

Hands-On: Data Acquisition with LabVIEW

Agenda

Introduction

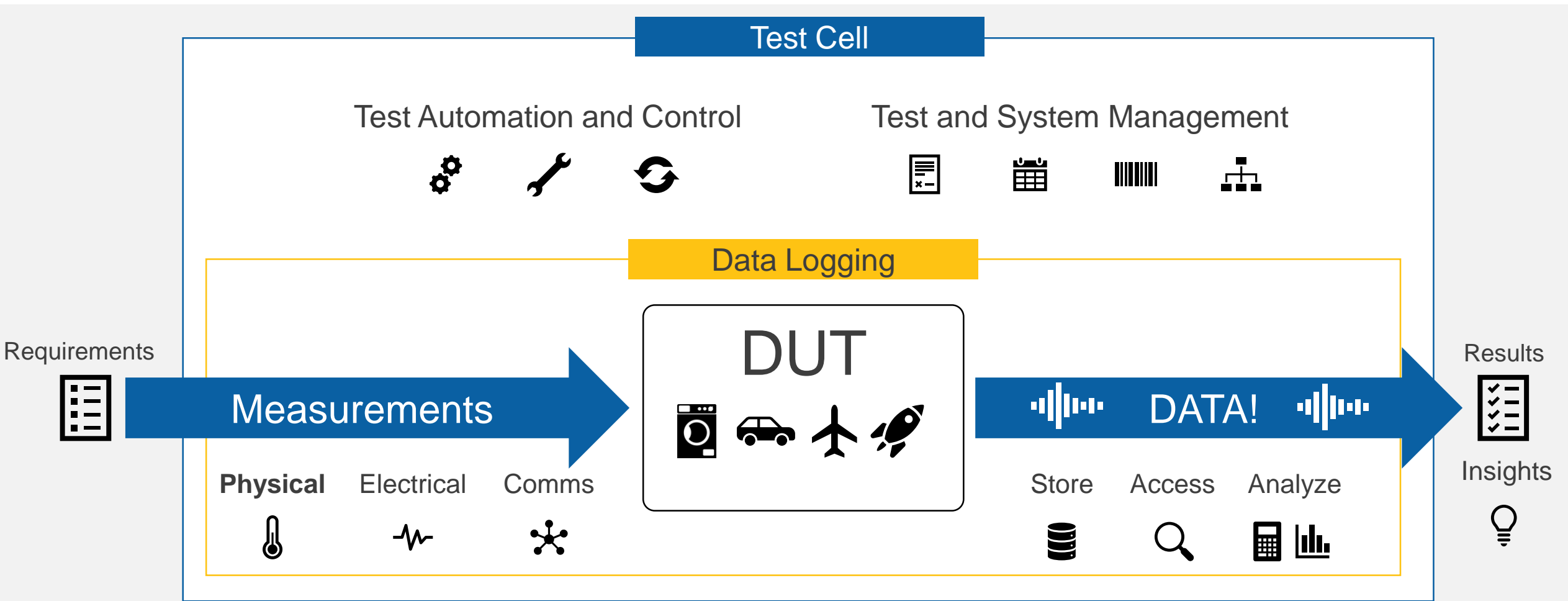
(5 Minutes)

CompactDAQ and LabVIEW Hands-On Exercises

(~1 Hour)

Wrap Up

(5 Minutes)



When to Use LabVIEW over FlexLogger?

- Multiple hardware vendors
- Inline data analysis
- Full control of data files produced
- Advanced control of the system

When to Use LabVIEW over Python?

- User interfaces and real-time data viewing
- Multiple hardware vendors
- Engineering specific components of an application

Components of a Measurement System

Sensor



Hardware



Signal
Conditioning

Analog-to-Digital
Converter

Software



Driver
Software

Application
Software



Integrate Hardware. Visualize Data. Accelerate Engineering.

Rapidly connect to and configure instrumentation

Minimize test sequence development time

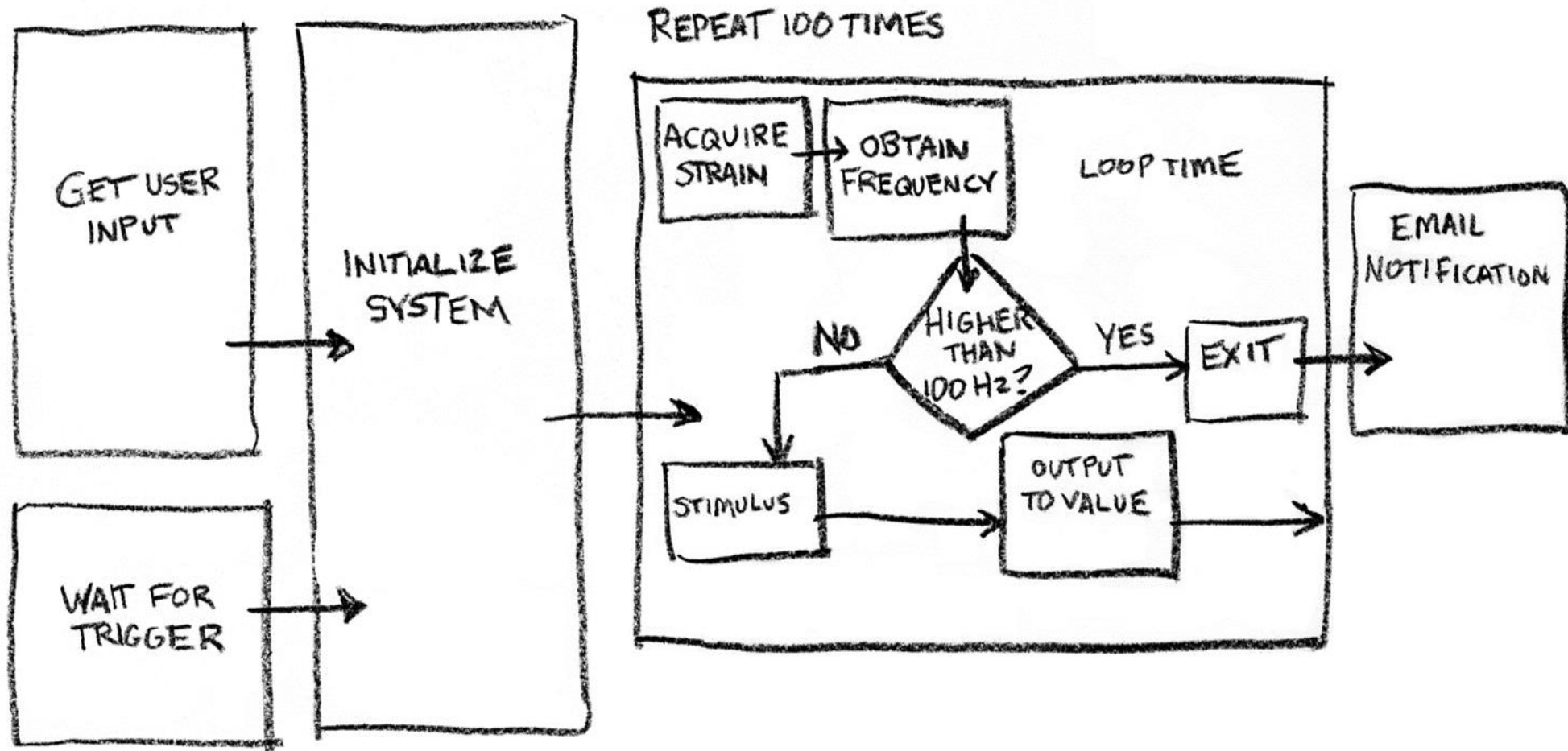
Quickly reuse existing source code, scripts, and libraries

Instantly visualize measurement results

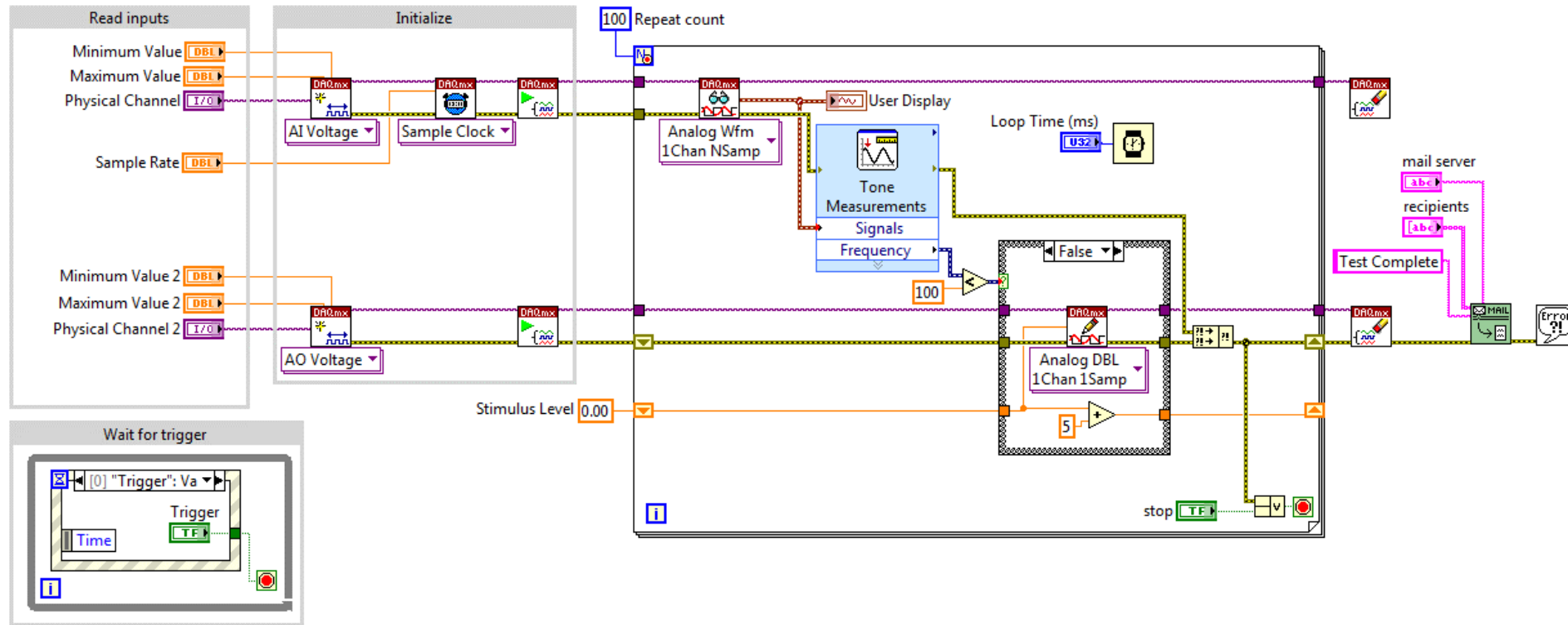
Reduce test station deployment and rework costs



Customize With Graphical Programming



With LabVIEW, You Can Program the Way You Think



The graphical, dataflow-based G programming language is ideal for programming parallel test and measurement hardware.

Seamlessly Connect to Your Hardware

LabVIEW was built from the beginning to connect to and collect measurements from test and measurement hardware, whether connecting to NI hardware using NI drivers or 3rd party hardware



CompactDAQ Hardware



CompactDAQ Hands-On

Part 1: Getting Started (mandatory)

Hardware Configuration..... 4

Explore the Example Finder.....14

Part 2: Choose Your Own Adventure (optional)

Temperature Measurement and Logging..... 23

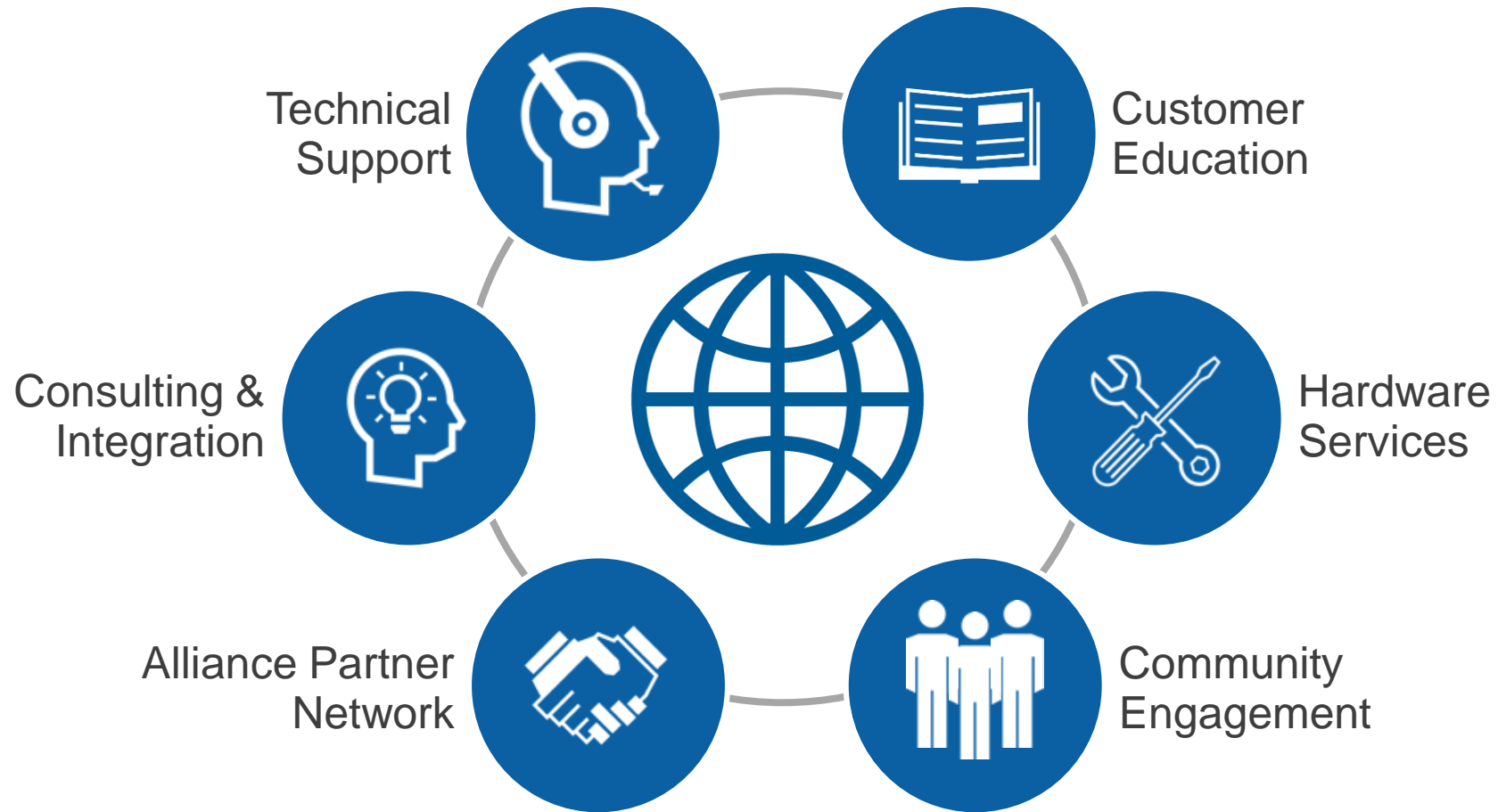
Measuring Vibration from an Accelerometer..... 47

Wrap Up

Goals of Today

1. Learn about the benefits of standardizing on a scalable hardware platform.
2. Know the options for automating measurement hardware.
3. Understand the importance of improving your proficiency with whatever tool you choose.
4. Get hands-on with different software

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