Quality Control System Upgrade Programs

Protect the value of ABB classic Quality Control Systems with lifecycle migration to the latest QCS800xA solution.

Technology Trends

Technology is changing our behavior at a fast pace. A large part of today’s modern process automation system now consists of server-client technology, inherited from the office automation (IT) world. With the introduction of open standards for operating systems and standard PC hardware and software, a new challenge was introduced to process automation system owners. In the past there was a level of protection from frequent software updates and constantly increasing connectivity requirements, now these parameters are in a constant state of flux. The industry has embraced this technology as process automation supplier’s shift from proprietary hardware and software to custom-off-the-shelf (COTS).

The current technology environment creates both challenges and opportunities to users when it comes to maintaining a modern Quality Control System. The challenge for users is to ensure that new PC-based software is kept up-to-date to maintain security and performance levels. The opportunity for users with older classic QCS systems is to extend support for their existing control software investment, while establishing an affordable path to the next generation of functionality. ABB QCS800xA Quality Control solution built on the System 800xA platform is representative of this technology shift. The need for automation suppliers to provide an active lifecycle management program is clear.

Automation Sentinel is ABB’s program designed to address lifecycle management needs and provide the best overall ROI for your past, present and future software investments and ensures PC software is kept current for the latest QCS800xA solution.

However, Automation Sentinel’s subscription program goes much further to target the installed base of classic 1180M, 1190, and Nexus solutions to provide an affordable way to upgrade software to gain productivity benefits from the latest System 800xA solution. ABB upgrade programs go beyond rip and replace solely for obsolescence in an effort to reuse as much of the existing equipment as possible. ABB addresses customer’s business critical needs to bring value and increased capabilities that truly increase customer ROI and solve problems. Let’s review typical classic QCS system upgrades in greater detail.

AccuRay 1180M and 1190 Upgrades

For AccuRay 1180M and 1190 QCS systems, the Automation Sentinel subscription program cost effectively maps existing software over to the latest QCS800xA software. Expansion software not available in these classic systems is available to address business critical needs. With older 1180M and 1190 QCS systems there are often hardware obsolescence issues that need to be addressed. A site survey by ABB engineers is a first step to determine the lifecycle status of key QCS subsystems and identify support and failure risks. Modular hardware upgrades are available such as Measurement Platform to Network Platform upgrades and the rebuild of the front-end electronics of Profiler subsystems. By moving scanners and profilers to the latest QCS800xA architecture users can upgrade to QC Aspect Workplaces. Both scanning platform and profilers subsystem upgrades are designed to reuse much of the existing hardware to leverage previous equipment investments.
Nexus Mixed Architecture Upgrades

ABB’s installed base of Nexus Quality Control solutions may not have the same obsolescence challenges of older 1180M and 1190 systems but users frequently expand their Nexus system due to a process change, or to take advantage of the latest QCS800xA technology to solve a critical business need.

ABB offers several upgrades with the Nexus quality control system expansion in mind. A breakthrough with the release of the latest Nexus Quality Control Aspect software version is the support of mixed architecture. Mixed architecture offers the ability to combine existing Nexus AC 450 controls with the latest Quality Control Aspect Workplaces and QCS800xA controls. Users are reassured that they are investing in the future by providing the architecture foundation of latest QCS800xA solution. Nexus users with the AC 450 controller never need to worry about being locked into a dead-end position. Through QCS upgrades users have effectively transformed their existing Nexus system into the QCS800xA system.

ABB’s revolutionary Quality Control Aspect Workplace is not just for operators. One of the most common Nexus system upgrades is to replace obsolete Unix-based workstations. Papermakers go on to add additional QC Aspect Workplaces beyond the needs of the machine operators. Quality Control Aspect Workplaces are easily personalized to individual user requirements and users are able to access QC Aspect Workplaces anywhere on the network. Quality Control Aspects represent information associated with specific objects from the Quality Control solution, enabling unprecedented user visibility to control and optimize the process. Users can instantly view high-resolution profile measurements, machine-direction (MD) and cross-direction (CD) variations, profile contour maps, reel and grade reports, documentation and support tools. Quality Control Aspects Workplaces based on Microsoft® technology offers intuitive and flexible navigation. As an open system, Quality Control Aspects provides the possibility to integrate third-party applications such as Excel, Word and CMMS as Aspect Systems. This ensures the right person gets the right information to make the right decision.

Nexus users are able to add several of ABB most advanced controls that are only available in the latest QCS800xA solution. Within the mixed architecture structure advanced control updates include LV Control, Multivariable CD Control and Color Automatic Shade Change Control that are all targeted to solve a business critical need.

For example, narrower CD response widths, such as those in dilution valves, require extremely precise mapping on a continual basis. QCS800xA latest LV Control identifies areas of excessive localized variation and automatically adjusts mapping to correct the problem, ensuring long-term, optimized performance of CD Controls.

Multivariable CD Control addresses the need of paper machines that are equipped with multiple sets of cross-machine direction (CD) actuators. One set of actuators could change several sheet properties and each sheet property may be affected by multiple sets of CD actuators. An independent CD control may not handle such couplings effectively. A multivariable approach is needed for these types of processes to optimize profile control.

QCS800xA Color Control is redesigned from the ground up with new QC Aspect operator interface, enhanced UV signal processing, and an option for Automatic Shade Change. All of these advanced controls provide a high rate of return and invest in the latest technology while protecting previous Nexus control investments.

QCS system expansion may also include the addition of measurements such as Color or Fiber Orientation and new ABB Profilers with related Cross-direction Controls. ABB’s recent investment in a new line of xP Profilers (Extended Profiling) demonstrate ABB’s commitment to provide the industries premier profiler offering with new Dilution xP, Slice xP, Air-Water xP, and Induction xP solutions.

To lower upgrade costs and reduce project installation services the existing Nexus AC 450-based MD and CD control software and I/O wiring remain in place. The existing AC 450 controller and I/O may be used to drive the expansion QCS800xA controls, or users may elect to expand I/O in the latest AC 800M controller. With the new AC 800M controller industry-standard fieldbus (ProfiBus, FOUNDATION Fieldbus and HART), network and data interchange protocols are supported, making it easy to integrate third-party plant systems.

The Final Word

In the end, the real measure of your upgrade strategy is whether it improves process performance. ABB’s upgrade strategy will help you do exactly that by taking advantage of advanced ROI creating features available in the latest QCS800xA solution. By upgrading older classic QCS systems users will also experience significant cost savings through reduce maintenance costs and unplanned process stops. Because QC Aspect workplaces provide more and better information to both operators and other front-line personnel, users accomplish improved process integration and information retrieval. QC Aspect workplaces will improve productivity as well as your decision-making process. Performance of your process is improved and costs controlled through more secure management and supervision.

ABB is committed to delivering product enhancements that leverage investments of systems you already own. You may be surprised to find that investment and migration to System 800xA is not an all-or-nothing proposition. Moving to newer technology can be managed at a controllable investment level, eventually migrating to our complete QCS800xA solution. To minimize your capital expense, ABB will ensure the reuse of as much of your existing equipment as possible, and offer modular upgrade solutions to Quality Control QCS800xA. Completing ABB’s portfolio of evolution planning products and services, Automation Sentinel is another reason why ABB has the best track record in the business for control system investment protection.

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