ARC BRIEF

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Deploying HMI/SCADA Software That Can Best Leverage 64-Bit Computing

Introduction

Overall operational performance is positively affected by maximizing the visualization capabilities of HMI/SCADA software. This is done through leveraging the latest in 64-bit hardware technology and deploying an operating system designed to optimize this hardware, such as Microsoft Vista or Server 2008. Best results for the operator are obtained from presenting the most realistic representations of the process possible, developed through a collaborative design and implementation process between operators, process or design engineering, and operations management. Manufacturers who have the desire to upgrade their HMI/SCADA software to the latest operating system proceed forward because they have data that documents the business case that time and budget spent on improved process visualization pays off very quickly in terms of operational improvement, reduced incidents and accidents, operator turnover, and absenteeism. An example of this business case data includes engineering the application, which can be the largest cost of the project, sometimes consuming over 60 percent of the total expenditure. Taking advantage of 64-bit computing can greatly reduce this effort, resulting in enormous savings and helping the bottom line.

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Manufacturers are developing business cases that demonstrate how 64-bit Vista or Server 2008 HMI/SCADA software visualization can be easily adapted to the operator's needs while incorporating the manufacturing process requirements for optimal operation. The operator can now focus attention on the process as a whole and avoid distraction when, for example, zooming into details. 64-bit Vista or Server 2008 HMI/SCADA software visualization provides the operator with the closest rendering of the real process, and avoids the need to translate an operator's thinking into code, numbers, and tags. Operations improve when the operator is able to solve complex problems, which results in increasing KPIs and Operational Excellence.

Leveraging 64-Bit Technology for Plant Historians

Overall operational performance is also positively affected by maximizing the capabilities of Plant Historian software, which has evolved into manufacturing intelligence solutions because of the need to aggregate numerous disparate databases and data sources. This has positioned Plant Historian software as a critical part of production management systems. The Plant Historian not only provides a record of where the manufacturing process been, but it also can provide insight into where the plant is headed as a source of leading indicators for maintenance, safety and performance.

The Plant Historian is an important tool for operational excellence. It is used to historize and trend current operation, correlate current performance to "Best Day" performance for benchmarking and again through correlation identify leading indicators for maintenance, environmental and safety events. In the future, the Plant Historian will perform deep historization with slices of contextual data in order to recreate situations, which will require the latest in 64-bit hardware technology and deploying an operating system designed to optimize this hardware, such as Microsoft Vista or Server 2008.

HMI/SCADA Products Designed For 64-Bit Computing

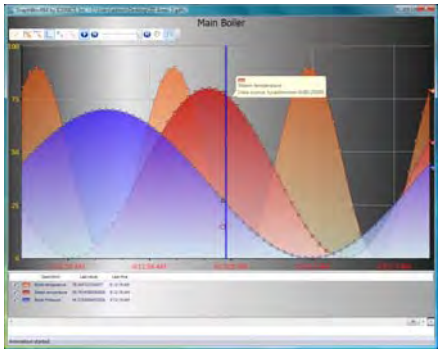
HMI/SCADA software suppliers are listening to the demands of manufacturers and are developing products that exploit the technology advantages and business benefits of 64-bit computing and Microsoft's Vista or Server 2008 operating systems. ICONICS' latest industrial automation software solution, GENESIS64, is their next generation in software automation. The new suite takes advantage of 64-bit computing to reduce costs associated with engineering, which can be the largest cost of the project, sometimes consuming over 60 percent of the total expenditure. GENESIS64, designed and certified for Windows Vista and Windows Server 2008, coupled with 64-bit technology processors from AMD and Intel, allows for faster development of automation solutions.

GENESIS64™

GENESIS64 utilizes key features within Windows Vista and Windows Server 2008 to provide customers with a 360-degree view of their entire organization. These include universal data connectivity using Windows Communication Foundation (WCF), real-time KPI Gadgets/Windows Vista Desktop Sidebar technology, an enriched user experience via Windows Presentation Foundation (WPF), hardware-accelerated graphics for 3D visualization, increased security via User Account Control (UAC) integration, Virtual Earth Geographical Information System (GIS) integration, Windows Vista Search & Organize technology, and Windows Workflow Foundation (WF) for secure, real-time data communications.

The GENESIS64 suite is comprised of GraphWorX64, TrendWorX64, AlarmWorX64, EarthWorX and the Workbench Web-based development, deployment and operations products. For example, GraphWorX64 provides users with 3D views of their operations in real-time with live data. It provides the ability to view how equipment is running, in real-time, from any angle, a thorough approach to visualization. ICONICS' new solution makes full use of the latest in graphics capabilities. GENESIS64 takes advantage of the graphic hardware acceleration through DirectX10, powered by Windows Vista.

Hyper Historian™



A new feature of ICONICS GENESIS64 is its integration with Microsoft Silverlight technology, a cross-browser, cross-platform, and cross-device plug-in for delivering.NET based media and interactive applications for the Web. Silverlight is able to combine multimedia, graphics, animation and interactivity into a single runtime environment. It has the ability to work along with XAML code in presenting vector graphics and animation and can be used to create Windows Sidebar gadgets for Windows Vista. Such capabilities help bolster the visualization and control abilities of GENESIS64.

Plant Historian Products Designed For 64-Bit Computing

Plant Historian software suppliers are also listening to the demands of manufacturers and are developing products that exploit the technology advantages and business benefits of 64-bit computing and Microsoft's Vista or Server 2008 operating systems. The ICONICS Hyper Historian is a 64-bit data historian with data logging rates greater than 100,000 data events per second on reference machines. For a historian to achieve a claim of 100,000

data tag per second would only be possible if the software can seamlessly integrate with today's 64-bit computing machinery. It is designed to data log from multiple data sources including OPC UA Servers, OPC DA Servers, OPC XML DA Servers, BACnet, and SNMP. The Hyper Historian uses a robust swinging door algorithm for extreme high-speed, real-time data collection. The Hyper-Historian provides full, Web-based online configuration and supports Store-and-Forward technology, providing data synchronization with remote loggers.

ICONICS Hyper Historian is available in stand-alone and enterprise versions. The enterprise version includes redundancy and multiple remote collectors. Hyper Historian is configured through the Workbench, a multi-functional, centralized, thin client Web-based environment. Other Hyper Historian capabilities include historian-to-historian data collection, Statistical Process Control (SPC) capability, leverage of multi-core CPUs by the hyper historian logger, redundant monitoring and management, audit trail on historical data editing, support for E-Signatures, and web chart control to allow for exporting data to an Excel/CSV file as well as access to the Hyper Historian's logged data.

About ICONICS

Founded in 1986, ICONICS is a Microsoft Gold Certified Partner provider of Web-enabled, OPC-based, HMI/SCADA Visualization and Manufacturing Intelligence software for all Microsoft Windows operating systems. With a single development tool based on open industry standards, ICONICS products run on multiple Windows platforms including Windows Server 2008, Windows Vista, Windows XP, Windows XP Professional x64, Windows 2000, Pocket PC, Embedded XP, Windows 2003 Server and Windows 2003 Server x64. A 2008 Microsoft Gold Certified Partner of the Year (ISV/Software Solutions), ICONICS' corporate headquarters is located in Foxborough, Massachusetts (USA) near Boston, and has offices throughout the United States, as well as in the Netherlands, United Kingdom, Australia, China, France, Italy and Germany. ICONICS also has a joint software development and sales office in Czech Republic.

This paper was written by the ARC Advisory Group on behalf of ICONICS. 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.