



Reliability Solutions & Services

Your partner for reliability program
development, implementation,
and **support** to drive operational
improvement



HOW OUR PROCESS ADDRESSES YOUR CHALLENGE

THE MAIN CHALLENGE

Unexpected downtime and poor asset performance impacts safety, asset availability, and profitability of sites.

With over 30 years of experience and closely working with industry to resolve past, current, and future challenges, Spartan can enable you to significantly improve Maintenance, Reliability, and Operations, leading to **reduced downtime** and **increased asset performance**.

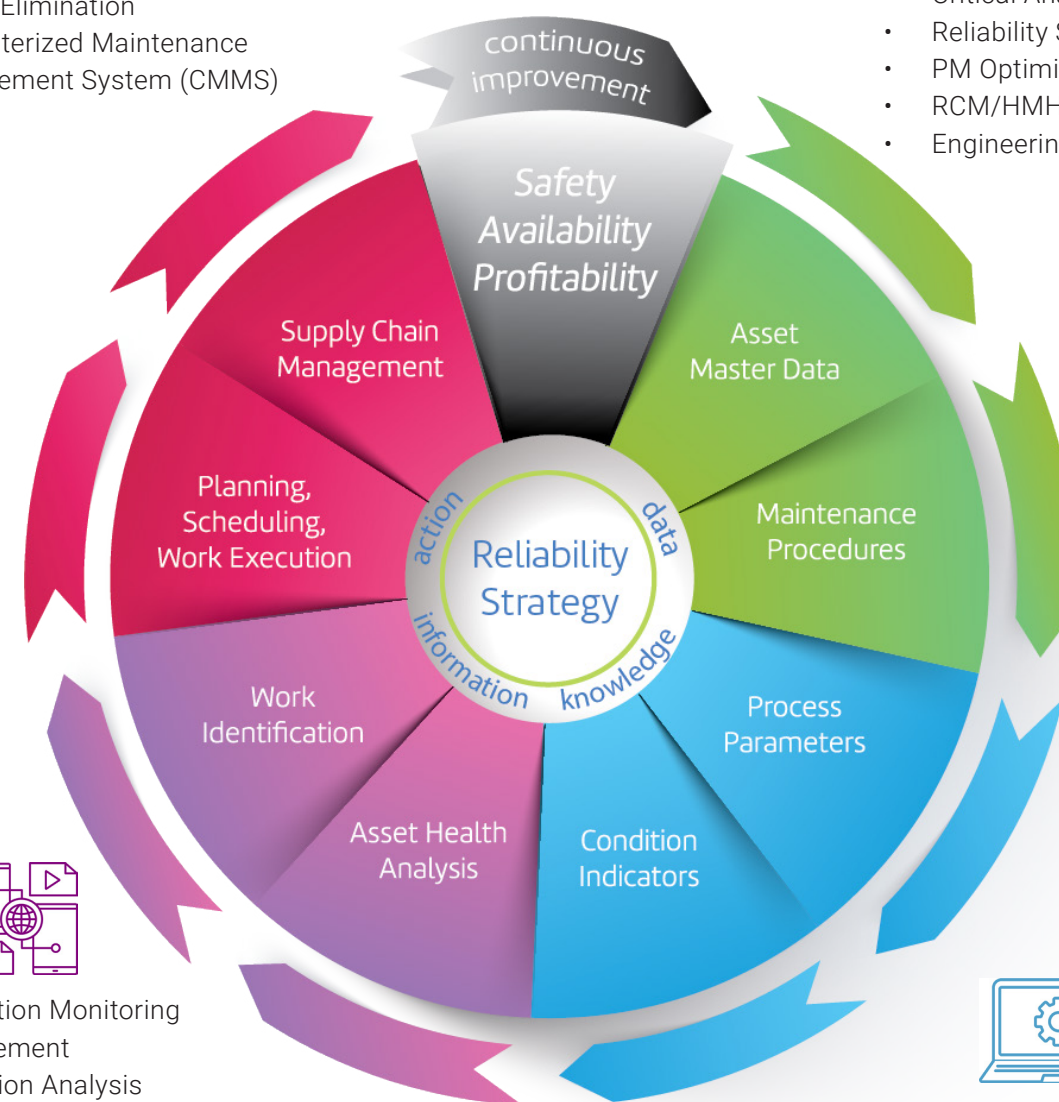
- MAINTAIN ASSET HEALTH AND PERFORMANCE ISSUES
- MAXIMIZE PRODUCTION OUTPUT
- REDUCE MAINTENANCE COST AND ASSET REPLACEMENTS
- IMPROVE PROFITABILITY



- Planning & Scheduling
- MRO-Spaces Management
- Defect Elimination
- Computerized Maintenance Management System (CMMS)



- Taxonomy
- Asset and Inventory Records
- Bills-of-Materials (BOM)
- Critical Analysis
- Reliability Strategy Development
- PM Optimization
- RCM/HMHA
- Engineering Process Design



- Condition Monitoring Enablement
- Vibration Analysis
- Oil Analysis
- Machinery Lubrication
- Thermography
- Ultrasound Testing
- Electrical Motor Analysis
- Alignment & Balancing



- Operational Excellence
- Key Performance Indicators (KPIs)
- Business Process & Playback Design
- Program & Change Management
- Maintenance & Reliability Training and Mentoring

Condition Monitoring Program Management

Our team can assist with all stages of reliability program management, from **development**, **implementation**, to **optimization**.



FOR SITES WITHOUT AN ESTABLISHED PROGRAM

Our Machinery Asset Specialist team can help with:

- Onsite vibration, thermography, or ultrasonic data collection and analysis
- Infield alarm and notification plus periodic reports
- Vibration analysis of machinery
- Audit and fit for purpose testing of existing machinery monitoring solutions from multiple vendors
- Hybrid approach of onsite and remote analysis utilizing our best in-class hardware and software solutions
- Fully remote data analysis via our LTE or networked online and wireless solutions

FOR SITES WITH AN ESTABLISHED PROGRAM

An audit of current practices against industry standards can be completed to ensure tangible value is being realized and to provide recommendations to improve the program.

Spartan Controls can further optimize your reliability program by assisting with Failure Mode and Effects Analysis (FMEA) on your assets. This approach identifies how assets fail, how often, the impact, and helps determine the appropriate condition monitoring technology to apply.

- Maximize the return on your reliability investment
- Find and repair faults before they become failures
- Improve business processes to support fault identification
- Ongoing program development and support



Reliability Consulting Services

Using Reliability Centered Maintenance (RCM) principles we help your teams to understand how their assets might fail and what actions we can enable to monitor and mitigate these failure modes. Spartan Controls can support your PdM program for rotating machinery as well as valves and instrumentation at a variety of levels from on site support to remote monitoring and reporting.

We have developed assessment tools for Maintenance and Reliability Programs, Vibration Programs and Instrument and Valve Programs that provides a comparison with best practice as well as an action plan to close the gaps and improve performance.

Our team has shaped our consulting and support practice to meet client requirements and drive improvement. Often we fill the gaps in your programs that need help with expertise, resources and technology to meet your goals.

“Customer saw 10–15% reduction in maintenance costs across five plant sites.”

OUR PROGRAM DEVELOPMENT SERVICES INCLUDE

- Reliability Program Assessment
- Program and Road Map development
- Master Equipment List Development/Walkdown
- Equipment Criticality Ranking
- RCM/FMEA
- PdM Program Assessment
- PdM Services and Solutions
- PM Optimization
- Asset Health Reports
- RCFA

HOW CAN WE HELP?



Assets

- Clean and accurate asset hierarchies
- Complete Asset Data
- Asset Criticality Ranking



Program Development

- PM/PdM Program Development based on RCM/FMEA analysis



Process Development

- Work Management Process
- Development & Coaching



Data Management

- Data Analysis & Defect Elimination
- KPI and Reporting



AI/ML

- Machine Learning and AI Application
- Reliability Engineering

Wherever you are in your reliability journey – we can help

Signet Monitoring & Analysis Inc.

COMPRESSOR & ENGINE PERFORMANCE

Reciprocating compressors have centrifugal and reciprocating movements that most technicians are not trained or experienced with in a single asset design. The Signet team has decades of experience with these assets and often provide design criteria to OEMs for improvement of them. Complementing that experience, our technicians can use portable stand alone and online technologies to capture true performance characteristics, such as engine load during testing, and recommend proactive maintenance strategies.

EMISSIONS MONITORING

Signet can also provide unbiased, third-party emissions strategies to quantify your emissions and plan your emissions program. This emissions program was created to help companies not only become regulatory compliant including the new federal MSAPR (Multi-Sector Air Pollutants Regulations), but also make their emissions program cost-effective and practical. Because Signet's emissions testing team have a mechanical background and are experienced in engine tuning and balancing, they work with your current tuning companies to ensure that engines meet targeted emissions levels.



Specialized Services

STRUCTURAL ANALYSIS

Using tools like ODS/Modal analysis and Motion Amplification, engineers can better visualize structural deficiencies and potentially damaging movement. Motion Amplification® is a proprietary video processing algorithm that detects subtle movement and then converts that movement to a level visible to the naked eye. This process enhances the understanding of the components and interrelationships creating the motion.

These services can be completed on both structures (piping, skids, etc.) and machinery (pumps, compressors, etc.) to resolve complex machinery issues by using torsion and three dimensional interior and exterior vibration phase related measurements.

Root cause analysis can determine if design or operating conditions contribute to failures. Utilizing best in class technologies, process awareness, and decades of improvements, Spartan's process can separate excessive force conditions against excessive response designs and support achieving next level program goals.

Training

To enable our customers with theory, application, and technology utilization, Spartan Controls delivers factory-authorized training to an average of 5,000 students a year. We provide formal factory-certified training that meets ISO Standards on condition monitoring data sources and applications to help analysts and organizations use these tools to their full potential.

Spartan can also provide training at any of our Certified Training Centers in Western Canada, onsite training at your facility, or hybrid training with both classroom and field components. Courses can also be customized to meet your site-specific needs.





Case Studies

MACHINERY ASSET SPECIALIST SERVICES

Our team of machinery asset specialists worked with a large mining customer to implement a predictive maintenance program on rotating equipment, utilizing a variety of Emerson technologies. This solution resulted in a **50% reduction** in lost ore tonnage on slurry pumps (\$3.6m production) and were able to successfully stretch scheduled down days from **1 day to 2-3 weeks** without increasing unplanned downtime.

50% reduction in lost ore tonnage on slurry pumps (\$3.6m production)



CONSULTING SERVICES

The customer set a goal of reaching top quartile performance for its global manufacturing operations (Scotland, Czech, USA, China, Australia) and project goals included reduced cost for maintenance and improved production and quality performance.

Spartan's Senior Reliability Consultant lead the creation of a global maintenance and reliability program that included the implementation of a standard maintenance management software, common work processes and improved asset data and integration of precision maintenance processes and predictive maintenance technology.

Customer has seen a significant reduction in lost production due to asset failure and a 10-15% reduction in maintenance costs. Quality improvements due to contamination issues have been reduced and product consistency have led to improved sales orders.



Experience Industrial Innovation

Call us or request a quote online 24/7

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