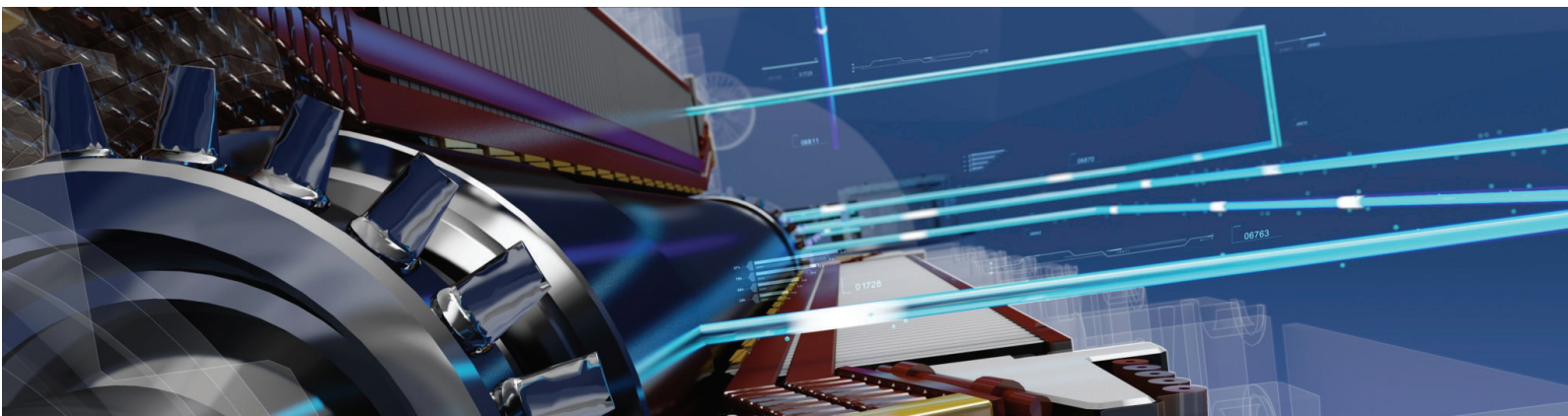GENERATOR SERVICE SOLUTIONS | SOFTWARE SOLUTIONS

Generator Health Monitoring

A comprehensive approach to Generator condition assessment enabling predictive maintenance

About Generator Health Monitoring

Successfully managing a power plant in today's competitive industry means controlling the risk of failures and unplanned downtime by making smart decisions based on more accurate operational and inspection data.

Generator Health Monitoring (GHM) is a fully integrated and modular online monitoring suite available for any type of Generator that allows continuous condition assessment and the earliest identification of any evolving issues.

With GHM solutions you will be able to implement, a cost-effective condition-based maintenance strategy that increases reliability and availability.

Allowing improved outage planning and lifetime extension of the plant's equipment while reducing maintenance costs.

Service Levels

Level 2 GOLD® Service
GE's periodical online monitoring service allows you to cost-effectively assess the condition of your generator, for any OEM. It involves the installation of permanent sensors, followed by twice-yearly measurements and an expert report, allowing you to make informed decisions about your planned maintenance.

Level 3 Service
With our continuous online monitoring suite operators will benefit from on-site trending as well as comprehensive half-yearly reports including recommendations to mitigate any risk of failure & to improve outage planning.

Level 4 Remote Service
For the highest level of assurance, we propose our remote service. This service includes a permanent remote data link to the GE Remote Monitoring Center allowing weekly checks as well as quarterly full reports, ensuring the earliest identification of any evolving issue.
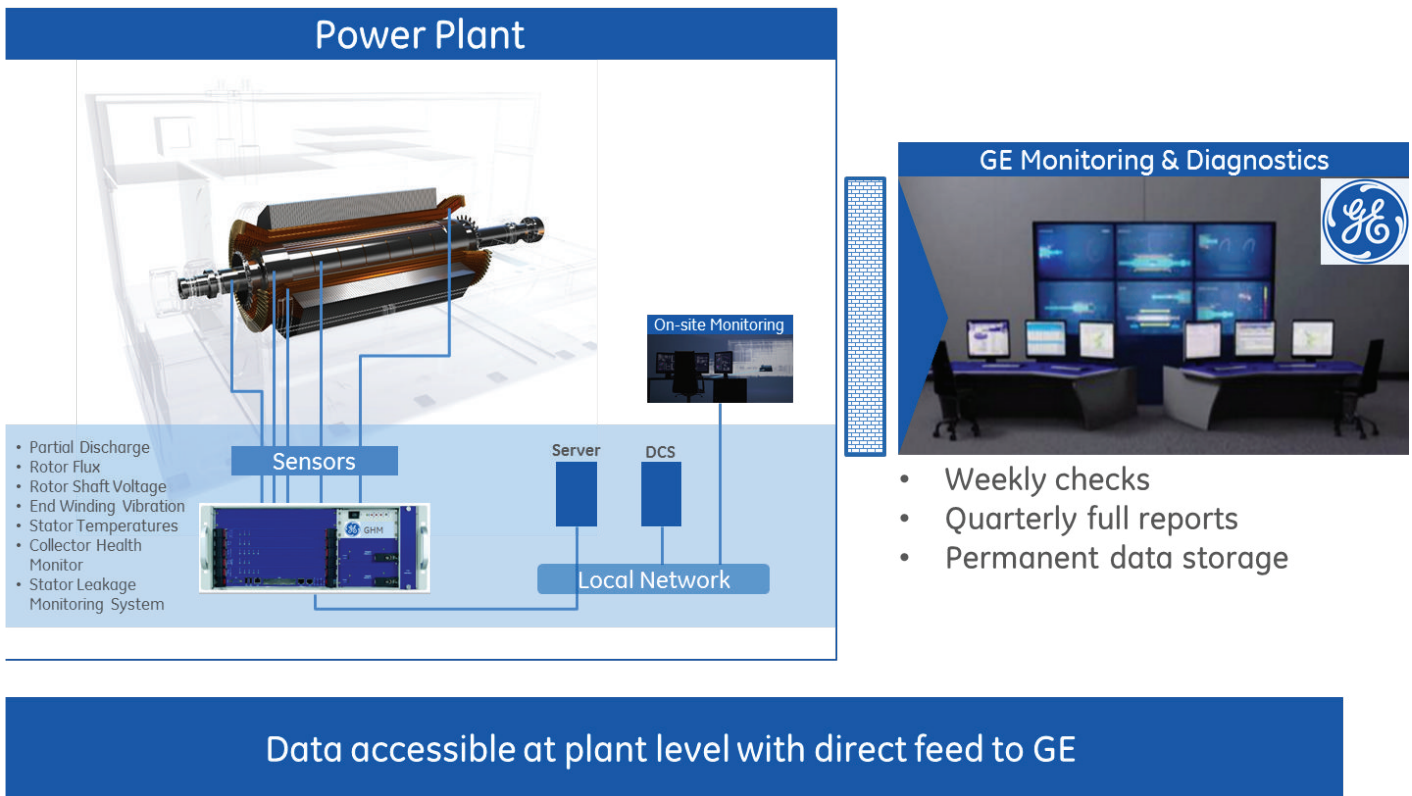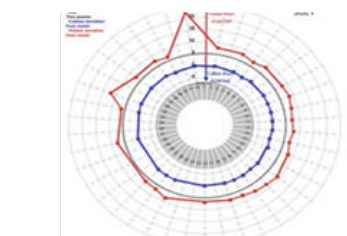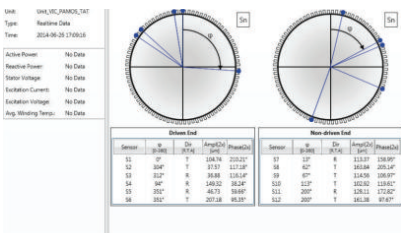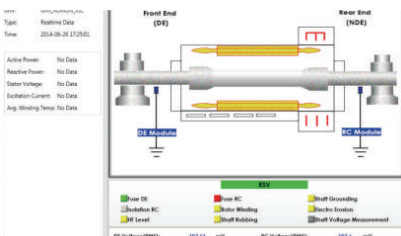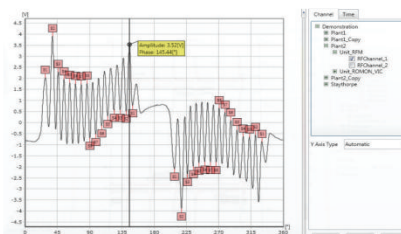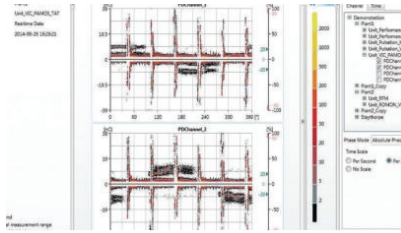

Figure 1 GHM Level 4 Remote Service Setup

Level 3 & Level 4 Monitoring Modules integrated in one Platform

The fully integrated platform is a modular system with a User-friendly web based interface. With one Care Box, instead of several standalone systems, any combination or all of the following generator parameters can be monitored in real time:

Modules

Detection Capabilities

Partial Discharge

The PD module continuously monitors the partial discharges within the stator winding and bus duct.

- Deterioration of stator winding insulation
- Contamination of generator and bus
- Semi-conductive coating deterioration

Rotor Flux

The RF module measures the rotor slot magnetic flux from sensing coils at the air-gap between the stator and rotor.

- More accurate detection and location of rotor winding short circuit problems
- Tracking of fault condition to support ongoing machine operation

Rotor Shaft Voltage

The RSV module continuously monitors the shaft for induced voltage, inductive and capacitive disturbances.

- Shaft grounding quality monitoring
- Rotor rubbing, rotor inter-turn short circuits, bearing insulation status
- Electro-erosion (pitting)

End Winding Vibration

The EWV module provides continuous monitoring of stator end winding vibrations.

- Deterioration in mechanical stiffness of overhang support
- Detection of any change in end winding vibration levels
- Phase measurement of the location and root cause analysis of the vibration level changes

Temperature

The Temperature module constantly monitors the generator temperatures in line with operating conditions, trending deviations from design values.

- Blocked water cooled stator bars
- Stator cooling efficiency decrease
- Stator core defects
- H2 cooler effectiveness

Imagination at work

To learn more about GE Power visit powergen.gepower.com