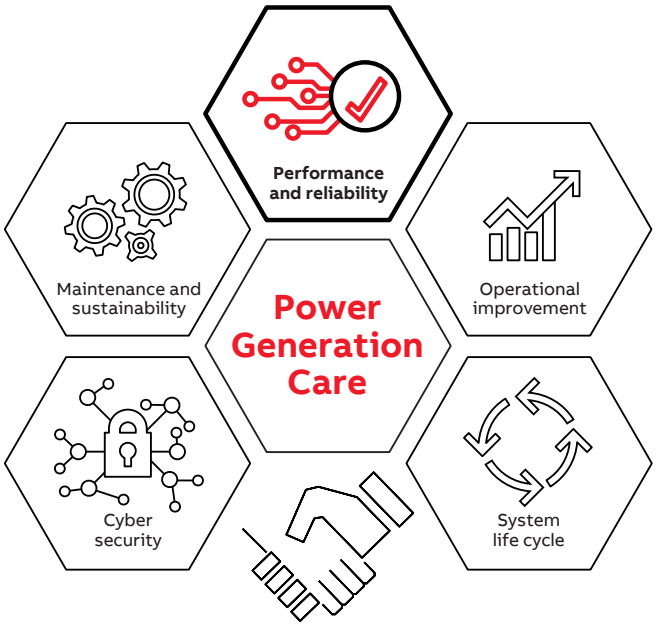
ADVANCED SERVICES

# Power Generation Care

## Harmony Performance Service

### Early detection of system performance irregularities

ABB Harmony Performance Service identifies, classifies and helps prioritize opportunities to improve the performance of your control system. ABB Harmony Performance Service uses data collected during scheduled and on-demand analyses for comparison against best practices and standards to detect performance irregularities. This comparison quickly pinpoints issues, helping to improve system reliability, availability and performance.




### Life cycle service solutions for power plants

**Benefits**

- Increases system performance, availability and reliability by confirming complex system architecture and settings are aligned
- Minimizes the risk of system shutdown through early detection of potential problems
- Confirms hardware is up to date by ensuring all hardware versions are documented and compatible
- Decreases the time and cost spent pinpointing system problems
- Helps ensure uninterrupted performance by identifying errors between modules
- Reduces response time and travel expenses by providing remote access to ABB experts for troubleshooting

# Increase control system reliability
## Scheduled or on-demand monitoring of KPIs

**Scheduled monitoring and analysis to quickly identify performance issues**
ABB Harmony Performance Service is a service delivery platform conveniently deployed at your location. You can view data gathered through a web-based window (channel) that is easily accessible by customer or ABB personnel.

With ABB Harmony Performance Service, you get the advantage of proactive data analysis to greatly reduce the time and effort needed to identify node and module performance irregularities. Data is classified based on your specific KPIs to provide a list of problematic items that are then prioritized based on severity, criticality and/or financial impact. This analysis allows you to track and trend performance history more accurately, which leads to more informed decision making by your team, better system performance and higher availability.

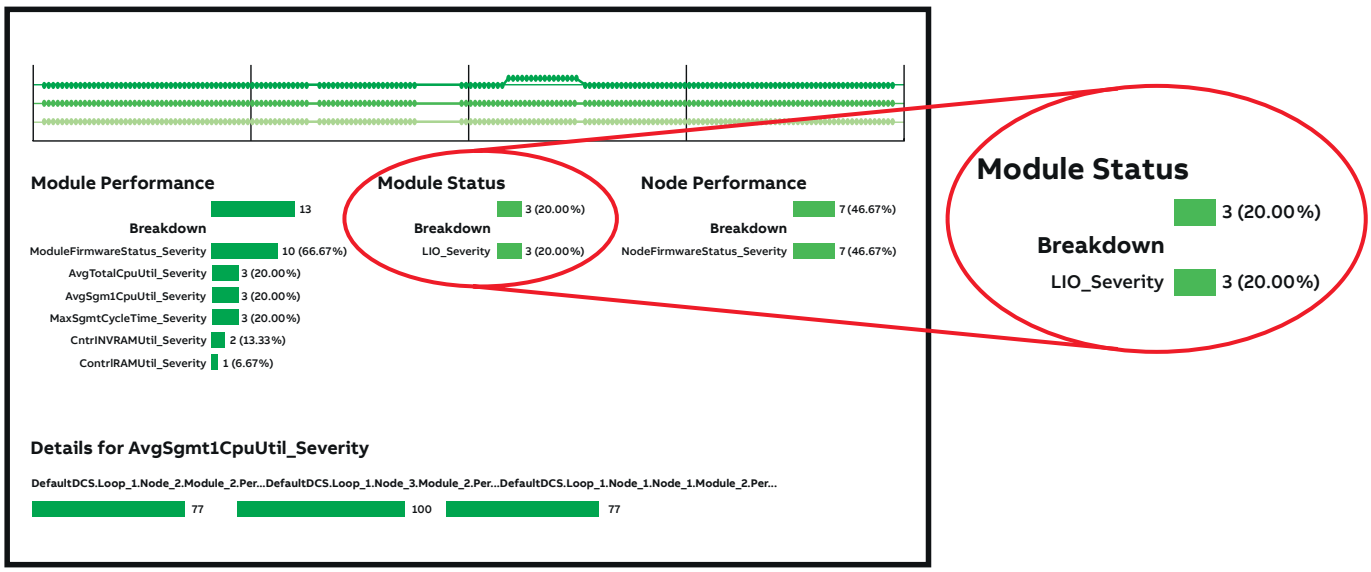
**More accurate troubleshooting with comprehensive KPIs**
With Harmony Performance Service, KPIs are determined for the following areas:

- **Node performance:** Node performance statistics and node event and error counters are monitored to identify nodes with high message rates, indicate when messages are lost or unable to find designated targets, and help isolate the source of potential faults. Exception reporting statistics are also measured, indicating where parameters should be adjusted to optimize control system operations.
- **Module performance:** CPU utilization is measured to pinpoint module loading and configuration issues. Segment cycles are analyzed to determine if the system has enough CPU free time, if individual segments are getting enough CPU time and if the cycle times are behind the optimal count.
- **Module status:** System thresholds, including error rates, controlway errors and memory overflow, are monitored to identify interrupted and/or discarded message rates, module-to-module communication error rates and errors between redundant modules.

**Simplified view of data and analysis**

# View, analyze or receive alerts on control process performance

## Harmony Performance Service components

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01 You can access three different views for each of your KPIs. The above example shows the KPI analysis view for module status. The display only shows the KPIs that are outside thresholds and prioritizes them – the bigger the bar, the greater the need to address the KPI.

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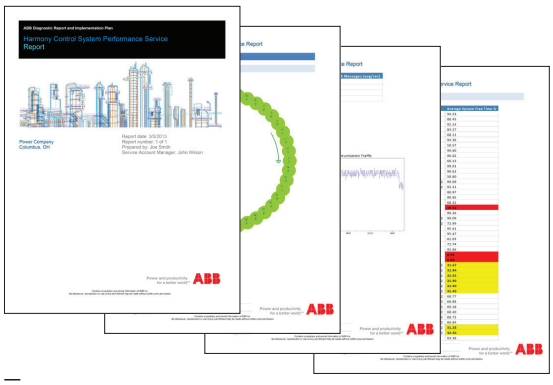
02 Included in your service agreement are periodic performance reports, which point to actions that will help prevent potential problems.

Access to and visualization of KPI data is provided through the KPI dashboard. This easy-to-use interface provides three separate views of the data:

- **Raw data** allows you and ABB service experts to view data associated with your node and module performance.
- **KPI** analysis presents a summary of KPIs, ranked by severity, that are outside set limits (Figure 1).
- **KPI monitoring** empowers you to specify your own set of rules for KPIs and displays each occurrence that falls outside a threshold.

**Expert analysis helps detect potential pr oblems**
To ensure that your Harmony Control System is performing at peak availability, ABB provides periodic performance analyses. ABB experts evaluate data to look at the health of your system, determine the statistical accuracy of the KPIs and find trends that predict possible irregularities. The resulting performance report points to actions that will prevent potential problems and improve availability, reliability and system performance (Figure 2).

**Critical notification when it matters most**
To help prioritize issues that require immediate action, sitespecific rules are applied to targeted KPIs. Any KPI that tracks outside of pre-determined parameters triggers an instant alert by email or SMS. This quickly notifies you about issues that can compromise system availability, so you can address them as soon as they are detected.

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