NI Solution Brief

Configuration-Based Data Logging

NATIONAL INSTRUMENTS™

Quick, reliable data logging is a key requirement for tests from component characterization to prolonged endurance testing to the evaluation of large, distributed systems. Configuring and running a data-logging system should be straightforward: you should maximize the time you spend on root cause analysis like isolating test anomalies from product defects.

The NI Advantage

- Maximize your investment by learning one toolchain for both testing and logging.

- Pair industry-leading measurement hardware with configuration-based data-logging software to create custom applications.

- Quickly visualize and analyze test data, prepare reports, and compare data across various tests.

- Reduce test reruns due to inaccurate and/or disorganized measurement data.

Application Requirements

- Creation of flexible, scalable data-logging systems with features like alarming and triggering without programming

- Ability to set up, visualize, and synchronize a mix of I/O including various third-party sensor types and communication protocols

- Interactive review of test results to visually inspect data and draw conclusions

NI Solution

- Learn one toolchain for measurement, automation, and reporting/data management by using a platform-based approach.

- Use Time Sensitive Networking (TSN), the latest synchronization technology, which is integrated into modular CompactDAQ hardware and rugged FieldDAQ™ hardware. Experience seamless integration between powerful hardware and configuration-based FlexLogger™ data-logging software.

- Export data from FlexLogger to programs like Excel; The MathWorks, Inc. MATLAB® software; or dedicated engineering data analysis tools like DIAdem to mine data, perform advanced analysis, and report results.
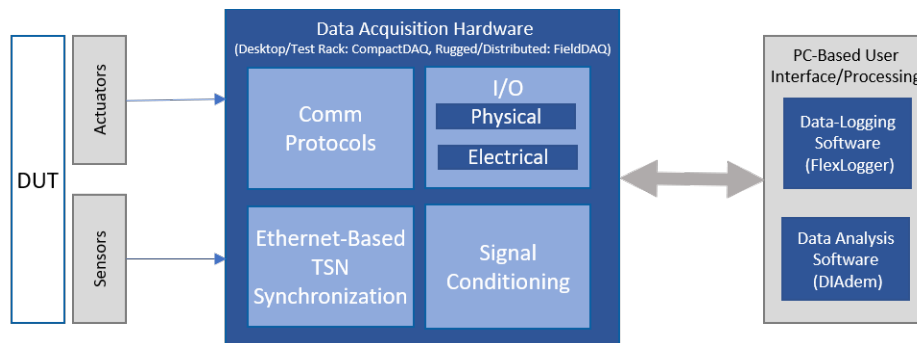
Basic System Diagram

Figure 1. This basic setup could be expanded with control elements, analysis in third party environments such as Matlab or Excel, etc.

CNH Maximizes Productivity

"FlexLogger makes it easier to troubleshoot and verify that the raw data from different sensors is correct before I start my test. This helps shorten test development by saving time typically wasted on redoing configurations."

Andy Tarman, Lab Test Engineer, CNH Industrial

Key Specifications

| Synchronized, Distributed Measurements	CompactDAQ and FieldDAQ can be connected via Ethernet to take advantage of TSN synchronization technology across measurement types.
Harsh Conditions	FieldDAQ features rugged enclosures that are dust and water resistant with an ingress protection rating up to IP67.
Ability to Connect to Virtually Any Sensor	NI offers the widest selection of DAQ hardware with modular systems for measuring any signal or sensor type.
Quick Setup and Configuration	FlexLogger data-logging software provides intuitive, configuration-based workflows to acquire sensor measurements, drive actuators, and visualize and log data.
Customizable Reports	You can export data to analysis programs including DIAdem data analysis software to standardize analysis and reports across your team.
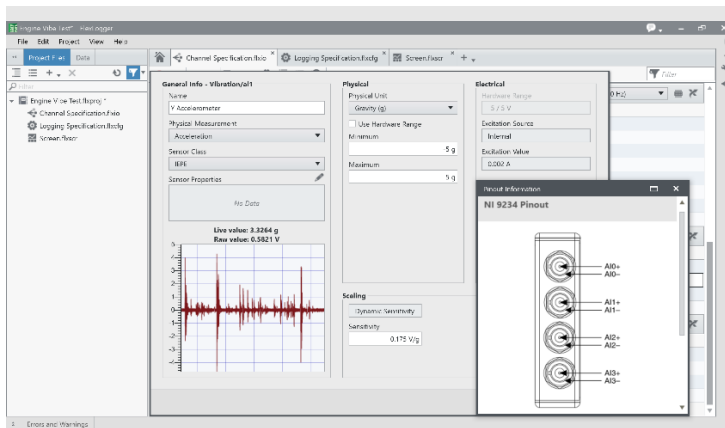
Figure 2. FlexLogger is configuration-based data-logging software that interfaces with CompactDAQ and FieldDAQ.

Test With Confidence

NI is a trusted partner to leading test organizations around the world that take advantage of NI's open platform featuring global services and support. You can leverage a wealth of online resources and the expertise of NI's worldwide network of support engineers and Alliance Partners to fully maximize your investment.

Contact your account manager or call or email us to learn more about how NI can help you increase product quality and accelerate test timelines.