

Summary

Wonderware MES Software/Quality provides quality operations management capabilities for sample data collection in work order execution context for both automated and manual production operations. Statistical Process Control (SPC) monitoring of sampled data helps improve product quality, minimize variations and improve yields by driving quality closer to targets and within specification limits.

Business Value

Using Wonderware MES Software/Quality, manufacturers can increase operational efficiencies, product quality and yields, quality data accuracy, and reduce quality losses. Increased automation reduces the cost of quality, regulatory and product safety compliance.



Wonderware MES Software/Quality

QUALITY OPERATIONS MANAGEMENT ON THE SHOP FLOOR IMPROVES PRODUCT QUALITY, COMPLIANCE AND OPERATIONAL EFFICIENCIES

The desire for increased margins and the growing pressure of compliance with internal, governmental or safety regulations requires tighter quality control and improved quality procedure management in many manufacturing industries. Balancing these quality requirements requires efficient in-line quality operations; minimal impact to operator efficiency; access to multiple systems for data and recording; and management of the plant/enterprise systems landscape, to minimize complexity and lower the total cost of ownership.

Wonderware® MES Software is configurable, fully functional and highly scalable Manufacturing Execution System (MES) software which can be applied to most industrial manufacturing and production processes. Wonderware MES Software includes real-time manufacturing operations, performance and quality management, plus execution capabilities for the shop floor. Comprehensive enterprise integration and standardization capabilities facilitate use by any scale of business or enterprise.

Wonderware MES Software/Quality helps manufacturing companies reduce the cost and increase the efficiency and accuracy of capturing and monitoring of critical quality information on the shop floor, in context and in dynamic synchronization with the execution of work orders.



Wonderware MES Software/Quality:

- Increases operational efficiency and accuracy of quality data by automation of quality sampling procedures with enforcement or direct sampling from plant equipment or control systems.
- Improves product quality and reduces losses through tighter control and faster response to non-conformance or deviations, leveraging Statistical Process Control (SPC) monitoring of sampled data with notifications of rule and limit violations.
- Enhances operational agility while securing compliance through dynamic quality specification and sample plan management for ever-changing production schedules, based on current work order execution status.
- Improves compliance, product safety, and governance through complete electronic system records of operational execution and quality procedures.
- Complements enterprise quality management systems with sampling execution capabilities on automated process equipment, or for interoperability with integrated quality and manufacturing operations.

ELECTRONIC QUALITY SPECIFICATION AND SAMPLE PLAN EXECUTION MANAGEMENT

Wonderware MES Software/Quality allows the definition of individual quality specifications for products to be produced, equipment to be used and operations to be executed, or combinations of these to be administered.

Quality specifications may include one or many characteristics (variables) with attached target values and specification limits, sample plan and control rule definitions. "Out of the box" quality specification version management ensures data consistency and supports the continuous adoption of product changes and process optimization.

When a scheduled work order process is started, the specified sampling plans are automatically generated and dynamically maintained in alignment with the work order execution progress, status and resources involved. Operator quality data entry requests and procedure enforcement, or automatic sampling from equipment/instrumentation are executed by the system according to quality specifications.

The software dynamically manages the quality data sampling requirements and increases the flexibility in scheduling and response to unplanned events by securing the proper quality documentation and control according to specifications, without additional intervention, which specifically removes distracting and difficult to manage tasks from operators.

The screenshot displays the Wonderware MES Software/Quality interface. On the left, a table lists sample plans with columns for Sample Name, Entity, Item Id, WO ID, Operation, Frequency Name, Lot No, Sublot, Requested Time, Expiry Time, Pulled, Finalized, and Result. Below this is a table for characteristics with columns for Characteristic, Moving, Version, Lower Specification, Upper Specification, Lower Reasonable, Lower Reasonable, Equipment, last_edit_com, Edited By, and Last Edit At. On the right, the 'Edit Sample Results' window is open for 'JeffTest201207260179'. It shows a table with columns for Contamination, Density, Moisture, and pH. The table contains data for 5 samples, with the 4th sample highlighted in red. The window also includes a 'Show Characteristics in the grid as...' dropdown, a 'Find' button, and a 'Save' button. At the bottom, there are fields for LRL, LSL, Target, USL, and URL.

Sample Name	Entity	Item Id	WO ID	Operation	Frequency Name	Lot No	Sublot	Requested Time	Expiry Time	Pulled	Finalized	Result
Sample1	Mixer				BottleRuntime2hrs			7/20/2011				Pending
Sample2	Mixer				BottleRuntime2hrs			7/20/2011				

Characteristic	Moving	Version	Lower Specification	Upper Specification	Lower Reasonable	Lower Reasonable	Equipment	last_edit_com	Edited By	Last Edit At
OutsideDiameter	QMSpec	1	15	27	0	50		jeff	jeff	7/20/2011
Permeability	QMSpec	1		0.256						

Sample ID	Characteristic	Value No	Results Value	Actual Sample
2	36	1	0.26	
2	38	1	26	

Contamination	Density	Moisture	pH
1 / 50	1.2	52	6.2
	1.29	54	
	1.36	48	
	1.21	39	
	1.23	42	

Using Wonderware MES Software's execution management capabilities, customers can:

- Reduce off-spec production through electronic application of correct specification definitions based on current work order data
- Enforce required quality product sampling rates by system generated sampling plans and upcoming sample notification to operators
- Improve response time to quality deviations by providing SPC control rule violation notification to operators when sample data and values are entered

INTEGRATION INTO ARCHESTRA SYSTEM PLATFORM

Automatic quality data sampling execution from process equipment and controls is gained through integration into ArchestrA System Platform. System Platform provides the infrastructure for integration and data collection from automated equipment, through the Quality Module's new Sample Recording Object.

MES Software Objects connect with real-time information from control systems or plant automation devices, enabling automatic / semi-automatic information exchange and data collection.

NEAR REAL-TIME STATISTICAL PROCESS CONTROL (SPC)

Sample data can be displayed instantly in SPC charts to production or quality operators for closed loop quality control. Wonderware MES software includes rich SPC trend and chart display capabilities. These include notifications for violations of control and specification limits. Additional notifications can be configured based on a large set of standard SPC rules indicating specific trends and behavior of quality characteristics.

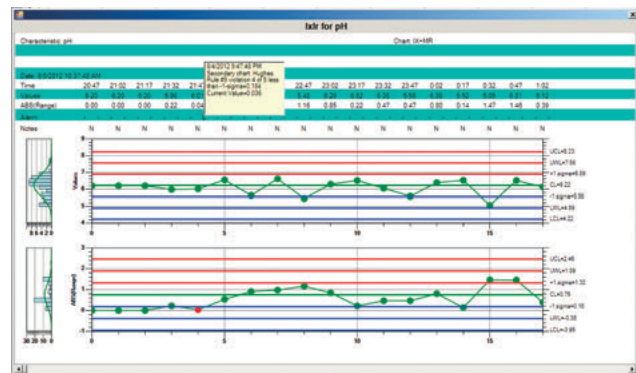
Near real-time quality monitoring eliminates time delays to non-conformance notifications while minimizing impact on downstream operations. SPC analysis can be leveraged to "predict" quality issues and, in response, trigger preventive actions to avoid quality losses before they cost time and money.

All Standard SPC charts are included:

- X-bar and Range or Sigma
- X-individual and Moving Range
- Moving Average and Range or Sigma

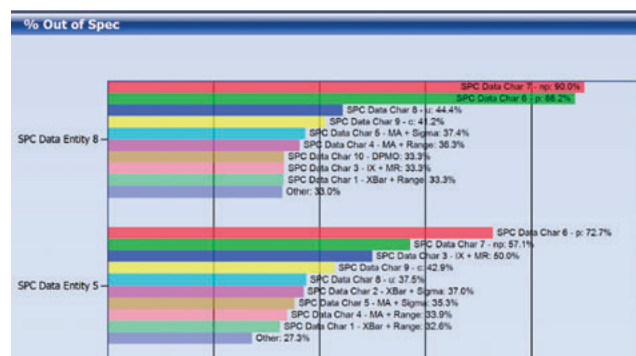
Attribute Charts include:

- P
- Np
- C
- U
- Defects per Million opportunities (DPMO)



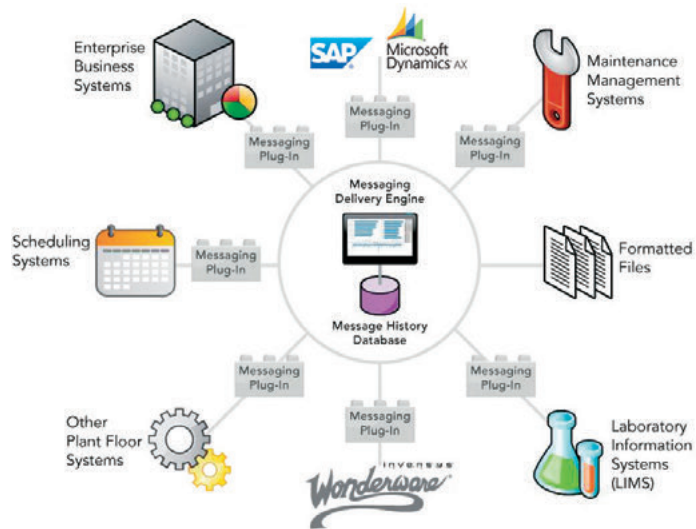
QUALITY REPORTING FOR COLLABORATIVE INFORMATION ACCESS

Wonderware MES Software/Quality includes a set of standard quality reports which are published to Wonderware Information Server (part of the ArchestrA System Platform infrastructure) for flexible information access via a web browser.



INTEROPERABILITY FOR THE ENTERPRISE

For enterprise integration, the collected quality data is stored together with all of the additional operational work order execution data in the Wonderware MES Software database. It can be flexibly provided to any existing enterprise quality management system (ERP, custom, or LIMS) via the Wonderware Enterprise Integrator software, or through an open interface for data access. The full electronic data collection and data exchange between systems minimizes cost, potential data entry errors and the delay time for follow-up processes.



EXTENDED MANUFACTURING OPERATIONS MANAGEMENT CAPABILITIES

Wonderware MES Software/Quality provides users of Wonderware MES Software/Operations an easy extension of their existing implementation and configuration with new quality capabilities when upgrading to Wonderware MES Software 2012.

The integration of ArchestrA® Workflow software with Wonderware MES Software allows users to implement electronic workflows for Corrective and Preventive Action (CAPA), Non-conformance (NC), material disposition, sign-off approvals, escalation of alarms, out-of-control conditions, or any other event in a quality context.

The native integration of Wonderware MES Software with ArchestrA System Platform provides the connection to automation systems, data pre-processing and the MES real-time execution engine, as well as integration with additional software applications like IntelTrac® for mobile operator procedure execution or Wonderware InBatch recipe management and batch execution software.

Wonderware MES Software/Quality with Wonderware Intelligence Software enables you to gather, aggregate, contextualize, store, and report operational data from both Quality and other Wonderware and non-Wonderware data sources, using a dashboard to present Key Performance Indicators that are used to visualize, tune and maximize your operations.

For more information on Wonderware MES Software/Quality, contact your local Wonderware distributor or Invensys® salesperson, or visit iom.invensys.com.



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