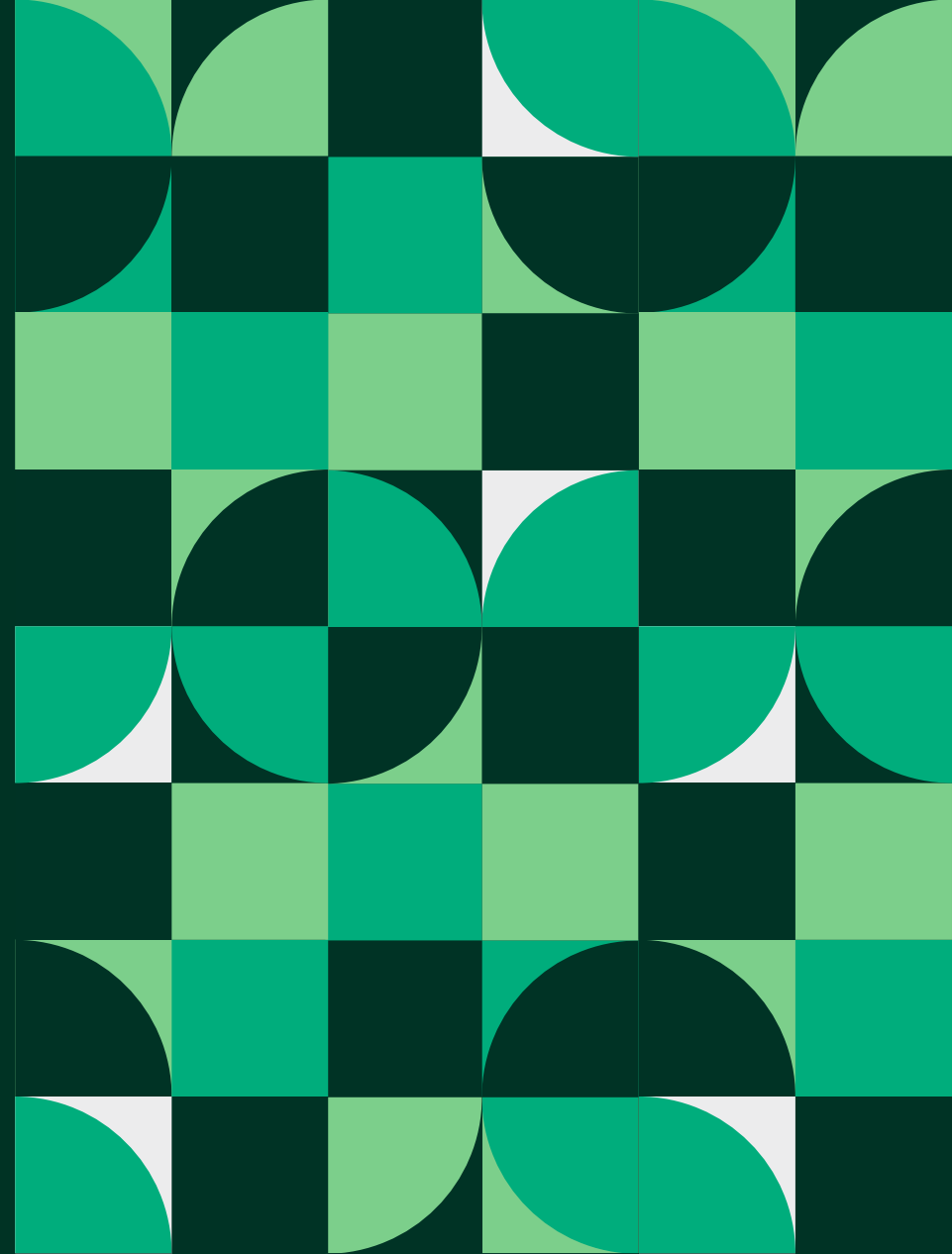# What's New with NI

Software + Hardware, and a SW roadmap

Agenda

Hardware

Highlights of newly released PXI hardware, and RF-specific hardware and software

Software

Highlights of newly released software, and updates and new features in NI software.

Software Roadmap

Product-specific roadmaps for key NI software pieces.

What's New in the PXI world?

PXIe-8822, PXIe-8842, PXIe-8862
- 11th Generation Intel Core Processors
- DDR4 Memory
- DisplayPort 1.4
- 2.5 Gb Ethernet
- Thunderbolt 4 (PXIe-8842/62 only)

Windows Updates
- Windows 11 shipping kits for PXIe-8822, PXIe-8842, PXIe-8862, PXIe-8881
- Windows 10 to Windows 11 Field Upgrade Kit for existing deployments (only supports PXIe-8822/42/62/81)
- Windows 10 LTSC shipping kit for PXIe-8862 (standard products use SAC)

PXI Ethernet Module
- 2x 25 Gb Ethernet RDMA module
- 1x 50 Gb Ethernet RDMA module
- Transfer high-bandwidth data from PXI to PCs/Servers for storage and processing

PXIe-8822/8842/8862

Features:

- Intel Core i3, i5, and i7 CPU's
  - PXIe-8822: i3, 4-core, 2.4 GHz (replaces PXIe-8821)
  - PXIe-8842: i5, 6-core, 2.6 GHz (replaces PXIe-8840DC)
  - PXIe-8862: i7, 8-core, 2.6 GHz (replaces (PXIe-8861)

- Expecting >20% performance improvement over previous products

- 4-16GB/s System BW to controller

- 8GB DDR4, max16/32GB DDR4

- 320/512GB NVMe SSD Storage

- TPM 2.0

- 0-55C Operational temperature

I/O (varies by product):

- Thunderbolt
- USB 2.0 and USB 3.0
- GPIB
- Serial
- Ethernet
- DP

Windows 11 Available for PXI Controllers

Future-proof your test system using the latest OS from Microsoft. Including more security features than any Microsoft OS to date, Windows 11 increases the protection of your data so you can feel confident in the security of your system.

✓ Windows 10 IoT to Windows 11 IoT Field Upgrade Kit
✓ PXIe 8822/8842/8862/8881 controllers shipped with Windows 11 IoT
✓ Windows 10 Long-Term Servicing Channel(LTSC) available for PXIe-8862

Windows 11 Features for Increased Security

- TPM 2.0
- Virtualization-based Security (VBS)
- Hypervisor-Protected Code Integrity (HVCI)
- The UEFI Secure Boot

What's Included: Windows 10 IoT to Windows 11 IoT Field Upgrade Kit

1. Windows 11 IoT license for activation
2. Certificate of Authenticity (COA) label to place on the controller
3. USB media which hosts our Windows 11 OS image with which to flash the controller

Precision DC Investment Areas

Higher Channel Density SMUs

NI recently released new high-channel-count SMUs, including 4-, 12-, & 24-channel SMU options, and we are now developing a new 8-channel 80 V SMU

New Measurement Capabilities

NI recently released its first LCR meters, and we are developing a new VCSEL I-V test instrument and an Ultra-Fast Pulsed IV solution for wafer parametric test

Higher Power Supplies & Electronic Loads

NI recently doubled the power of our 1-ch SMUs (20 -> 40 W) and added 300 W high-performance power supplies & e-loads

EMERSON | **ni**

PRODUCT RELEASE

PXIe-4190
LCR Meter and SMU

NI's new LCR & SMU ensures the speed, accuracy, usability, and repeatability needed to efficiently perform DC and impedance measurements in a variety of applications.

Key Features

LCR Meter with fF-class capacitance measurements

- Frequency: 40 Hz – 2 MHz
- DC bias: ± 40 V (AC + DC), ± 100 mA
- AC Stimulus: Up to 7.07 Vrms
- Basic Impedance Accuracy: 0.05%

SMU with fA-class current measurements

- ± 40 V, ± 100 mA
- 1 fA sensitivity with best-in-class noise performance

Connectivity

- Triaxial, Coaxial breakout cable options

Software

- NI-DCPower driver with added LCR measurement API
- Support for LabVIEW, C, C# .NET, Python

Chassis Support

- Supported by all 58W+ cooling chassis

PXIe-4162/3 10 pA SMUs

Great for Mixed Signal IC & µLED Test

Channel Count:

PXIe-4162: 12 + Guard

PXIe-4163: 24

Max Voltage: +/- 24 V

Voltage Resolution: 200 µV

Voltage Accuracy: 0.05% + 5 mV
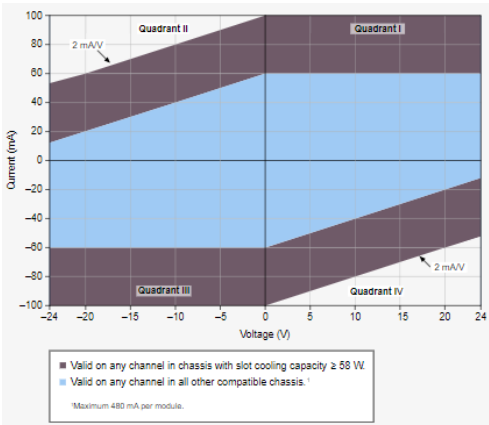
Max Current:

PXIe-4162: +/- 100 mA

PXIe-4163: +/- 50 mA

Current Resolution: 10 pA

Current Accuracy: 0.1% + 100 pA

Minimum Current Range: 1 uA

Released

NI PXIe-4162/3 10 pA SMUs

Current

Range	Resolution and Noise (0.1 Hz to 10 Hz, peak-to-peak, typical)	Accuracy (23 °C ± 5 °C) ± (% of Current + Offset) [5]	Tempco[6] ± (% of Current + Offset)/°C, 0 °C to 55 °C
		T$_{cal}$ ± 5 °C	
1 µA	10 pA	0.10% + 100 pA	0.004% + 20 pA
10 µA	100 pA	0.10% + 1 nA	0.004% + 20 pA
100 µA	1 nA	0.10% + 10 nA	0.004% + 100 pA
1 mA	10 nA	0.10% + 100 nA	0.004% + 1 nA
10 mA	100 nA	0.10% + 1 µA	0.004% + 10 nA
30 mA or 50 mA[7]	500 nA	0.10% + 5 µA	0.004% + 50 nA

High-Performance 300 W PXI Power Instruments

Primary Application Targets:

- Power electronics validation & test
- General semiconductor & electronics test

PXIe-4151 300 W Power Supply

- 1 channel, 2 PXI slots
- Up to 20 V and 25 A (e.g. 20 V, 15 A or 12 V, 25 A)

PXIe-4051 300 W E-load

- 1 channel, 3 PXI slots
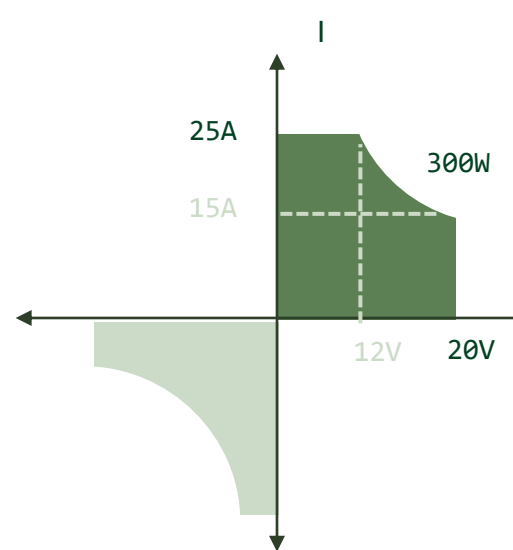- Up to 60 V and 40 A (e.g. 60 V, 5 A or 7.5 V, 40 A)

Common Features:

- 150 V CAT I isolation
- Simultaneous I & V measurements
- DMM-like measurement accuracy
- 1.8 MS/s sample rate & 100 kS/s update rate
- Transient response tuning (SourceAdapt)
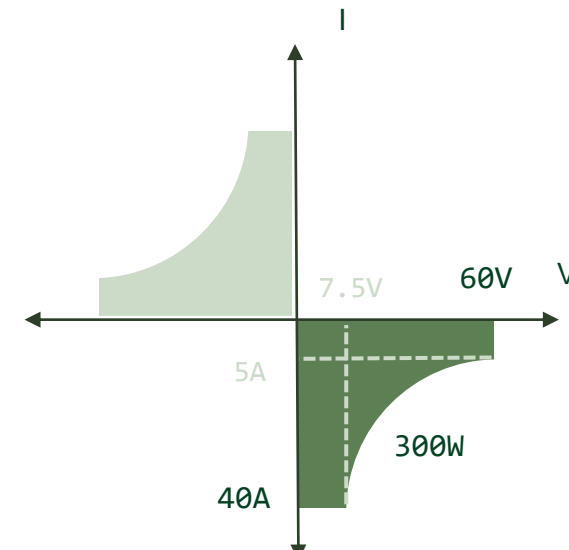- Advanced sequencing (per-step properties)

PXIe-4151

PXIe-4051

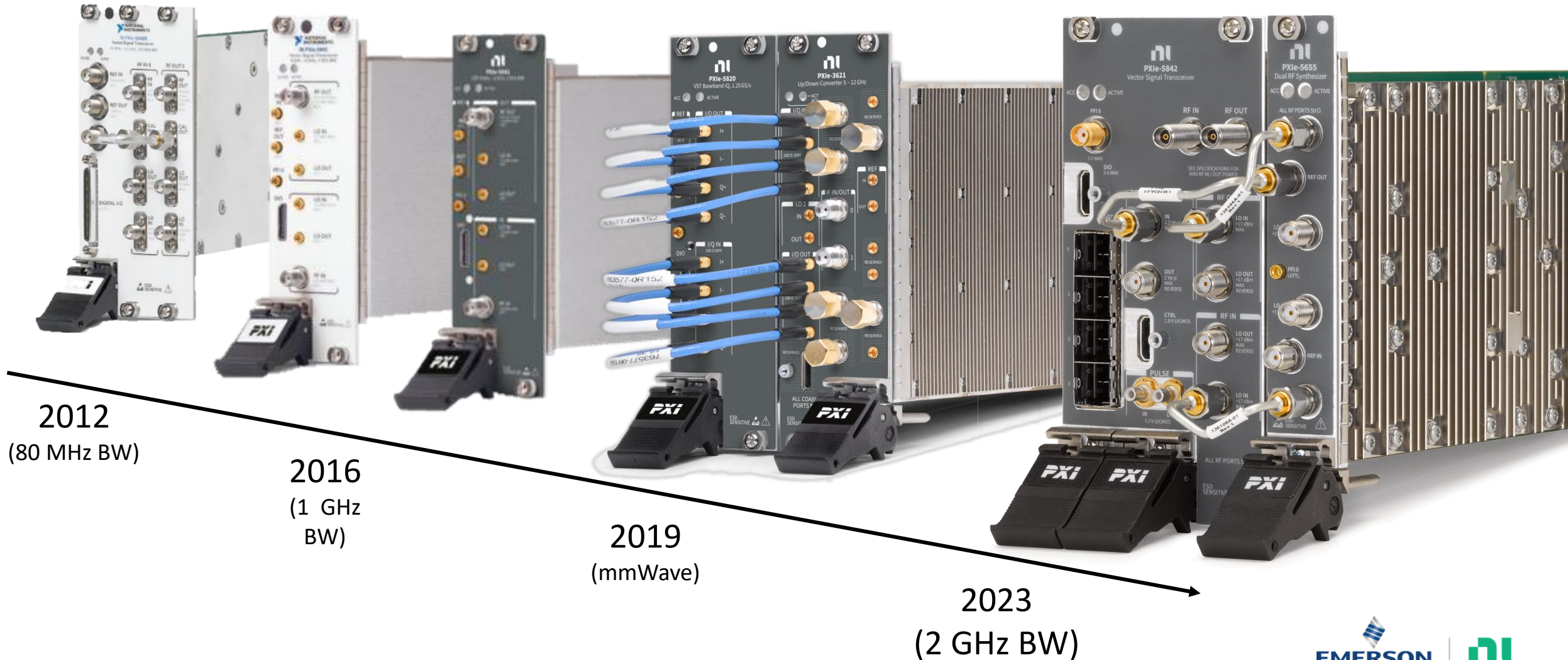*Floating – Can be physically inverted for quadrant III*

Floating – Can be physically inverted for quadrant II
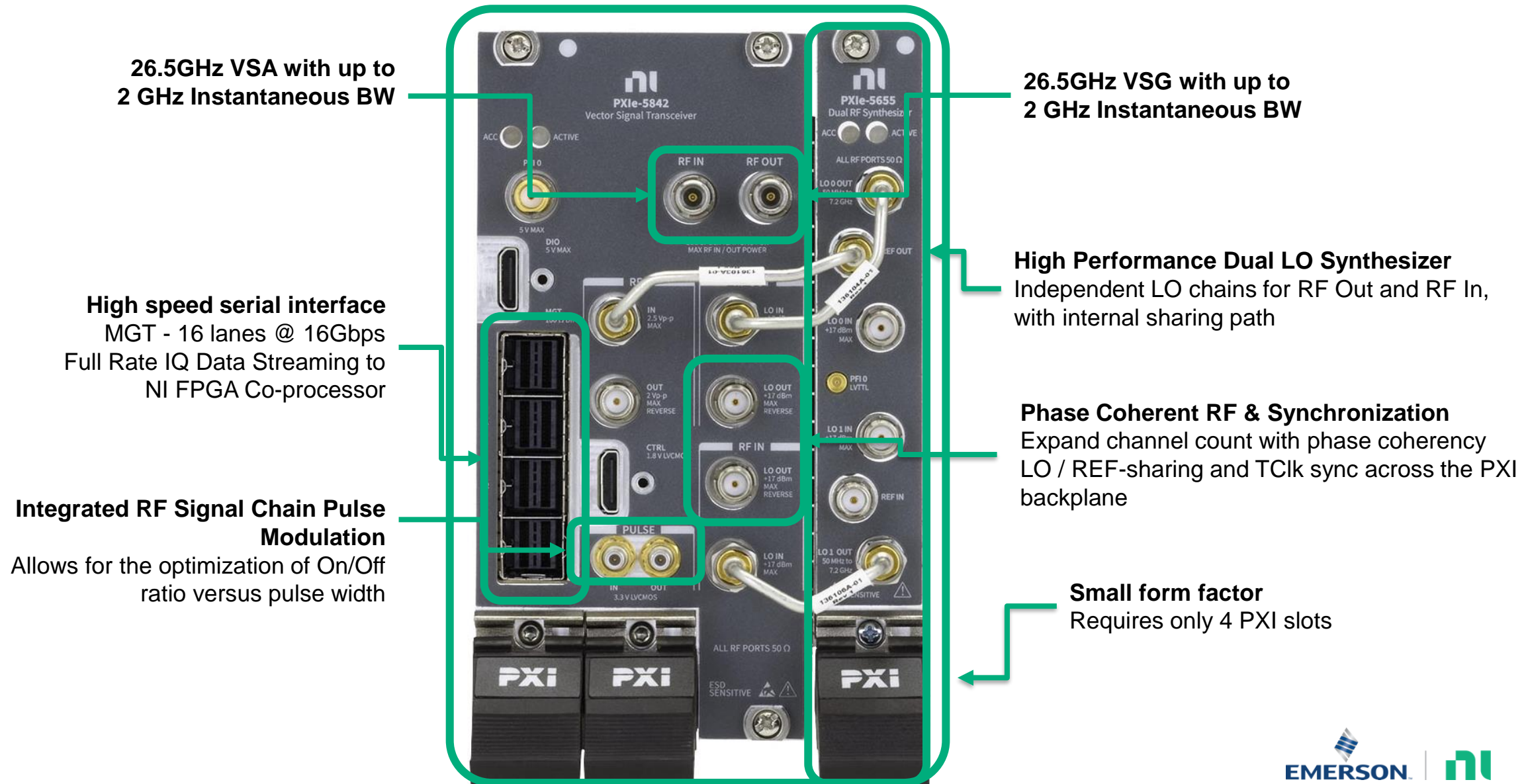
What's New in the PXI RF Platform?

What is a PXI Vector Signal Transceiver?

NI VST – Over a Decade of Ambitious Engineering

2012
(80 MHz BW)

2016
(1 GHz BW)

2019
(mmWave)

2023
(2 GHz BW)

PXIe-5842 | Most Versatile & Capable PXI VST

26.5GHz VSA with up to 2 GHz Instantaneous BW

High speed serial interface
MGT - 16 lanes @ 16Gbps
Full Rate IQ Data Streaming to NI FPGA Co-processor

Integrated RF Signal Chain Pulse Modulation
Allows for the optimization of On/Off ratio versus pulse width

26.5GHz VSG with up to 2 GHz Instantaneous BW

High Performance Dual LO Synthesizer
Independent LO chains for RF Out and RF In, with internal sharing path

Phase Coherent RF & Synchronization
Expand channel count with phase coherency LO / REF-sharing and TClk sync across the PXI backplane

Small form factor
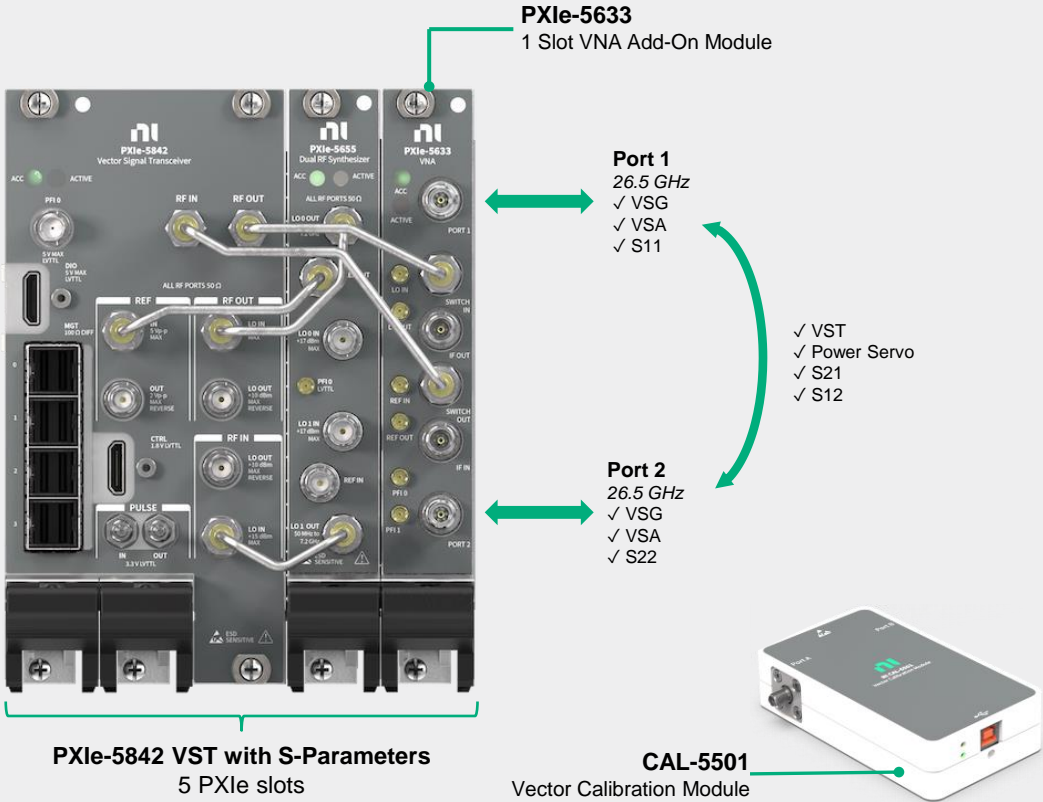Requires only 4 PXI slots

EMERSON | ni

PXIe-5633 Vector Network Analyzer

PXIe-5633 Key Features

- 1 slot VNA add-on module to PXIe-5842 VST

- 2 bidirectional RF Ports covering up to 26.5 GHz in VSG, VSA or VNA mode

- Combined VST+VNA simplifies large and small signal testing to one test insertion

- Software support with RFmx VNA and InstrumentStudio

- Vector Calibration Module for Automated SOLR calibration

Parameter	Specification*
S-Parameters (2 ports)	
Frequency Range	50 MHz– 26.5 GHz
Dynamic Range	>134 dB (300 MHz – 22 GHz)
Source Power	15 dBm (12 GHz)
Directivity (Raw / Corrected)	> 13 dB, > 41 dB (12 GHz)
Measurement speed	< 100 µs per point

Parameter	Specification*
Modulated (on either port)	
Frequency Range	30 MHz – 26.5 GHz
Bandwidth	Up to 2 GHz
RF In / Out Abs. Accuracy	±0.45 dB / ±0.7 dB (12 GHz, typ)
Max Unleveled TX Power	+22 dBm (12 GHz)
802.11ax EVM	Better than -53 dB

*Specifications subject to change

PXIe-5633
1 Slot VNA Add-On Module

Port 1
26.5 GHz
✓ VSG
✓ VSA
✓ S11

✓ VST
✓ Power Servo
✓ S21
✓ S12

Port 2
26.5 GHz
✓ VSG
✓ VSA
✓ S22

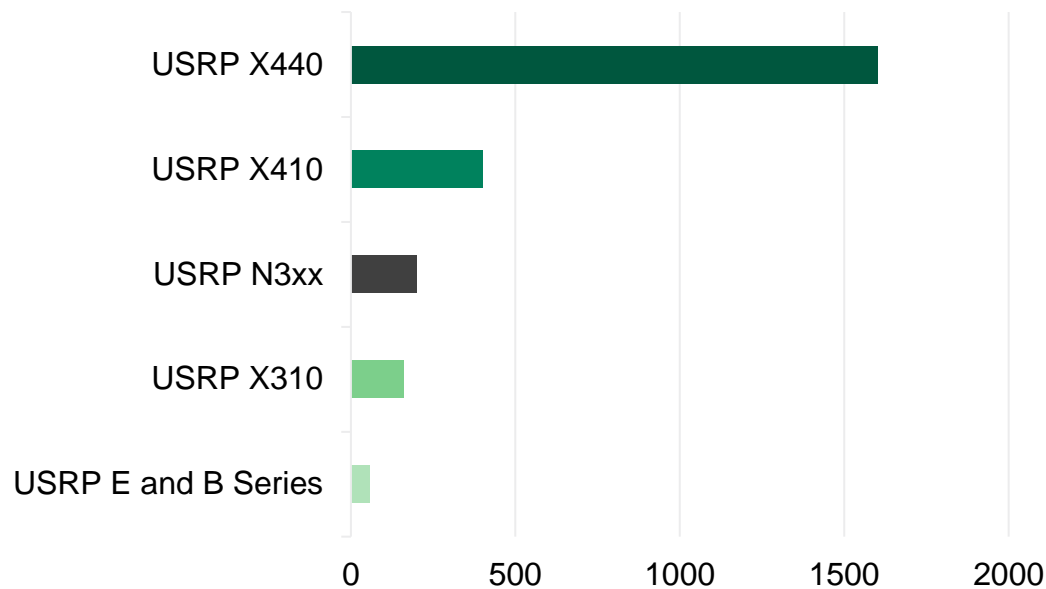**PXIe-5842 VST with S-Parameters**
5 PXIe slots

CAL-5501
Vector Calibration Module

What's New in the USRP Platform?

NI Ettus USRP X440 | Wide Instantaneous Bandwidth and High Channel Density

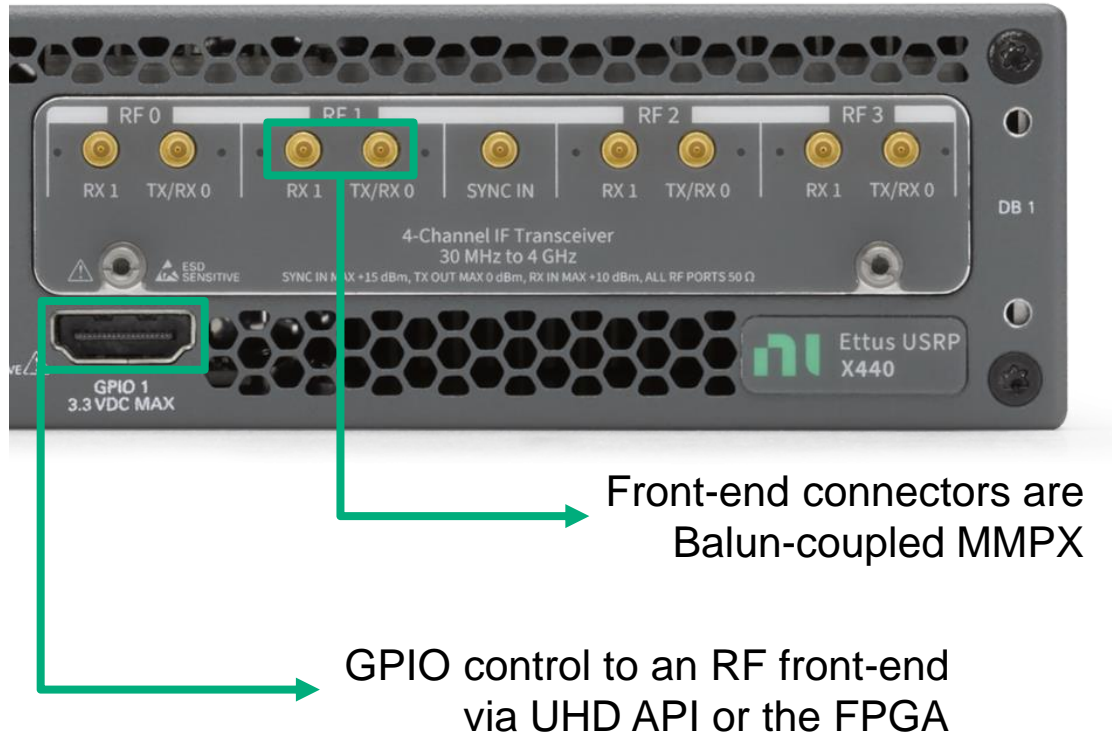## Instantaneous Bandwidth of NI Ettus USRP Models (MHz)

Hardware Specifications of the USRP X440:

- IF Range: 30 MHz – 4 GHz*
- 1.6 GHz* of instantaneous bandwidth (IBW)
- Up to 3.2 GHz of IBW in aggregate
- 8 Tx / 8 Rx channels (or 8 TRx)

Benefits of wide IBW & high channel count instrumentation:

- Improved scan rate in spectrum monitoring applications
- Exploration of broad frequency ranges and modulation schemes for research and prototyping
- Enhanced range and resolution capabilities for radar applications

* IF-Bandwidth combination limitations apply due to Nyquist zones and gaps

NI Ettus USRP X440 | Direct Sampling Architecture

Front-end connectors are Balun-coupled MMPX

GPIO control to an RF front-end via UHD API or the FPGA

Hardware Specifications of the USRP X440:

- CPU: Built in quad-core ARM processor
- FPGA: Xilinx Zynq UltraScale+ RFSoC ZU28DR-2
- GPIO: Two 12-lane HDMI ports with SPI protocol support
- Direct Sampling: Flexible up to 4 GSps

Benefits of a direct sampling architecture:

- Direct access to the ADCs and DACs on the RFSoC
- Support versatile modulation schemes and signal types for diverse communication and radar systems
- Improved signal fidelity for spectrum monitoring applications

EMERSON | ni

What's New in the RF Software?

Automate Signal Generation and Measurement

GENERATE
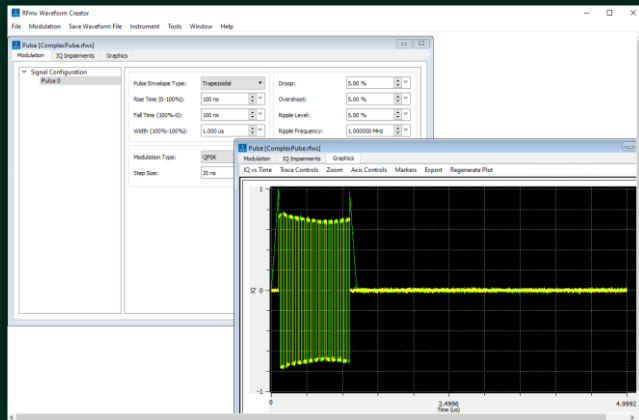
RFmx
Waveform Creator

MEASURE

RFmx
Instrument Studio

AUTOMATE
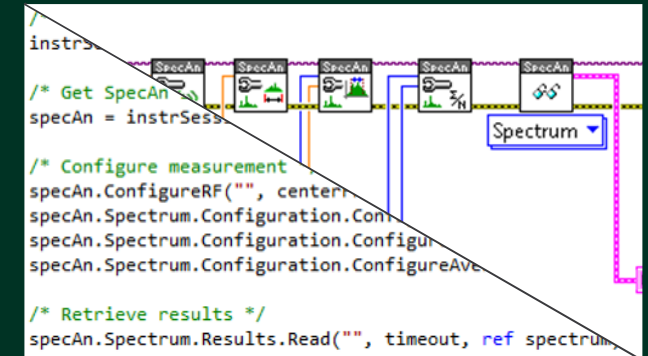
RFSG / RFmx API

# RFmx 2024 Q2

RFmx 2024 Q2 adds additional measurement and generation capabilities for Bluetooth Channel Sounding, new bands for 5G NR for improved NTN coverage, and various quality-of-life enhancements such as new markers in RFmx SpecAn and simplified installation for customers using the WLAN MIMO soft front panel. RFmx 2024 Q2 also continues to add new features to recently released RFmx Pulse and RFmx VNA personalities, such as support for time sidelobe measurements in RFmx Pulse and pulsed S-parameters in RFmx VNA.

Key Features:
- Bluetooth Channel Sounding Enhancements
- New bands supports for RFmx NR
- New markers in RFmx SpecAn
- Simplified installation when using the WLAN MIMO SFP
- RFmx Pulse supports time sidelobe measurements
- RFmx VNA supports pulsed S-parameters

EMERSON | ni
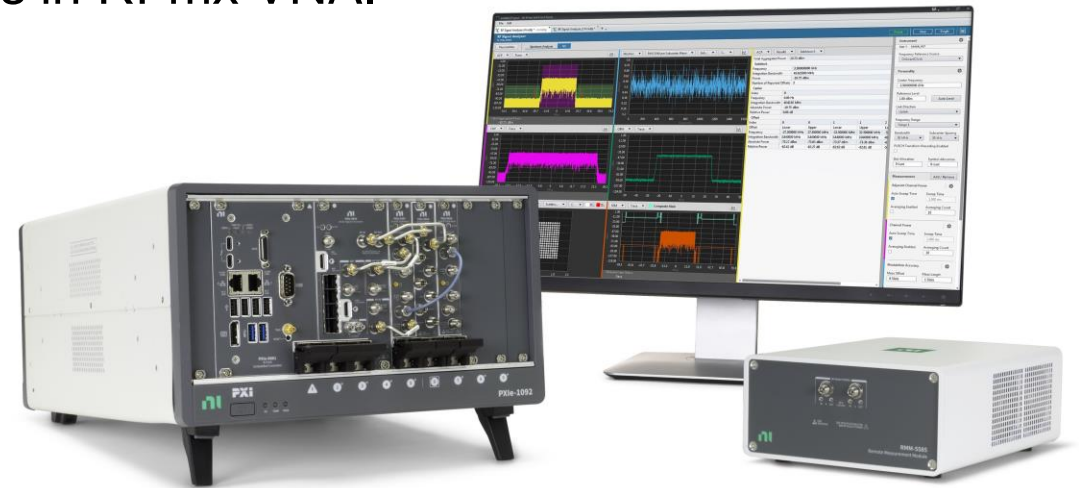
# NI Software Promise: A Comprehensive, Connected Approach

JOE & LUIS
LabVIEW Developers,
EI Electronics, Ireland.

1. **Develop more quickly** in an environment tailored to the specific workflow of the test engineer

2. **Spend time where it matters most** with higher level starting points for most measurement tasks

3. **Get unbound flexibility** to meet new and evolving requirements with an ecosystem open to any HW & SW

4. **Share and reuse IP** with a connected suite of software that spans the product development lifecycle

5. **Deliver insight across the organization** with trusted data sharing and visualization.

Evolving NI Test Software

Enable Test & Measurement Professionals to Be More Efficient and Deliver Higher Quality Products
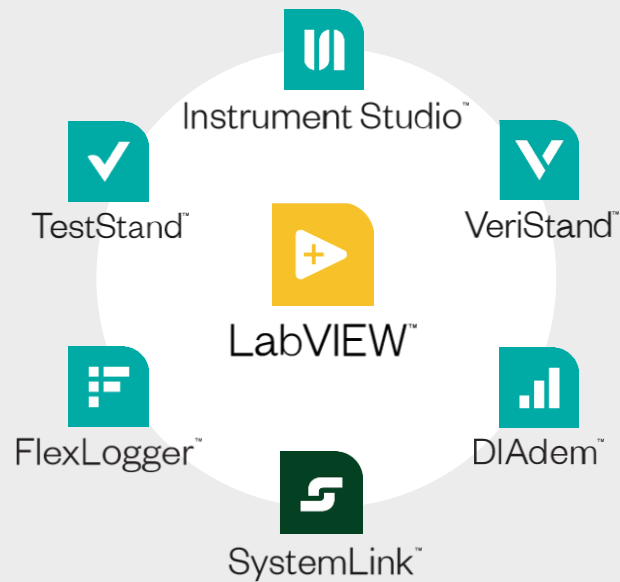
1 **Strengthen Software** | Deliver **new capabilities in NI Software** to meet the evolving requirements of test professionals
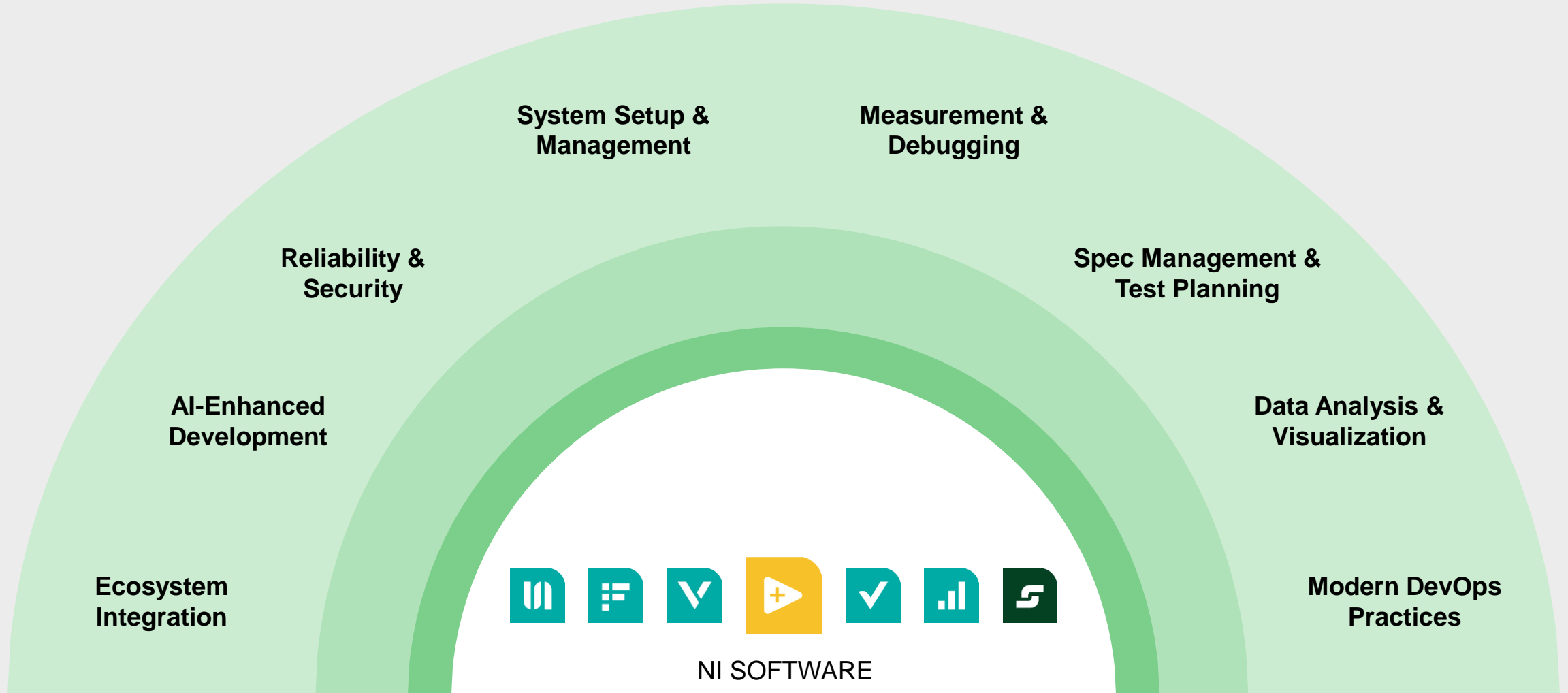
2 **Connect Workflows** | Bridge seamlessly between **tools**, **tasks**, and **teams** to accelerate the productivity of test professionals

3 **Build Community** | Engage and **collaborate with the community** to empower their continued success
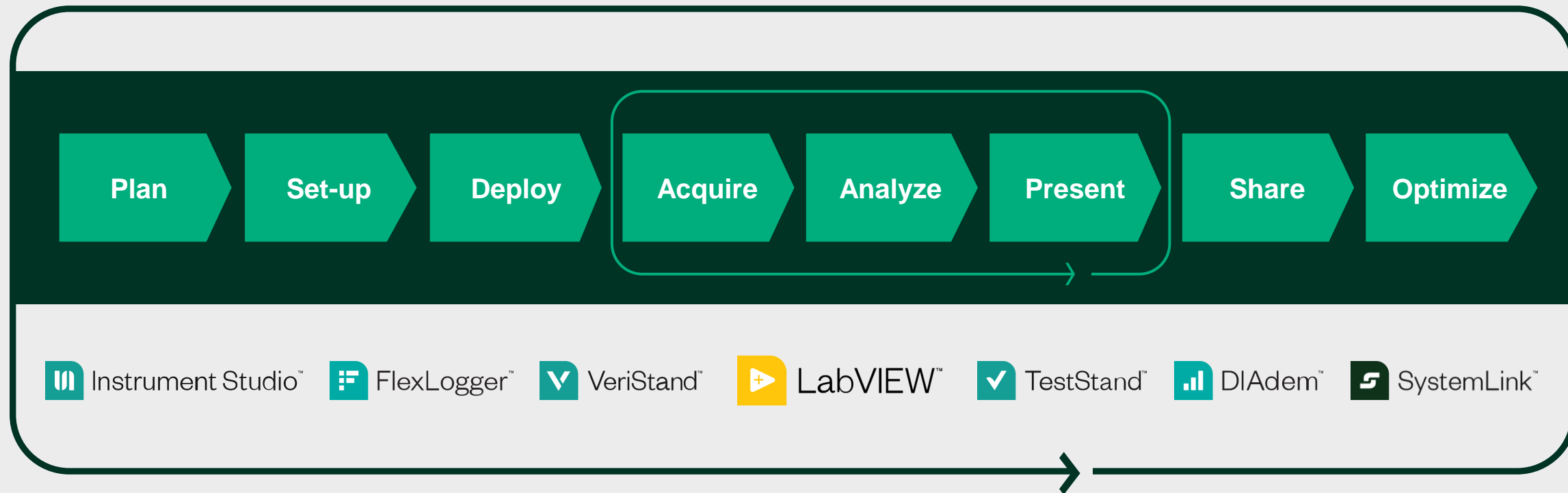
Connect **Workflows**

Bridge seamlessly between **tools, tasks,** and **teams** to accelerate the productivity of test professionals across their workflows

| Plan | Set-up | Deploy | Acquire | Analyze | Present | Share | Optimize |

Instrument Studio™ FlexLogger™ VeriStand™ LabVIEW™ TestStand™ DIAdem™ SystemLink™

LabVIEW+ enables **test automation workflows** by bringing together a comprehensive and connected suite of software, featuring **LabVIEW**

SystemLink enables **test operations workflows**, streamlining lab and line management, and amplifying product insights across the organization

EMERSON | ni

Build **Community**

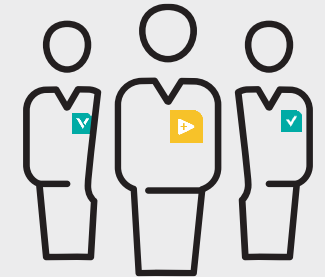Engage and **collaborate with the community** to empower their continued success

|		
Open-Source Software	**Product Roadmaps**	**Training & Education**
Events, Forums & User Groups	**Partner Collaboration**	**Academic Engagement**

EMERSON

What's New in LabVIEW 2024 Q1

- Toolkits and modules
- Managing dependencies
- New VI functionality

EMERSON | ni

Summary of New Features

- Toolkits are now version-independent add-ons

- Report Generation Toolkit, Database Connectivity Toolkit, Advance Signal Processing Toolkit and others now included in LabVIEW Professional

- Added support for 64-bit SQL to the LabVIEW Datalogging and Supervisory Control Module, and end of support for 32-bit from Microsoft.

- Managing project dependencies made easier now with JKI Dragon- included with LabVIEW at **no additional cost**

- New VI functionality including now accepting a VI Reference type as input to the Open VI Reference function, and allowing Path Control Browse for Path Methods
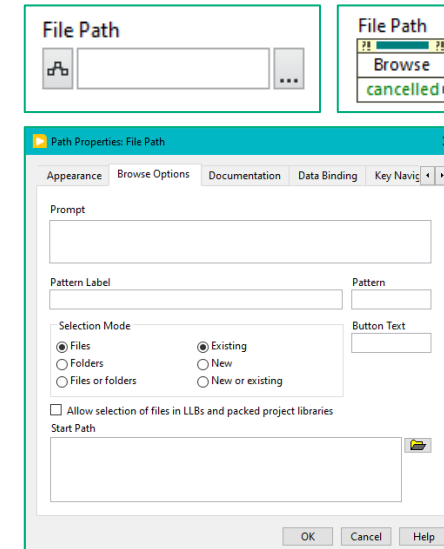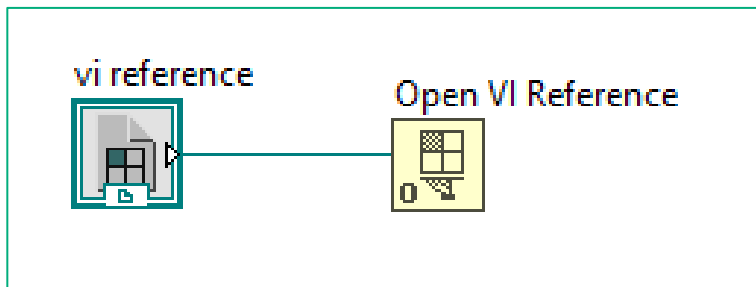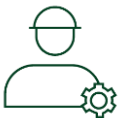
Toolkits as Version-Independent Add-ons

Addresses long-standing pain points around upgrading:

I need to update all my toolkits and drivers since I updated LabVIEW versions

It takes time and effort to install new drivers even when I don't have a change in my hardware set-up

Revalidation efforts for existing applications take longer when toolkits and drivers are updated

- Drivers became independent of LabVIEW versions in 2022 and 2023
- Many toolkits now also install in a way that's not tied to a specific version of LabVIEW
- Allows you to upgrade to newer LabVIEW versions without requiring you to upgrade your drivers and toolkits as well

EMERSON | nl

Managing Dependencies

Managing Project Dependencies

- JKI Dragon is included with LabVIEW at **no additional cost**

- Manage your LabVIEW project's dependencies:

  – **View** package dependencies

  – **Install** package dependencies

  – **Detect** package dependencies automatically

  – **Configure** package dependencies manually

- Supports both **VI Package Manager** (VIPM) and **NI Package Manager** (NIPM)

Dragon

Complete your LabVIEW project faster!

LabVIEW 2024 Q3

- Version-independent collaboration

- Compare VIs

- Support .NET 8.0

- Software Bill of Materials (SBOM)

Summary of Features in 2024 Q3

- Everyone on your team can choose when to upgrade LabVIEW independently with the upcoming capabilities for **version-independent collaboration.**

- Interactively compare VIs (a.k.a "Diff") using **Tools>Compare** menu items

- LabVIEW 2024 Q3 will support **.NET 8.0** for Constructor, Invoke, and Property Nodes, and int, char, Boolean, and string data types.
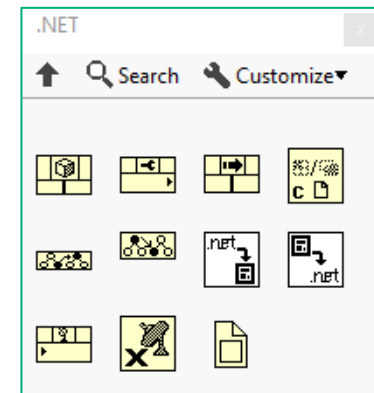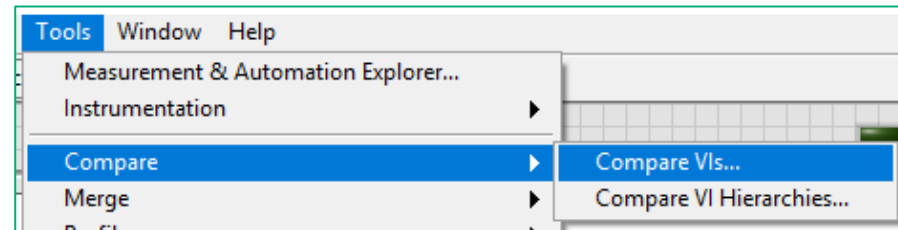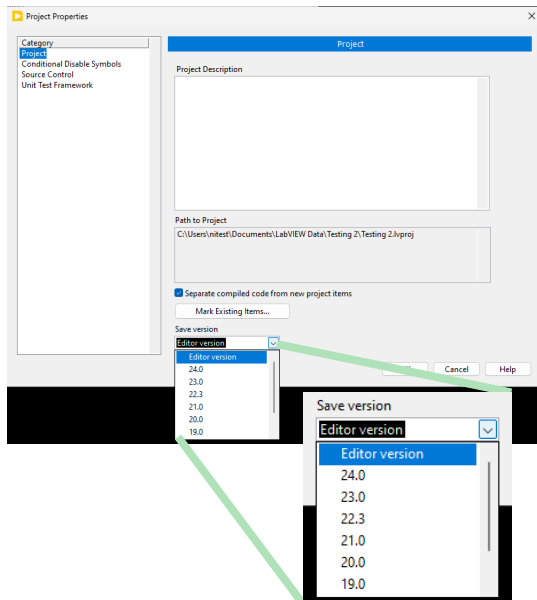
Version-Independent Collaboration

- Take advantage of the **latest LabVIEW editor features** without upgrading the save version of your project!

- *Benefits*

  - Everyone on your team can **choose when to upgrade** LabVIEW independently

  - You can contribute to **open-source projects** more easily

- Different from Save-for-Previous:

  - Saves in-place

  - Does not "lose" code

    - Saves in a later version instead of replacing code with images

  - Provides editor feedback when using newer VI panel or diagram objects
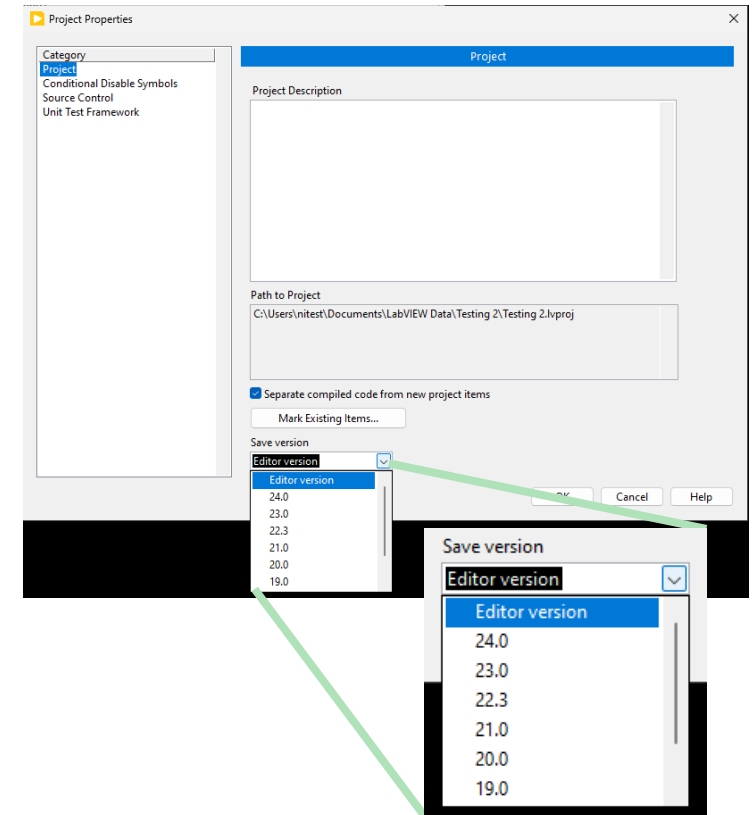
Compare VIs (a.k.a. "Diff")

- In LabVIEW 2022 Q3 and later, *Compare VIs* is not limited to the Professional Edition of LabVIEW

- Interactively compare VIs using **Tools>Compare** menu items
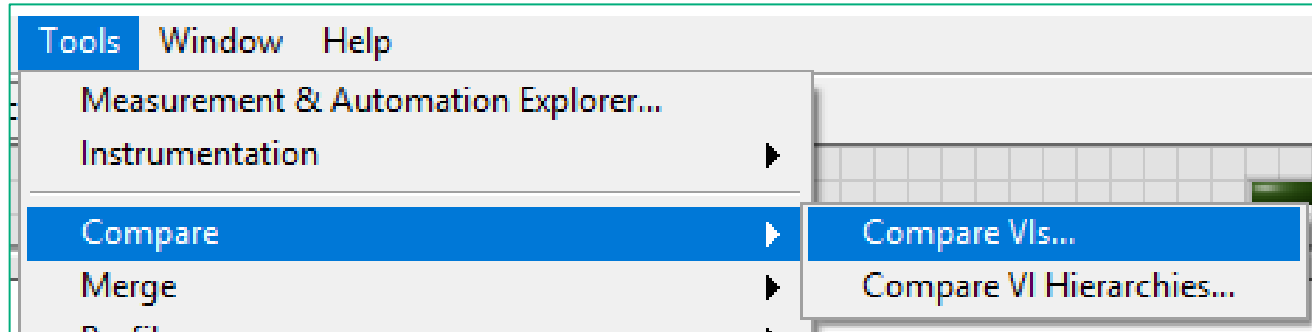

- Use the helper app **LVCompare.exe** as the diff tool for your source control system

```
lvcompare.exe <path to VI 1> <path to VI 2>
[-lvpath <path to LabVIEW>] [-noattr][-nofp][-nofppos]
[-nobd][-nobdcosm][-nobdpos]
```

Support .NET 8.0

Preview Feature: .NET 8.0

- LabVIEW will continue to support .NET Framework

- LabVIEW 2024 Q3 will support .NET 8.0 for the following:

  – Constructor Node

  – Invoke Node

  – Property Node

- Supported data types:

  – int

  – char

  – boolean

  – string
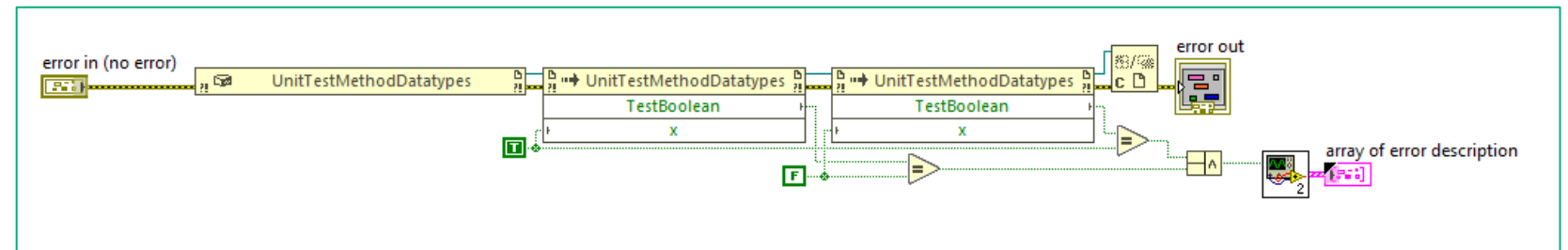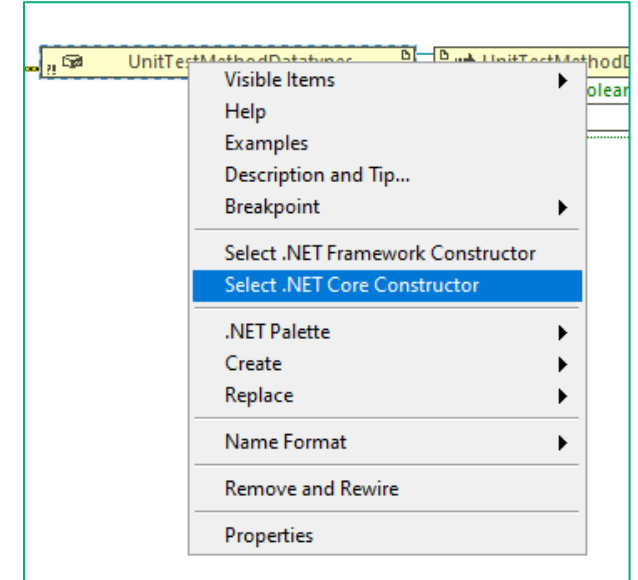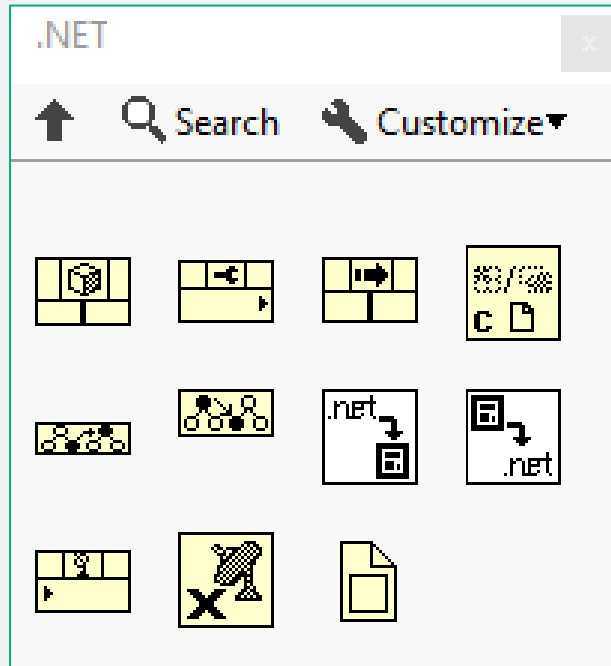
Future .NET 8.0 Work

- Built applications
- Additional data types
- Register Event Callback
- Configuring a specific version of .NET
- Front panel controls
- Linux
- Building .NET Core Interop Assemblies
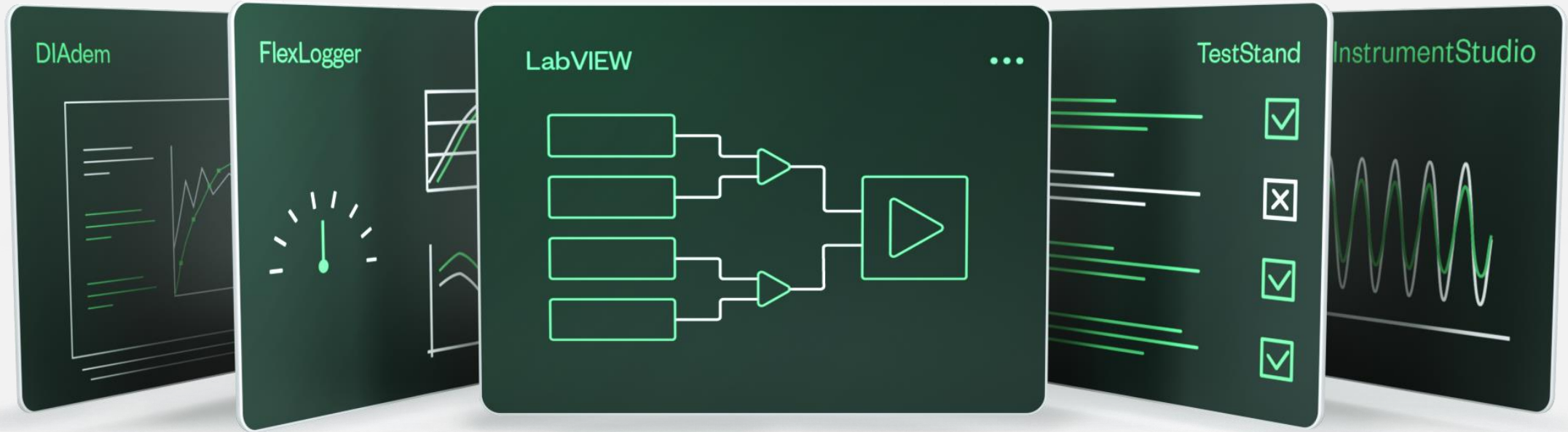
The NI LabVIEW+ Suite

LabVIEW *Plus* Application Specific NI Software

LabVIEW + TestStand DIAdem FlexLogger InstrumentStudio G Web Development SW

Instrument Studio™

Free Companion Software for PXI Instruments
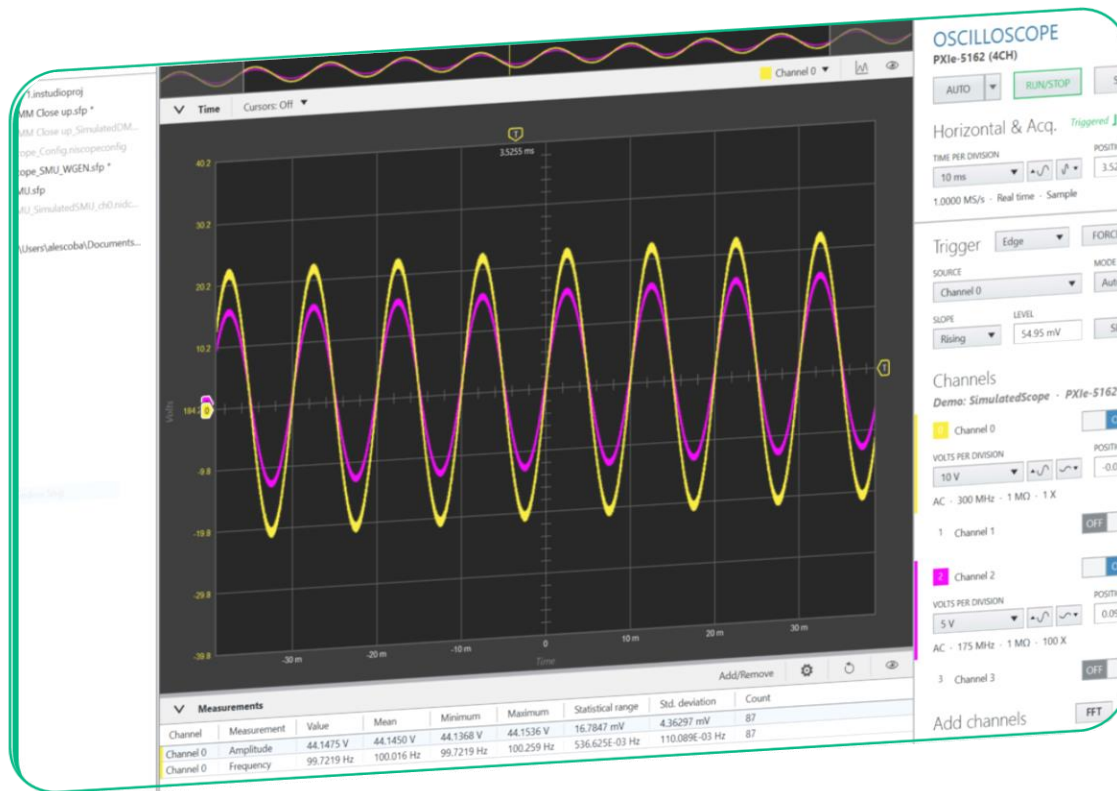
Visualize and Control PXI Instruments

Interact with Multiple Instruments

Monitor and Debug Applications

Electronics Test | Validation Workflow

| Setup Test System | → | Develop Measurement | → | Interactive Validation | → | Configure Automation | → | Automated Validation |
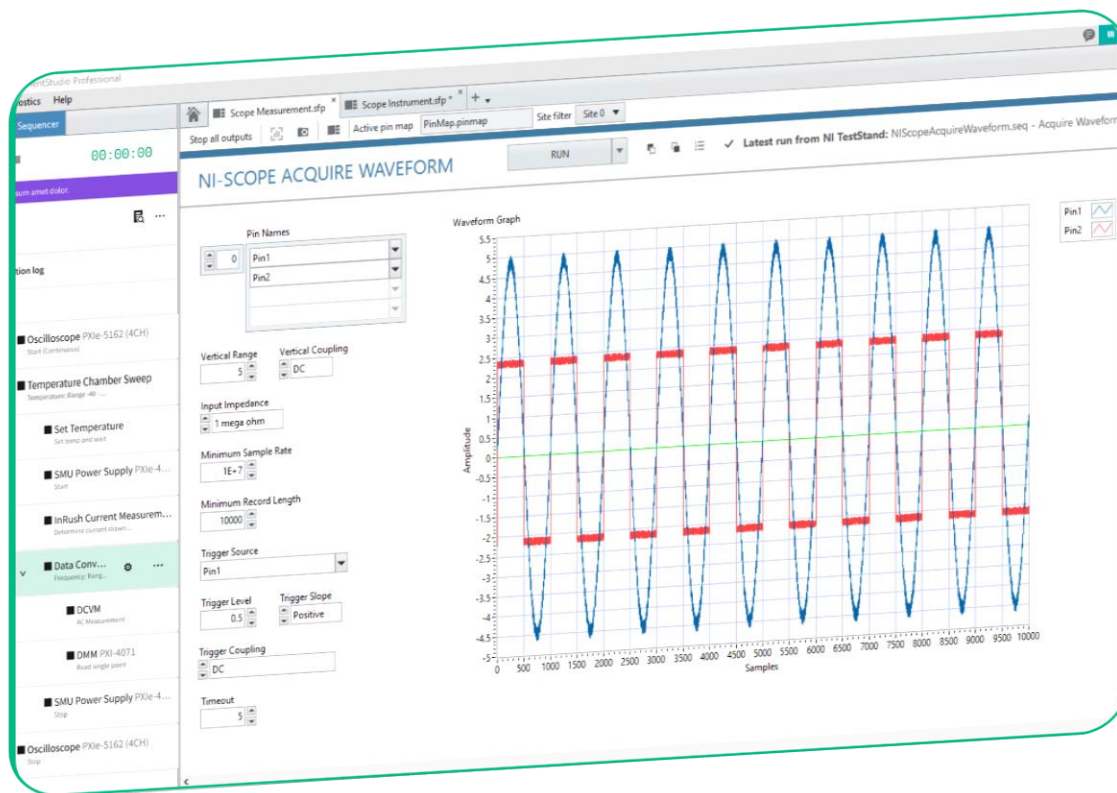
Challenges

- DUT bring-up and interactive measurement workflows can be disconnected from test automation and debugging
- Mixing and matching hardware from different vendors is complex
- Variety of different programming languages and open-source technologies
- Difficult to reuse IP across teams or projects

EMERSON | ni

Electronics Test | Validation Workflow

| Setup Test System | → | Develop Measurement | → | Interactive Validation | → | Configure Automation | → | Automated Validation |

Benefits of Standardized Workflow

- Reduce Time to First Measurements
- Reduce Time Spent Developing Duplicate Measurement IP
- Reuse Code Across Projects, Teams, and Sites

What's New in TestStand

Hot reloading

- Make changes to your source code while debugging

- Continue to execute your test sequence without rebuilding/restarting test execution

- C#, C++ hot reloading with TestStand & Visual Studio 2022

- Python hot reloading with Visual Studio Code

Python virtual environment using venv

Virtual environments help isolate packages & dependencies of python projects

- Venv is a built-in python package to create Virtual environment

- Call a python code in a virtual environment from TestStand

P Python Adapter Configuration   ✕

Python Settings

Interpreter to use	Global ▾
☑ Display console for interpreter sessions	
Virtual environment (optional)	demo_venv ▾ 📁
☐ Reload modified modules before execution	
☐ Enable debugging	
☑ Enable just my code	
Executable Path	▾ 📁
Version	3.10 ▾

*Required

.NET core code module support

- We acknowledge the need for a text-based language more performant than Python

- .NET core:

  - Performant & cross-platform

  - Supports newer versions of C#

  - Has hot-reloading capabilities while debugging in Visual Studio

  - Availability of many 3rd party IP to leverage

- .NET core support in TestStand

  - .NET adapter in TestStand would now support .NET 8

  - Call and debug .NET 8 assemblies from teststand

  - Many .NET framework assemblies can be called too*

  - A step towards Linux support

Software for Professional Test Workflows

Electronics Validation Test

Characterizing electronic prototypes to ensure quality and performance

Set-up & Configure	Measure & Automate	Analyze & Share

Electronics Production Test

Functional test ensuring manufactured products meet specifications

Set-up & Configure	Measure & Automate	Deploy & Maintain

Electromechanical Validation Test

Characterizing physical prototypes to ensure quality and performance

Build & Customize	Configure	Analyze & Share

Embedded Software Test

Testing deployed software for defects across wide parameter variations

Configure & Map	Test & Bring Up	Automate & Execute

EMERSON | ni

LabVIEW™ Roadmap

Short-term product focus

Improve experience for users looking to work as a team to build larger applications

Improve support for 3rd party tools ensuring flexibility

Long-term product focus

Enhance integration with other NI tools for seamless data exchange and enhanced functionality

Uplevel security features on all data linkages-especially in military and aerospace applications

Capability	Shipped	2024	2025+
Project Management			
Improvements to the speed of building applications	2023		
Driver versions independent from LabVIEW	2023		
Improved LabVIEW Project Dependency Management	2024		
Maintaining projects in older versions		✓	
Enhancements in diff and merge functionalities		✓	✓
Ability to upgrade legacy Windows installers to NIPM packages			✓
CI/CD Workflows - integration into Git source code management			✓
UI Improvements			
Editor improvements: Diagram Zoom, Double click to finish wire, Quick change list	2023		
Debug improvements: Execution highlighting	2023		
Improvements in the areas of breakpoints, probes, and run-time error reporting			✓
Interoperability			
Ease of calling, editing and debugging MATLAB scripts	2022		
Python 3.10 with Python class support	2022		
Call Python code running in virtual environment	2023		
Support for calling .NET Core Assemblies (.NET 8)		✓	✓
System Support			
Data Communication additions (IPv6 support)			✓
General Software Security			
Updating 3rd party dependencies		✓	
Internal improvements in response to increased global security standards		✓	

Roadmap Date: 2024 Q2 | Next Release: 2024 Q3 | Release Cadence: Q1 and Q3 | Roadmap is a snapshot and can change based on a variety of factors, including development execution and customer input.

EMERSON | ni

TestStand™ Roadmap

Short-term product focus

Provide better interoperability with modern and performant programming languages and frameworks

Improve usability and efficiency for engineers to quickly develop scalable and maintainable test systems

Long-term product focus

Enable test deployment and development on modern, secure and cross-platform environment

Improve TestStand on-boarding experience

Capability	Shipped	2024	2025+
Interoperability			
Support Python virtual environments		✓	
Support for calling .NET Core assemblies (.NET 8)		✓	✓
Support Python Anaconda distribution			✓
Remote Procedure Call steps			✓
Native Python API for TestStand			✓
Modern, secure & cross-platform environment			
gRPC API for remote control & execution of test sequence	Early Access on GitHub		
Modern Operator Interface		✓	✓
Deploying Test sequences on Linux Desktop			✓
Development of Test sequences on Linux Desktop			✓
Improve test development efficiency			
Hot reloading of C# & C++ modules in Visual Studio 2022	2023		
Integration with SystemLink Specification Compliance Manager	2023		
Filter variables & their properties	2023		
Integration with Git source code management			✓
Easily create test sequence variants for Device Under Test (DUT)			✓
Performance			
Remove dependency on LabVIEW ADE version for source VIs and support better build times for steps using source-only VIs	2023		
Improved performance of Python enumerations	2023		

Roadmap Date: 2024 Q2 | Next Release: 2024 Q4 | Release Cadence: Annual | Roadmap is a snapshot and can change based on a variety of factors, including development execution and customer input.

EMERSON | ni

Instrument Studio™ **Roadmap**

Short-term product focus

Cover broad range of electronics test validation and production debug operations

Allow basic automation of interactive operations

Allow the creation and sharing of custom panels

Deliver more out-of-the-box panel functionality

Long-term product focus

Support more advanced testing topologies

Increase data connectivity

Improve path to fully optimized production test

Streamline and improve customization capabilities

	Capability	Shipped	2024	2025+
	Panels			
	RFmx S-Parameter measurement workflows	2023 Q4		
	Support for electronic loads	2023 Q4		
Pro	Measurement-centric panels		✓	
Pro	Support for non-NI hardware		✓	
	Support for additional NI hardware			✓
	Workflow			
	Measurement organization and search	2023 Q4		
	Improved channel alias and pin map options		✓	✓
	Improved system configuration			✓
	Additional data logging options			✓
Pro	Additional remote-control support			✓
Pro	Additional parallelism support			✓
	Automation			
Pro	In-app sequencing and sweeping		✓	
Pro	Streamlined sequence creation			✓
	TestStand Semiconductor Module support			✓
	Extensibility			
	LabVIEW VISA gRPC driver APIs	2024 Q1		
	Simplified session management	2024 Q1		
Pro	Publish and share custom measurements		✓	
Pro	Additional datatypes and controls			✓
	Full C# support for custom measurements			✓

Roadmap Date: 2024 Q2	Next Release: 2024 Q3	Release Cadence: Quarterly	Roadmap is a snapshot and can change based on a variety of factors, including development execution and customer input.

EMERSON | ni

FlexLogger™ Roadmap

Short-term product focus

Provide companion software to new and existing DAQ users

Leverage the power of LabVIEW and TestStand with the ease of FlexLogger for automated validation

Improve the experience of developing new custom measurements and lightweight control logic

Long-term product focus

Streamline the development, management, and deployment of custom measurement and lightweight control logic

Simplify automated validation with built-in sequencing, alarms, events, logging triggers, and more

Expand and enhance core measurement configuration and monitoring capabilities

Capability	Shipped	2024	2025+
Interoperability			
Support for USB-6008/6009 multi-function DAQ devices	2023 Q4		
Simulate a DAQ device from FlexLogger when no hardware is connected	2023 Q4		
Support for new USB multi-function DAQ devices		✓	
Simplify development and debugging of measurement and control plugins		✓	✓
Automation			
Automate validation tests using FlexLogger with LabVIEW or TestStand		✓	
Automatically or manually change the logging rate during a test		✓	✓
Automate lifecycle and durability tests without leaving FlexLogger			✓
Improved alarms, events, and notifications			✓
Workflow Enhancements			
Improve project load performance when using formulas	2023 Q4		
FlexLogger DAQ companion software: Fast, out-of-the-box software for logging and monitoring measurements		✓	
Improve project and application load performance		✓	
Enhance and expand live calculated channels			✓
Import/export channel configuration from a spreadsheet			✓

Roadmap Date: 2024 Q2 | Next Release: 2024 Q2 | Release Cadence: Quarterly | Roadmap is a snapshot and can change based on a variety of factors, including development execution and customer input.

VeriStand™ **Roadmap**

Short-term product focus

Reduce time to market through automation and orchestration

Streamline Integration with customer's ecosystems with easier reuse of model assets and greater leverage existing test cases

Long-term product focus

Simplify tasks within VeriStand for easier on onboarding and reduced context switching

Enable integrators to create more powerful plugins with enhanced automation capabilities

Ensure secure connectivity with other ecosystem components

Capability	Shipped	2024	2025+
Model Integration			
External Mode Support for CPU Models	2023		
FMI 3.0 Support	2024		
HDL Coder customization with LabVIEW		✓	
Block parameter import from Simulink™		✓	
Improvement for model import/reuse		✓	
Connectivity with Simulink Test™			✓
Automation			
Improved Scripting APIs - Python and .NET	2023		
VeriStand Steps for TestStand		✓	
In-product sequencing			✓
Virtualization			
Import/Run Virtual ECUs within VeriStand	2024		
Usability and Plugin Support			
Improved error handling & debugging tools		✓	
Diagnostics for VeriStand execution		✓	
Updated Custom Device scripting APIs			✓
Automotive networks config simplification			✓
Communications bus template ease of use			✓
System Support			
Improved loop rates for large systems	2023		
Deployment workflow for Linux desktop			✓
Improvements to meet security standards			✓

Roadmap Date: 2024 Q2 | Next Release: 2024 Q2 | Release Cadence: Quarterly | Roadmap is a snapshot and can change based on a variety of factors, including development execution and customer input.

EMERSON | ni

DIAdem™ Roadmap

Short-term product focus

Workflow enhancements to DIAdem modules

Continuous Python support

Long-term product focus

SystemLink Enterprise Client Integration

ASAM ODS 6

Capability	Shipped	2024	2025+
Interoperability			
SystemLink Enterprise Integrated Client	2023 Q4		
MDF4 Data Plugin Sub-Channel Loading	2023 Q4		
Python 3.11 Support	2023 Q4		
VIEW: Layout template for "New Layout"	2023 Q4		
DataAPI: ValueIndex() method	2023 Q4		
Single folder mode to path behavior	2023 Q4		
Data Portal: Invalid Channel Highlighting	2023 Q4		
VIEW: New Python Graphic area to create displays	2023 Q2		
VIEW: New Event 'OnLoadedLayout'	2023 Q2		
ANALYSIS: Optimization of resampling/peak find functions	2023 Q2		
DAC: Extension of GPS Driver	2023 Q2		
REPORT: 2DTable 'OnDrawingCell' Settings		✓	
SystemLink Enterprise: Extended Features			✓
Python 3.12 Support			✓
Focus Area: ASAM ODS 6			✓
VIEW/REPORT Module Usability Updates			✓
UI Improvements			
VIEW: 'New Layout' template loading in REPORT	2024 Q4		
Display absolute/relative value in Pie Chart	2024 Q2		
VIEW Module Video Synch Updates			✓

EMERSON | ni

SystemLink™ Roadmap

Enterprise software for managing labs, improving test operations, managing and analyzing engineering and tracking product compliance to specifications.

Short-term product focus

Manage & deploy software to test systems

Centrally manage, schedule, deploy, and execute test plans

Ensure product compliance to specifications

Visualize and analyze waveform data

Long-term product focus

Streamlined Deployment

Specification compliance and product health

AI Driven Test Planning and Data Analysis

Capability	Shipped	2024	2025+
Systems & Assets			
View and manage assets	2023 Q4		
Monitor system health and test status	2023 Q4		
Manage and deploy software	2024 Q2		
Asset calibration history and utilization tracking		✓	
Asset utilization dashboards			✓
Product Insights			
Manage and visualize test results & parametric data	2023 Q4		
Collaborate on test results and data spaces	2024 Q1		
Manage product specifications	2024 Q2		
Analyze parametric data and visualize analysis results		✓	
Visualize and analyze waveform and RF data		✓	
Product specification compliance analysis			✓
Operations			
Work order and test plan management	2023 Q4		
Manage DUTs	2024 Q2		
Manage test plan templates	2024 Q2		
Remotely start and stop test executions		✓	
Comment on work orders and test plans		✓	
Customize test parameters		✓	
Schedule test plans based on system availability		✓	
Support for multi-DUT test plans			✓
Platform			
AWS & Azure Deployments		✓	
Alarms and notifications		✓	
Unified Platform for Small-on-Prem to Enterprise			✓

Roadmap Date: 2024 Q2	Release Cadence: Monthly	Roadmap is a snapshot and can change based on a variety of factors, including development execution and customer input.

EMERSON | ni