National Instruments & OSIsoft Academic Program Partnership

Presented by

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NATIONAL INSTRUMENTS

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Today's 30-Minute Agenda

1. **Who** is driving the **partnership**?
2. **Who** should be **interested**?
3. **What** has been **developed**?
4. **How** does it **work**?
5. **How** can it be **applied**?
6. **How** can you learn **more**?
7. **What questions** do you have?

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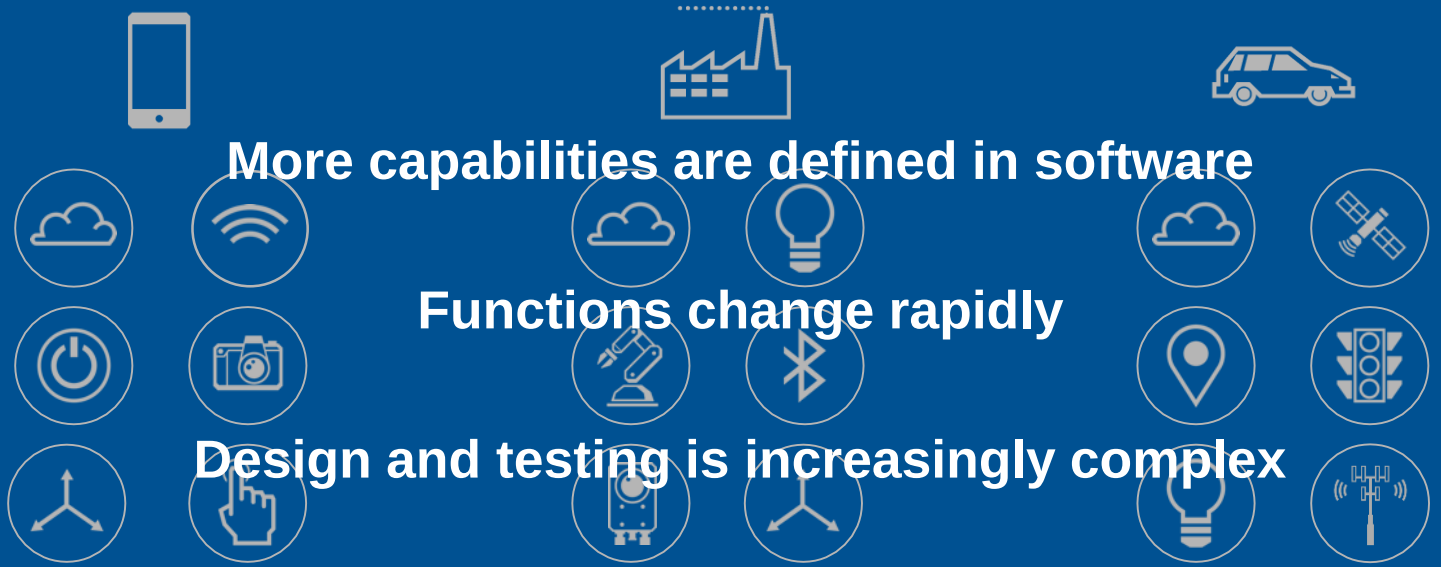
The World of Converged Devices



More capabilities are defined in software

Functions change rapidly

Design and testing is increasingly complex

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Who is Driving the Partnership?

Since 1976 we've been equipping engineers and scientists with **systems** that accelerate productivity, innovation, and discovery. We are in 40+ countries and serve over 35k companies.

We deliver an **open enterprise infrastructure**, to connect **sensor-based data**, **systems** and people. The result: real-time, actionable insights that empower companies to optimize and transform their business.

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NI Flexible Software Protects Critical Assets

LabVIEW

TestStand | VeriStand | DIAdem | NI InsightCM™ Enterprise

Multisim | LabWindows™/CVI | Measurement Studio | Third-Party Software

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The mark LabWindows is used under a license from Microsoft Corporation. Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

NI Modular Hardware Allows Easy Customization

Complete I/O Coverage
With More Than 600 Modules

Highest Data Throughput
With PCI Express

Software Extensibility
With Apps, IP, and Toolkits

Parallel Measurement Execution
With Latest Multicore Processors

Real-Time Measurements
With Timing and Synchronization

Measurement Acceleration
With User-Programmable FPGAs

Reduced Size, Power, and Weight
With Form Factor Variants

Increased Measurement Range
With Latest ADC/DAC

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Who Should be Interested?

Anyone whose work **depends on data**…

… needs the **right data** from the right sources to make the right decisions!

But the right data isn't always easily available; **different systems** have different, **separate**, critical pieces of the puzzle.

You need an **integrated**, all-encompassing solution…

That takes advantage of software and expertise ***that you already own!***

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What has Been Developed?

A LabVIEW toolkit to integrate LabVIEW and the PI System.

1. Any data that is collected by the PI System can be streamed in real-time **into LabVIEW**.

2. Any data that is collected or measured in LabVIEW can be streamed in real-time **to the PI System**.

Download it here:

http://forums.ni.com/t5/Reference-Design-Portal/OSISoft-PI-connectivity-toolkit-for-LabVIEW/ta-p/3568074

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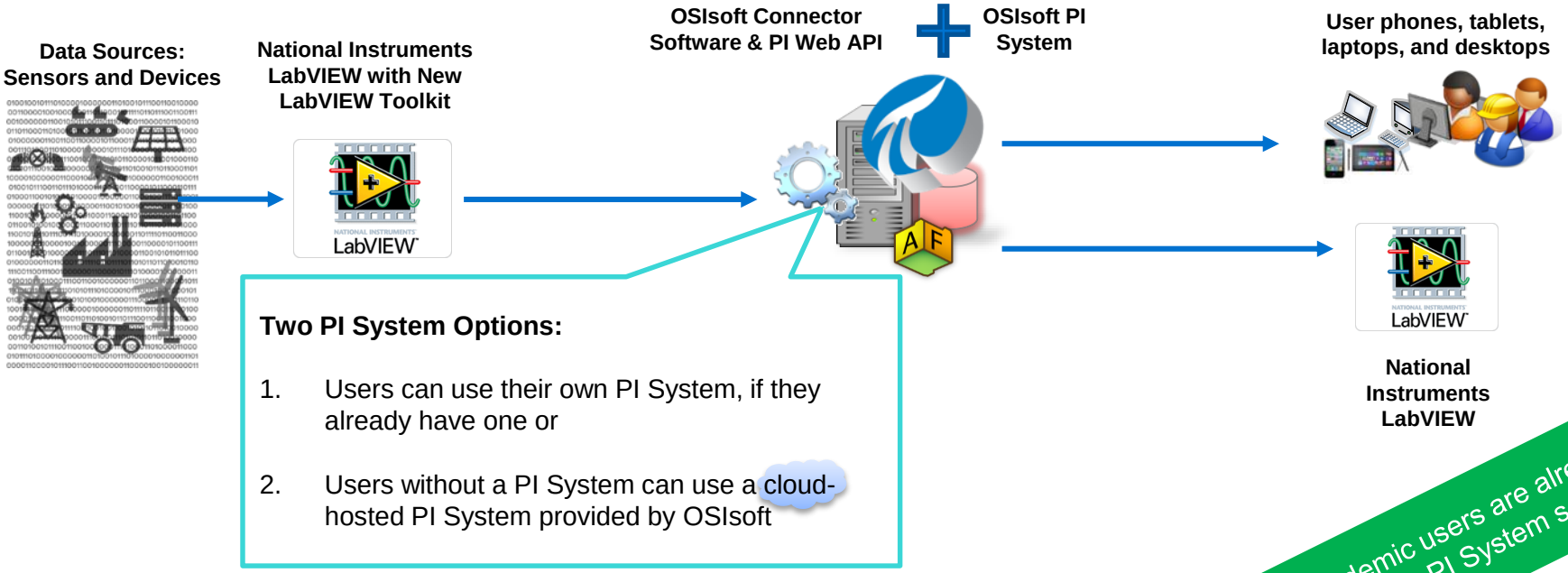
How Does It Work?

You need LabVIEW, a PI System, and the PI Web API and/or PI Connector for UFL:



Note: Academic users are already licensed for this PI System software

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DEMONSTRATION

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myRIO WriteExample (UFL).lvproj - Project Explorer

File Edit View Project Operate Tools Window Help

Items Files

- Project: myRIO WriteExample (UFL).lvproj
  - My Computer
    - Dependencies
    - Build Specifications
  - NI-myRIO-1900-030d1e18-dlopez (NI-myRIO-1900-030d1e18-dlopez.local)
    - Chassis (myRIO-1900)
    - myRIO WriteExample (UFL).vi
    - Dependencies
    - Build Specifications

myRIO WriteExamp... myRIO WriteExamp... \\DANLOPEZLAPTO... PI Coresight - Inter...

5:51 PM
3/19/2017

How Can It be Applied?

Smart Grid Applications

Can utilize NI's PMUs (Phasor Measurement Units) and other equipment. Universities are already reading PMU data into the PI System using OSIsoft's PMU interface.

Enterprise Asset Management/Condition-Based Maintenance

NI's InsightCM can collect waveform data from multiple CompactRIO systems and provide data visualization and analysis—and send that data to PI Points (AF integration and read capabilities are in development).

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How Can It Be Applied?
Coming Summer 2017: Academic Community PI Server

- A shared, cloud-based PI System to support **classroom initiatives**
  - It requires a minimal on-campus footprint
  - PI Server maintenance is handled by OSIsoft
  - Students use web-based tools to visualize and access data

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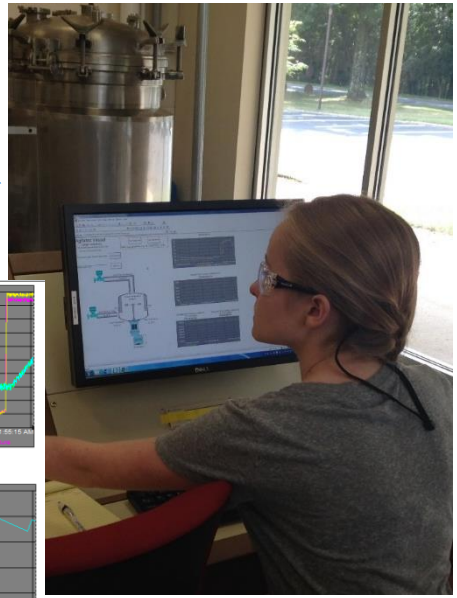
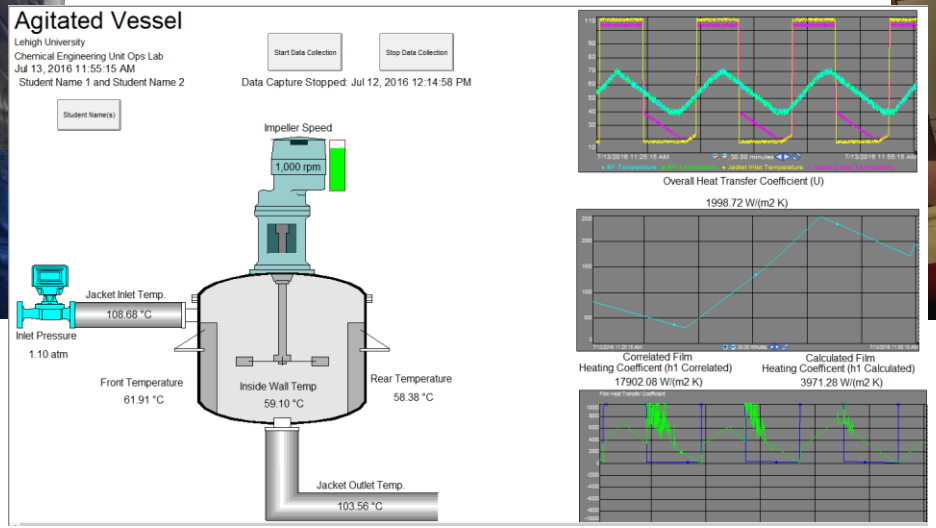
NI Example: Agitated Vessel Heat Transfer at Lehigh University

Unit Operations Service
(Hosted by OSIsoft)





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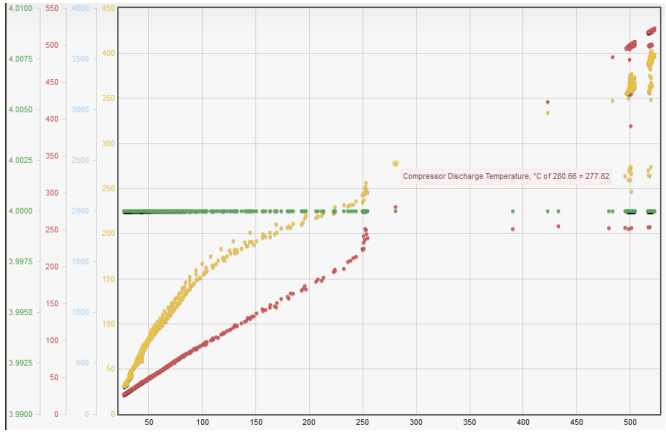
Unit Operations Service for ChE Departments

- Move beyond the traditional ***operations*** of a Unit Operations Lab
  - ➢ Pre-lab data investigation and planning
  - ➢ In-lab real-time visibility and value-added calculations
  - ➢ Data science integration with student lab reports
    - E.g. allow students to easily benchmark lab runs

- More information:
  - Available summer 2017

Universities @ OSIsoft.com



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How Can You Learn More?
Visit Us at the Partner and Product Expo!

Visit the OSIsoft and National Instruments Exhibitor Booths to see live demonstrations

Location:

Partner and Product Expo, Yosemite & West Lounge

Hours:

Tuesday:	12:30 PM – 6:00 PM
Wednesday:	12:00 PM – 7:00 PM
Thursday:	12:30 PM – 6:00 PM

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What Questions Do You Have?

Please wait for the **microphone** before asking your questions

State your **name & company**

Please remember to…

Complete the Online Survey for this session

http://bit.ly/uc2017-app

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谢谢

Danke

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado

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