

Quality Control System Performance Fingerprint

Improve measurement and control utilization



The QCS Performance Fingerprint frees up valuable system engineer and operator time by ensuring QCS measurement health is recorded and documented for remediation scheduling.

Common issues:

- Decreasing usage in Machine direction (MD) or cross direction (CD) control results in quality issues and sheet breaks
- Operators have lost confidence in QCS scanner measurements and have disengaged controls
- MD or CD reel variability is higher than industry standards
- Production loss time related to QCS system is higher than expected due to under-performing controls

Solution

A QCS that is under-utilized impedes production and quality improvement. The QCS Performance Fingerprint helps you quickly identify obstacles to improve measurement and control, and provides clear guidance to make more and better product at less cost. The QCS Performance Fingerprint generates a benchmark, an improvement plan, and an economic benefit projection. This service is non-invasive, can be completed remotely or on-site, utilizes proven data analysis methods, and is executed with ABB's advanced technical tools.

The QCS Performance Fingerprint applies comprehensive data collection, visual inspections, and numerical analysis of the following key performance indicators.

Benefits

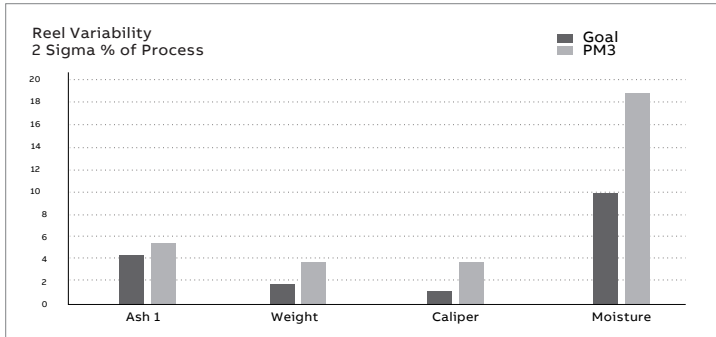
- Potential for higher QCS utilization
- Basis to realize return on QCS investment
- Increased operator confidence in process measurement accuracy and the capabilities of automatic process control
- Foundation for higher availability, production and quality

Features

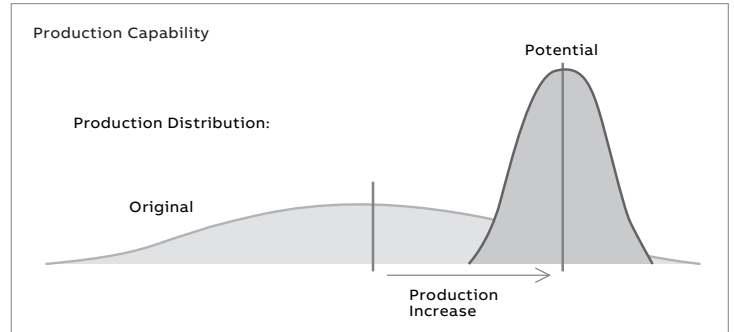
- Non-invasive data-gathering techniques
- Proven tools to measure and analyze QCS performance
- Applied knowledge of process measurement and control
- Benchmarking of data to best-in-class global performance
- Detailed report outlining improvement opportunities

Production capability

Variability in daily production is an indication of poor machine utilization. This module evaluates 30 days of standard QCS Shift/Day Reports to quantify daily production trends, variability, and span. Once variability standards are measured, steps can be taken to reduce daily production variations, automatically increase production and improve machine utilization. This module also correlates production trends related to



Graphic representation of reel variability analysis



Defining the source and magnitude of production limitations helps remove production barriers

shift operations, control utilization and loss time. The output of this module defines how much more sellable product can be made by reducing daily production variability.

Control utilization

You don't turn off features that make better paper. A direct correlation exists between the amount of time automatic controls are used and the confidence operators have in the QCS. This module evaluates standard QCS Shift/Day reports and measures the percentage of time each machine direction control and profile control is used per shift. Low control utilization can indicate physical problems on the machine; average utilization can indicate training or tuning issues; and high utilization indicates the need for invasive testing to further tune control performance.

Reel variability

At each reel turn up, the QCS generates a reel report with statistics, also known as Variation Partition Analysis (VPA). This module analyzes 30 days of reel report information, defines performance and compares it with industry standards for total roll variability, as well as energy distribution in a reel of paper. This analysis defines the improvement opportunities related to one or more issues, including measurement utilization, control utilization, or the process itself.

Sensor stability

The cornerstone of the QCS is sensor technology. Repeatability, reliability, and accuracy of measurements are crucial to quality and production improvements. This module evaluates 30 days of standard ABB reports that define Standardized Values, Check Samples, and Calibrate Samples. By applying numerical methods to this data, sensor performance can be de-

defined and quantified. If sensors are not being utilized, or if they are not properly calibrated, then the QCS will not function correctly. To fully utilize the QCS, sensors must be calibrated and operated correctly.

Control tuning / setup cluster analysis

Many tuning and setup parameters exist that enable the QCS to be flexible and uniquely optimal depending on production needs. However, over time, with changes in production, instrumentation, actuators, and operators, these numbers can change in small ways that can lead to poor system utilization. This module uses standard QCS displays to indicate accuracy based on years of expert feedback on QCS application settings. This analysis helps determine if controls are in acceptable ranges.

Diagnose, implement and sustain

QCS Performance Fingerprint services uses a three-step methodology: Diagnose, Implement and Sustain. The Diagnose step provides a comprehensive report detailing analysis results, a performance benchmark and improvement plan with associated ROI. Once improvement opportunities have been defined, steps to increase performance and create a foundation for continuous improvement can begin with the Implement and Sustain steps. Services to implement recommendations are in addition to the QCS Performance Fingerprint service and priced separately.

Approved improvement recommendations can be implemented all at once, or scheduled to be completed incrementally over time; beginning with improvements that provide the greatest financial return. ABB is available to implement the improvements, work with site engineers, or work along with site personnel to achieve the desired performance level.