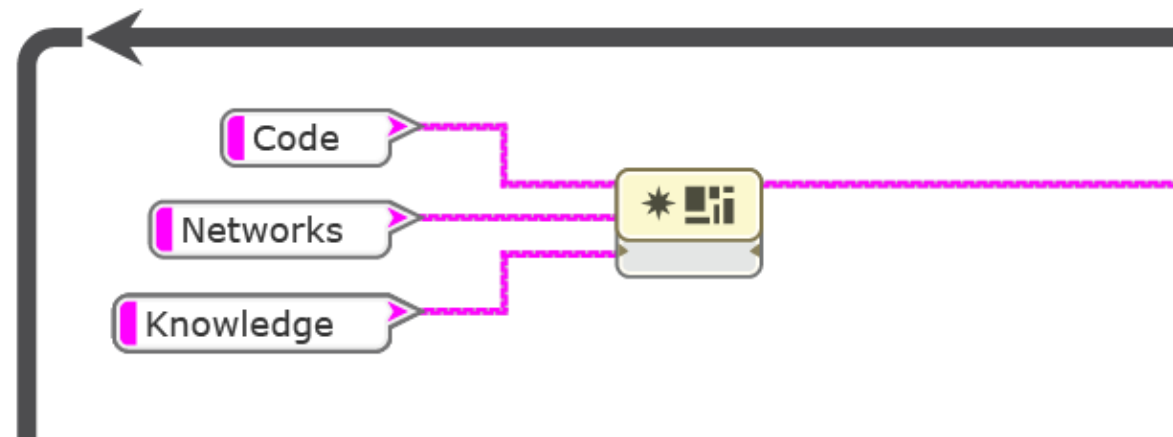
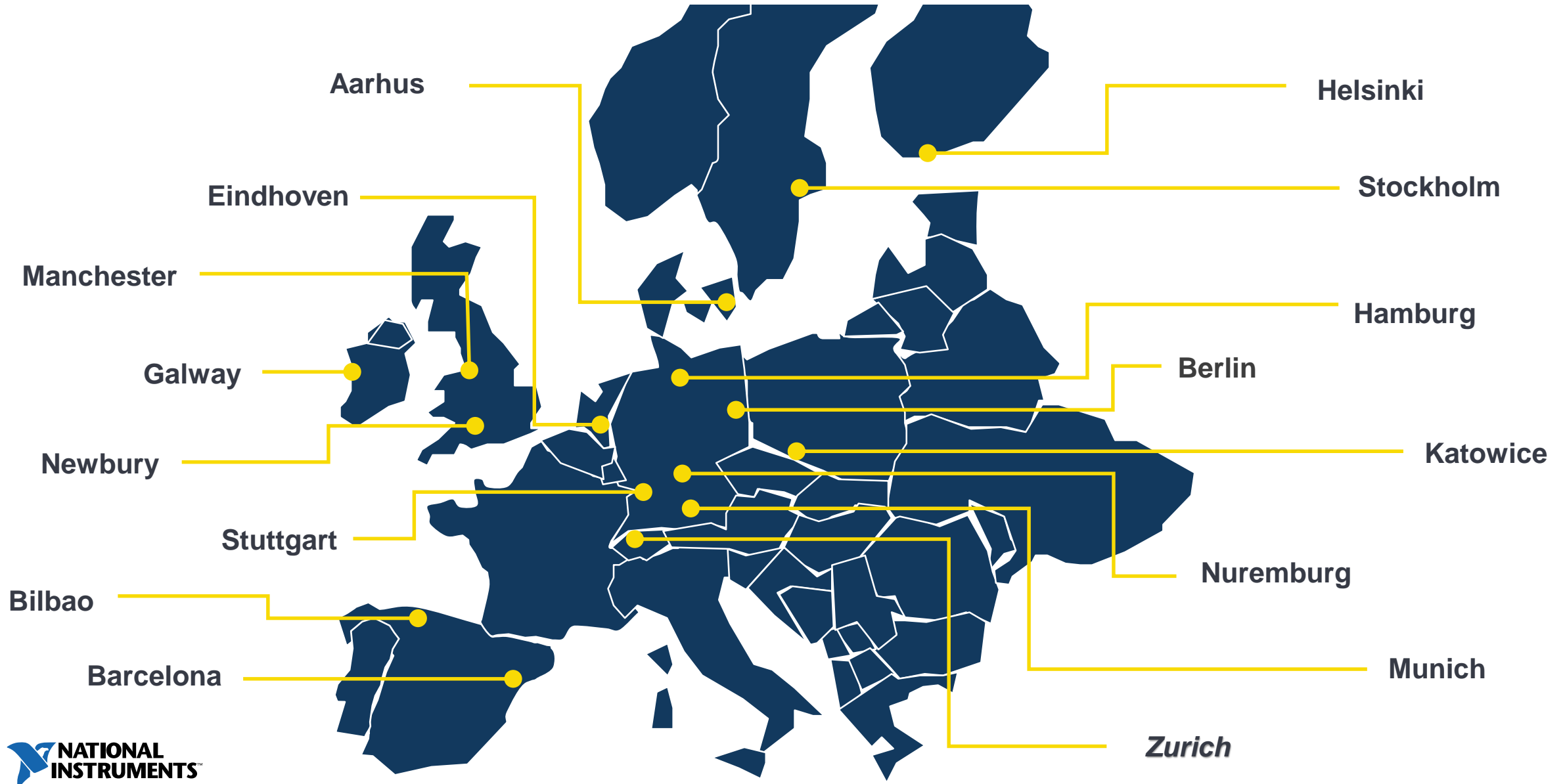


# LabVIEW™ DEVELOPER DAYS

29<sup>th</sup> June 2018  
Stockholm



# What is LabVIEW Developer Days?





LabVIEW™



# Understanding Elephant Communication

Austin Consultants

## **Challenge:**

Creating a way to visualise infrasonic elephant communication for the Zoological Society of London.

## **Solution:**

Used LabVIEW, LabVIEW NXG and Compact DAQ to create a web-based visualisation of infrasonic communications and now working on implementing machine learning to understand elephant noises.



# Hacking Implantable Medical Devices

KU Leuven

## **Challenge:**

Determining if medical implant devices can be controlled by a malicious third party.

## **Solution:**

Used LabVIEW and USRP software defined radio to 'listen' to signals from devices and 'hack' them.





# Passively Monitoring Health in Nursing Homes

Coventry University and University College London

## Challenge:

Reducing burden on healthcare staff continuously monitoring the health, activity and well-being of nursing home patients.

## Solution:

Using LabVIEW and USRP software defined radio and machine learning algorithms to monitor changes in WIFI signals due to patients' movements.



# Testing the World's Most Cost-Effective Fighter Plane

SAAB Aeronautics

## Challenge:

Creating a hardware-in-the-loop system based on commercial off-the-shelf equipment for testing LRUs in their Gripen E aircraft.

## Solution:

Using LabVIEW, CompactRIO and SLSC to develop a full HIL system to test airplane's LRUs.

# Proficiency leads to success







Innovation



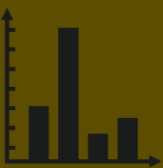
Customer Loyalty



Profitability



Employee Retention



Market Share

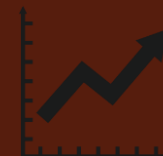


Reduce Costs

Student Experience



Share of Wallet



Reliability



New Customers



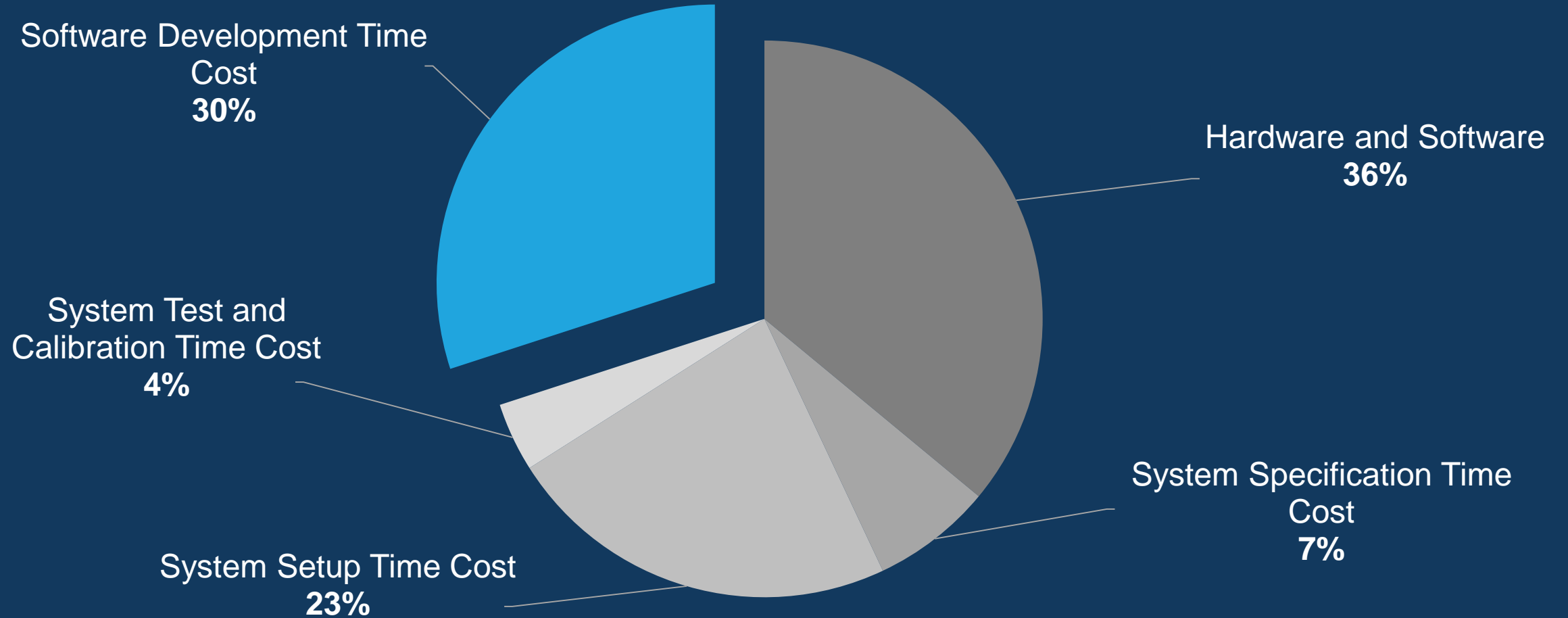
Customer Service



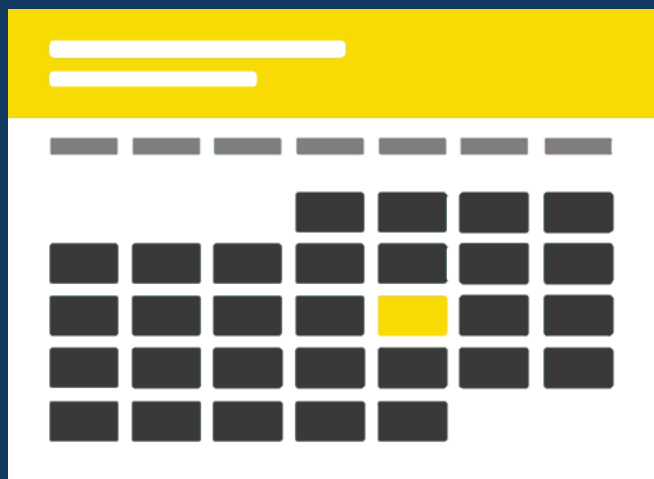
Productivity



# Reduce Costs



# But Developer Days only happens once a year



Accelerate Learning. Promote Accomplishments.

## Badge Program



Learn

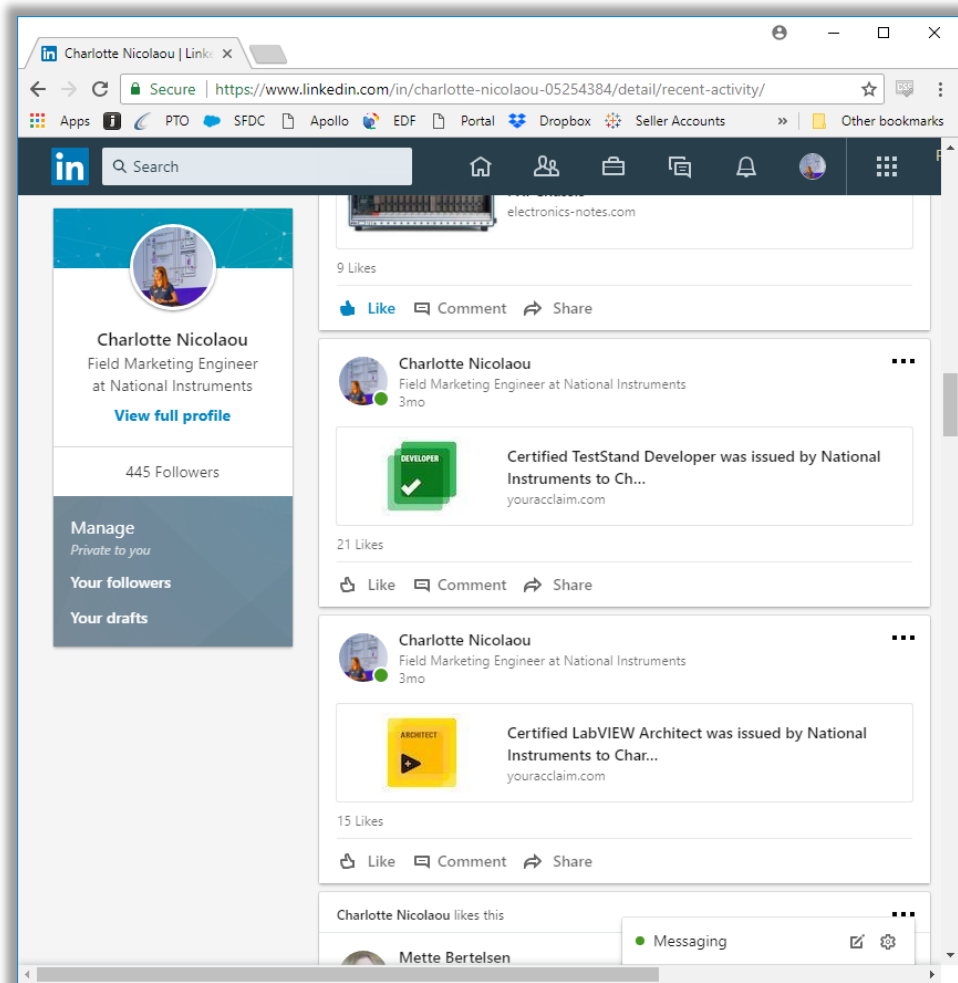


Test



Promote

# Badge Program

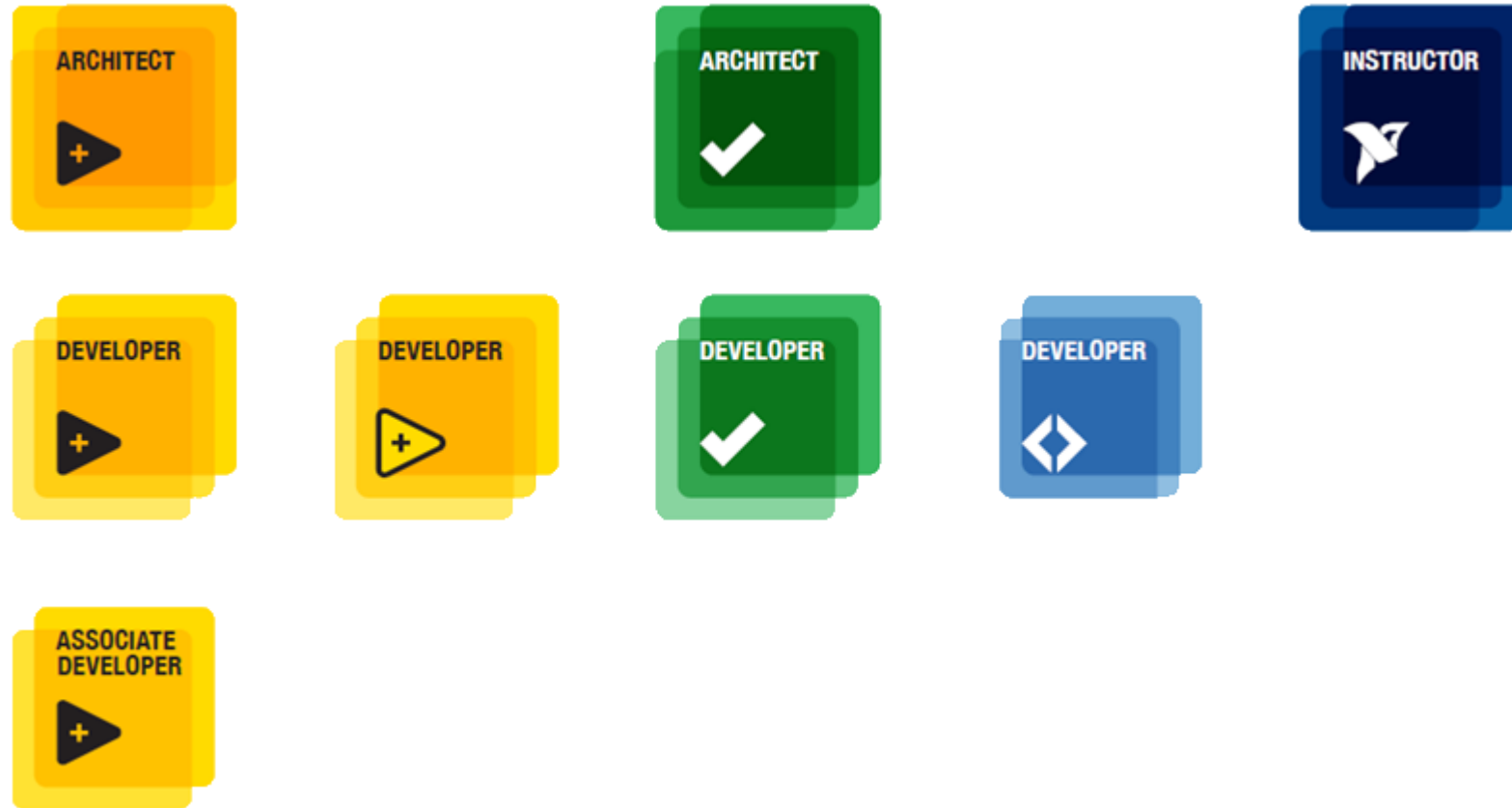


Digitally share and instantly  
verify achievements.

Visit [ni.com/badges](https://ni.com/badges)



# Professional Certification



# Limited-Time Offer for LabVIEW Developer Days Attendees

Complete the **LabVIEW Programming Fundamentals** badge and get a **50% discount CLAD Exam**



- Visit **ni.com/badges**
- From the badge landing page, click **Take the Assessment**
- **Correctly answer 85%** of the 15-20 questions
- Send your passing score to [northern.europe.training@ni.com](mailto:northern.europe.training@ni.com)
- Receive your discount

# User Groups



Learn New Trends



Get Help



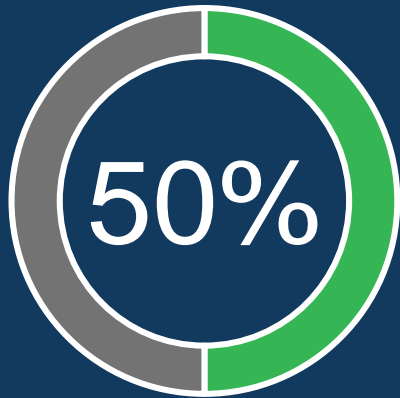
Develop Best Practices



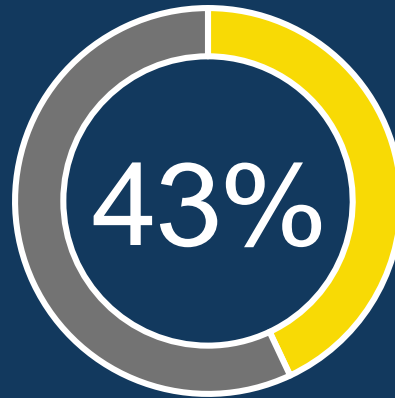
Network



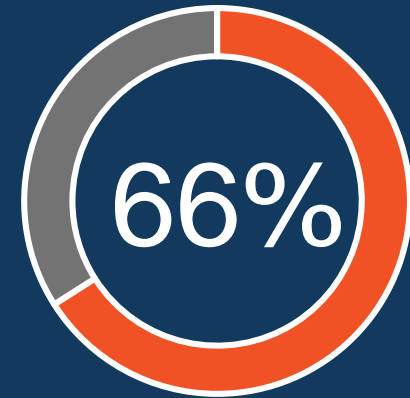
# Training Courses



Quicker  
Development Time



Less Time  
on Maintenance



Faster  
Learning Time

# Training Prize Draw



**Win a free NI Virtual Training course**



Visit **[ni.com/labviewcoe](https://ni.com/labviewcoe)** for more information.

Align on a plan to integrate new techniques into your unique workflow

Undertake an iterative process of learning about new skills and techniques

Execute a self-assessment across all team-based proficiency areas to identify gaps in process and skills

# LabVIEW Community

[forums.ni.com](https://forums.ni.com)



ASK



CONNECT



SHARE

# Other Proficiency Events



CLA Summit 2018



# L3 Technologies



9X

Code Reuse Across  
Similar Products



80%

Improvement in  
Development Times



50%

Reduction of Beta  
Test Downtime

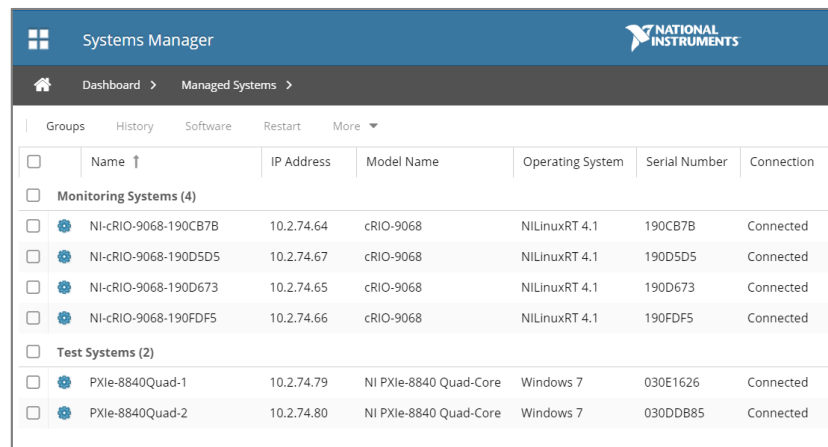
# NI News





# SystemLink™

## Web Application



	Name ↑	IP Address	Model Name	Operating System	Serial Number	Connection
<b>Monitoring Systems (4)</b>						
<input type="checkbox"/>	NI-cRIO-9068-190CB7B	10.2.74.64	cRIO-9068	NI Linux RT 4.1	190CB7B	Connected
<input type="checkbox"/>	NI-cRIO-9068-190D5D5	10.2.74.67	cRIO-9068	NI Linux RT 4.1	190D5D5	Connected
<input type="checkbox"/>	NI-cRIO-9068-190D673	10.2.74.65	cRIO-9068	NI Linux RT 4.1	190D673	Connected
<input type="checkbox"/>	NI-cRIO-9068-190FDF5	10.2.74.66	cRIO-9068	NI Linux RT 4.1	190FDF5	Connected
<b>Test Systems (2)</b>						
<input type="checkbox"/>	PXIe-8840Quad-1	10.2.74.79	NI PXIe-8840 Quad-Core	Windows 7	030E1626	Connected
<input type="checkbox"/>	PXIe-8840Quad-2	10.2.74.80	NI PXIe-8840 Quad-Core	Windows 7	030DDB85	Connected

## Server



## Managed Systems



# CompactRIO with NI DAQmx Support

Combine the ease-of-use DAQmx programming with the low-level functionality of LabVIEW FPGA





# FieldDAQ

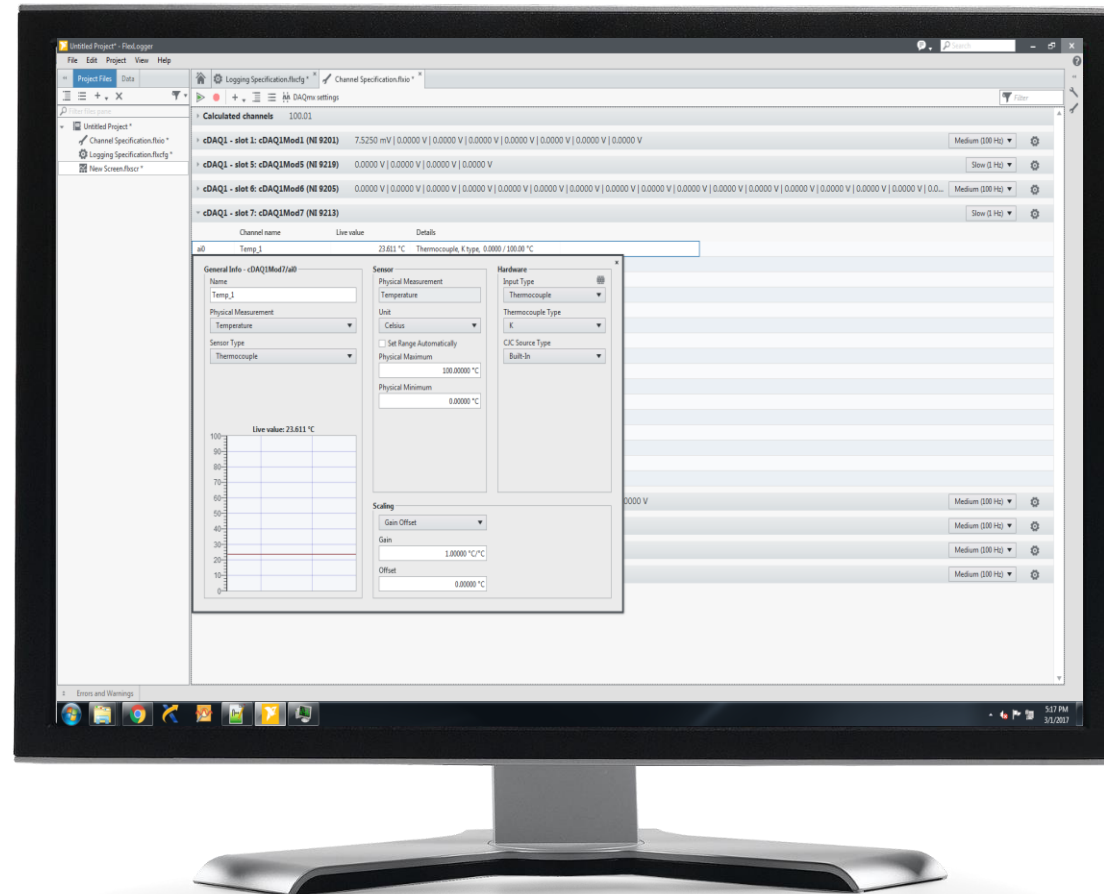
Rugged, IP67 and IP65 rated distributed data acquisition devices

Sensor specific – voltage, temperature and strain



# FlexLogger™

Configuration based software to quickly acquire and log data from sensors







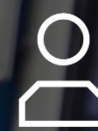
OPERATIONS IN  
50+ COUNTRIES

**\$1.29**

BILLION  
IN 2017



35,000+  
CUSTOMERS WORLDWIDE

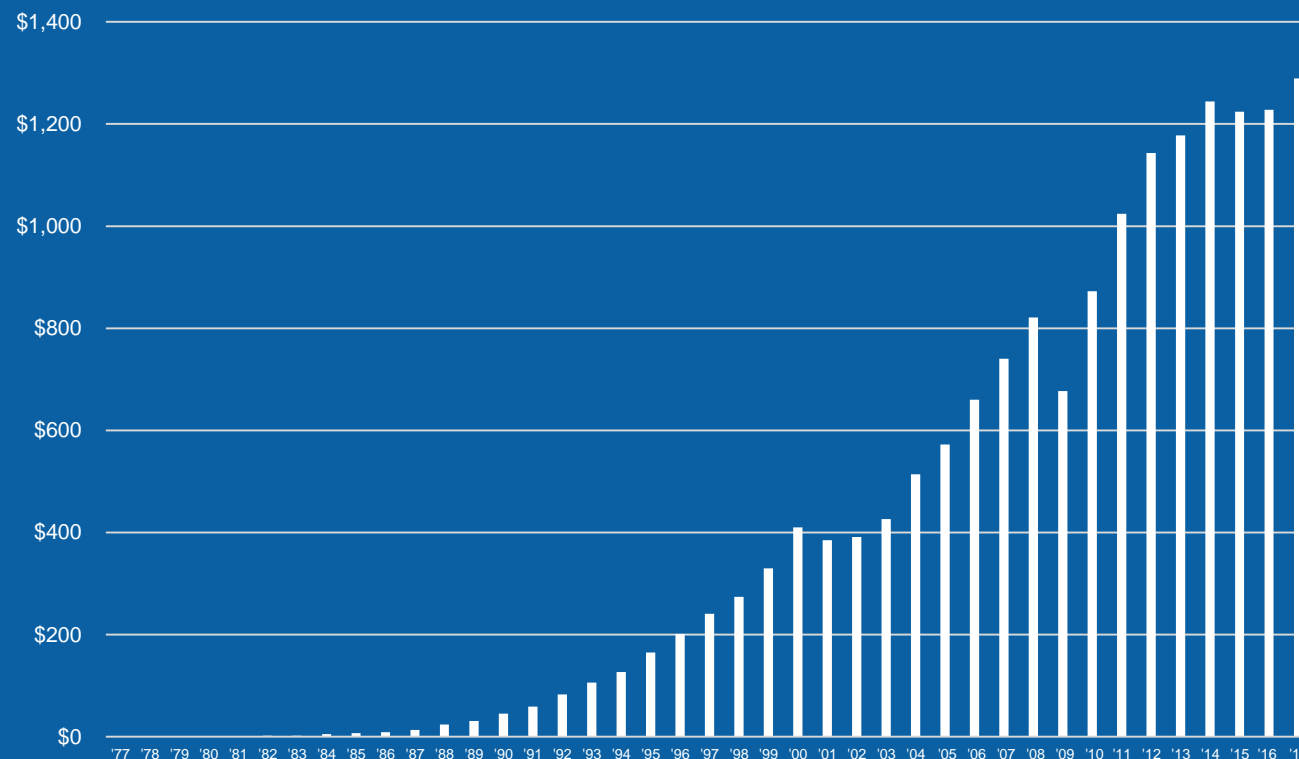


16%  
INVESTMENT IN R&D

## Long-Term Track Record of Growth



Revenue in millions USD





# Agenda

	LabVIEW FUNDAMENTALS	LabVIEW AND BEYOND
08:30	Registration	
09:00	<b>Keynote</b> The desire to learn and share LabVIEW knowledge is what brings all of us here today, but how do we continue increasing our proficiency on a more regular basis? Explore some of the ways developers can increase their mastery of LabVIEW, so you can use them, too. Also get a short update on the latest NI news.	
09:45	<b>What's New in LabVIEW 2018 and LabVIEW NXG</b> [U] The release of LabVIEW 2018 and the latest version of LabVIEW NXG offer a lot of new features. Explore them to improve your day-to-day programming in both versions of LabVIEW and look at the latest LabVIEW NXG roadmap.	<b>Working with XML, TDMS and JSON</b> [I] Most of us use LabVIEW to save data to disk at some point. But to make sure our data files are high quality and easy to analyse, we need to carefully consider how we save the data, what format we use, and how to add metadata. Explore XML, TDMS and JSON and look at the best practices for using LabVIEW APIs.
10:30	Break	
11:00	<b>Integrating WebVIs into Your Application</b> [U] With LabVIEW NXG, you can create WebVIs, or VIs built into standard web formats and hosted on a server to give you remote access and control of your LabVIEW applications. Discover how to build a WebVI to interact with a LabVIEW application, set up a web server, and deploy.	<b>Testing Your LabVIEW Code</b> [I] Validating LabVIEW code ensures software meets users' needs. Examine different ways to analyse code using built-in and add-on tools such as the LabVIEW Unit Test Framework Toolkit, LabVIEW VI Analyzer Toolkit and the VI Metrics window to ensure code works correctly and to write high-quality code.
12:00	Lunch	
13:00	<b>The Flow of Data</b> [E] G code relies on the principle of data flow to pass data around an application. But the most common issue with developers' code is they're using the wrong tool for the job. Examine the most common ways to share data and when certain tools should be used.	<b>Live Code Review</b> [U] Code reviews, usually done as a group, are an excellent way to ensure your code is error free whilst sharing different programming techniques amongst your team. Spend this session almost entirely in LabVIEW to learn through doing and hearing other developers' ideas for what makes great code and a great review.
13:45	Break	
14:15	<b>Tips for Code Reuse in LabVIEW</b> [I] Do you have code that you want to reuse? Learn how to incorporate C DLLs and .NET assemblies along with your .m algorithms into the LabVIEW 2018 and LabVIEW NXG environments. Example applications include automated test and measurement system, RF/communications and data analysis.	<b>Managing Large Deployed Systems with SystemLink™</b> [U] Managing large distributed test systems or remote monitoring and control applications is challenging. You need to ensure the hardware is connected and running and the software is up to date. You also need to remotely view key parameters. Learn how you can use SystemLink™ to simplify the maintenance of your deployed system.
15:00	<b>What's New in the LabVIEW Tools Network</b> [U] Discover tools and techniques to help you in your daily life accelerate your application development. Explore the latest news in static code analysis, new tools for LabVIEW, and the development of tools for LabVIEW NXG.	<b>Parallel Testing with TestStand</b> [I] Many LabVIEW developers use TestStand to manage their automated test system. Examine how to use the tools in TestStand to implement parallel test and increase test throughput. Also compare cover batch with parallel process models and discover how to synchronise and share hardware.
15:45	Wrap Up	
16:00—16:40	<b>Getting Ready for Your CLAD Exam</b> [E]	<b>How to Master the CLD Exam</b> [I]