Work Process Management Improves Traceability in the Food and Beverage Production

The food and beverage (F&B) industry has some unique production challenges, including specific regulatory requirements to ensure quality and safety. Many food and beverage manufacturers use tracking and traceability processes to monitor all portions of the manufacturing process, from raw materials entering the factory all the way through delivery and sales of the final product. GE's Proficy Workflow application and Cognex vision hardware can be used together to improve work process management and traceability in F&B facilities.

Traceability Systems

Traceability systems include a method to assign a unique code to parts or materials, a system to read these codes at each step of the manufacturing process, and a database to store information on the parts or materials and provide information to operators or managers as needed. 1D or 2D bar codes are often used to identify parts, whether on a label affixed to the part or a container, or etched directly on the part itself. To read these identification codes, an automated vision system is used, such as the In-Sight® 5110 vision system from Cognex, along with their VisionPro® software. These vision systems use the cameras to look at the part, and the software locates the identification code within the image and looks up the code in the system database. The software then updates the database with the current location of that individual part and any other relevant information from the image.

Automated vision is also used for other functions besides identification. Vision systems are integrated with inspection and testing processes, so the software can update the system database with information on inspection and test results and part location. Vision systems can verify the quality of the traceability process. After a part is imprinted with a code, a vision system is generally used to image the code right away to ensure that it can be clearly read and the number can be entered into the manufacturing database.

Managing Industrial Workflow

Industrial workflow is used to manage production challenges including setting up a machine to managing complete production processes and passing information between many different systems. While food manufacturers have to continue to manage production efficiency and meeting regulatory requirements, electronic work process management offers a way for manufacturers to for improving traceability. Work process management software takes inputs from vision systems used for traceability, and uses that information to update operator user interfaces, guiding the operator through the right process depending on the individual part.

Industrial workflow software, such as GE Proficy Workflow, provides a system for constantly improving and optimizing production practices. This industrial software takes a production "flowchart" and digitizes it across a web of people, systems and equipment. Industrial workflow software transforms process decision trees into wizards that can walk newer employees through a variety of operational and troubleshooting processes. These trees help newer workers decide what actions need to be taken, depending on the exact circumstances. Industrial workflow software can also walk operators through set-up and break-down processes, quality assurance (QA) planning and inspection processes, and process monitoring.

By leveraging industrial workflow elements such as electronic work Instructions and exception management, facilities in the F&B industry can reduce variations in performance, cost and quality, resulting in more consistent work processes, including traceability. Traceability allows producers to ensure product quality and safety and maintain the integrity of their brand.