

FEBRUARY 12, 2007

By Craig Resnick

## Manufacturers Deploy Real-Time Visualization Solutions for Continuous Improvement

### Introduction

One trend that many successful manufacturers are following is the use of real-time visualization solutions to ensure that problems are identified as they occur on the plant floor. One of the leading providers of these real-time visualization solutions is SeQent.

Manufacturers are searching for ways to improve their competitiveness in the face of increasing globalization, fierce pricing pressures, ever-changing market demands, evolving capacity deployment locations, and shrinking product life cycles. Continuous improvement methodologies including lean manufacturing, six sigma, and kaizen are popular options in the quest for manufacturers to improve their competitiveness and increase their profitability. Although there are many forms of lean, most enterprise-wide programs are geared towards improving efficiencies and quality. The ability to detect a breach of tolerance and automatically notify key personnel in real time contributes significantly to improving efficiencies and reducing defects and waste.

One trend that many successful manufacturers are following is the use of real-time visualization solutions to ensure that problems are identified as they occur on the plant floor. This is a welcome trend to workers on the plant floor, especially when they are empowered to stop the manufacturing process and fix the problems as they occur to get the product quality right the first time. In order to build a culture that empowers workers to stop the manufacturing process, there needs to be a method of detecting defects as soon as they occur so that the problems can be resolved before products continue downstream. Some studies have shown that up to 80% of plant floor problems can be resolved by an effective real-time visualization solution. Many of these real-time visualization solutions utilize Andon boards to prominently display operating conditions and any deviations from standard. These Andon boards require software that is either embedded, purchased off-the-shelf, or custom developed to push real-time information in an effective and efficient manner. One of the leading providers of these real-time visualization solutions is SeQent.



## Real-Time Visualization for Continuous Improvement

Manufacturers operate in an environment that requires an exchange of information across all domains of the manufacturing enterprise. As manufacturers move into a global business climate that demands the integration of manufacturing operations and business systems, collaboration must move beyond hype and buzzword to become a commonplace reality. This path transcends applications and systems. Manufacturers recognize that each process provides a vital link to real-time data for the enterprise as a whole, which is especially critical with the move towards Real-time Performance Management (RPM) that uses dynamic performance targets to drive an enterprise to its optimum potential and competitive advantage. This is driving manufacturers toward real-time-based visualization solutions at the manufacturing and enterprise level, which drives manufacturers towards continuous improvement.

Real-time visualization solutions are an indispensable component of Collaborative Production Management systems. It provides a common basis for using manufacturing information from the plant floor to enterprise systems and business partners.

Real-time visualization solutions are an indispensable component of Collaborative Production Management systems. It provides a common basis for using manufacturing information from the plant floor to enterprise systems and business partners. Supporting the enterprise's information and visualization requirements places new demands on manufacturing and typically requires the coordination of disparate sources and platforms. Manufacturers also recognize that connectivity of each process is essential for an enterprise to achieve Operational Excellence. Fact-based analysis drives consensus and improvement, which is impossible without the real-time connectivity of both enterprise systems and the plant floor.

Real-time visualization solutions provides manufacturing information to people, processes, and applications, and delivers new performance capability to users at the plant-level and throughout the distributed manufacturing enterprise and supply network. Real-time visualization solutions provide real-time data collection and connectivity at the plant floor, establishes operational context, and exposes manufacturing information to the rest of the enterprise.

Real-time visualization solutions provide the foundation for manufacturers to run their business using an RPM strategy from the bottom up. As a plant-centered enterprise component, Real-time visualization solutions can

Real-time visualization solutions provide the foundation for manufacturers to run their business using an RPM strategy from the bottom up. As a plant-centered enterprise component, Real-time visualization solutions can

tap all operational areas, including production, planning, quality, engineering, inventory/materials management, and maintenance and asset management applications. Real-time visualization solutions are a natural extension of HMI functionality, but with connectivity to PLCs and PACs facilitate a view of not only plant floor data, but also production management data. This information is made available to view on devices such as pagers, mobile phones, Blackberries, and PDAs as well as to LED displays and Andon boards.

### GM Implements Real-time Visualization Solutions

General Motors has been a major user of SeQent real-time visualization solutions. Currently, a significant number of GM plants have installed a version of *FirstPAGE*<sup>™</sup> through an OEM relationship with GE Fanuc and their product called CIMPAGER, *FirstPAGE* is a product that delivers real-time, automated status messages to a specified hierarchy of GM personnel via personal communication devices, including mobile phones, pagers, BlackBerrys', PDAs and vehicle mounted data receivers. *FirstPAGE* was adopted by GM as a global corporate standard for production. GM also purchases paging hardware from SeQent to run their in-house paging system. The main reason for GM's use of SeQent's in-house paging systems is due to its quick response time, which is typically 2-3 seconds.

The main reason for GM's use of SeQent's in-house paging systems is due to its quick response time, which is typically 2-3 seconds.

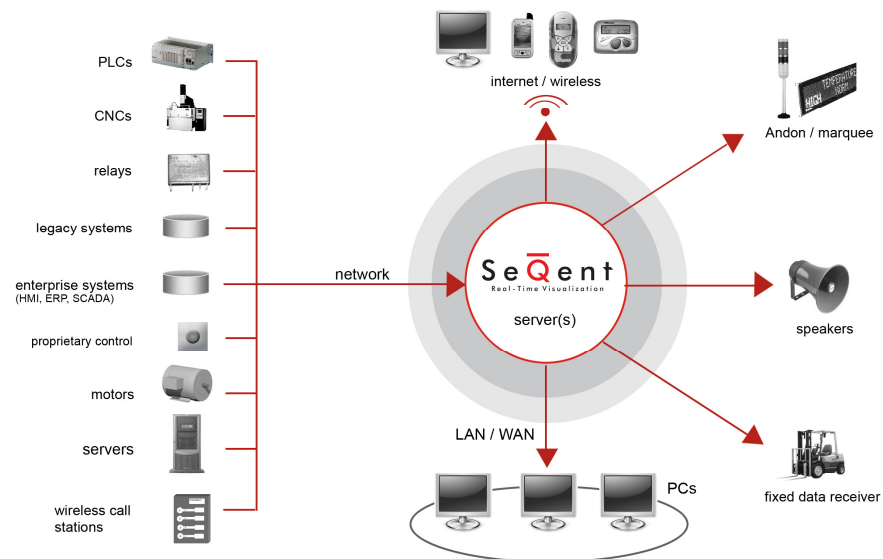
GM also contracted SeQent to develop a gateway to their quality information system for use in several plants. This is a system of touch screen monitors located throughout GM's plant floors that display real-time production data including defect occurrence and tracking. SeQent's Gateway for the quality information system sends a page to the appropriate GM individuals as soon as a defect is detected. This enables GM personnel to react immediately to prevent quality defects and potential line stoppages.

Additional real-time visualization solutions adapted as a corporate standard by GM include Marquee Manager<sup>™</sup>, a product that pushes status messages to GM's plant floors using visual or audible devices such as LED displays, Andon boards, stack lights, and sounder alarms. Marquee Manager is a multi-vendor marquee solution, supporting GM's multitude of boards, including legacy displays. This message management system also includes prioritization and queuing. GM has implemented Marquee Manager in numerous plants.

GM also contracted SeQent to develop a gateway to their IBM Maximo system for several plants. Maximo is used to handle the logging, scheduling, and dispatch of all maintenance calls. Each worker is assigned a specific audible tone and when an individual is required to perform a task, SeQent's Gateway for Maximo sends an alarm in the form of an audible tone, which the individual recognizes as his or her cue and responds as required. The alarm is also transmitted as a text message that is displayed on Andon boards throughout the facility. GM also uses FirstPAGE and FirstPAGE Gateway for SMTP to send messages from MAXIMO to the plant floor.

## About SeQent

SeQent's automated solutions send real-time text and voice messages to plant personnel through LED displays and Andon boards, PDA's, mobile phones, and radio/paging systems. SeQent's mission is to support their



### Overview of SeQent's Real-Time Visualization Solutions

customers' continuous improvement initiatives by providing cost effective solutions that identify out of tolerance events in real time and distribute critical information in a highly visible way to decision makers. SeQent provides solutions to more than 350 facilities worldwide, including customers in the manufacturing, distribution, petrochemical, pharmaceutical, and health care sectors.

*This paper was written by the ARC Advisory Group on behalf of SeQent. The opinions and observations stated in the paper are ARC's. For further information or to provide feedback, please contact the author at [cresnick@arcweb.com](mailto:cresnick@arcweb.com)*