Alliance Day 2013 Schedule

KEYNOTE - EXPO HALL #4: 8:30-9:45 A.M.

BREAK TO SESSIONS: 9:45 - 10:00 A.M.

TRACK	BUSINESS			RF & WIRELESS		EMBEDDED SYSTEMS		SOFTWARE		HANDS-ON TRAINING		Automated Test and Data Acquisition	
SESSION BREAKOUT	DISCOVERY WORKSHOP	HOT TOPICS	CONSULTING	PRODUCT PLATFORM	TECHNICAL	PRODUCT PLATFORM	TECHNICAL	PRODUCT PLATFORM	TECHNICAL	HANDS-ON TRAINING	HANDS-ON TRAINING	PRODUCT PLATFORM	TECHNICAL
Room	12A/B	13A	13B	14	15	16A	16B	17A	17B	18A	18C	19A	19B
10:00 - 10:55	GOLD/PLAT. WKSHP #1 (INVITE ONLY)	Challenger Selling: Challenging Customers' Assumptions and Leading them Through the Complex	SE 1x1s	RF Coexistence and Compliance Test in Regulated Industries	Part 1: How to Spell RF	Emb.Systems & cRIO Product Outlook	Understanding High Speed Data Acquisition in cRIO	NI LabVIEW Platform Outlook	Designing a Plug-In Measurement Abstraction Layer Using the Actor Framework	Wireless Connectivity and Cellular Test Hands-On	OPEN	NI PXI and Modular Instruments Product Outlook	Accelerate Real-Time Test Application Development Using NI VeriStand and LabVIEW
11:00-11:55		Alliance Partner & NI Sales - Best Practices for Effective Collaboration and Growth	SE 1x1s	Leveraging RF Silicon Vendor Program to Win Downstream RF Opportunities	Part 2: How to Spell IQ	Developing the Next Generation of Smart Grid Intelligent Electronic Devices	Advanced Pull Deployment Technology for Embedded Applications	What's New in LabVIEW 2013	The LabVIEW Actor Framework in in Distributed Systems		OPEN	NI PXI and Modular Instruments Product Outlook	Optimizing Productivity With Your .m Files, LabVIEW, and Hardware

ALLIANCE PARTNER & LabVIEW TOOLS NETWORK AWARDS LUNCHEON - EXPO HALL #4: 12noon - 1:15 P.M.

TRACK	DISCOVERY WORKSHOP	HOT TOPICS	CONSULTING	PRODUCT PLATFORM (14)	TECHNICAL (15)	PRODUCT PLATFORM (16A)	TECHNICAL (16B)	PRODUCT PLATFORM (17A)	TECHNICAL (17B)	HANDS-ON (18A)	HANDS-ON (18C)	PRODUCT PLATFORM (19A)	TECHNICAL (19B)
1:30-2:25	GOLD/PLAT. WKSHP #2 (INVITE ONLY)	The Revival of the LabVIEW Consultant	SE 1x1s	Revolutionizing RF Semiconductor Test with a PXI Approach	Wireless Channels Are Complicated: An Intro to Fading	Emb.Systems & cRIO Product Outlook	Case Studies Exploring Time vs Signal Based Synchronization	Selling Tools on the LabVIEW Tools Network	LVOOP in Embedded Applications	Wireless Connectivity and Cellular Test Hands-On	LabVIEW Actor Framework Hands-On	CompactDAQ and Multifunction DAQ Product Outlook	Best Practices for HSDIO
2:30 - 3:25		System Integration: If You Think You're Winning, Tell Me The Score	LVTN R&D 1x1s	RF and Wireless Product Outlook	High-Performance RF Power Leveling using the VST	Key Technologies for Smart Machine Design	The Ins and Outs of Data Communication in embedded applications	NI LabVIEW Platform Outlook	Web Technology for Test and Automation Applications			Thriving in the Real-Time Test Eco-System	Embedded SW Validation Best Practices
3:30 - 4:25	GOLD/PLAT. WKSHP #3 (INVITE ONLY)	Big Analog Data Solutions	LVTN R&D 1x1s	Software-Defined Radio Solutions for Rapid Prototyping	From Text to Realization: The Life of a Measurement From a Cellular Perspective	Latest Updates on NI Efforts to "Complete the Design V" for Inverters and Smart Grid Power Electronics	Calling external code in LabVIEW RT (VxWorks and Linux)	Power User's Guide to NI Linux Real-Time	Error Handling Strategies in Actor Framework	Wireless Connectivity and Cellular Test Hands-On	LabVIEW Actor Framework Hands-On	CompactDAQ and Multifunction DAQ Product Outlook	FPGA-Based Measurements for Plasma Physics Application
4:30-5:25		Taking it To the Streets: Turning Academic Lab Research into Commercial Success	LVTN R&D 1x1s	RF and Wireless Product Outlook	Ready, aim, acquire! Triggering for RF Measurements	Asset Monitoring for Utility Applications	Advanced cRIO AppDev: Scan Engine	Creating a Single User Interface for Multiple Screen Sizes	Everything You Always Wanted to Know About Programming Events in LabVIEW *But Were Afraid to Ask			NI Technologies and Transportation	

WELCOME HAPPY HOUR: Exhibition Hall 5:30-7pm

TRACK	TITLE	ABSTRACT	TIME
BUSINESS	Challenger Selling: Challenging Customers' Assumptions and Leading Them Through the Complex Sale	NI leadership is embracing how today's deals are growing increasingly complex and is investing in the concept of "Challenger Selling" by educating and training the sales force. Learn how Alliance Partners can adopt this approach to increase opportunities to create successful customers rather than just find them.	10:00 - 10:55
BUSINESS	Alliance Partner and NI Sales: Best Practices for Effective Collaboration and Growth	Learn what other NI Alliance Partners and their NI Sales sponsors are doing to effectively work together and grow. Not only explore the core sponsorship responsibilities of both the Alliance Partner and NI Sales, but also gain insight into the recommended best practices for collective growth.	11:00-11:55
BUSINESS	The Revival of the LabVIEW Consultant	Really into LabVIEW? Learn about our new program to support NI LabVIEW Consultant Alliance Partners and see new marketing tools to help develop and grow your business. This session includes time for open discussion and feedback.	1:30-2:25
BUSINESS	System Integration: If You Think You're Winning, Tell Me the Score	Customers want the best pricing, employees want great salaries, and banks want clean balance sheets. But how realistic are their expectations? Your company can help answer this question by monitoring key performance indicators (KPIs) and even benchmarking them against industry norms. At this session, learn from executives at Exotek and Velentium about which KPIs you should watch, how often to watch them, and what actions they may inspire.	2:30 - 3:25
BUSINESS	Big Analog Data Solutions	Engineers and scientists are publishing more test and measurement data in a variety of forms more quickly. Immediately after acquiring this data, they face a Big Analog Data™ problem. This requires advanced tools and techniques for data transfer and management as well as effective systems management for the many networked DAQ, control, and automated test systems. End-to-end solutions, composed of products and services from several Alliance Partners, provide customer benefits such as reduced time to value and decreased integration risk. At this session, explore Big Analog Data customer solutions and a process template for future end-to-end solution marketing and development.	3:30 - 4:25

TRACK	TITLE	ABSTRACT	TIME
BUSINESS	Taking It to the Streets: Turning Academic Lab Research Into Commercial Success	Discovery how NI is turning Capstone Design success and other research projects into commercially available products and discuss opportunities to integrate academia in industry.	4:30-5:25
BUSINESS	1x1 Consulting Sessions	Meet with the Systems Engineering and LabVIEW Tools Network R&D teams during NIWeek to discuss your upcoming projects. SUBMIT A REQUEST	10:00 - 10:55
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RF & WIRELESS PRODUCT/APP	RF Signal Coexistence Testing and Compliance in Regulated Industries	To coexist in a crowded and unregulated spectral environment (for example, ISM band), radios have to be aware of their neighbors and the nature of their operations. At this session, explore the differences between electromagnetic compatibility testing and the coexistence RF testing that is required in regulated industries such as medical, nuclear, military, and industrial. Also examine the target customers who need to perform these tests. Lastly, view NI RF demos and specific applications that show how NI RF can address issues such as how in unlicensed spectra, radios belonging to different protocols must share the same spectrum, leading to mechanism failure.	10:00 - 10:55

TRACK	TITLE	ABSTRACT	TIME
RF & WIRELESS PRODUCT/APP	Leveraging an RF Silicon Vendor Program to Win Downstream RF Opportunities	Discover how the Mobile Device Test team, through its relationship with leading RF chipset vendors, is enabling success for global cellular and WLAN accounts.	11:00-11:55
RF & WIRELESS PRODUCT/APP	Revolutionizing RF Semiconductor Test With a PXI Approach	Wireless technologies are part of the devices we use every day, from handsets to automobiles to home appliances. To meet the demand, semiconductor companies have introduced numerous RFICs to take advantage of this business opportunity. As a result, companies have developed new approaches that overcome the challenges of expensive traditional test systems and test methods to get products to market faster and reduce production costs. At this session, see how to build compelling solutions on PXI and examine successful implementations using PXI in semiconductor test.	1:30-2:25
RF & WIRELESS PRODUCT/APP	RF and Wireless Product Outlook	From wireless device test to software defined radio, explore about NI investments in RF and wireless products and applications.	2:30 - 3:25
RF & WIRELESS PRODUCT/APP	Software Defined Radio Solutions for Rapid Prototyping	Software defined radio offers an affordable and flexible way to rapidly prototype wireless communications systems. Explore the NI USRP™ (Universal Software Radio Peripheral) platform and how Alliance Partners are using it for a wide range of applications including spectrum monitoring, record and playback, and advanced research.	3:30 - 4:25
RF & WIRELESS PRODUCT/APP	RF and Wireless Product Outlook	From wireless device test to software defined radio, learn about NI investments in RF and wireless products and applications.	4:30-5:25
RF & WIRELESS TECHNICAL	Part 1: How to Spell RF	Learn the absolute basic fundamentals of RF such as how a car radio works and ways to achieve blazing 4G speeds. This session explores the core building blocks of today's wireless technologies and explains how you can understand the fundamentals without complex math. Though it won't make you an RF expert, this presentation shows how RF and wireless communications is elegant—not black—magic.	10:00 - 10:55

TRACK	TITLE	ABSTRACT	TIME
RF & WIRELESS TECHNICAL	Part 2: How to Spell I/Q	Part 1 of this series, "How to Spell RF," offered an introduction to RF and highlighted the relevance of the I/Q modulator. In Part 2, examine how to derive I/Q data from raw user bits. Start off with a user image, convert it into bits, apply modulation and filtering, and load this I/Q data into the arbitrary waveform generator memory. Use minimal signal processing primitives to avoid abstracting any part of this process. The only primitives that offer better results are the hardware drivers for loading the I/Q data and generating this data from a vector signal generator.	11:00-11:55
RF & WIRELESS TECHNICAL	Wireless Channels Are Complicated: An Intro to Fading	Discover the limitations caused by fading on the design and testing of wireless devices and systems. Gain an understanding of the fundamentals of wireless fading such as the unknown and volatile sources that cause it. Also explore ways to model their effects statistically. Then see how to use these models and the NI RF platform to emulate a fading channel.	1:30-2:25
RF & WIRELESS TECHNICAL	High-Performance RF Power Leveling Using the VST	RF power amplifiers are vital components of RF transmitters that are commonly tested at a specific power-out configuration. RF test must adjust device input power while measuring output power to achieve a predefined power-out state for test. This operation, called "power leveling," is critical to test time. At this session, discuss industry power-leveling techniques and explore a vector signal transceiver-based methodology for minimizing power-leveling time. Also walk through NI's development of the "sideband IP" and LabVIEW API.	2:30 - 3:25
RF & WIRELESS TECHNICAL	From Text to Realization: The Life of a Measurement From a Cellular Perspective	Although the standard document specifies the measurements you have to perform, it is not straightforward when it comes to the deployment of the test setup on the customer test floor. At this session, explore how you have to juggle several aspects—some technical and some nontechnical—during this process such as performance, accuracy, the direct comparison of competitor capabilities, and continuous feedback looping with hardware and the driver.	3:30 - 4:25
RF & WIRELESS TECHNICAL	Ready, aim, acquire! Triggering for RF Measurements	Learn how to use the NI platform manifold triggering options and configurations for making better and faster RF measurements.	4:30-5:25

TRACK	TITLE	ABSTRACT	TIME
EMBEDDED SYSTEMS PRODUCT/APP	Embedded Systems and NI CompactRIO Product Outlook	Explore new and future embedded hardware and software tools from National Instruments including NI Single-Board RIO, CompactRIO, vision, motion, LabVIEW Real-Time, and LabVIEW FPGA.	10:00 - 10:55
EMBEDDED SYSTEMS PRODUCT/APP	Developing the Next Generation of Smart Grid Intelligent Electronic Devices	Distributed generation, electric vehicles, demand for quicker outage restoration, generation and grid security, environmental regulations, and integration of large-scale intermittent renewable power generation are all driving unprecedented change in the electrical power industry. To respond to these factors, the industry must innovate in ways not seen in nearly a century. NI provides the graphical system design tools for the instrumentation of the smart grid. At this session, discover how NI's commercial off-the-shelf high-performance hardware and software platforms along with industry-specific certifications, protocols, and analytics increase innovation and decrease the time to develop a smarter grid.	11:00-11:55
EMBEDDED SYSTEMS PRODUCT/APP	Embedded Systems and NI CompactRIO Product Outlook	Explore new and future embedded hardware and software tools from National Instruments including NI Single-Board RIO, CompactRIO, vision, motion, LabVIEW Real-Time, and LabVIEW FPGA.	1:30-2:25
EMBEDDED SYSTEMS PRODUCT/APP	Key Technologies for Smart Machine Design	Discover how leading machine builders take advantage of the LabVIEW reconfigurable I/O (RIO) architecture to design smarter machines. Experience how LabVIEW streamlines the design process of complex mechatronics systems and learn how to implement key automation tasks like motion, vision, industrial communication, and I/O technology on NI embedded control and monitoring systems. At this session, share best practices, review your available resources, and discuss opportunities to collaborate with NI.	2:30 - 3:25
EMBEDDED SYSTEMS PRODUCT/APP	Latest Update on NI's Efforts to "Complete the Design V" for Inverters and Smart Grid Power Electronics	Examine NI's vision and R&D investments to eliminate the most important bottlenecks in the embedded systems design process for inverter control and smart grid power electronics. Also learn how to create a comprehensive platform for embedded systems design, prototyping, high-volume commercial deployment, real-time hardware-in-the-loop simulation, and physical testing. See live demonstrations of new tools and technologies being announced for the first time at NIWeek 2013.	3:30 - 4:25

TRACK	TITLE	ABSTRACT	TIME
EMBEDDED SYSTEMS PRODUCT/APP	Asset Monitoring for Utility Applications	NI is successfully selling C Series platforms for large systems to monitor rotating equipment at power plants. At this session, discuss the business proposition for the utilities and the technical foundation, architecture, tools, and roadmap NI uses for these applications.	4:30-5:25
EMBEDDED SYSTEMS TECHNICAL	Understanding High-Speed Data Acquisition in CompactRIO	Explore the unique technical challenges of streaming high-bandwidth signals on CompactRIO. Also learn about the CompactRIO Waveform Reference Library including its theory of operation, benchmarks, and ways you can modify it for different use cases.	10:00 - 10:55
EMBEDDED SYSTEMS TECHNICAL	Advanced Pull Deployment Technology for Embedded Applications	In remote embedded and large distributed applications, network push technology (for example, deploying from a project or RAD Studio) can be an extensive manual process, especially if the images differ. At this session, explore an alternative deployment method during which embedded devices (CompactRIO) monitor configurations stored on a central (cloud) server and use network pull technology to pull down updates when the stored files change. The central server can store files and configurations that determine how the embedded application functions. Learn about pull deployment options using cloud technology and examine CompactRIO, web services, and NI Data Dashboard for LabVIEW.	11:00-11:55
EMBEDDED SYSTEMS TECHNICAL	Case Studies Exploring Time-Versus Signal-Based Synchronization	Discover the differences between time-based and signal-based synchronization. Also discuss the suitability and performance of each while focusing on the deployment environment, platform availability, and data rates. Finally, reinforce these concepts by exploring several real-world customer applications.	1:30-2:25
EMBEDDED SYSTEMS TECHNICAL	The Ins and Outs of Data Communication in Embedded Applications	Designing distributed embedded applications consists of defining individual components, processes, and other subsystems and specifying their interaction and communication. The design and choice of communication paths are based on the requirements of the individual components. At this session, get an overview of the different interprocess and intertarget communication techniques that you can implement on NI embedded systems. Also discuss a few examples from embedded applications that the Systems Engineering group has worked on to learn how to choose the right communication methods for your applications.	2:30 - 3:25

TRACK	TITLE	ABSTRACT	TIME
EMBEDDED SYSTEMS TECHNICAL	Calling External Code in LabVIEW Real-Time (VxWorks and Linux Real-Time)	Few LabVIEW Real-Time users attempt the difficult task of compiling and running external code on VxWorks-based CompactRIO targets. Linux Real-Time makes it easier to use a large number of prebuilt, ready-to-run libraries that are compatible with Linux, and many NI customers will be interested in using that code. At this session, discuss the basics of calling external code on VxWorks targets and the changes that will come into play when using Linux Real-Time.	3:30 - 4:25
EMBEDDED SYSTEMS TECHNICAL	Advanced CompactRIO Application Development: NI Scan Engine	The NI Scan Engine in CompactRIO has traditionally been used by inexperienced LabVIEW FPGA programmers to take advantage of hardware based on the LabVIEW reconfigurable I/O (RIO) architecture while avoiding the inconveniences of low-level FPGA implementations. This has led to the unfounded idea that the NI Scan Engine lacks valuable features for the advanced user. In this technical session, rediscover the architecture of the NI Scan Engine and obtain some advanced tips and tricks for automatic module discovery and dynamic configuration, Fault Engine manipulation, and advanced diagnostics and debugging tactics.	4:30-5:25
SOFTWARE PRODUCT/APP	NI LabVIEW Platform Outlook	Learn about upcoming features and investment areas for the LabVIEW platform.	10:00 - 10:55
SOFTWARE PRODUCT/APP	What's New in LabVIEW 2013	Discuss new LabVIEW features designed to accelerate your success and take a demo-heavy tour through the latest version of LabVIEW.	11:00-11:55
SOFTWARE PRODUCT/APP	Selling Tools on the LabVIEW Tools Network	The LabVIEW Tools Network is the premier web portal to download and purchase products and add-ons based on LabVIEW. Learn about the process to list your own products and gain tips and tricks to better integrate into the LabVIEW platform.	1:30-2:25
SOFTWARE PRODUCT/APP	NI LabVIEW Platform Outlook	Learn about upcoming features and investment areas for the LabVIEW platform.	2:30 - 3:25

TRACK	TITLE	ABSTRACT	TIME
SOFTWARE PRODUCT/APP	Power User's Guide to NI Linux Real-Time	Explore the new OS supported by the LabVIEW 2013 Real-Time Module running under the hood of the next generation of CompactRIO. Want to take advantage of Linux as you tackle your next embedded system project with LabVIEW and CompactRIO? From details on the new scheduler to programming the real-time application with C/C++ to installing and using packages, this session shows you how to make the most of the new NI Linux Real-Time OS.	3:30 - 4:25
SOFTWARE PRODUCT/APP	Creating a Single User Interface for Multiple Screen Sizes	Many LabVIEW user interfaces require the ability to size to a variety of screen sizes, which can involve writing custom code to position and resize every front panel element. At this session, examine different approaches to manage panel sizing and layout and discover how this challenge was addressed with a configurable front panel layout tool that you can use with any LabVIEW VI.	4:30-5:25
SOFTWARE TECHNICAL	Designing a Plug-In Measurement Abstraction Layer Using the Actor Framework	Examine the technical design decisions made while developing a multiprocess plug-in measurement system. One of the goals of this system is to minimize the level of effort required to add functionality to a relatively complex system through the use of a plug-in architecture, which is an increasingly popular request among LabVIEW programmers looking for ways to design extensible applications. At this session, dive into the technical details of using the Actor Framework, decoupling independent components, distributing templates, and deploying these plugins for the purpose of calling them from an executable.	10:00 - 10:55
SOFTWARE TECHNICAL	The Actor Framework in Distributed Systems	The Actor Framework addresses many of the issues that arise in applications consisting of multiple, independent tasks that need to communicate with each other. Phoenix Nuclear Labs chose to leverage the power of this framework to develop a line of commercial neutron generators, and it was one of the first LabVIEW users to apply the framework in a distributed real-time system. At this session, examine Phoenix Nuclear Labs' experience and learn useful tips and techniques that you can apply to your Actor Framework projects.	11:00-11:55

TRACK	TITLE	ABSTRACT	TIME
SOFTWARE TECHNICAL	LabVIEW Object-Oriented Programming in Embedded Applications	Many people do not understand the use cases and benefits of object-oriented programming, or they see it as a recipe for poor performance. Although there may be some disadvantages, this session explores the benefits and power of LabVIEW object-oriented programming for embedded applications through a series of examples.	1:30-2:25
SOFTWARE TECHNICAL	Web Technology for Test and Automation Applications	Information technology is consistently changing from year-to-year, but the basic concepts that the Internet are built upon are simple to understand. We will discuss the skills and terminology needed to add web technology to our applications. Examples will be provided.	2:30 - 3:25
SOFTWARE TECHNICAL	Error-Handling Strategies in the Actor Framework	Discuss how to handle errors in the Actor Framework and how to treat nested actors in the event of an error. Explore variations of this concept for "static nested" actors (actors launched by a parent actor during its start-up) and "dynamic nested" actors (actors launched by a parent after it has started up).	3:30 - 4:25
SOFTWARE TECHNICAL	Everything You Always Wanted to Know About Programming Events in LabVIEW *But Were Afraid to Ask	Explore how events in LabVIEW work under the hood, examine the newest features of the Event ecosystem in LabVIEW 2013, and discover how to use these features within your systems. Pros will walk away with great new ideas and beginners will learn what's possible and how to get started.	4:30-5:25
HANDS-ON	Wireless Connectivity and Cellular Test Hands-On	Learn how to take advantage of the latest NI wireless innovations. At this session, NI RF experts guide you through multiple demonstrations of NI's latest RF hardware and software.	10-11:55
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TRACK	TITLE	ABSTRACT	TIME
HANDS-ON	Actor Framework Hands-On	The Actor Framework helps you build LabVIEW applications for which multiple parallel tasks must communicate with each other. Using the framework, you can avoid many of the common deadlock and race conditions of parallel systems and enjoy more code reuse. At this hands-on session, follow a list of requirements and a class diagram to build a small working example consisting of several actors and messages. This session is most beneficial for those who have some knowledge of the Actor Framework and LabVIEW object-oriented programming. Find Actor Framework information at ni.com/actorframework.	1:30-3:25
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AUTOMATED TEST-DAQ PRODUCT/APP	NI PXI and Modular Instruments Product Outlook	Get insight into NI investments and focus areas for the automated test and measurement market including PXI chassis, controllers, and modular instrumentation from precision DC to high-speed digitizers.	10:00 - 10:55
AUTOMATED TEST-DAQ PRODUCT/APP	NI PXI and Modular Instruments Product Outlook	Get insight into NI investments and focus areas for the automated test and measurement market including PXI chassis, controllers, and modular instrumentation from precision DC to high-speed digitizers.	11:00-11:55
AUTOMATED TEST-DAQ PRODUCT/APP	NI CompactDAQ and Multifunction DAQ Product Outlook	Explore future NI R&D product plans for the NI DAQ hardware platform including innovations for NI CompactDAQ, plug-in DAQ, and external DAQ products.	1:30-2:25
AUTOMATED TEST-DAQ PRODUCT/APP	Thriving in the Real-Time Test Ecosystem	Real-time test applications require deterministic execution of data-logging, stimulus, control, and/or simulation tasks to test electromechanical components and the software that powers them. At this session, learn how NI is investing in this application space and how Alliance Partners can thrive in its ecosystem.	2:30 - 3:25

TRACK	TITLE	ABSTRACT	TIME
AUTOMATED TEST-DAQ PRODUCT/APP	NI CompactDAQ and Multifunction DAQ Product Outlook	Explore future NI R&D product plans for the NI DAQ hardware platform including innovations for NI CompactDAQ, plug-in DAQ, and external DAQ products.	3:30 - 4:25
AUTOMATED TEST-DAQ PRODUCT/APP	NI Technologies and Transportation	The transportation industry is undergoing change like never before. At this session, learn more about this opportunity and how NI plans to take advantage of this opportunity with you.	4:30-5:25
AUTOMATED TEST-DAQ TECHNICAL	Accelerate Real-Time Test Application Development Using NI VeriStand and LabVIEW	NI VeriStand is designed to be extended with plugins based on LabVIEW that offer custom functionality for every aspect of the product. The ability to add custom functionality through FPGA personalities, real-time tasks, custom GUI objects, and menu items has provided great efficiency and opportunity for system integrators. At this session, see how you can apply your LabVIEW skills with NI VeriStand to complete projects faster and generate a unique opportunity to sell your IP on the LabVIEW Tools Network.	10:00 - 10:55
AUTOMATED TEST-DAQ TECHNICAL	Optimizing Productivity With Your .m Files, LabVIEW, and Hardware	This session will focus on LabVIEW MathScript RT Module and how it can be used for real-time textual math, signal processing, RF/Comm, and control. Take the .m files you have developed in MATLAB® or GNU Octave and easily deploy your code to real-time hardware without extra code generation steps. You will be able to set up .m files to run in parallel and also add custom user interfaces and decision making. Hardware options include data acquisition for desktop applications, such as CompactDAQ, and real-time control and monitoring hardware for embedded applications such as CompactRIO and PXI.	11:00-11:55
AUTOMATED TEST-DAQ TECHNICAL	Best Practices for High-Speed Digital I/O	Regardless of the end application, most devices have some type of digital communication. Creating a working digital protocol to interface with these devices can be challenging. You have to build digital waveforms, meet various timing and synchronization requirements, and, in many cases, make everything as fast as possible. This session focuses on best practices using NI high-speed digital I/O devices such as the NI 654x, NI 655x, and NI 656x.	1:30-2:25

TRACK	TITLE	ABSTRACT	TIME
AUTOMATED TEST-DAQ TECHNICAL	Embedded Software Validation Best Practices	Embedded control software is growing exponentially in mechanical systems, forcing test methods to evolve even faster. At this session, learn how to create and use real-time test processes to validate embedded products from requirements to results. A well-architected real-time test process provides superior system quality and validation efficiency by enabling consistent testing, results analysis, and traceability throughout the entire development process.	2:30 - 3:25
AUTOMATED TEST-DAQ TECHNICAL	FPGA-Based Measurements for Plasma Physics Application	Discuss using NI FlexRIO digitizers and FPGA-based measurements to monitor and control high-power RF transmitters used in plasma physics experiments (DIII-D, Oak Ridge, PPPL, ITER, and so on). Many tokamaks use high-power RF transmitters for plasma heating and require continuous monitoring at multiple locations on the transmission lines for system tuning, post-experiment analysis, and real-time control. The real-time component is used to detect fault conditions and control the high-power (2 MW) transmitters with submicrosecond response. At this session, explore the use of the NI FlexRIO instrument development library, multimodule synchronization, and data recorded from on-site tests with a tokamak.	3:30 - 4:25