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Designed to be Right. Engineered to Work.

Services: Viewpoint Systems is a highly experienced systems integrator dedicated to delivering high-quality, custom solutions in manufacturing test, process monitoring, product development, industrial automation, and project management.

Products: Viewpoint has developed add-on products for LabVIEW to make your job easier:
MultiCom: Access up to 64 serial ports from LabVIEW for Windows
ViewPort: LCD & VFD Displays for LabVIEW Real-Time Systems
PCI-DIO64: PCI Version 64 channel intelligent high-speed digital I/O
PXI-DIO64: PXI Version 64 channel intelligent high-speed digital I/O
Peek/Poke: Memory and I/O access from LabVIEW
Opto32-128: Low Input Current SCXI opto-isolated digital input board
DIO-128: 128 channel high speed digital I/O
6K VI Motion Library: Active X Library for Compumotor's 6K Controller



Viewpoint Systems is a National Instruments Select Integrator and Certified Training Center and a Registered Gold Tier Member of CSIA.

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Viewpoint News

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Medical Device Test Software

Testing medical devices while meeting FDA requirements

Customer: Curbell, Inc. , Orchard Park, New York

The Challenge

Curbell required a modular test system to test many varieties of hospital bedside remote control pendants and record results to a central database while maintaining FDA compliancy (see sidebar). The test system needed to communicate with an external ERP system and provide test results in real time. Curbell wanted the ability to test their entire product line, which includes well over 2000 variations. It was necessary to use a generic test framework with a set of predefined test steps because of the many variations. All test stations are required to post test results to a central database and obtain product information from their existing ERP system.

The Solution

With the appropriate National Instruments hardware and software, a unique test system was created for Curbell. Tests on the pendants range from basic continuity tests to performing a timing analysis on the various TV functions. The system allows a manufacturing engineer to create many different types of tests using predefined test steps to define a test sequence, and execute it in potentially three different test modes, such as engineering, service or production. Typically, the engineer verifies the sequence by executing it in engineering mode. Once the test sequence parameters are verified, it can be approved for production testing. All of this occurs with a few button clicks and within a matter of minutes.

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LabVIEW™ Training

Introducing a Brand New class: LabVIEW Real-Time Application Development

Are you interested in learning how to apply your LabVIEW programming skills to a real-time operating system? Do you have questions about whether your application is appropriate for a real-time system? If so, this is the class for you!

The LabVIEW Real-Time Application Development course delivers hands-on training for developing powerful, reliable, deterministic measurement and control systems. During this three-day class you will:

- Learn to determine if a real-time solution is appropriate for a given problem
- Understand how to choose the best target hardware for a given real-time application
- Understand how to reduce the jitter in a real-time application
- Develop and implement a deterministic, reliable application

This course is the fastest way to learn dynamic system architectures, real-time programming techniques, and time-saving development tips. At the end of the course, you will be able to implement a LabVIEW Real-Time system that runs indefinitely with less than 4 ns of jitter.

Students enrolling in this class should have taken the LabVIEW Basics classes and be comfortable programming in LabVIEW.

The first class will be offered in March. Check page 3 for details on this and other courses!

Classes are filling up! Register at www.ni.com/custed or call (585) 475-9555. See page 3 for schedule.

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During actual product testing, an approved and digitally signed unique test sequence is loaded and executed using a user friendly test sequencer, designed with production automation in mind. Upon execution, test results are displayed to the operator and pushed to a database. The result database can be queried at any time by quality engineers throughout the organization. This provides real time status about products going out the door.

Surprisingly, there are only twelve test steps that need to be uniquely configured and combined to create sequences to test well over 2000 unique products. Test steps are capable of measuring basic resistance, current and voltage parameters as well as perform sound quality measurements and high speed digital waveform analysis. Several tests were designed to be subjective while others are fully automated.

The System

The system was built using a combination of National Instruments LabVIEW and TestStand™ software and various hardware from NI, Texas Instruments and Agilent. The software obtains this test information from the existing ERP system a SQL server, which also stores the data. Validated builds of the core software and validated specific information are protected and managed adhering to GMP (Good Manufacturing Practices) and FDA guidelines (CFR Part 11, Software Validation Guidelines).

Conclusion

Using this automated software, Curbell can be assured that all aspects of the device are being fully tested and all results are recorded following FDA guidelines. While this automated software reduces the time involved in testing a device, it also provides confidence that less products will be returning for

servicing. Having the ability to create custom test sequences makes this system versatile in testing the entire product line. Adding future testing modules to the core framework is easily accommodated, thereby making the overall validation effort a little less painful!

FDA Compliance - What is it?

Two important sections in the Code of Federal Regulations (CFR) Title 21 (Food and Drugs) relate to medical device testing.

21 CFR Part 11 - This section deals with how test data is managed electronically. The section contains rules for protecting data access security, audit trails, traceability and electronic signatures.

21 CFR Part 820 - This section details the steps that a manufacturer must take to ensure that a device conforms to its specifications (GMP). Not only must the test system perform the required operations to assure the final product is within specifications, but also the test system itself must be validated to assure that the product tests cover the requirements.

Viewpoint has extensive experience as well as tried and tested procedures and software architectures for designing and implementing test systems that allow medical manufacturers to comply with these regulations.

UPCOMING EVENTS

Automation Developers Forum

Tuesday, April 12, 2005

8:30 p.m. - 4:00 p.m.

Explore the latest technologies and developments in industrial measurement and control. Learn how the convergence of PLCs, PCs, and embedded technologies is helping engineers create sophisticated applications that incorporate motion, vision, measurements, and advanced control.

Session topics and registration information can be found at www.ni.com/events.

Training Center News!

Viewpoint's National Instruments' Certified Training Center has been ranked #1 in volume of all National Instruments training centers for 2004. All of our instructors are engineers and NI Certified Instructors. Customer evaluations rank them among the highest in the nation! We take great pride in our training center and continually look for ways to make the training experience more rewarding. Along those lines we have upgraded our center with faster machines and larger flat panel displays. We hope to see you soon learning new skills, or enhancing what you already know, in our top of the line Training

National Instruments Training

All classes listed below are held at Viewpoint's Certified Training Center in Rochester.

To register go to www.ni.com/training or call (585) 475-9555.

For detailed course descriptions, prerequisites & complete schedule go to www.ViewpointUSA.com/training

LabVIEW Basics I: Introduction

2/7, 3/7, 4/11, 5/16 3 days

Covers the fundamentals of LabVIEW programming and constructing simple VIs, building applications involving data acquisition, analysis, and user interface.

\$1595

LabVIEW Basics II: Development

2/10, 3/10, 4/14, 5/19 2 days

Builds on the Basics I and takes full advantage of clusters, globals, locals, attribute nodes and more. Learn techniques to reduce memory requirements, optimize execution speed and

LabVIEW Intermediate I: Successful Development Practices

2/21, 5/9 3 days

Teaches you structured practices to design, develop, test, and deploy LabVIEW applications. Analyze your application requirements, choose the correct design pattern and data structures for your application, and quickly test your design.**

\$1595

LabVIEW Intermediate II: Performance and Connectivity

2/24, 5/12 2 days

Teaches you memory management and performance-enhancing techniques to maximize application performance. Extend application functionality by leveraging other applications using

\$1095*

TestStand 1: Introduction

3/14 3 days

Use features provided in the TestStand environment and learn the basics of customizing. Upon completion, develop test applications using built-in tools supplied with

TestStand II: Customization

3/17 2 days

Customize the functionality built in to TestStand. Multithreading and multi-UUT testing, advanced reporting techniques, and application program interface (API). Concludes with system

\$1195*

LabVIEW Real Time Application Development

3/2 3 days

Hands-on training for developing powerful, reliable, deterministic measurement and control systems. This course is the fastest way to learn dynamic system architectures, real-time programming techniques, and time-saving development tips.

**

LabVIEW Machine Vision & Image Processing

4/19 2 days

Learn the fundamentals of machine vision, and locating cameras, lenses, and lighting equipment. Use vision software and hardware to calibrate coordinates and acquire and quantify images.**

\$1095

Motion Control Fundamentals

4/21 2 days

Learn how to configure a motion acquisition system, develop basic motion trajectories, and create feedback control loops. Identify types of moves and create motion control solutions.**



* 25% discount if scheduled concurrently with Course I

**Indicates prerequisite required.

