**ABB Ability™ Performance Optimization for control loops**

Improve and sustain control process performance

ABB Ability™ Performance Optimization for control loops identifies, classifies and prioritizes control loop improvement opportunities. Using non-stop data collection and analysis to transform raw data into actionable information, the Performance Optimization for control loops service quickly identifies troublesome loops, leading to reduced process variability, increased availability, improved product quality and higher throughput.

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<tr>
<th>Features</th>
<th>Benefits</th>
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<tr>
<td>Continuous analysis of Key Performance Indicators (KPIs)</td>
<td>Accelerates problem-solving through 24/7 visualization and analysis of control loops</td>
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<td>Automatic, non-invasive data gathering</td>
<td>Increases availability and utilization through reduced process variability</td>
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<td>Configurable alerts (via email or text) are supplied when KPIs are outside site-specific thresholds</td>
<td>Lowers maintenance, raw material and energy costs through quick identification of process errors or trends</td>
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<td>On-site or remote access for customer and ABB support personnel</td>
<td>Reduces response time and travel expenses by providing remote access to ABB experts</td>
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<td>Regular performance analysis by ABB experts identifies issues, finds trends and recommends performance improvements</td>
<td>Establishes a solid foundation for continuous improvement, including higher availability, increased production and improved quality</td>
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Scheduled monitoring and analysis to quickly identify performance issues

Performance Optimization for control loops service is accessed through a service delivery platform conveniently deployed on any control system at your location. Data is viewed through a web-based user interface that is easily accessible by customer or ABB personnel.

This service continuously analyzes data to greatly reduce the time and effort needed to identify loop volatility. Data is classified based on specific KPIs to provide a list of issues that are then prioritized based on severity, process area, criticality and/or financial impact. Problem areas are isolated and disturbance sources, such as dead time, inverse response and outliers, are identified. This analysis helps find the root cause of the problem and trend performance history more accurately, providing actionable information that will reduce process variability.

More accurate troubleshooting with configurable KPIs

With the Performance Optimization for control loops service, the best tuning parameters are found by monitoring KPIs for the following categories:

- **Control**: To keep the error at or near zero, the output of the controller is analyzed to find the source of out-of-sync measurements, such as incorrect tuning parameters.
- **Process**: To confirm that the valve or final control element (FCE) to the process is correct, repeatable and predictable, disturbances such as process changes or FCE failures are analyzed.
- **Signal processing**: To ensure that the measurement to the controller is as clean as possible, factors such as outliers or calibration are monitored.
**View, analyze or receive alerts on control process performance**

Performance Optimization for control loops service

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**Simplified view of data and analysis**

Access to and visualization of KPI data is provided through Explorer views. 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 control, process or signal processing.
- KPI analysis presents a summary of KPIs, ranked by severity, that are outside set limits (Figure 2).
- 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 problems**

To ensure optimal control loop performance, ABB provides periodic performance analyses. ABB experts evaluate control loop response, determine the statistical accuracy of the KPIs and find trends that predict possible irregularities. The resulting performance report identifies actions that will prevent potential problems and improve process availability and asset utilization (Figure 3).

**Critical notification when it matters most**

To help prioritize issues that require immediate action, site specific rules are applied to targeted KPIs. Any KPI that tracks outside of pre-determined parameters triggers an instant alert by email or text. This quickly notifies users about issues that can compromise system availability, so they can be addressed as soon as they are detected.
Secure connection for delivery of ABB services
On-site or remote access for customers and ABB

ABB Application Server is a remote-enabled, service delivery platform that provides a custom, secure connection to ABB services and experts. Deployed at a customer location, it enables delivery of local and remote services and provides customers and ABB service experts with a real-time view of KPIs and diagnostic and system data (Figure 4).

Advanced Digital Services are available for:

**Assets**
1. Control systems
   - 800xA
   - Advant
   - Freelance
   - Harmony
2. Low-Voltage drives
3. Mine hoists
4. Rotating machines

**Processes**
1. Control loops
2. Quality Control Systems (QCS)

**Risk mitigation**
1. Cyber security for control systems
2. Alarm Management for control systems