The Opportunity
Critical asset-intensive industries present tough working environments. Stressed equipment gives ambiguous readings that you don’t have time to run around and interpret. The result is too many surprise failures slipping through the cracks.

Gain Control Over Your Equipment, Instead of It Controlling You
What’s needed is a solution that provides the foresight to address little problems before they become big failures and ruin your day. As part of our goal to continually give you more value, we’ve acquired Proficy* SmartSignal predictive-diagnostic software to provide you this intelligence.

SmartSignal early failure warnings focus your attention right where it’s needed, using the data you already have. Working with Bently Nevada, SmartSignal software provides you one complete solution – unlocking more value from your Bently data and adding predictive foresight to Bently’s deep, diagnostic insight.

Typical Benefits
Early warnings of developing problems, indication of the apparent cause, and guidance on the high priority trouble spots will help you make better O&M decisions. The results will be:

- Reduced operating risks; higher safety and compliance margins.
- Fewer surprise outages; increased availability, reliability, and asset performance.
- Reduced maintenance expense; extended intervals and shorter durations through effective planning.
- Greater productivity; peace of mind for your team.

Predictive Diagnostics: How It Works
At the foundation of the SmartSignal solution are predictive models built uniquely for each individual piece of equipment. Empirical Similarity-Based Modeling technology maps the interrelationships within your data, providing predictions of expected behavior sensor by sensor, sample by sample. SmartSignal advisories give early warning from subtle deviations between actual and expected behavior, as opposed to typical alarms that are generated from fixed limits.

Evidence of deviations across specific components (such as a bearing or a motor) is then compared with the effects of known failure modes. Those failure fingerprints are developed from engineering experience and an extensive investment in Failure Mode Effects Analysis. The accumulated evidence drives specific diagnostic guidance and dynamic prioritization, which indicates the urgency and progression of developing issues.

Proficy SmartSignal Notification
When it sees a problem, the Proficy SmartSignal software sends a notification to the people who need to know—with a brief summary of the problem, contributing tags, and values. Multiple issues are correlated into one diagnostic advisory, which narrows the range of potential problems and reports urgency. This drives productivity in resolving pressing equipment issues in order to avoid more expensive surprises down the line.
One Solution: Foresight + Insight

Proficy SmartSignal foresight lets you know there's a problem. Bently Nevada insight tells you what the problem is. The combination of the two let's you fix it on your terms and timetable, not the equipment's. The predictive-diagnostic advisories are delivered to you by teaming state-of-the-art technology with seasoned equipment experts. You’ll receive reports that include everything you need to start getting value right away:

**Equipment Health and Performance Threats:** their locations, underlying priorities, diagnostic evidence, and recommended actions.

**Sensor Problems and Data Infrastructure Issues:** identification and location of bad tags and data-quality concerns; resolution support to get connectivity back online.

**Asset Running and Performance KPIs:** runtime and basic performance; advisory counts, closure, and trends.

**Collaborative Calls with Expert Support:** your own personal Customer Monitoring Manager to review new issues and support your expert interpretation. This service is personalized to fit your practice and preferences, including a collaborative call schedule.

You’ll also get documented proof of the value of your efforts, including:

**Case Studies:** detailed catches and their savings—which put a spotlight on the positive impact you’re having on operating results.

**Value Assessment:** projections of the value that predictive diagnostics will deliver to your team on an ongoing basis.

Simple Software for Analysis and Tracking

As you experience the benefits of exception-based, early warnings, you’ll also appreciate the ease of putting predictive advisories into action. To get even further value from Proficy SmartSignal software, you can augment the reports and calls with independent analysis.

The SmartSignal Sentinel monitoring software is included with the solution. It provides:

**Key Diagnostic Details:** a simple list that indicates priorities, contributing tags, persistence and scope of deviations, and advisory status.

**Analytical Charting:** dynamic access and comparison of all data trends—showing not just actual behavior, but expected behavior and all flagged deviations.

**Knowledge Capture:** easy recording and recall of notes about your findings for future learning.

Simple Implementation

Basic data access and very minimal involvement can get you started deploying the SmartSignal software:

1. Taglists on target assets.
2. Onetime set of historical data files for the SmartSignal team to build models.
3. Access to online operating data in your historian through one of a variety of secure transfer options.
4. Installation of simple batch-data collection software on a local machine with historian access.

The solution then can be online and providing early failure warnings within a few short weeks.

Easy to Get Started

Whether you start with a single Driver+Driven asset train, or a whole facility, the simple nature of Proficy SmartSignal predictive diagnostics makes it easy to extend within your enterprise. Dozens of large enterprises and hundreds of individual facilities have already experienced success, achieving full ROI on fleet-wide implementations in a matter of months. The easy path to getting started lets you gain back the control over your equipment and your life.

For more information, contact your local Sales Manager or visit www.ge-mcs.com/proficy-smartsignal

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