

Show Daily

NIWeek 2003 – The Worldwide Conference on Virtual Instrumentation

Friday, August 15

Help Shape the Future of MATRIXx

User group meeting, 1:00 p.m., Room 16A

NI shares its vision for its newest software, MATRIXx, at a user group meeting today at 1:00 p.m. in Room 16A. You are invited to this meeting to help shape the future of this control design and simulation software through a round-table discussion with NI MATRIXx developers.

The MATRIXx user group meeting also features presentations from NI Alliance Partners and other third-party companies discussing how they put MATRIXx to use in the automotive and aerospace industries. For example, Honeywell demonstrates how they used MATRIXx to develop the environmental and guidance and navigation controls on the International Space Station.

Before the user group meeting, stop by two control design sessions following today's keynote. The first, NI Control Design Tools for the Real World (10:30 a.m. in Room 16A), shows how MATRIXx and other NI tools such as NI LabVIEW, LabVIEW Simulation Interface Toolkit, real-time PXI, and Compact FieldPoint I/O work together to test control algorithms against the dynamics of the real world.

Next, you can learn how NI used MATRIXx to overcome the challenges of simulating a complex electromechanical system in the technical session Magnetic Propulsion System Design and Deployment with MATRIXx, Compact FieldPoint, and LabVIEW Real-Time. This session is in Room 16A at 11:45 a.m. ■

Expanding the Reach of Virtual Instrumentation

During Thursday's keynote, Tim Dehne, NI senior vice president of R&D, and representatives from Microvision, Advanced Measurements, and Lexmark, demonstrated the expanding reach of virtual instrumentation.

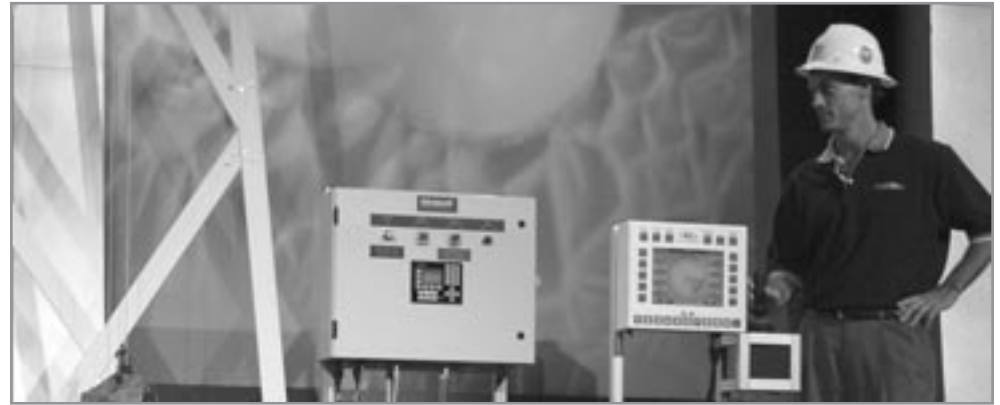
"Virtual instrumentation is driven by three factors – customers' applications, commercial technologies, and NI innovations," Dehne said. "Our job is to provide you with highly productive tools. These tools must be flexible, low cost, and high performance to give you the leverage you need to be successful."

Dehne introduced the mixed-signal suite, a new set of 100 MS/s PXI instruments and system resources. This suite is matched in frequency and resolution and built on a common Synchronization and Memory Core architecture that delivers precise timing and synchronization, deep and flexible memory, and fast data transfers. The mixed-signal suite, combined with flexible software such as LabVIEW 7 Express, delivers a versatile and precise platform for rapid prototyping and test.

Although these products just released today, Lexmark, a world leader in printer manufacturing, already uses the suite to test inkjet print heads. "The NI PXI-6552 digital waveform generator/analyzer gives us more control of fire pulse timing and the



Charles Schroeder, modular instrumentation hardware group manager, demonstrates the mixed-signal suite.



Tim Dehne demonstrates the Rig Data Capture System that Advanced Measurements created for Key Energy.

scripting capabilities give us more flexibility in generating waveforms," said James Nichols from Lexmark. "The NI PXI-5122 high-resolution digitizer lets us crank up the sample rate by a factor of eight while simultaneously giving us two more bits of resolution on the resistance measurements." Because of the flexibility and modularity of virtual instrumentation, Lexmark upgraded to LabVIEW 7 Express, changed out two instruments, and migrated its entire system to PXI in just two weeks.

Dehne also revisited products NI has introduced in the past year that pushed virtual instrumentation into higher frequency rates and resolutions, more rugged environments, and new application areas. Engineers from NI and third-party companies demonstrated how they expand virtual instrumentation with some of these products.

An engineer from Microvision showed how he uses the NI FlexDMM for precision measurement, control, and analysis of helmet-mounted micro displays. An Advanced Measurements representative showed how his company created an oil rig Data Capture and Control System to increase safety and efficiency for Key Energy. NI engineers also demonstrated the high speed and triggering of the new Compact Vision System and showed how easy it is to add up to three 1394 cameras in one system.

In addition, Dehne talked about how NI, the IEEE, and leading sensor vendors are expanding virtual instrumentation to smart sensors. These plug and play sensors eliminate the need to manually enter sensor configuration and scaling data. NI engineers showed a new Virtual TEDS database available on ni.com/sensors, where you can download an electronic data sheet to make any sensor TEDS capable.

To wrap up the keynote, Dehne talked about future NI hardware innovations that will push the boundaries of virtual instrumentation even further.

"As you know, we've been investing in R&D throughout this economic downturn, which means you're going to see a lot of new products from NI," he said. "We're looking forward to seeing how these products will impact the world around us and expand the horizons of virtual instrumentation." ■

Meet the Winner of the NIWeek 2003 Virtual Instrumentation Applications Paper Contest



NI CEO and President Dr. James Truchard congratulates paper contest winner Howard Foster.

This morning Dr. James Truchard recognized Howard Foster of MicroCraft Corporation for submitting the best overall paper to the NIWeek

2003 Virtual Instrumentation Applications Paper Contest. The winning paper, "PXI-Based Vision System for Microspeck and Microflaw Detection in Plastic Film," describes how an automated motion and vision system detects, counts, and categorizes micron scale defects in a sample of plastic film. In this paper, Foster explains how he used NI LabVIEW, IMAQ Vision, and NI motion software to develop code to control a two-axis backlight table, acquire images with two cameras, and evaluate found defects for operator categorization.

At the Virtual Instrumentation Applications Paper Contest Awards dinner, NI recognized the finalists and winners for each of the nine contest

categories – academic, aerospace/defense, automotive, biotechnology/life sciences, communications, discrete manufacturing/process control, manufacturing functional test, R&D/lab automation, and semiconductor.

Customers from 13 countries submitted 93 papers to the contest. More than 100 technical publication editors and NI experts judged these papers on three criteria – technical challenge, innovation, and cost effectiveness.

Congratulations to Howard Foster and all of our category winners. Visit ni.com/success to view the NIWeek 2003 papers and other NI customer solutions. ■

Don't Miss This Today:

Managing Large Data in LabVIEW

10:30-11:30 a.m., Room 14

Stop by this session to learn how to acquire, store, and display data without slowing down your VI or running out of system memory.

Algorithms That Learn: Pattern Matching and Optical Character Recognition

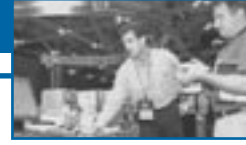
10:30-11:30 a.m., Room 12A

See how machine vision applications use new and intelligent learning algorithms to ensure that they find and identify the correct match every time. Learn how these functions work and learn techniques to improve accuracy and speed in your application.

Build a Home Entertainment System with Virtual Instrumentation

11:45a.m.-12:45p.m., Room 17B

Watch as NI engineers "misuse" NI LabVIEW software and PXI hardware to build a PC-based home entertainment system from scratch, including a fully functional TV, radio, and CD player.



Word on the Street

What's your favorite thing about Austin?



"All the things to do in the evening – the music and just walking around downtown. I also enjoyed the Alliance appreciation event at Cedar Street Courtyard."

Anand Chinnaswamy
Soliton Automation
India



"The live music scene, restaurants, and Sixth Street. Austin is one of the best working towns you can visit. It has some of the best things to do outside of work."

Darren Lingafeldt
nexjen systems
Charlotte, NC



"The culture – 'Keep Austin Weird.' Also, head of sales Pete Zogas."

Kellie Hutchinson
MicroCraft Corp.
Raleigh, NC



"This might come off as a little stiff, but I like that I can just sit quietly and read 'Show Daily' without anyone bothering me. Also, even though there are a lot engineers around here, no one treats me like a dummy."

Manny Quinn
Plastics Inc.
Austin, TX

Teams Build Robots, Take ROBO LAB Challenge

The NIWeek expo hall was abuzz last night as hundreds gathered for the fourth annual NIWeek ROBO LAB Challenge. Teams of local teachers, students, and NIWeek attendees put their engineering skills to work building and programming robots in LabVIEW-based ROBO LAB software to maneuver the twists and turns of the 2003 ROBO LAB challenge course.

ROBO LAB Challenge competitors had only six hours to design, build, and program their entry. During the competition, teams had two minutes to complete as many laps around the challenge course as possible, while ringing bells to score points and tackling rough terrain throughout the course.

The Ringers Take Home Championship

The Ringers, comprised of Tim Johnson and Tristan Kennedy, both research developers at the University of Alaska, are this year's ROBO LAB Challenge Champions. With the Ringer's unique strategy, they earned 3,600 points with nine bell rings per second for a



The Ringers and their mentors celebrate after winning the ROBO LAB competition.

total of 720 rings. The Ringers receive a LEGO Team Challenge Kit and ROBO LAB Software. As part of the competition, Pitsco LEGO Dacta Education Division will make a donation of kits and software in the name of the Ringers to a University of Texas elementary charter school.

Team George from Lockheed Martin won second place with 600 points. The AMAT Raptors, comprised of engineers from Applied Materials took third place with 500 points.

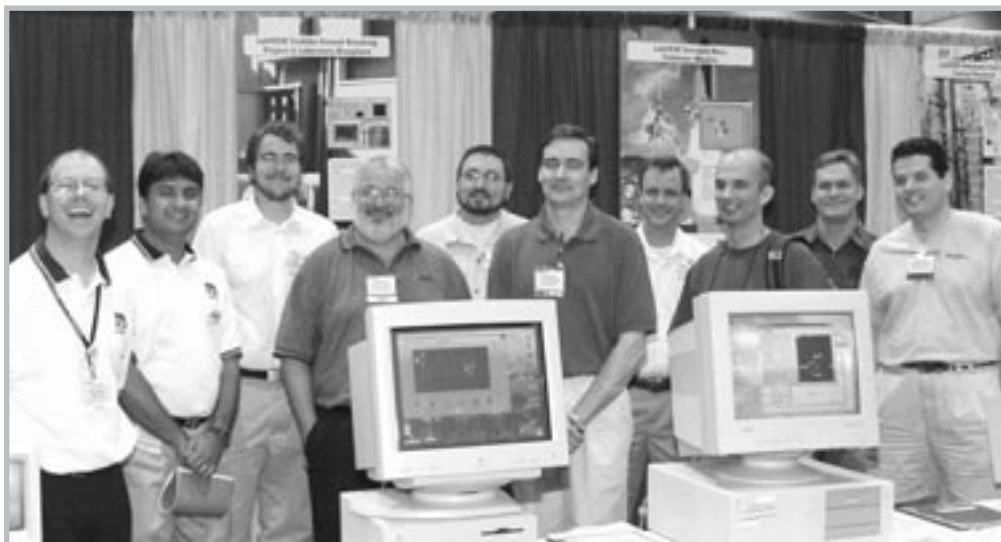
Father of LabVIEW-Based ROBO LAB Inspires Teachers and Attendees

NIWeek ROBO LAB festivities began Tuesday night at a reception with Dr. Chris Rogers, professor of mechanical engineering from Tufts University and the father of ROBO LAB software, shared classroom tips with more than 70 Austin-area teachers and NI ROBO LAB classroom volunteers. On Wednesday, NIWeek attendees learned How to Enrich Your Child's Classroom with LabVIEW in a dynamic hands-on session hosted by Dr. Rogers.



Dr. Chris Rogers, the father of ROBO LAB, shares his expertise with Austin-area teacher Kathleen Crowe.

For more information about ROBO LAB or the Mindstorms for Schools Starter System visit ni.com/robo lab ■



Jeff Kodosky and the LabVIEW design team met at the LabVIEW Hall of Fame booth to celebrate the recent release of LabVIEW 7 Express.



NIWeek attendees test their strength at the dynamic strain demo, which shows off the NI PXI-4220 high-speed strain input module.

Plan to Attend NIWeek 2004!



Each year, NIWeek unites engineers and scientists from around the world to help them gain insight into solving their application needs.

Make plans now to join us for NIWeek 2004, August 18 to 20 at the Austin Convention Center, as customers, NI Alliance Partners, and educators again come together to learn and exchange ideas about the latest technologies in virtual instrumentation. Register now to take advantage of discount rates and priority exhibitor booth selection. Visit ni.com/niweek for updates on next year's conference.

We want to hear about your time with us during NIWeek this year. We appreciate feedback on your experience, from the hotel room to the convention floor. Please send your comments to niweek@ni.com or fill out an NIWeek survey available at the registration booth.

We appreciate your attendance and participation at NIWeek 2003 and hope that your time with us has been informative and fun! ■



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