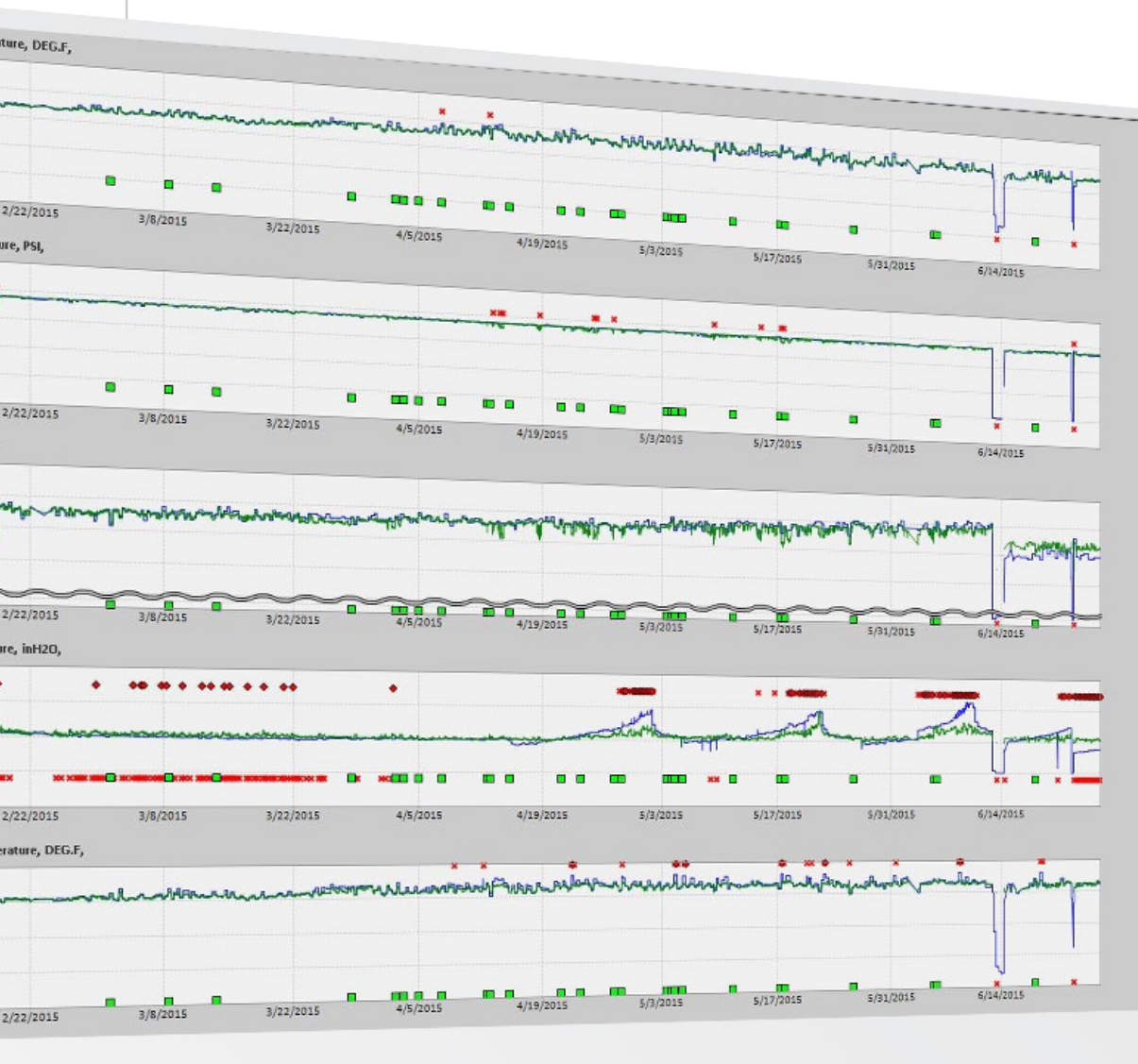
The software provides actionable notifications of anomalies, along with diagnostics and prioritizations. It reduces maintenance costs by helping reduce unplanned downtime and lower overall maintenance needs. It also reduces overtime and equipment replacement costs, reduces damage to critical equipment, limits unexpected shutdowns and catastrophic failure, and helps keep operations safe and productive.

In doing so, SmartSignal helps increase availability, reliability, efficiency, and profitability—while overcoming the challenges of inexperienced and aging workforces, aging equipment, limited budgets, and data overload.

SmartSignal Classic's key features include:

- Equipment agnostic—works on both GE and non-GE equipment—across industries

- Identifies a broad range of problems across a wide variety of rotating and processing assets, load ranges, and failure modes—across the plant and across the fleet

- Easy to implement, with no need to build from scratch; SmartSignal includes more than 125 unique blueprints* across industries

- Includes optional advanced blueprints* for incremental value

- Readily scalable due to GE Digital's data-driven approach to modeling and configurable model templates

* Repeatedly applicable equipment template types, including comprehensive diagnostic failure mode coverage.
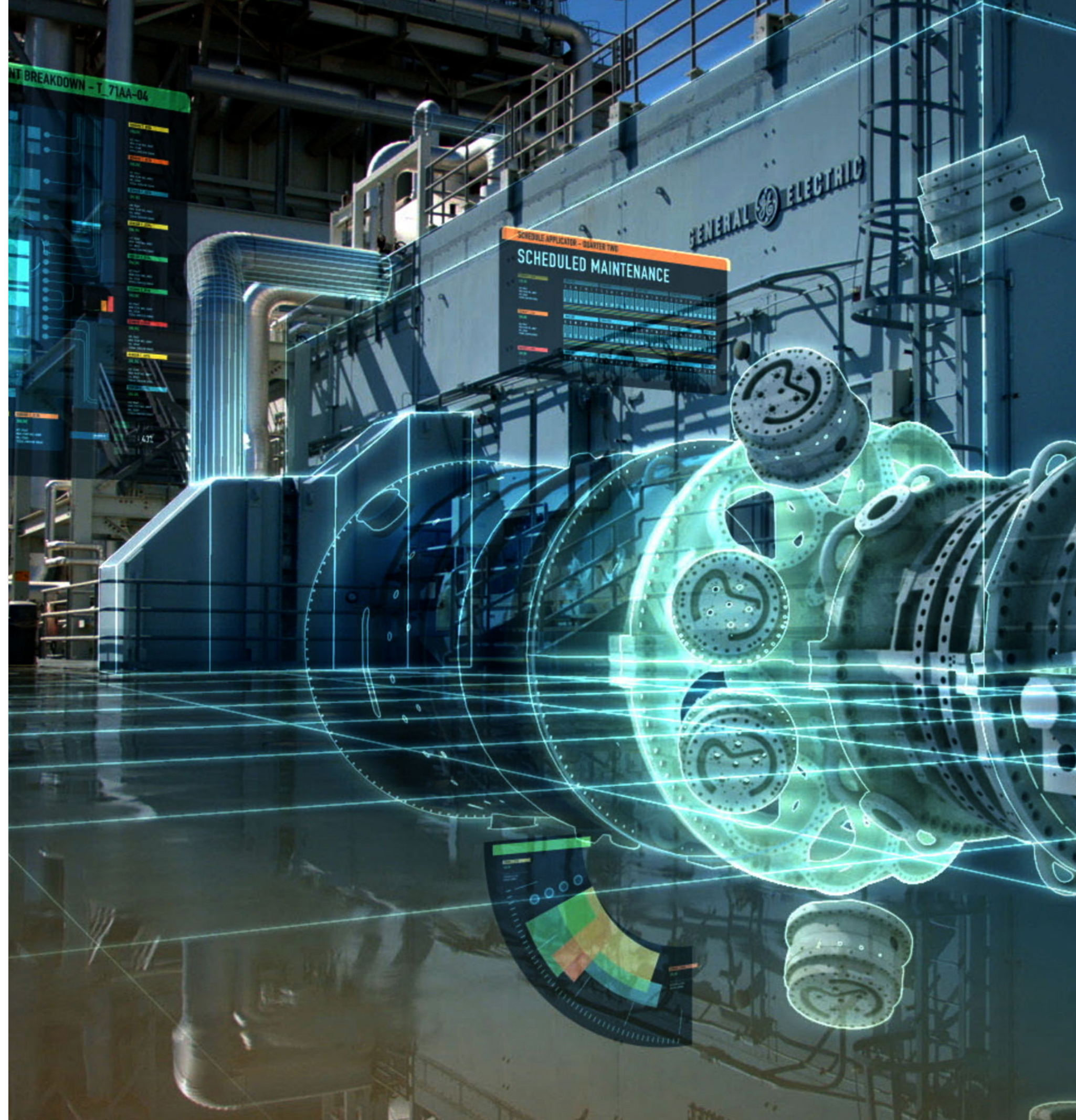
SmartSignal Classic lets you fix small issues before they become big problems, reduce surprise equipment failure, and move towards no unplanned downtime.

How SmartSignal works

With SmartSignal Classic, every piece of equipment is unique, as reflected in its own historical data. Our modeling puts into context the normal operating relationships among all relevant parameters, such as load, temperatures, pressures, vibration readings, and ambient conditions. In real time, the software compares actual sensor readings to that particular machine's normal, predicted values.

SmartSignal Classic detects and identifies events and abnormal behavior by the differences between real-time actual data and predicted, normal behavior—not by thresholds on actual values. It then provides exception-based notifications of developing problems to users, along with diagnoses and prioritizations. This enables information management by exception.

Optional advanced blueprints*

Gain more detailed insights to better detect and diagnose some of your most critical equipment and process issues.

Cycle Watch detects problems that first appear during the stresses of dynamic CT starts and provides early warnings of impending problems, improving startup reliability.

Insights from Cycle Watch allow you to investigate deviations and perform necessary repairs before your next startup, ensuring your units are reliable and ready when needed. Cycle Watch uses Variable Similarity-based Modeling (VBM) to capture rapidly changing parameters every ten seconds and point out subtle deviations. It processes data at a high frequency, which means you're able to detect even the slightest deviations from "golden" starts before issues and outages happen. The solution can identify most major startup failures on your CTs.

Extended Vibration Monitoring detects and diagnoses the most common journal bearing problems.

Standard SmartSignal Classic models have traditionally employed fundamental vibration amplitudes. Extended Vibration Monitoring (EVM), though, leverages advanced vibration data such as harmonic and phase information available from Bently Nevada from GE Oil & Gas. This allows the SmartSignal Classic solution to predict more journal bearing problems even earlier, with much greater precision in diagnosis and urgency indication. With the addition of advanced vibration data to rotor and process data, the software can detect the five most common problems for hydrodynamic bearing-supported rotors, whether they occur in startup or during online operation. These include: misalignment, radial preload, high synchronous vibration, sub-synchronous rub, and rotor bow.

The **Thermal Performance Diagnostics** blueprint maximizes plant and fleet performance.

Standard SmartSignal Classic models cover fundamental machine failure diagnostics. But with additional Thermal Performance Diagnostics, GE Digital extends models and diagnoses overall plant- and subsystem-level heat-rate increases and performance degradation. This drives greater precision in performance problem identification, diagnosis, and urgency indication and helps point engineers to the problem areas when only subtle under performance is identified, earlier than otherwise possible.

* Repeatedly applicable equipment template types, including comprehensive diagnostic failure mode coverage.

Services

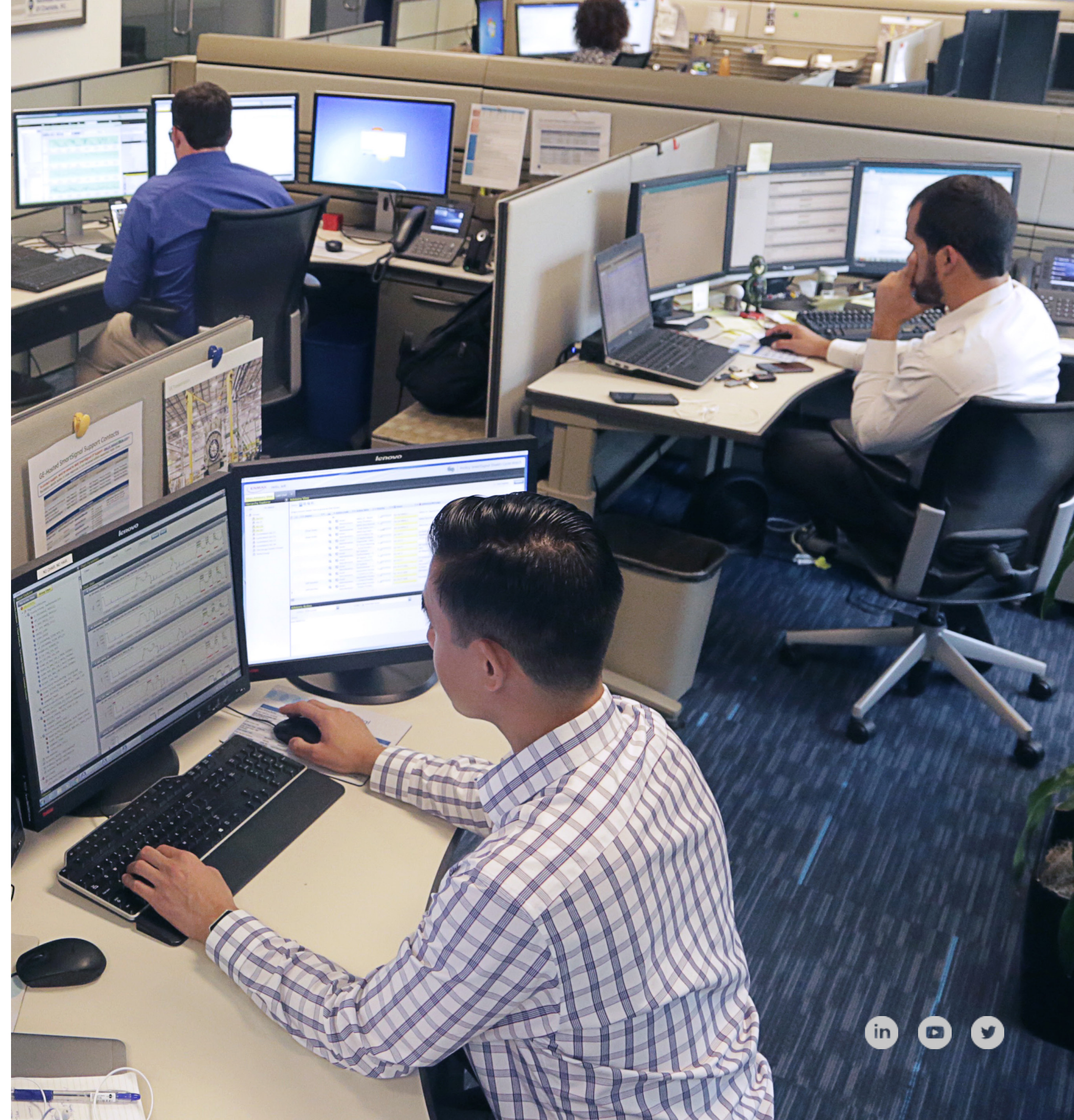GE Digital offers professional support and services to our customers, including:

- [Advisory Services](#)
- [Managed Services](#)
- [Implementation Services](#)
- [Education Services](#)
- [GlobalCare Support Services](#)
- [Wurldtech Security Services](#)

This includes model-maintenance and monitoring services through our Industrial Performance & Reliability Center.

LEARN MORE ABOUT SMARTSIGNAL　　**TECHNICAL DETAILS**

GE Digital's Industrial Managed Services Center (IMS).
The center currently monitors 6,000 assets globally valued at $12B across 85+ customer sites in oil and gas, power generation, aviation, and mining.

About GE

GE (NYSE: GE) is the world's Digital Industrial Company, transforming industry with software-defined machines and solutions that are connected, responsive and predictive. GE is organized around a global exchange of knowledge, the "GE Store," through which each business shares and accesses the same technology, markets, structure and intellect. Each invention further fuels innovation and application across our industrial sectors. With people, services, technology and scale, GE delivers better outcomes for customers by speaking the language of industry.

Contact Information

Americas: 1-855-YOUR1GE (1-855-968-7143)

gedigital@ge.com

www.ge.com/digital/products/smartsignal