
NATIONAL
INSTRUMENTS™

Welcome to NIDays

THE LabVIEW Conference

Jack Bering

Sales Manager NI Denmark

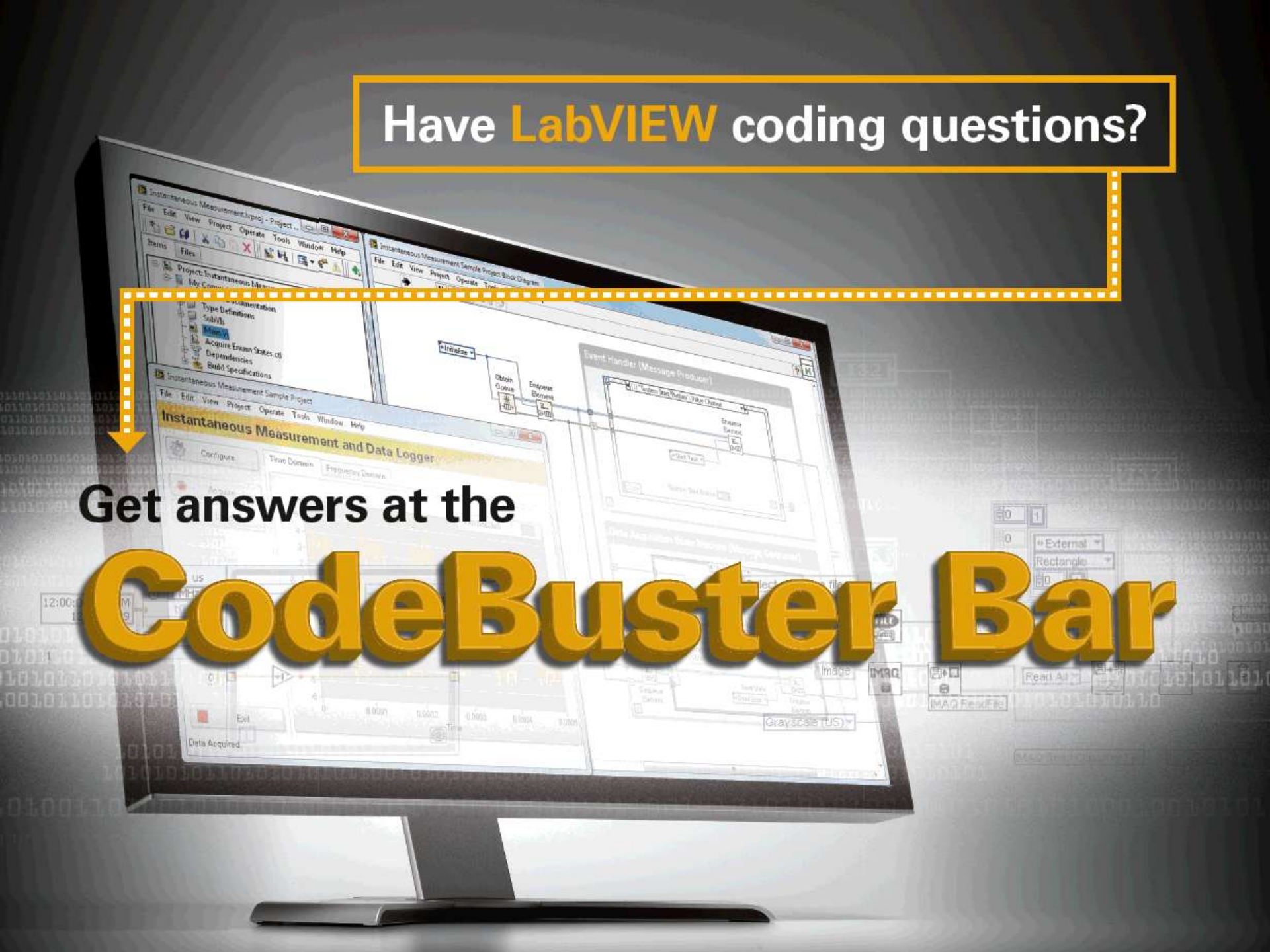
NATIONAL INSTRUMENTS

Thank you!

NATIONAL INSTRUMENTS

Presentations from our partners

Title	Presenter	Time/Track
How to create a reliable and flexible production test system concept with LabVIEW	6TL Engineering	11.00 Track B
Complete toolbox for handling product diversity in TestStand applications	DSE Test Solutions	11.00 Track C
Using CompactRIO and LabVIEW in an advanced logging solution	CIM Industrial Systems	11.45 Track A
How to make a test solution last over time	Prevas	11.45 Track B
Overview of modern RF/microwave design software and linking RF design and test	AWR	11.45 Track C
Integration of vision in industrial applications	ESI-CIT Group	14.30 Track B


Have LabVIEW coding questions?
Get answers at the
CodeBuster Bar
Instantaneous Measurement and Data Logger

System Design for the 21st Century

Elijah Kerry

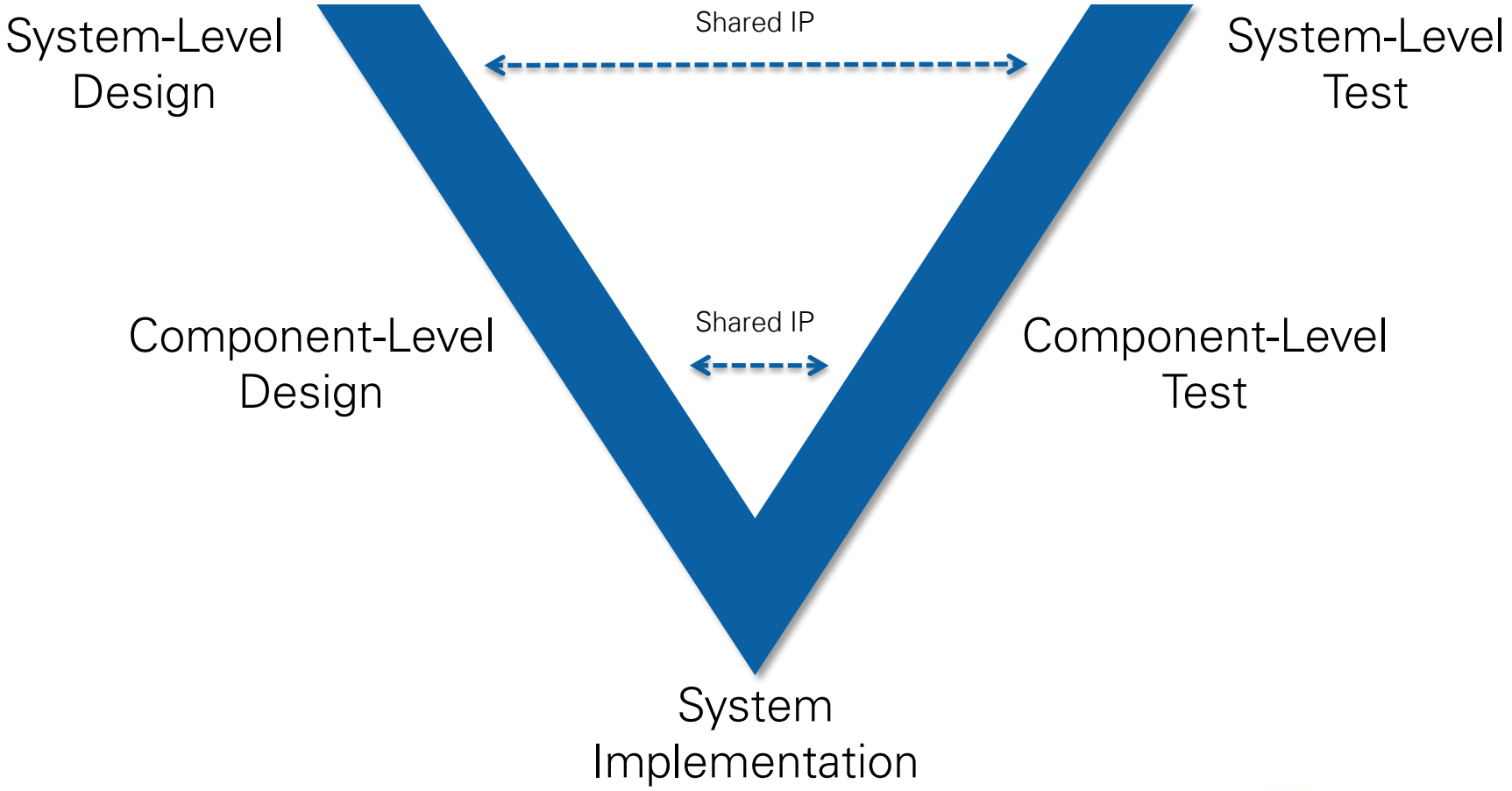
Certified LabVIEW Architect

Senior Product Manager LabVIEW

NATIONAL INSTRUMENTS

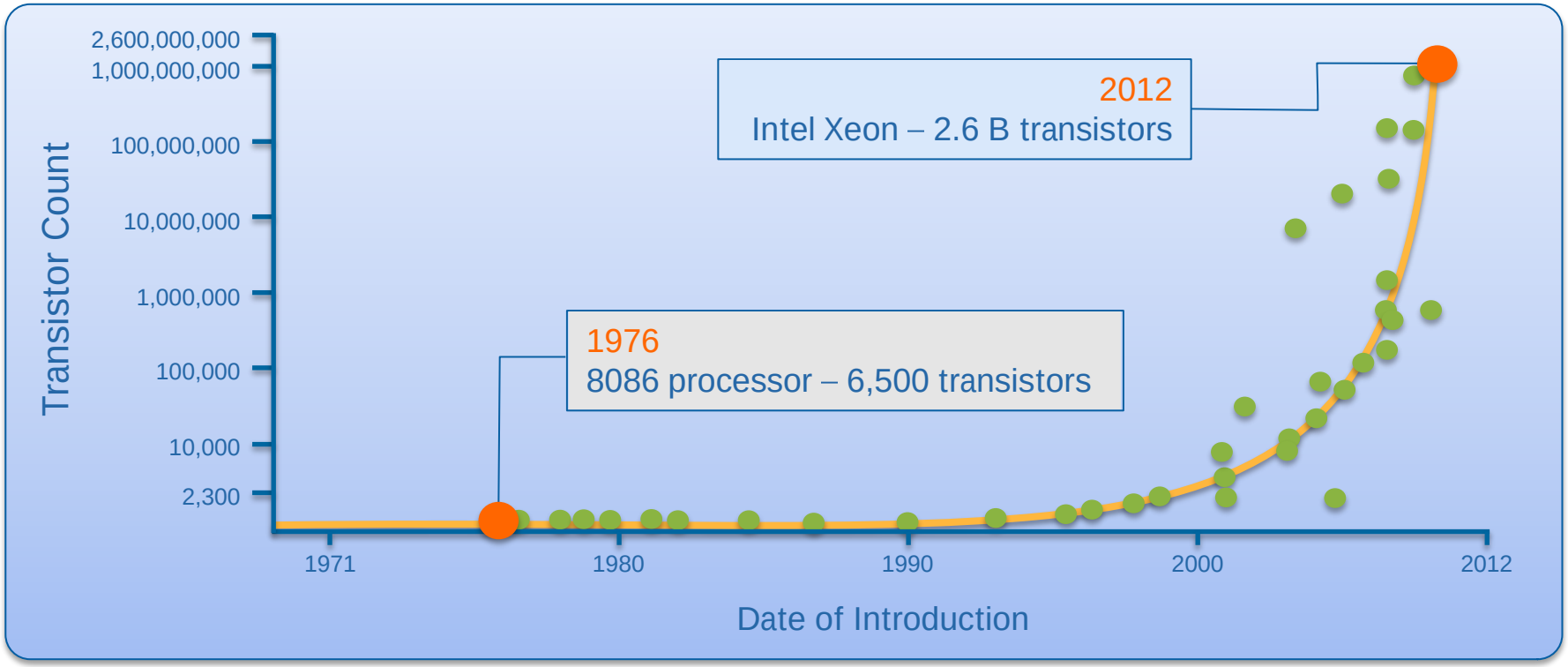
Presentation Mode Viewing Only

Integrating Design and Test with Shared Tools and IP



NATIONAL INSTRUMENTS

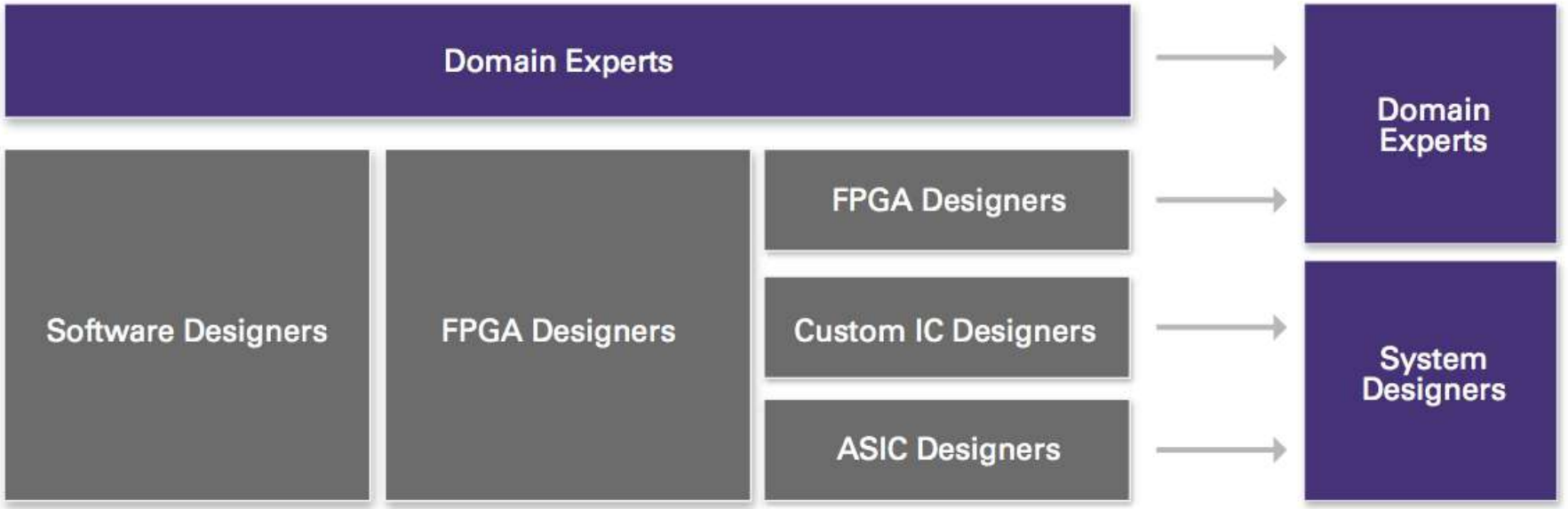
Moore's Law



NATIONAL INSTRUMENTS

Evolution of Instrumentation

Innovation Evolution



"Innovation initiatives that were once handled by dozens a decade ago are now run by only handfuls…less apparently enables more."

—Michael Schrage, Harvard Business Review Blog Network

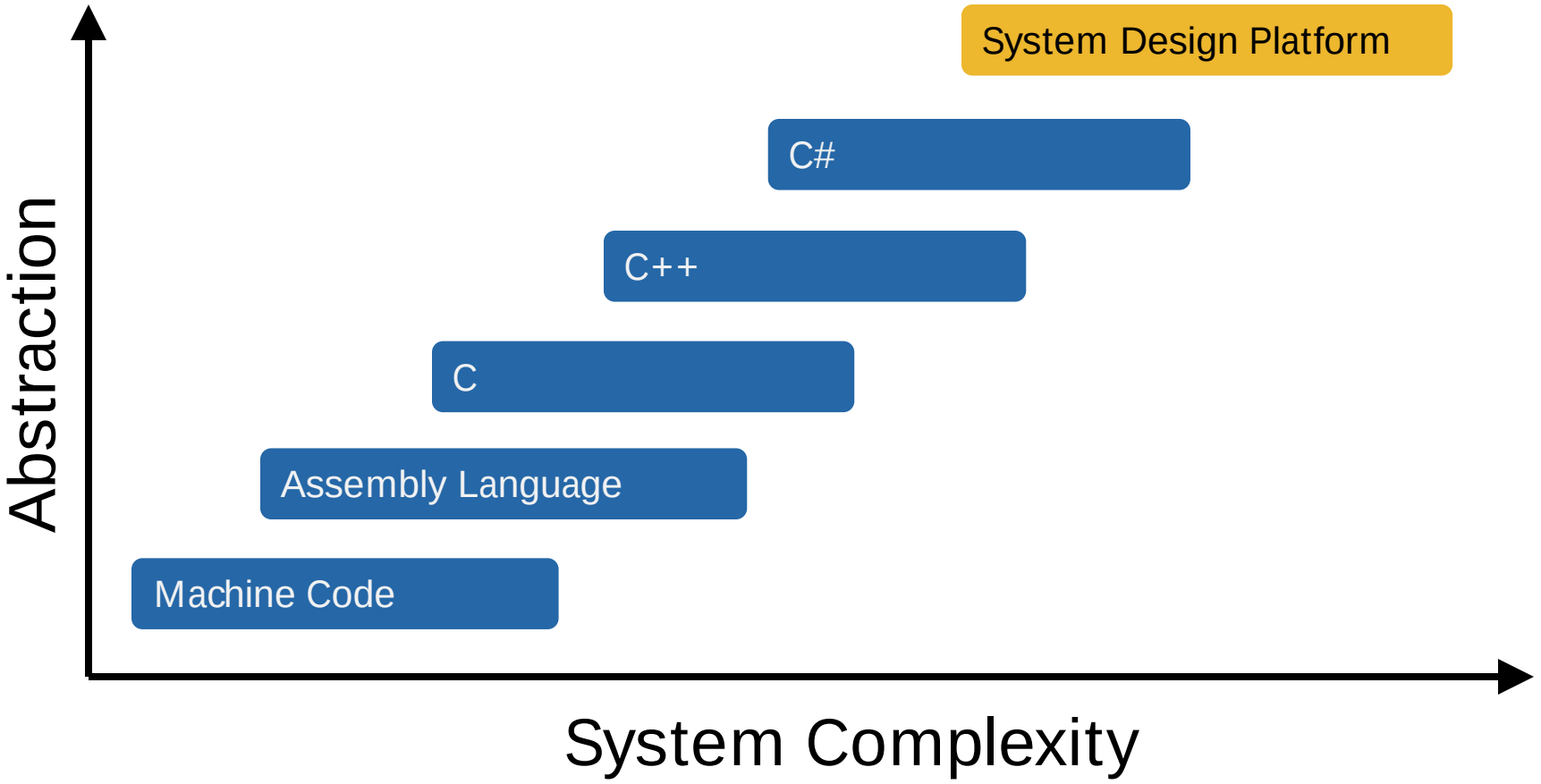
NATIONAL INSTRUMENTS

The Cost of a Software Defect

Development Phase	Cost Ratio
Requirements	1
Design	3-6x
Implementation	10x
Development Testing	15-40x
Acceptance Testing	30-70x
Post Release	40-1000x

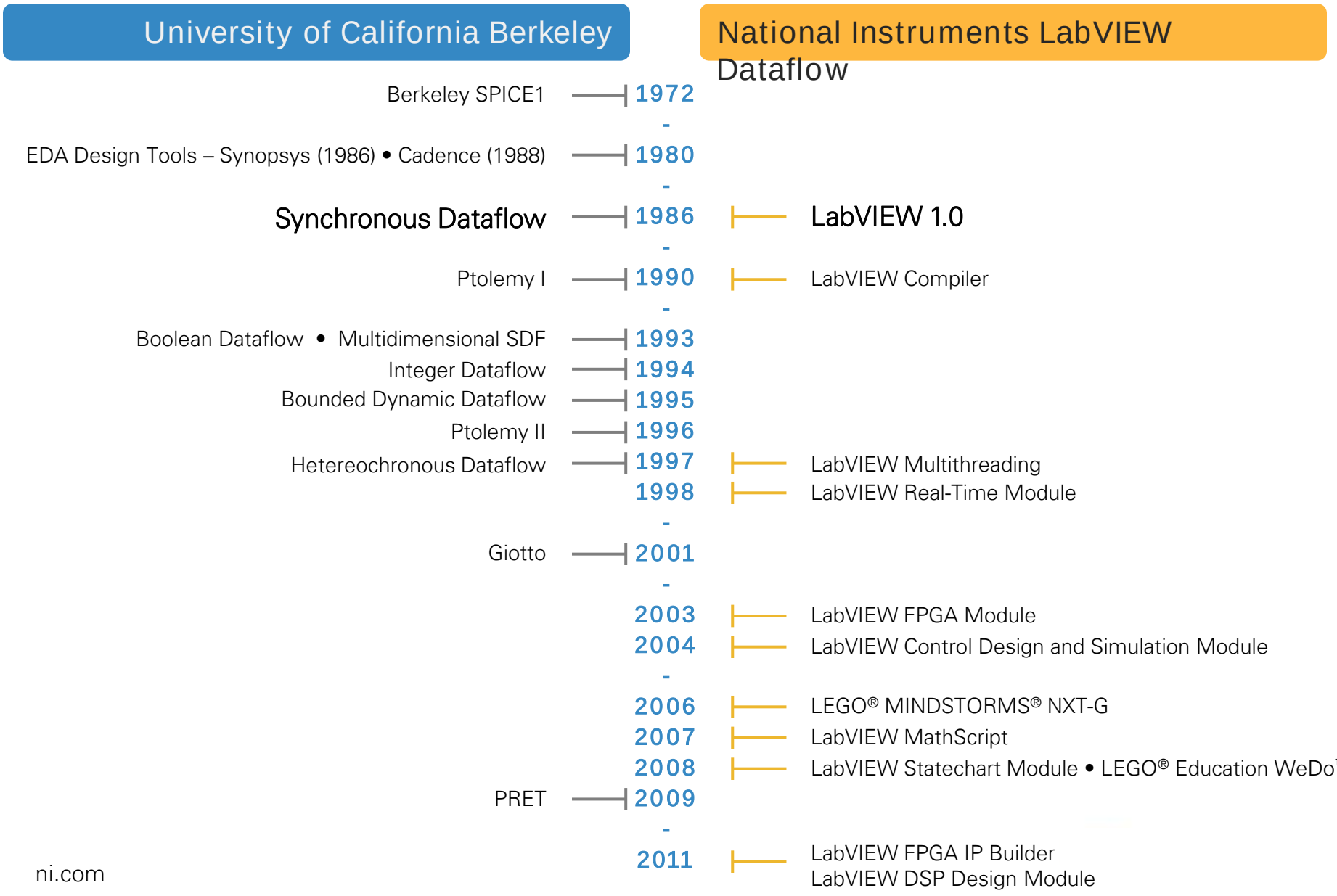
Based on an analysis of 63 software development projects at companies including IBM, GTE and TRW

Scalable Software Abstraction



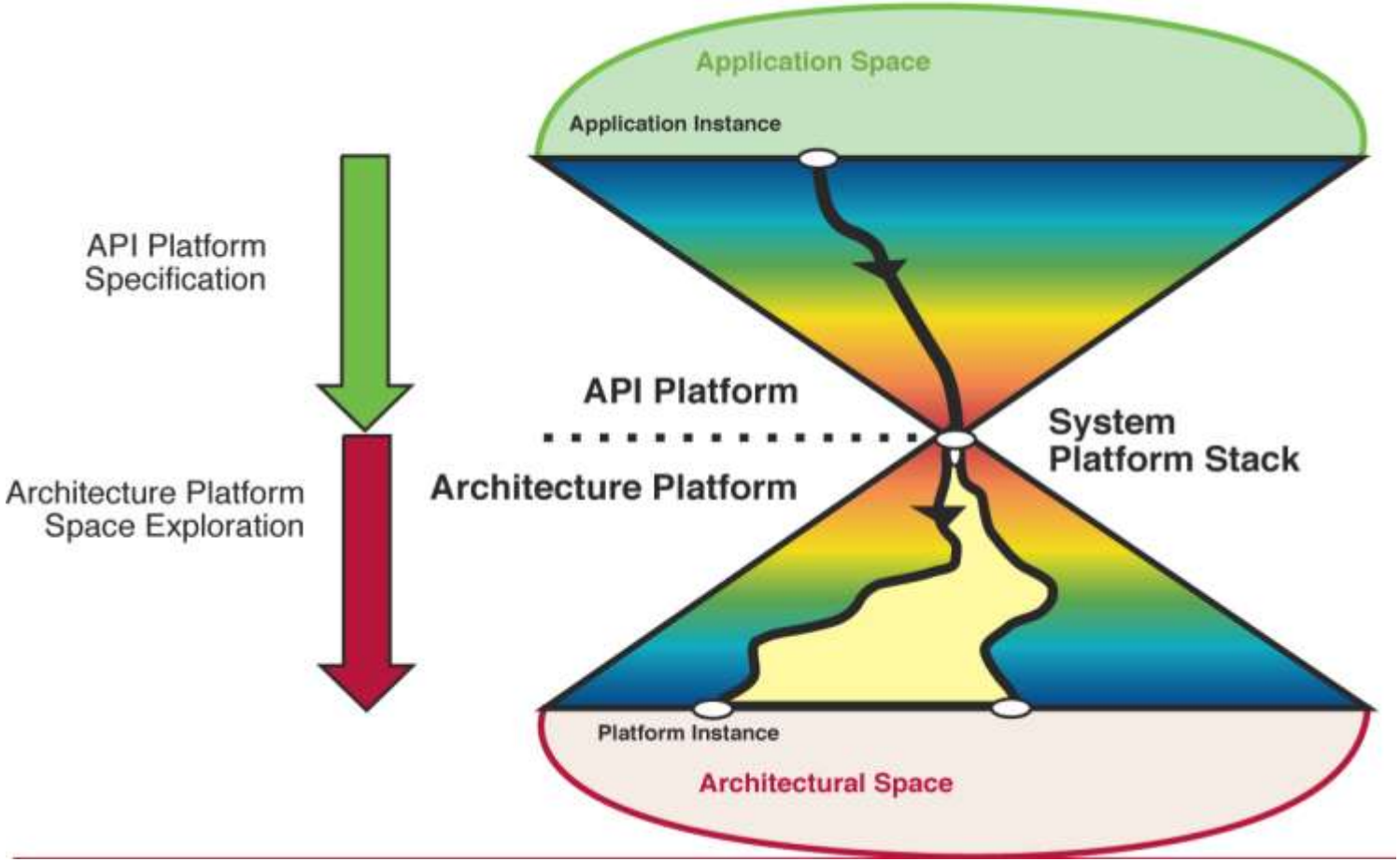
NATIONAL INSTRUMENTS

Academic Foundation to Strong Design



University of California Berkeley

A Platform-Based Design for System-On-Chip

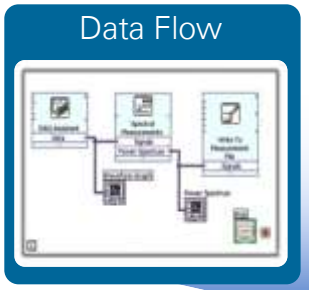


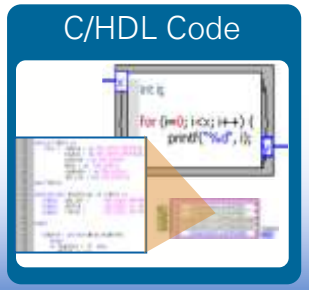
A. Sangiovanni-Vincentelli, UC Berkeley. Defining Platform Based Design. EEDesign, Feb 2002

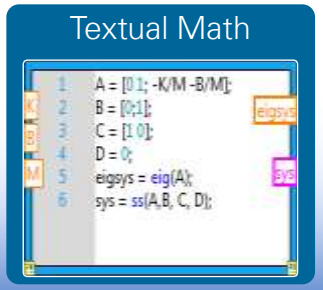
NATIONAL INSTRUMENTS

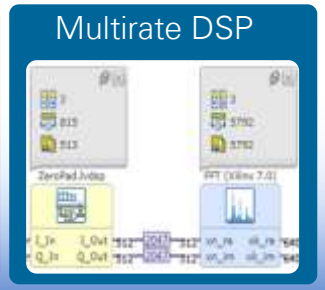
Graphical System Design

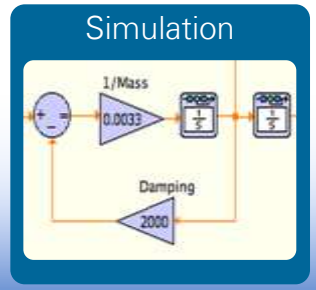
A Platform-Based Approach for Measurement and Control

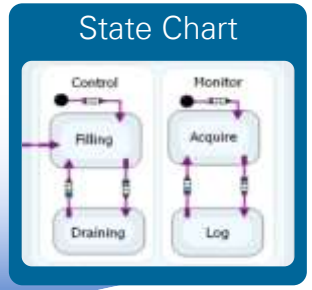












NATIONAL INSTRUMENTS LabVIEW™


Personal Computers


PXI Systems


NI CompactRIO


NI Single-Board RIO


NI USRP

Graphical System Design

A Platform-Based Approach for Measurement and Control

Test

Monitor

Embedded

Control

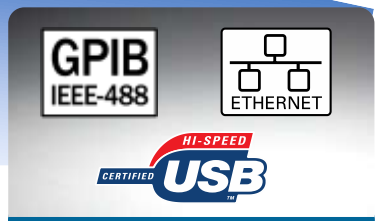
Mechatronics

NATIONAL INSTRUMENTS LabVIEW™

Desktops and PC-Based DAQ

PXI and Modular Instruments

NI CompactRIO and Custom Designs



Open Connectivity with 3rd Party I/O

NATIONAL INSTRUMENTS

NATIONAL INSTRUMENTS

LabVIEW™

System Design Software

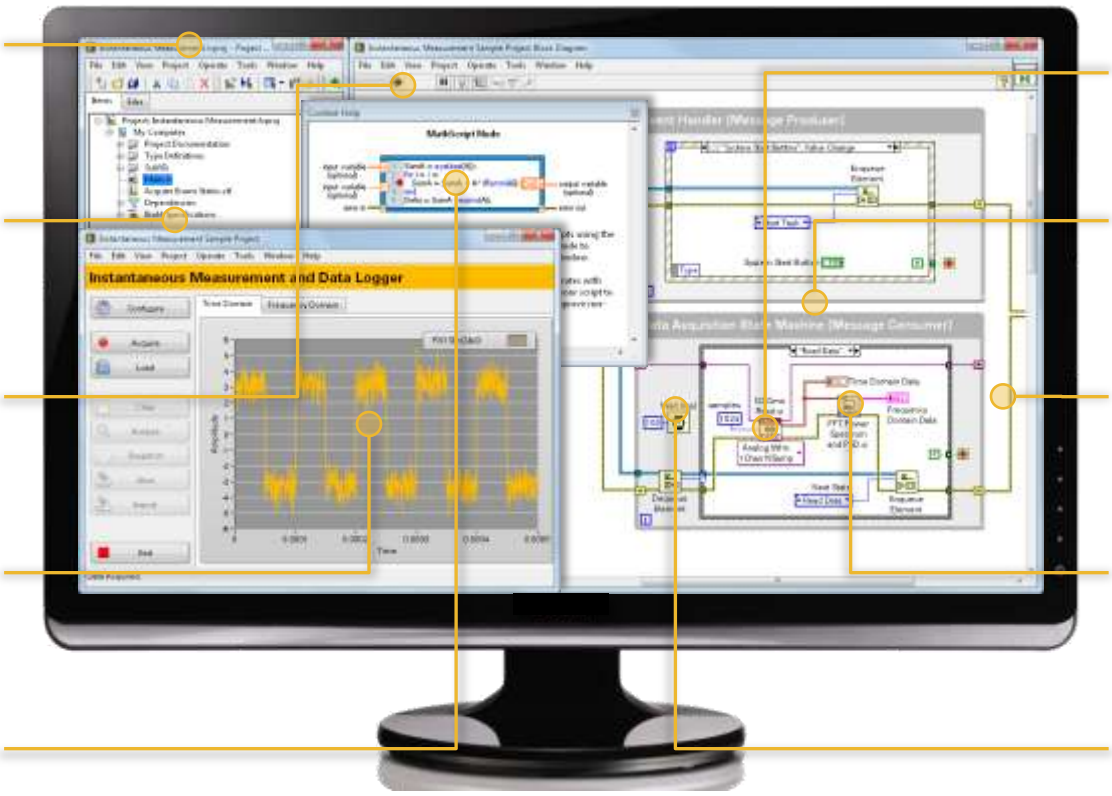
Project Explorer
Manage and organize all system resources, including I/O and deployment targets

Deployment Targets
Deploy LabVIEW code to the leading desktop, real-time, and FPGA hardware targets

Instant Compilation
See the state of your application at all times, instantly

Front Panel
Create event-driven user interfaces to control systems and display measurements

Models of Computation
Combine and reuse .m files, C code, and HDL with graphical code



Hardware Connectivity
Bring real-world signals into LabVIEW from any I/O on any instrument

Parallel Programming
Create independent loops that automatically execute in parallel

Block Diagram
Define and customize the behavior of your system using graphical programming

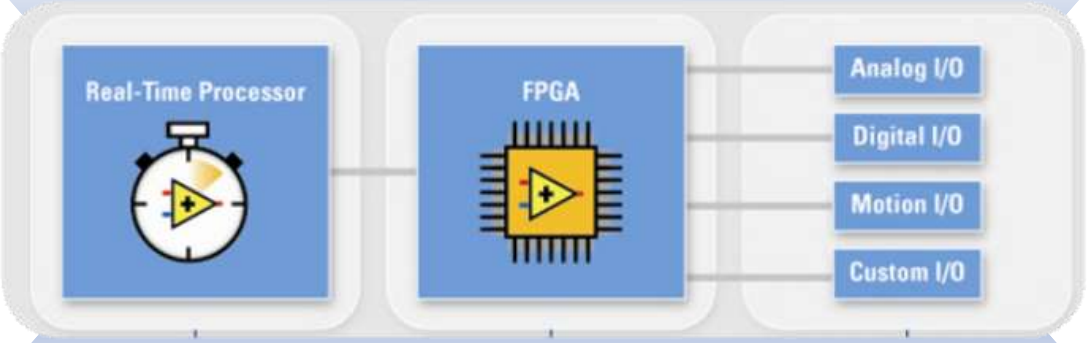
Analysis Libraries
Use high-performance analysis libraries designed for engineering and science

Timing
Define explicit execution order and timing with sequential data flow

Accelerates Your Success

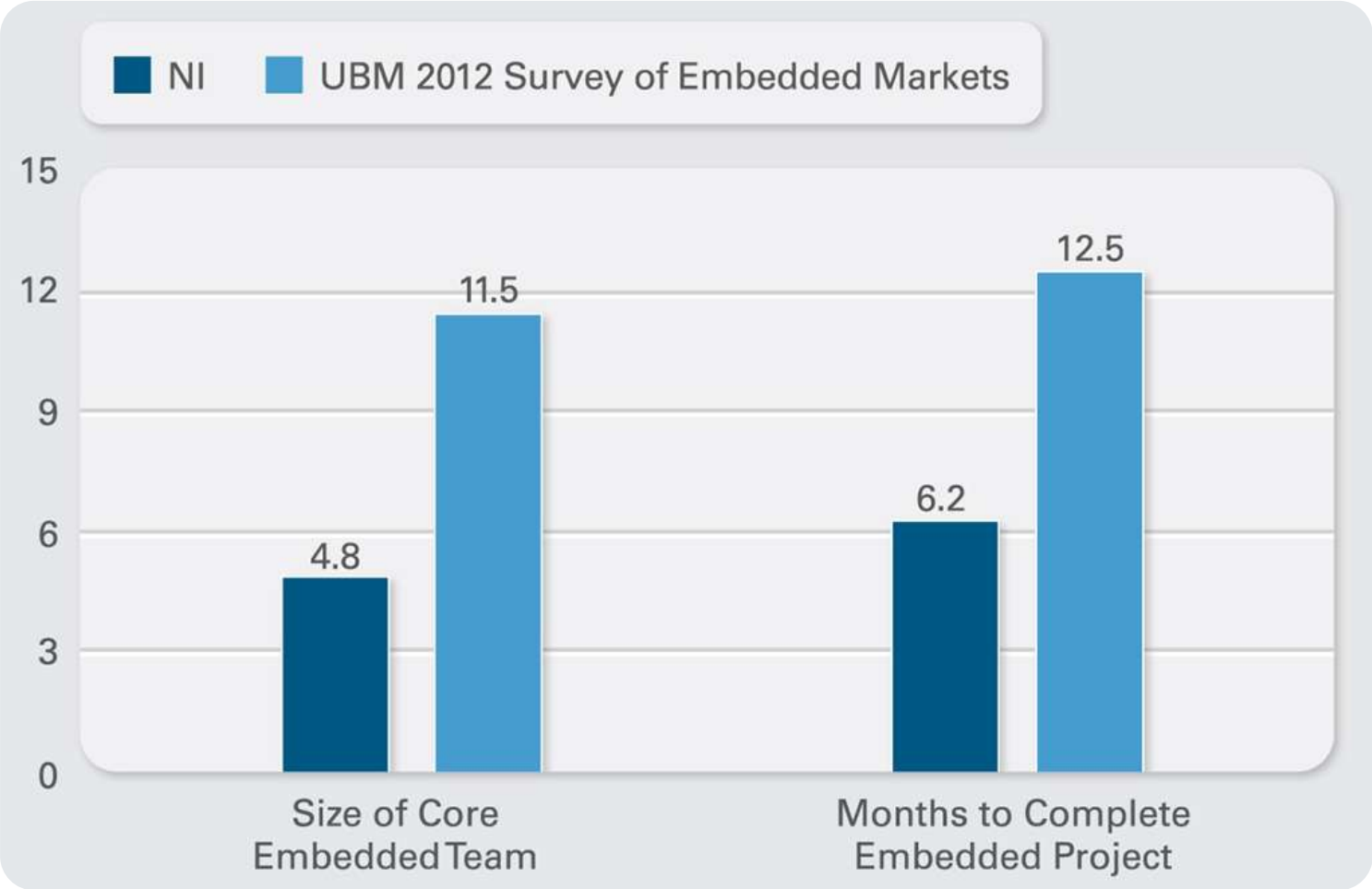
By abstracting low-level complexity and integrating all of the tools you need to build any measurement or control system

LabVIEW Reconfigurable I/O (RIO) Architecture



NATIONAL INSTRUMENTS

Smaller teams get to market faster using the NI graphical system design approach



UBM Electronics

NATIONAL INSTRUMENTS

Wireless Everywhere

"the proliferation of mobile devices, including smart phones and other mobile devices, will continue to be the key growth driver into the foreseeable future."

- Jessy Cavazos, Industry Director, Frost and Sullivan

NATIONAL INSTRUMENTS

"The best way to predict the future is to invent it."

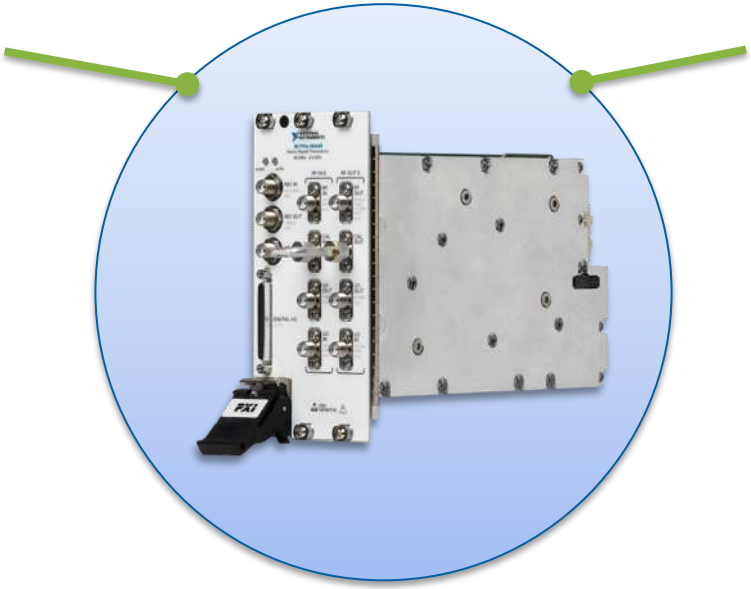
Alan Kay, software pioneer

Introducing the PXIe-5644R

Worlds First Software Designed Instrument

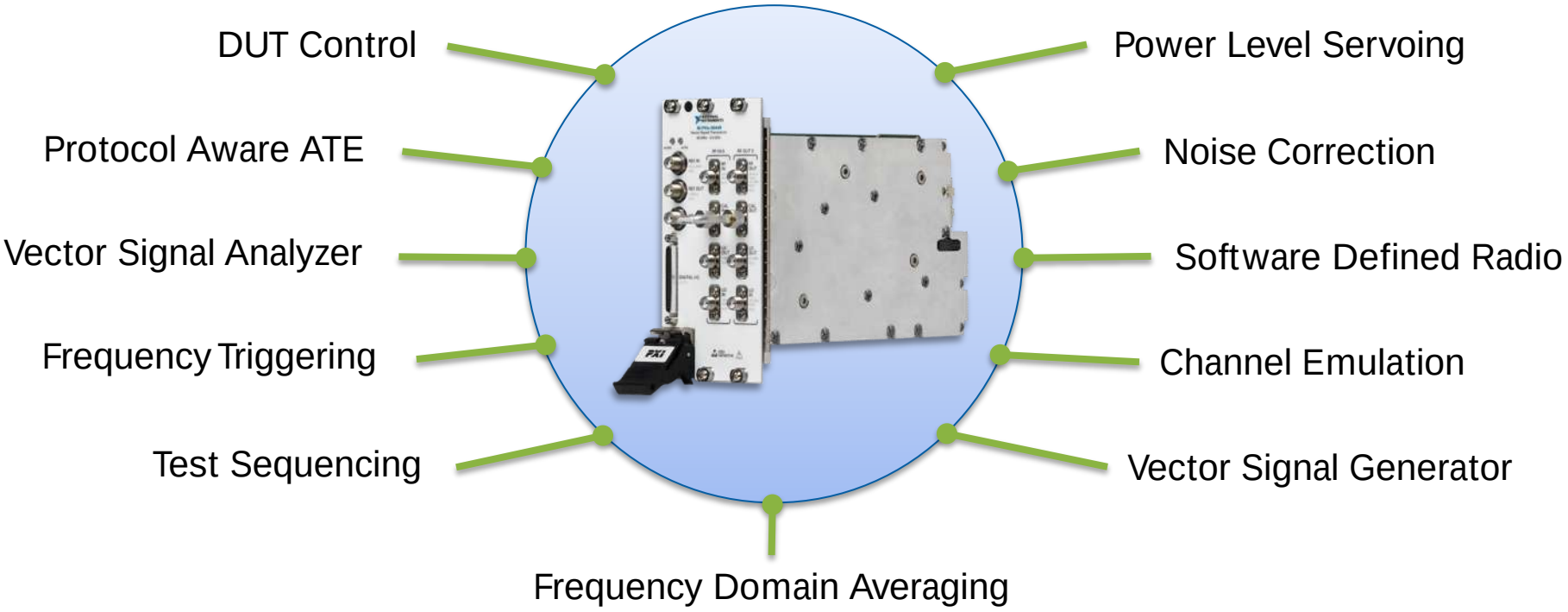
Software-Designed Instrumentation

Vector Signal Analyzer



Vector Signal Generator

Software-Designed Instrumentation



NATIONAL INSTRUMENTS

Rebecca Rose

Systems Engineer

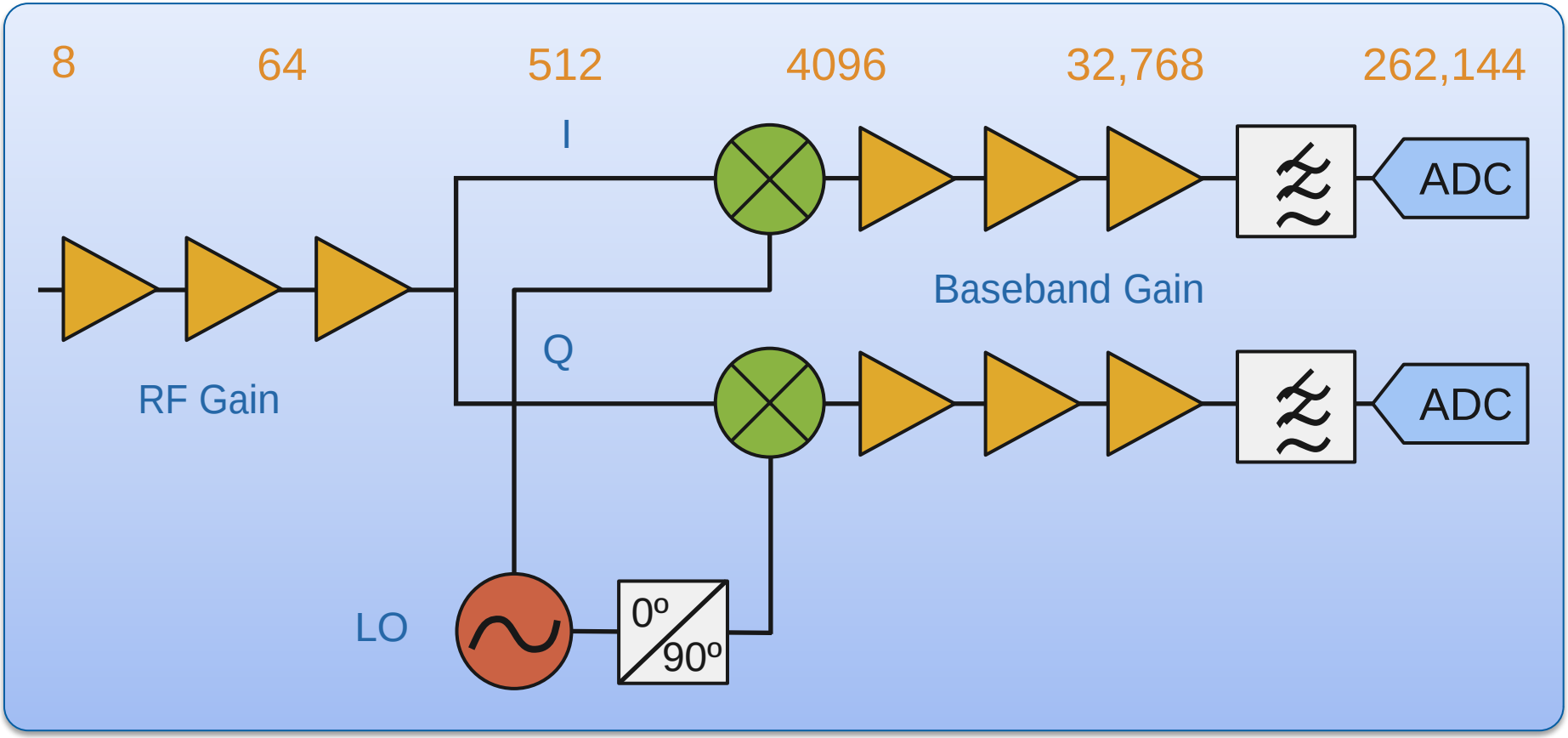
NATIONAL INSTRUMENTS

Fraction of the Size of Traditional Solutions

Worlds First Vector Signal Transceiver

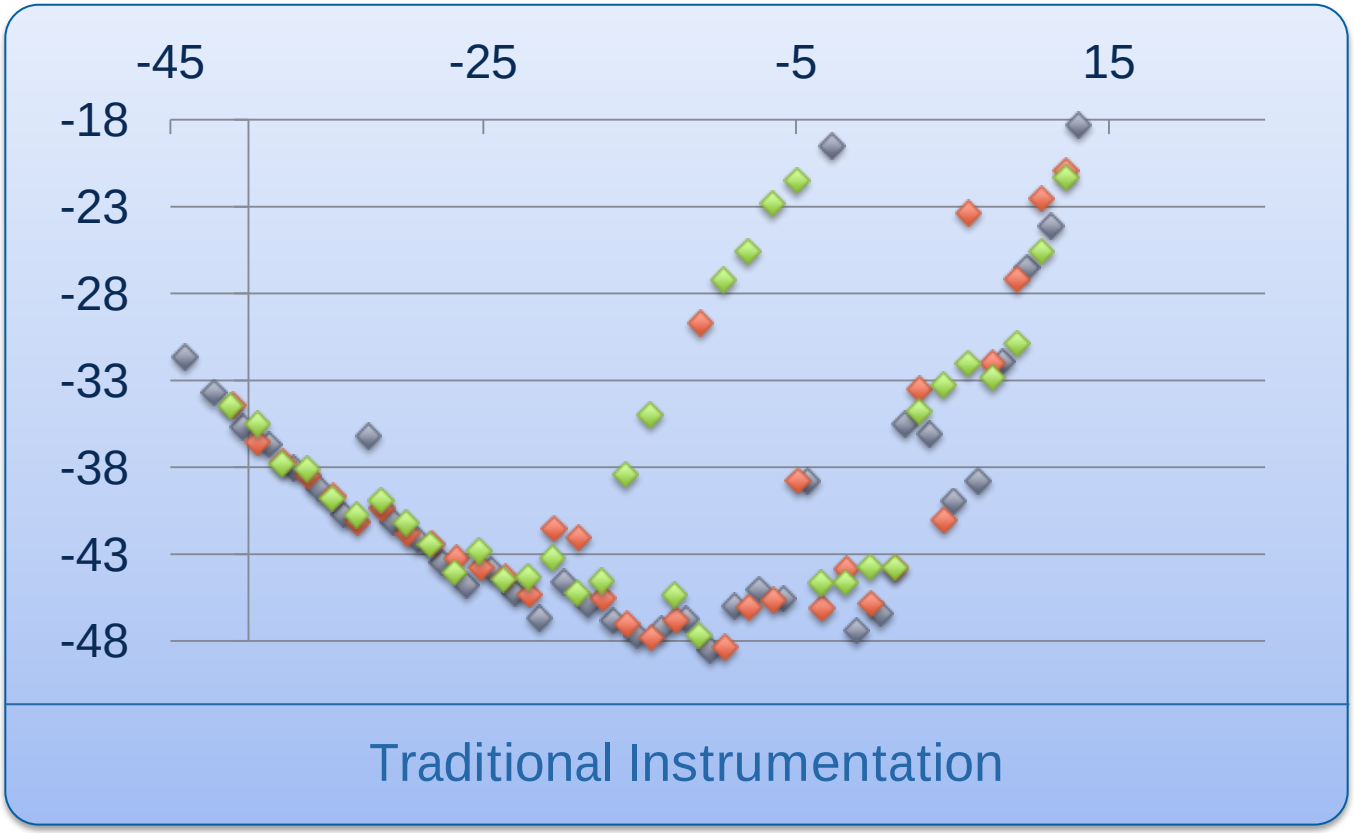
NATIONAL INSTRUMENTS

Qualcomm Atheros – Evolution of Instrumentation EVM (dB) versus Average Output Power Chain



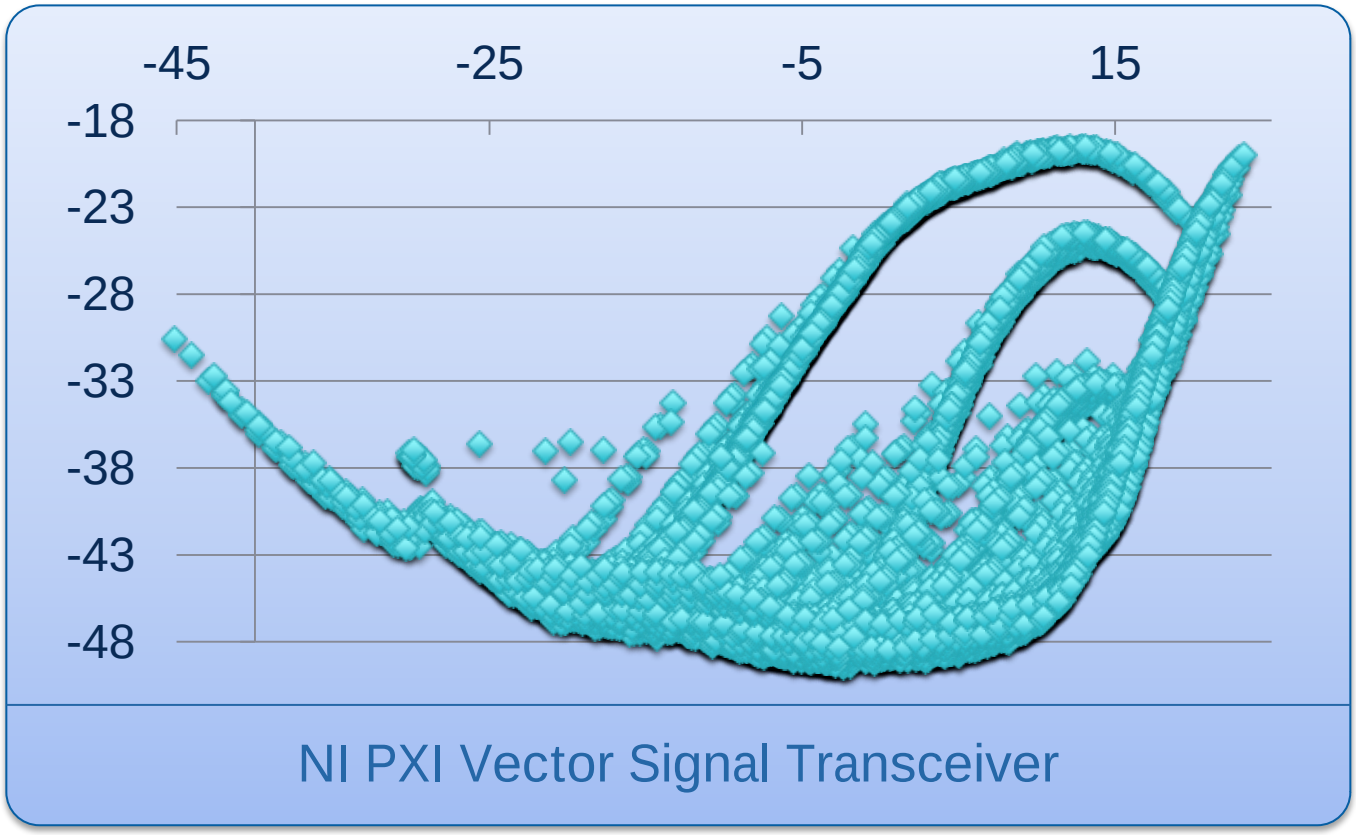
NATIONAL INSTRUMENTS

EVM (dB) versus Average Output Power Chain



NATIONAL INSTRUMENTS

EVM (dB) versus Average Output Power Chain

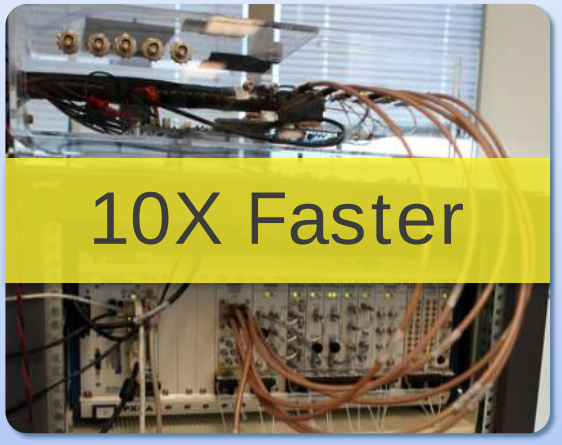


Qualcomm Atheros – Evolution of Instrumentation
EVM (dB) versus Average Output Power Chain

802.11a + b + g

Early 2000s
Traditional Rack and Stack

+ 802.11n



2007
NI PXI RF Instrumentation

+ 802.11ac

2012
NI Vector Signal Transceiver

NATIONAL INSTRUMENTS

Domain Experts from LEGO to Rocket Science

LEGO mindstorms education

NATIONAL INSTRUMENTS
LabVIEW

SPACEX


Dragon Altitude
1867.1
3191.56
29.5744
0.997393
26.2622
180.002
-6369.82
POWERED BY
NATIONAL INSTRUMENTS
LabVIEW

Enjoy your day!