

# NIDays

WORLDWIDE GRAPHICAL SYSTEM DESIGN

## CONFERENCE



NATIONAL INSTRUMENTS

# LabVIEW™ 2012

Charles Schroeder

Director of Marketing, Test Systems

# Graphical System Design

A Platform-Based Approach for Measurement and Control

Test



Monitor



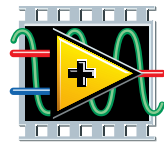
Embedded



Control



Cyber Physical



NATIONAL INSTRUMENTS

# LabVIEW™



Desktops and  
PC-Based DAQ



PXI and Modular  
Instruments



RIO and Custom  
Designs

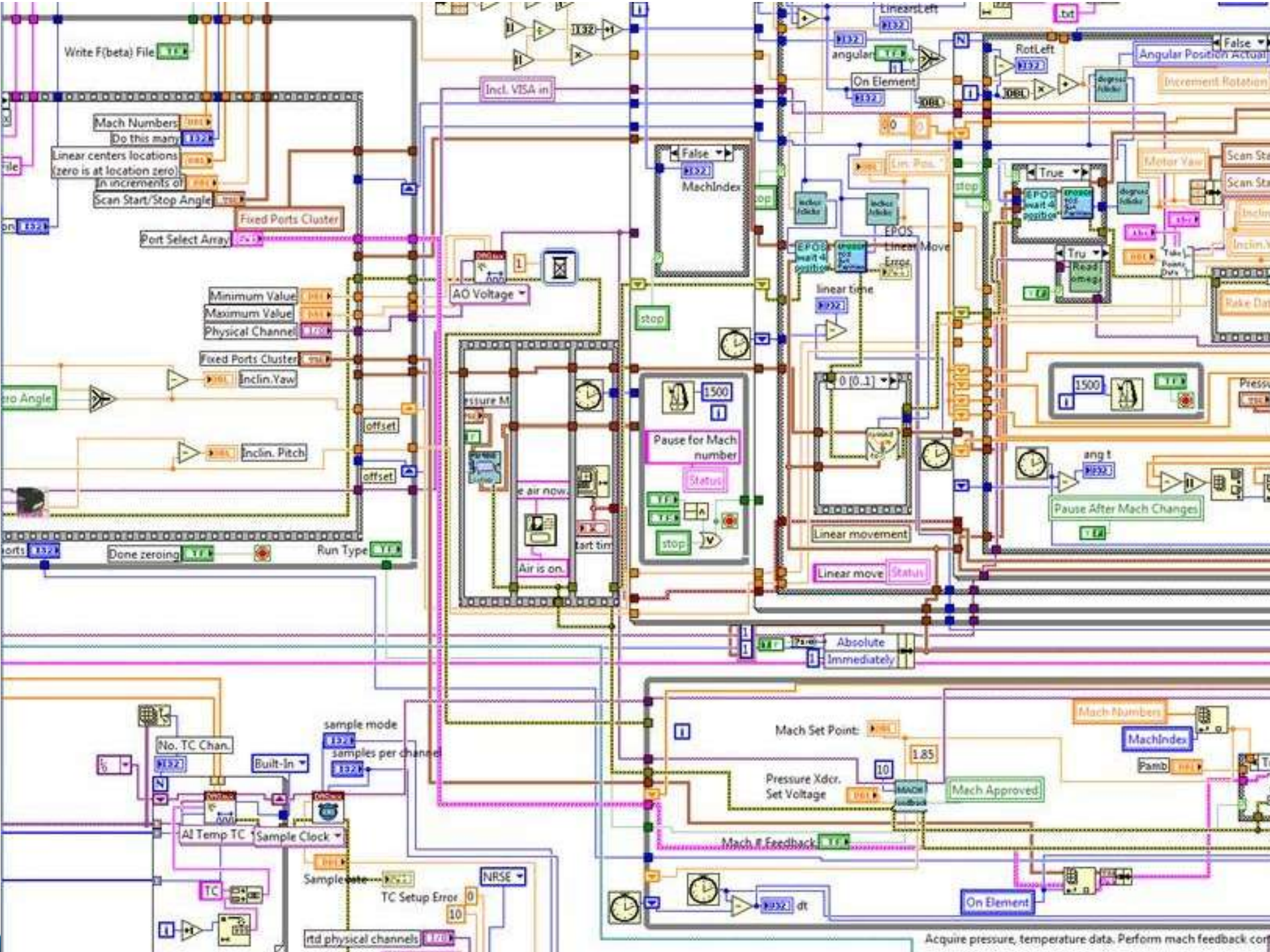
**GPB**  
IEEE-488

**ETHERNET**

**HI-SPEED**  
CERTIFIED  
**USB**

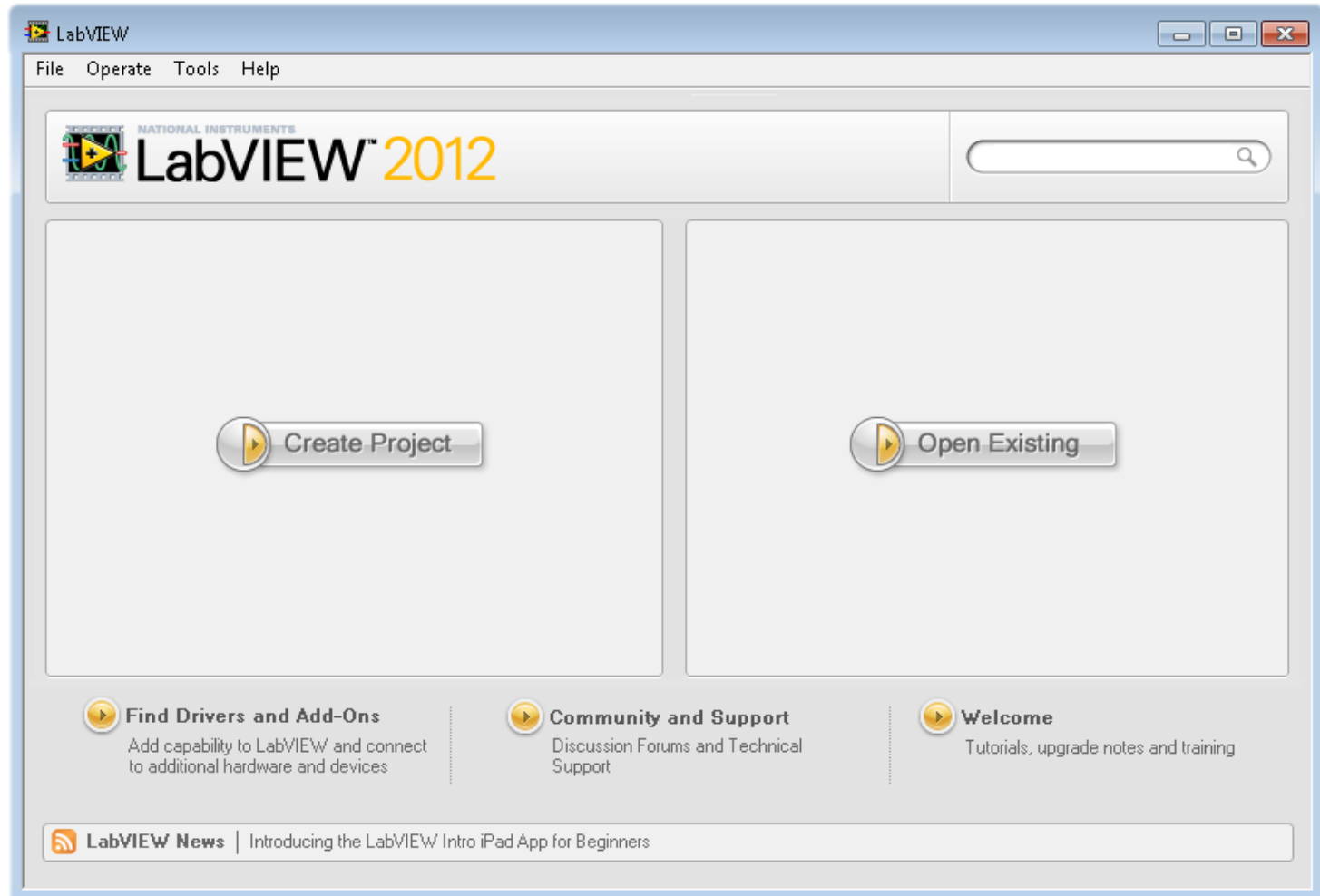
Open Connectivity  
With Third-Party I/O



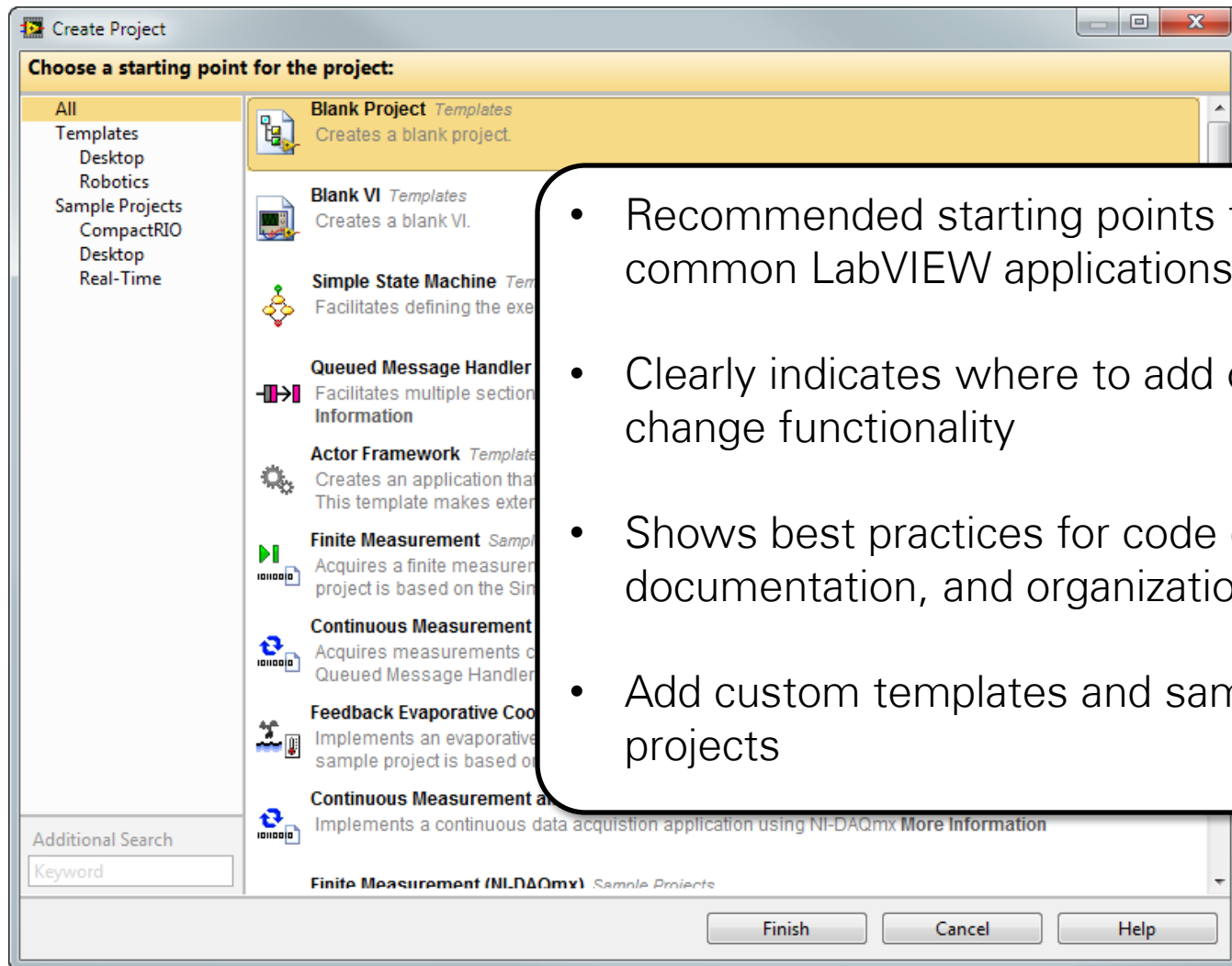


Acquire pressure, temperature data. Perform mach feedback control

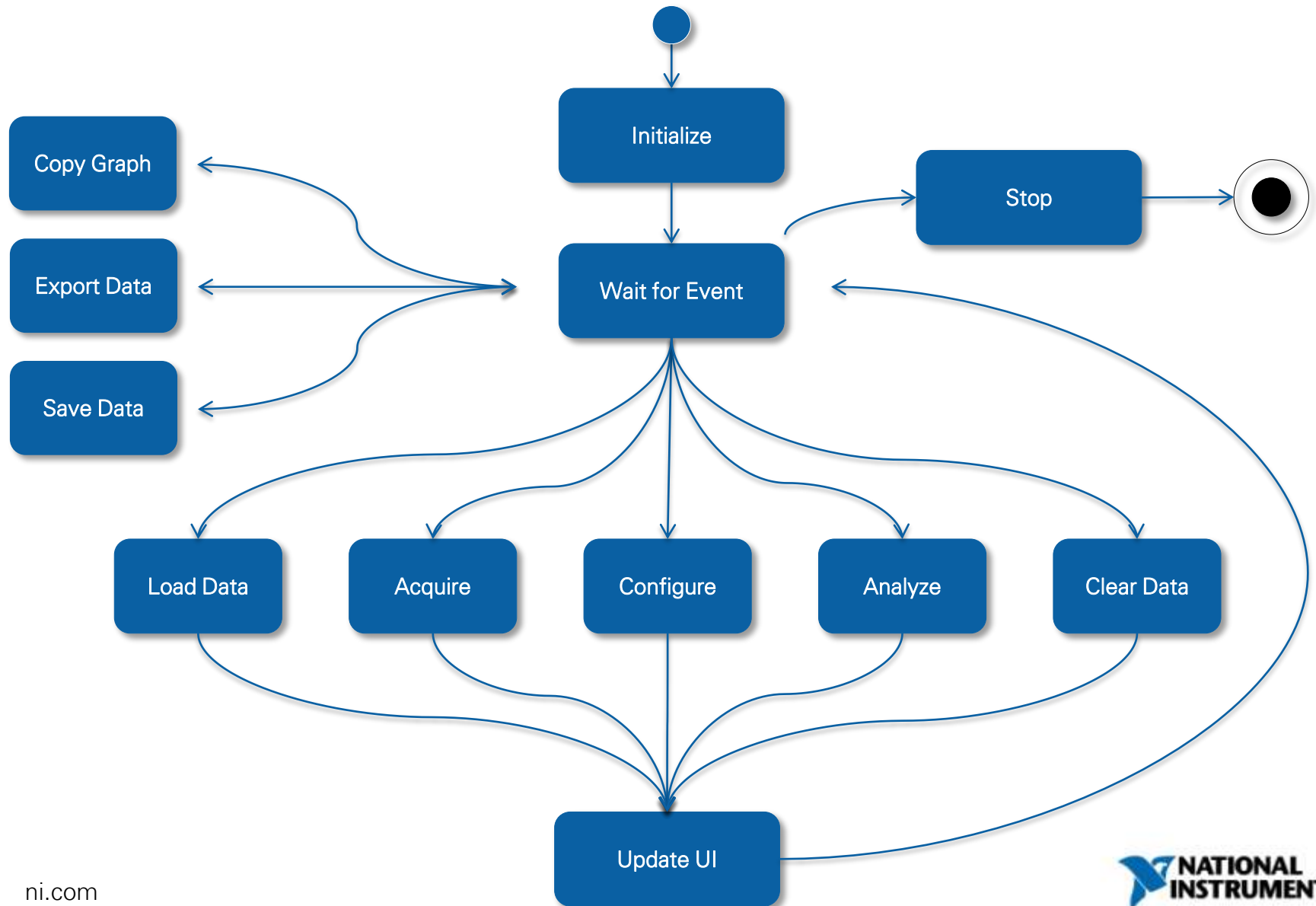
# LabVIEW 2012 Getting Started Window



# Introducing Templates and Sample Projects



# Finite Measurement Sample Project State Diagram

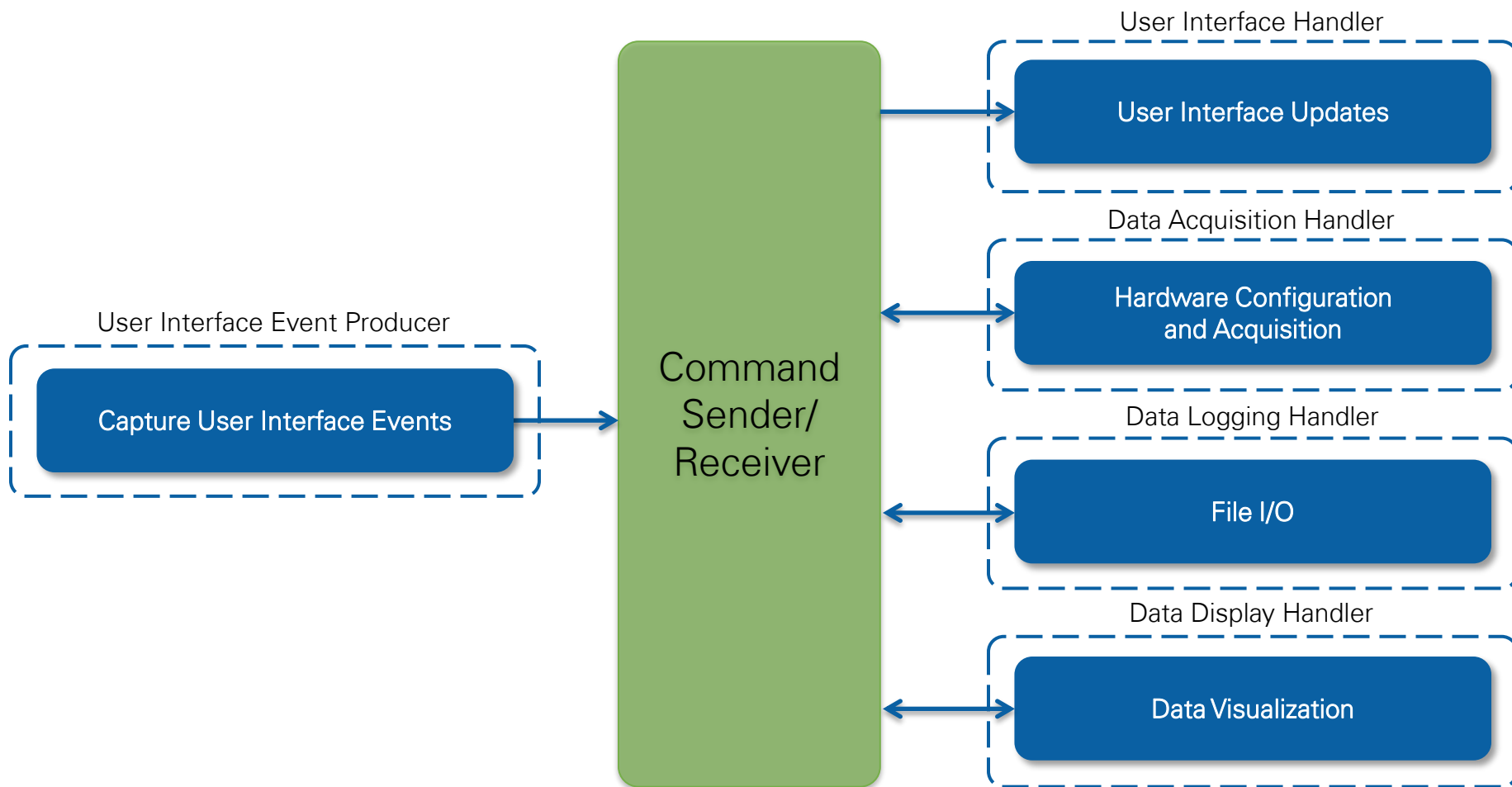


# Samuli Bergstrom

Technical Marketing

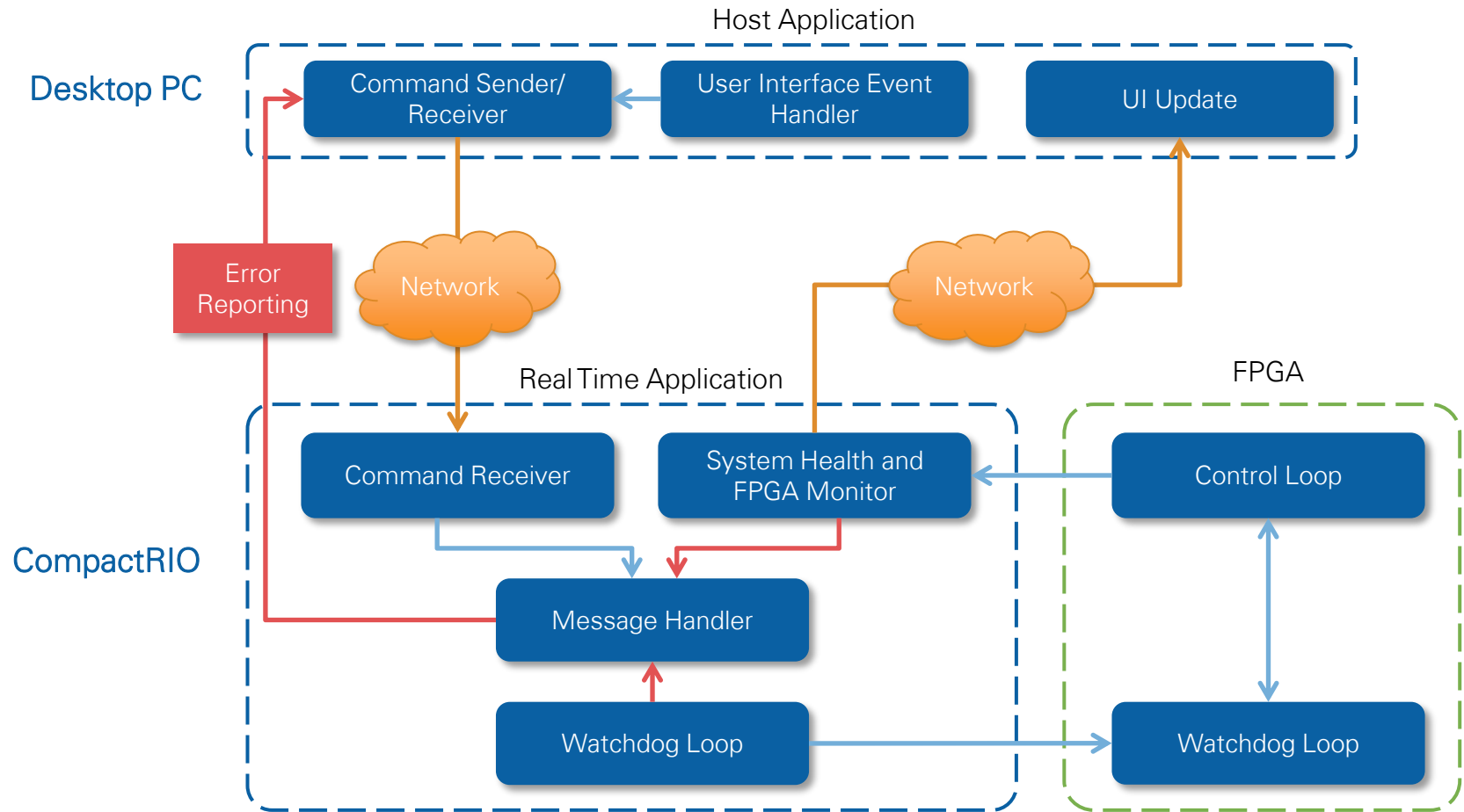


# LabVIEW Continuous Measurement Architecture



Provides a **ready-to-run** starting point using a **scalable** architecture

# LabVIEW FPGA Control Sample Project



Provides a recommended starting point using a scalable architecture

# Training and Certification

Joeri Wingelinckx  
Services Manager

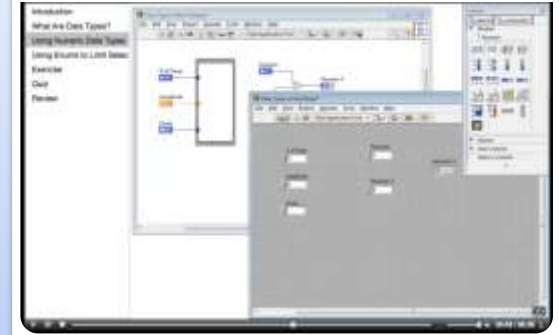
# New Learning Resources



New LabVIEW Skills Guide



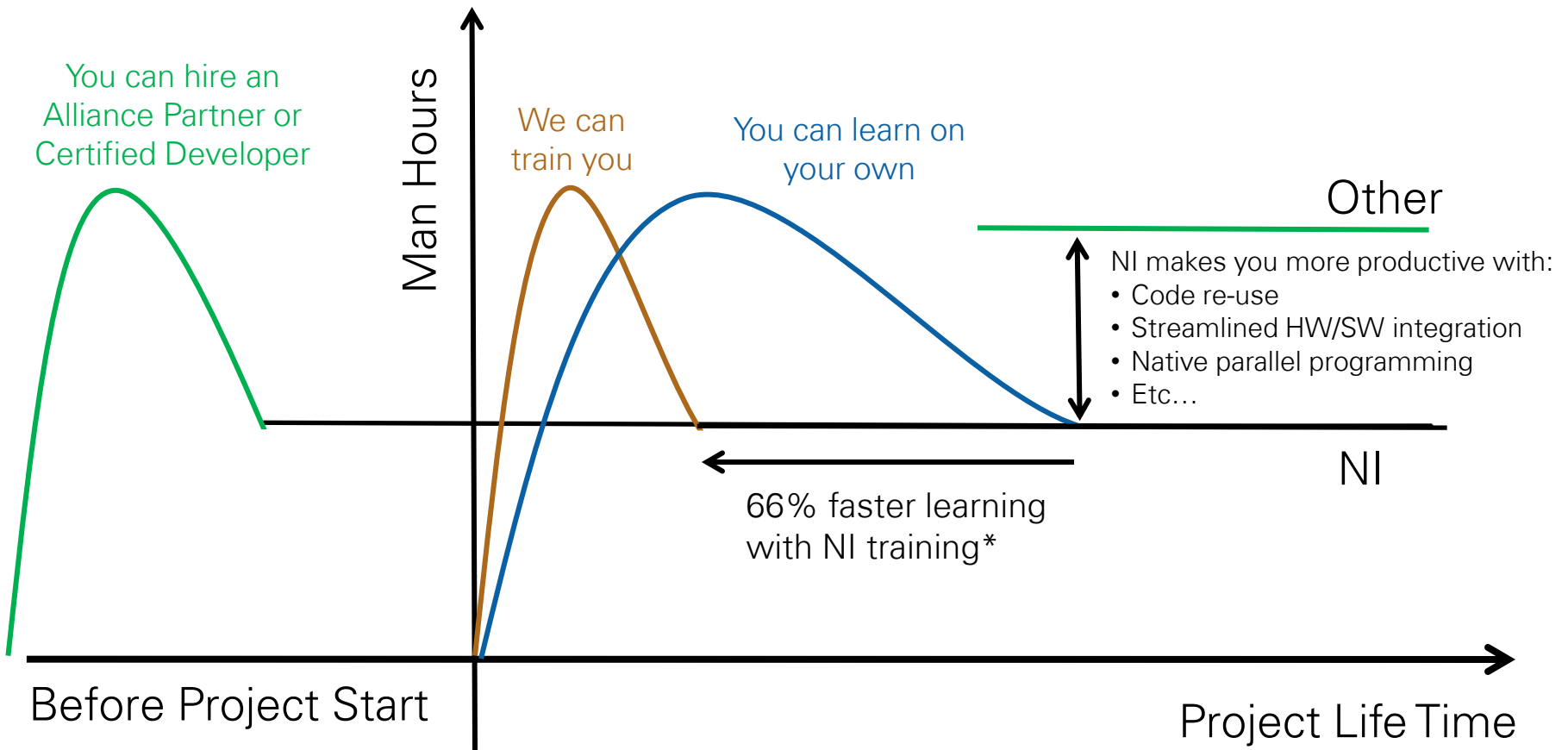
New Self-Paced Online Training



>25 Hours of Video Learning Content

# NI LabVIEW Will Make You More Productive

## ...But There Is a Learning Curve

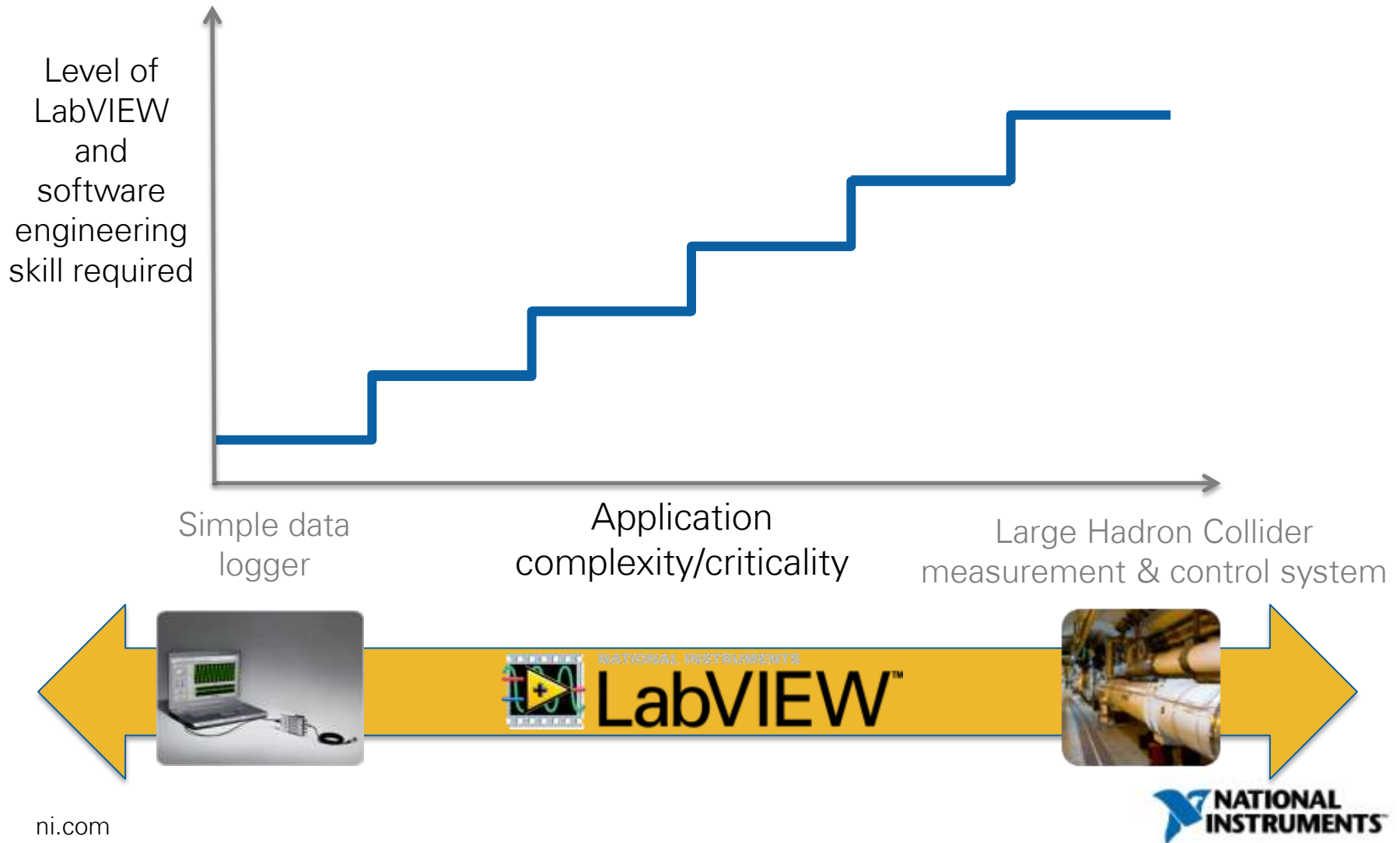


\*Source: NI worldwide training customer survey, 2009, n = 640



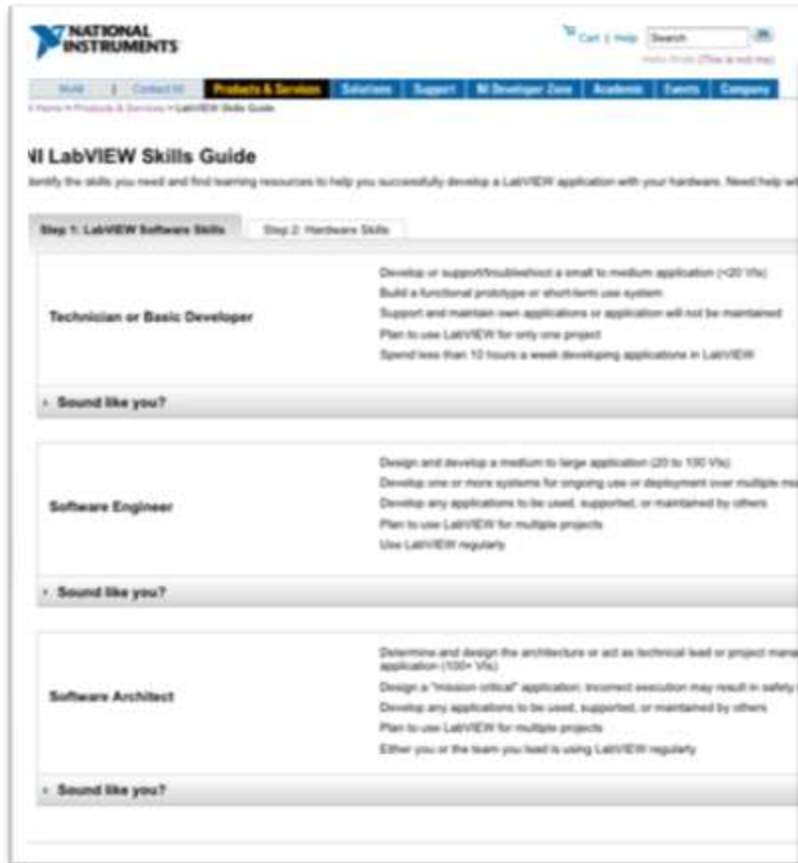
# Harness the Power of LabVIEW

*In the hands of a capable developer,  
LabVIEW offers virtually unlimited possibilities*



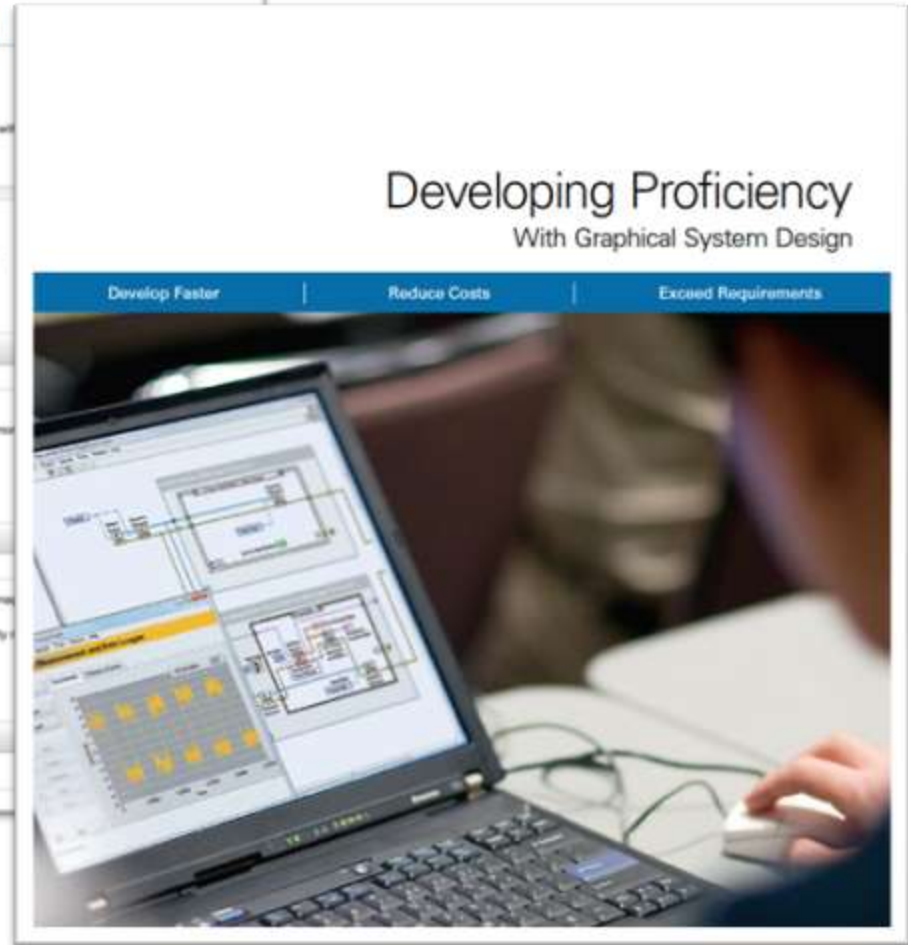
# What Skills Do You Need to Maximize Success?

## NI Offers Tools to Help You Find Out



Online LabVIEW Skills Guide

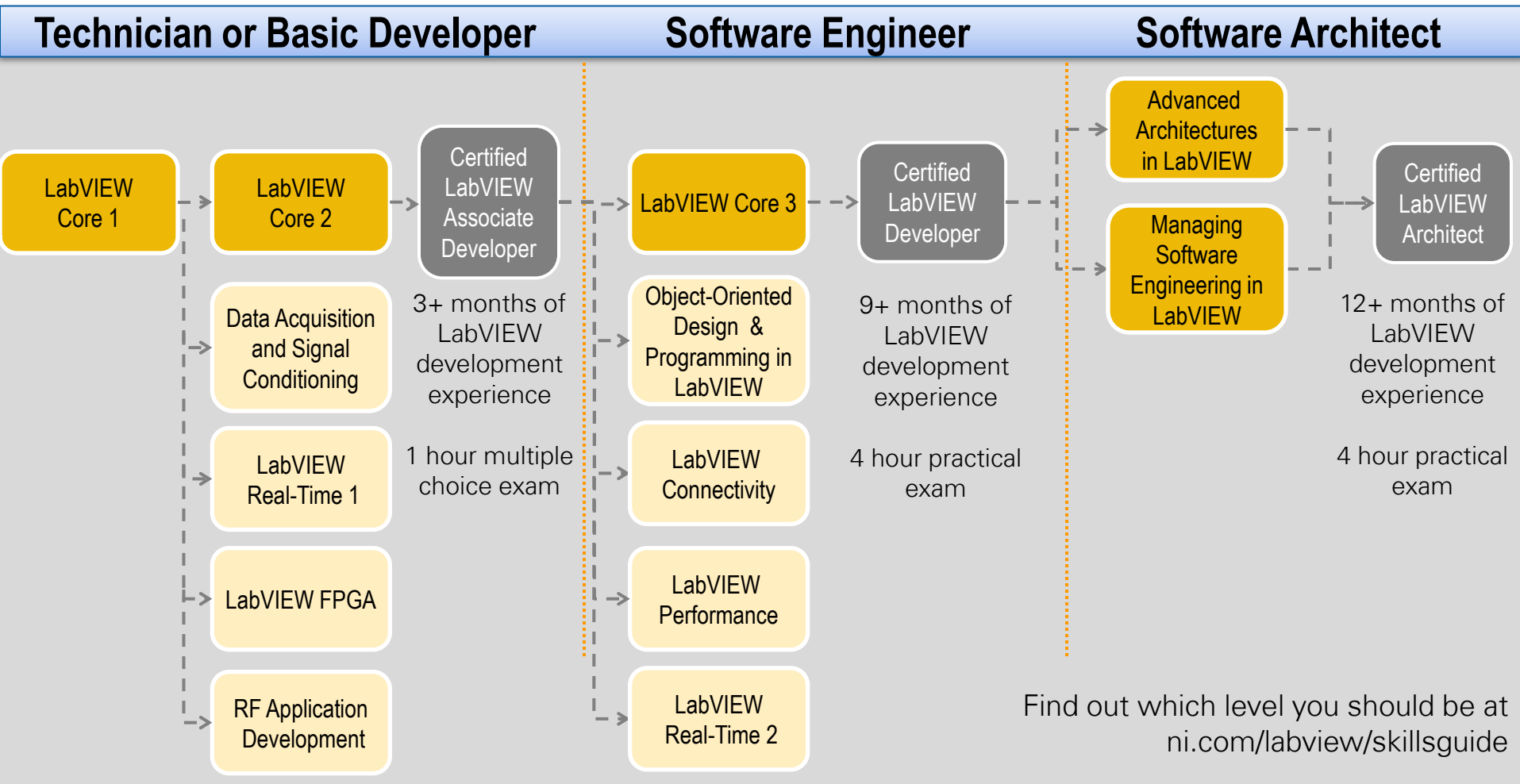
ni.com



Printed brochure

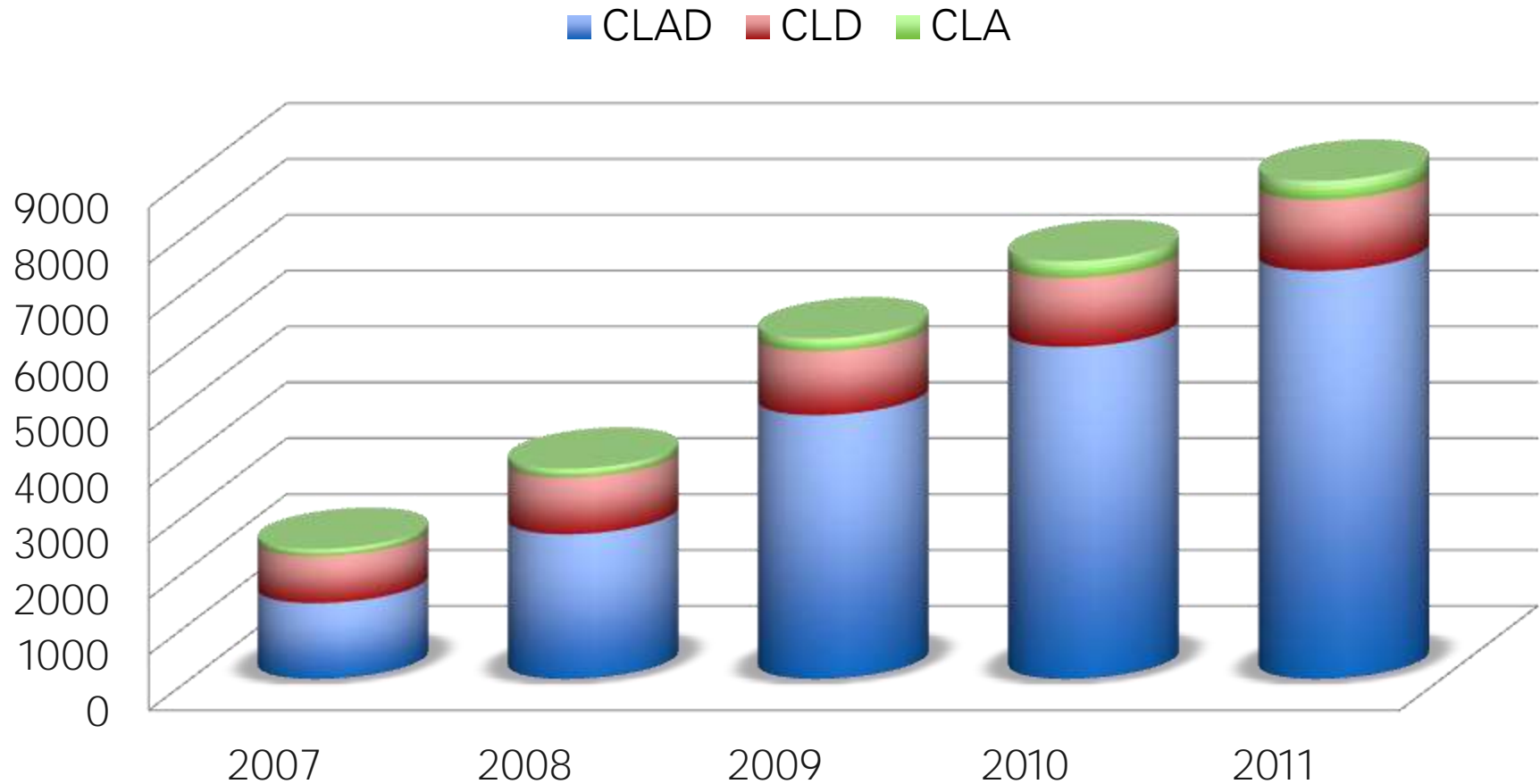


# NI LabVIEW Training and Certification Path



Recommended course    Optional course    Optional certification

# Certified LabVIEW Professionals



# Self-Paced Online Training

24/7 access to LabVIEW Multimedia Training  
Included with your Software Service Program (SSP)





# Self-Paced Online Training – What is it?

- Online Multimedia Training
  - Access 24/7, English (subtitled)
  - Currently: LabVIEW Core 1-3
  - Each course split into 5-15 minute modules
- Covers same topics as instructor led classes
  - Concepts, Exercises, Quizzes
- Included with SSP (1 year full access)
  - Can be purchased separately (6 months or 1 year)
- Ideal for a quick refresher on technical topics or to prepare for an upcoming certification exam.



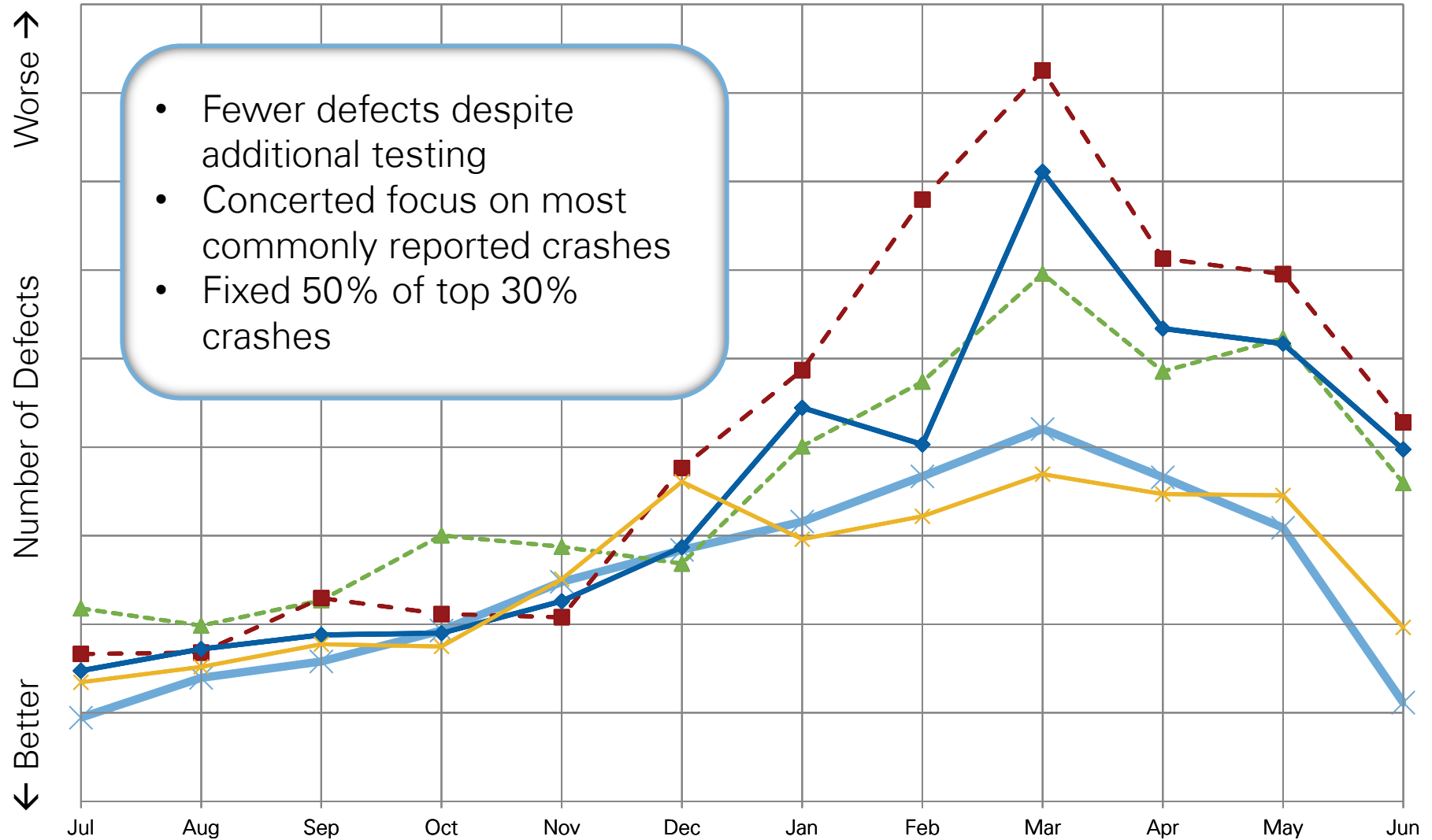
# Training Formats

Training Formats	Good		Better	Best	
	Self-Paced		Instructor-Led		
	Course Kit	Online	Online	Regional	Onsite
Certified Instructor who can answer questions			✓	✓	✓
Access to relevant hardware			✓	✓	✓
Classroom setting				✓	✓
Interact with other students				✓	✓
Personalized training solutions					✓
Training needs assessments					✓ **
Avoid travel expenses	✓	✓	✓		✓
Receive printed manual that accompanies the course (manuals may differ in format and content detail by course)	✓		✓	✓	✓
Designed for self-paced learning		✓			
Multimedia training platform (video, exercises, etc.)		✓	✓*		
Concept review quizzes	✓	✓	✓	✓	✓
Full day class(8 hours per day)				✓	✓
Half day class (4 hours per day)			✓		
Learn at your own pace, on your own schedule (24 hours / 7 days)	✓	✓			

\* Recorded video of the class can be reviewed

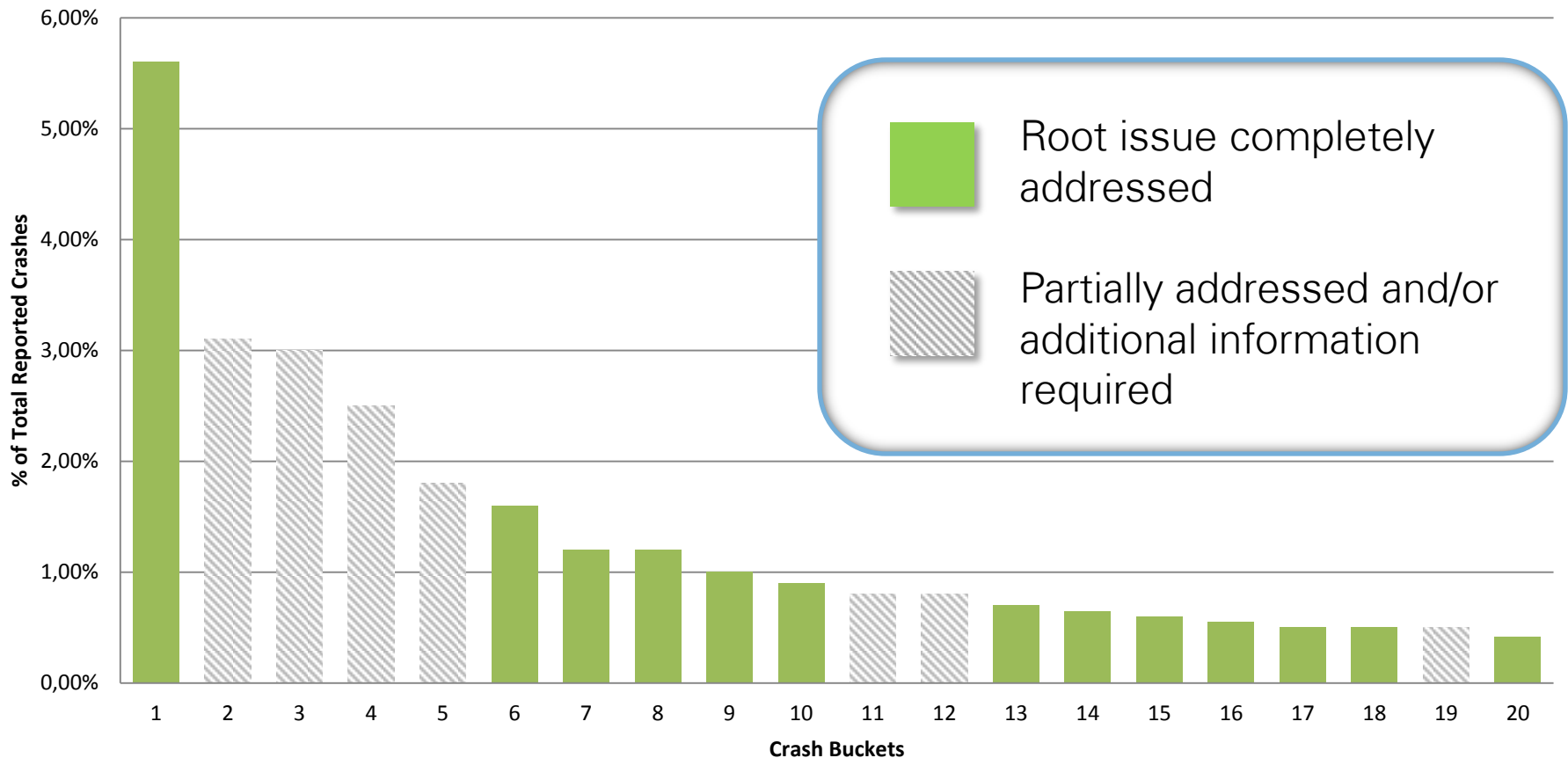
\*\* Optional service available for team of engineers

# Pre-Release LabVIEW Defect Flow



# Continuous Investment In Stability

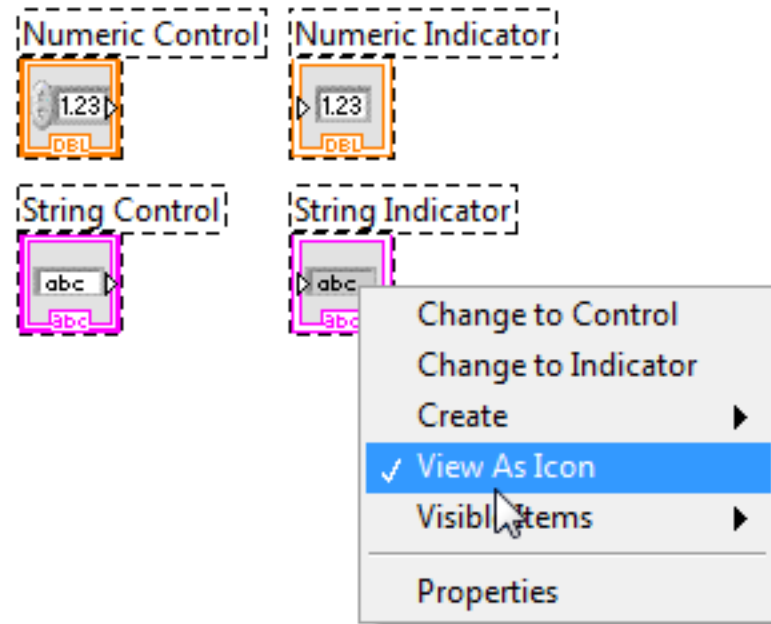
## Top 20 LV 2011 NIER Reported Crashes (30% of all reported crashes)



Over half of the top reported crashes were fixed in 2012

# Idea Exchange Features

- Pop-up Menus for Multiple Selected Objects



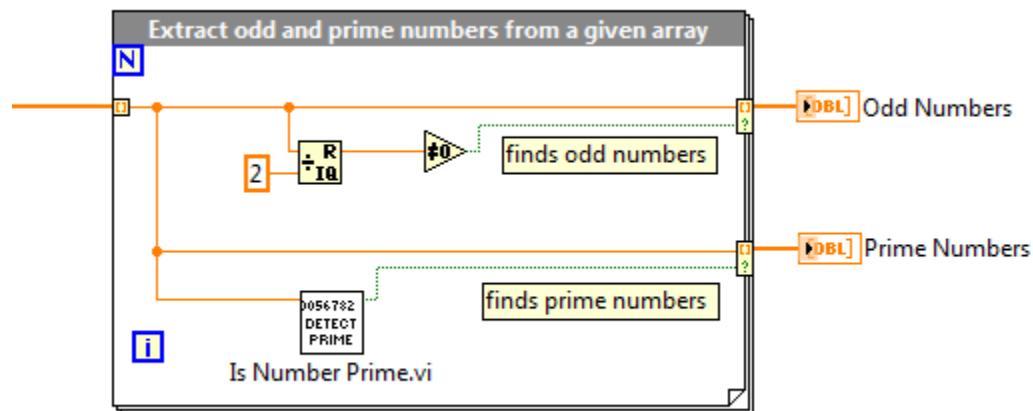
Save the time required to manually apply settings to multiple items



# Idea Exchange Features

- Conditional Loop Tunnel

Simplified approach



Simplifies common coding practices for  
conditionally building arrays

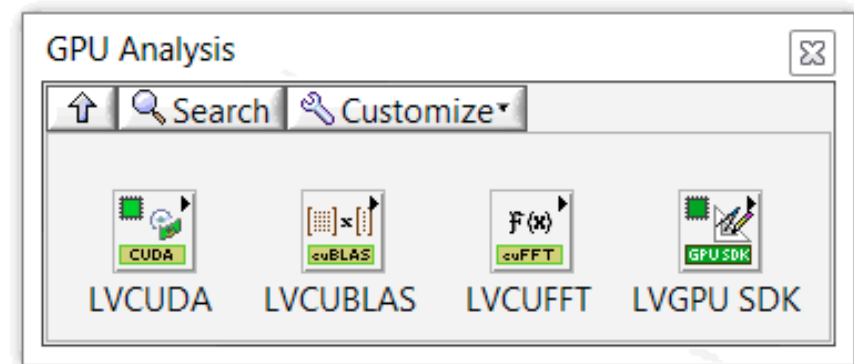
# 12 Productivity Enhancements From the LabVIEW Idea Exchange

- Subdiagram Labels
- Enumerated dialog enhancements
- Removing selected broken wires
- Icon Editor API
- Contextual Help for Data Coercion
- Event structure in Base version
- Conditionally writing values to loop output tunnels
- Concatenate indexing
- Right-click menu for multiple items
- Long file path truncation
- Separate label locations for controls and indicators
- String editing dialog box

# LabVIEW GPU Analysis Toolkit

Support for NVIDIA® CUDA™ GPUs

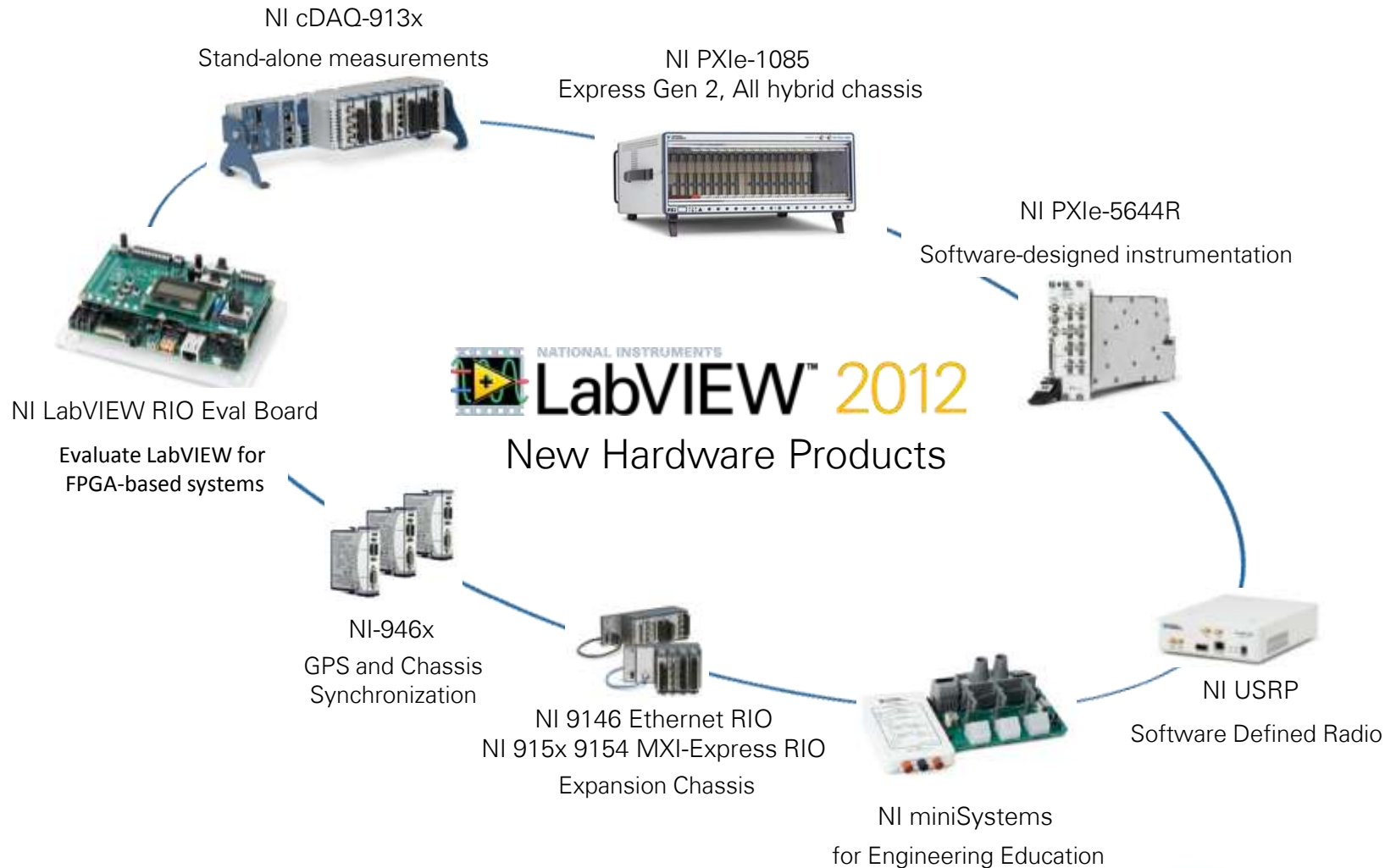
- Communicate with NVIDIA® CUDA™ GPUs from LabVIEW applications
- Quickly prototype GPU algorithms using cuBLAS and cuFFT functions wrapped in LabVIEW
- Access documentation on calling custom GPU code from LabVIEW
- Select GPU devices and manage resources using CUDA Runtime and Driver APIs



# Fixed-Point



# Unrivaled Integration with the Latest Technology





# Possible LabVIEW 2013 Features

- Advanced block diagram commenting
- New Sample Projects
- Shipping example overhaul
- Automatic detection of drivers to include in installers
- Clearer Application Builder error reporting
- Improved Microsoft Excel integration
- Simplified creation and deployment of web services
- LabVIEW FPGA productivity enhancements
- Security enhancements on embedded targets

# Use Cases for LabVIEW and Mobile Devices



Monitor and Control Measurement Systems



View Measurement Data Stored in the Cloud



Configure and Debug Hardware Devices



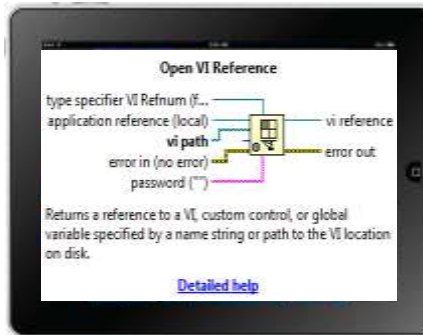
View, Run, and Edit LabVIEW VIs



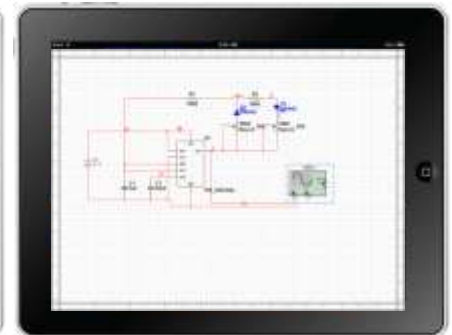
Learn STEM Concepts



Make Measurements in the Field



Aid LabVIEW Usage on the Desktop

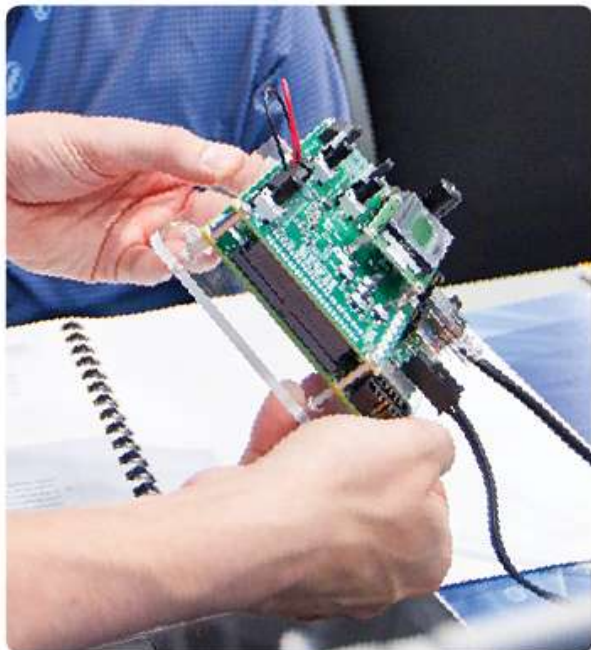


View, Edit, and Simulate Circuits



# Aku Wilenius

Sales Manager NI Finland



# NI Build Your Own Embedded System Workshop

December 10<sup>th</sup> | Espoo

*Ask our staff for more information*

# Thank you!

