

# Automated Equipment Fault Detection and Prediction



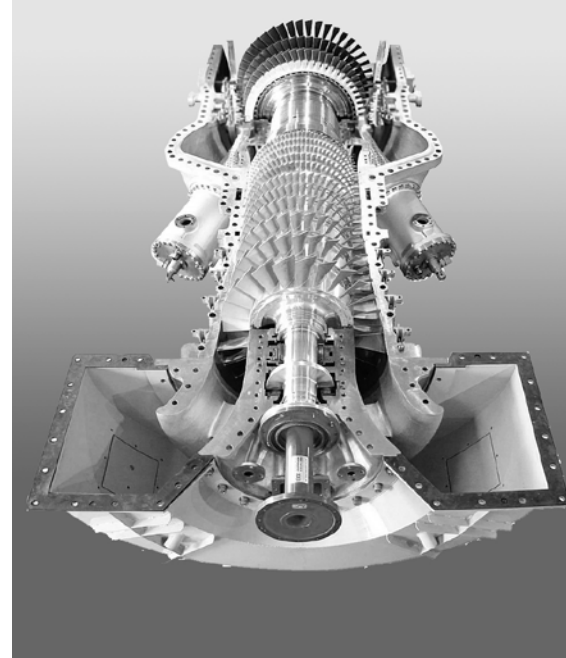
## Advanced, real-time monitoring for gas turbines

Impact Technologies has developed a range of cutting edge machinery diagnostic and health monitoring systems that are designed to:

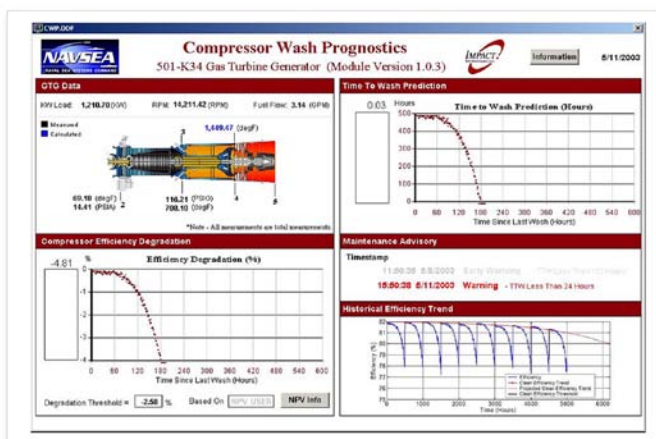
- Reduce machinery component life cycle costs.
- Facilitate maintenance planning based on remaining useful life of critical components.
- Enhance availability of assets by reducing time-based maintenance with a truly prognostic condition-based maintenance process.

## Features:

- Uses standard/existing industrial sensors: pressure, temperature, vibration, flow and acceleration.
- Produces diagnostic/prognostic features that identify and report on component wear and fatigue mechanisms.
- Automatically evaluates machinery health, assesses degradation modes, and provides feedback to operators and maintainers.
- Generates operating efficiencies and cost/manpower savings to industry and government.



Impact's "Gas Turbine Health Monitor" (GTHM™) provides advanced, real-time monitoring for gas turbines; including compressor wash predictions, fuel nozzle fouling detection, performance analysis and signal validation/recovery. It can be directly read as a status indicator or wired to a remote station for reporting.



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### Embedded Health Management Applications:

Impact's intelligent health management applications are based on fault detection and diagnostic technologies developed from many years of experience in the industrial turbomachinery and defense industries. Impact's embedded monitoring systems typically include:

- Advanced feature extraction algorithms
- Sensor data fusion analysis
- Performance and degradation modeling
- Automated health assessment indices
- Real-time embedded system processing

Fully automated output of Impact's embedded monitoring systems is available as a digital readout or can be transmitted through the plant-wide network via wireless transmission to a central maintenance management computer or as a portable PDA-type wireless device for periodic download by maintenance personnel.

### Benefits:

Better on-line diagnosis and prognostics of critical equipment through the use of the advanced monitoring software will:

- Reduce the risk of safety-related system failures.
- Provide suitable maintenance lead times and planning.
- Decrease costly inspection routines or preventative maintenance testing.
- Allow for component replacements through a risk-based, maintenance optimization technique (Condition-Based Maintenance).