

Product Quality System Developed for Water Filtration Module Production Line

MAVERICK developed a product quality system (SCADA) for a new, flexible water filtration module production line of a major supplier of water filtration solutions.

Objective

MAVERICK was selected by a major supplier of water filtration solutions to develop a system that proves the quality of each filter by documenting the details of how it was made. In an industry awash with knockoffs, this supplier is able to differentiate its superior offerings from those of inferior producers. MAVERICK was chosen for their expertise in developing Product Quality Systems.

Results

MAVERICK developed a Product Quality System that established a full genealogy of information for the water filtration modules. This genealogy includes the lot numbers of all materials used, recipe and equipment setup parameters, and process information. The Product Quality System is configurable to reflect the final production line layout.

Solution

MAVERICK's team developed the architecture of the system's core SQL Server database to provide a full genealogy for each water filtration module produced. Information tied back to each module includes:

- » Process operations, including repeated process steps
- » Process data
- » Product inspection results
- » Lot numbers of materials used
- » Equipment and recipe setup parameters

Material and process order information is linked to higher level enterprise resource planning (ERP) systems.

The team designed the system's core database to support a flexible specification of the production line elements / stations.

Inductive Automation's Ignition product was selected by the MAVERICK team as a foundational element of the system solution. Ignition's SQL Bridge Module forms a communications bridge between the production line's control system and the product quality system. Ignition's Vision Module enables the building of sophisticated thin client HMI screens.



The team configured Ignition's SQL Bridge Module communications.

- » Downloading of recipes and equipment setup parameters
- » Logging of data collected per operation step
- » Logging of product inspection results

Ignition's SQL Bridge Module and the system's core database were extended to allow recipe parameters to be added, modified or deleted from the database and downloaded to the control system without requiring changes to Ignition's configuration.

HMI screens were developed for each station associated with a process step. Leveraging Ignition's Vision Module's flexibility, a number of screen elements were dynamically specified in a table in the core database, providing support for a flexible production line specification, as well as significantly reducing the HMI screen count.

Finally, the team developed water filtration module genealogy reports using SQL Server's reporting services.

The MAVERICK Difference

MAVERICK provided the system architecture, design and development expertise to create a Product Quality System that produces a full genealogy of module data for a flexible water filter module production line.



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