Aircraft Systems Integration HIL Test

As aircraft become more complicated, systems integration testing (Iron Bird or integration test facilities) are more important than ever. Rigorous systems integration HIL testing ensures that Line Replaceable Units (LRUs) across the Aircraft – that have been developed in isolation – all function correctly and safely together.

Customer Needs

01

Scale to high channel counts (thousands of signal paths) across multiple LRUs

02

Support real and simulated loads and sensors with fault insertion on all signal paths to simultaneously simulate all used LRU physical interfaces

03

Use multi-LRU bus communication and fault insertion to generate all bus traffic normally flowing in an aircraft

04

Execute dynamic models simulating the behaviour of all connected LRUs and simulated models

NI + Aliaro Solution

01

Reconfigure more than 2,000 channels in minutes and store multiple test system configurations with the Aliaro xMove Configurator for SLSC and NI VeriStand

02

Shorten system configuration and test development time so that you can expand test coverage using an NI platform-based approach combined with Aliaro SLSC cards and system configuration tools

03

Accommodate testing different system configurations and decouple requirements on other teams using model integration and real-time model-based control and provisions for real/simulated switching

"The major advantages that made us pick NI and Aliaro were third-party integration of smaller suppliers, time to delivery, price advantage, agile development, and VeriStand. We found VeriStand to be very intuitive and easy to work with. The car project for which the HIL is intended evolved as we created the specs for the HIL, which meant that we could not deliver a full spec order. NI and Aliaro were flexible and preferred communicative delivery."

Test Coordinator
Major OEM

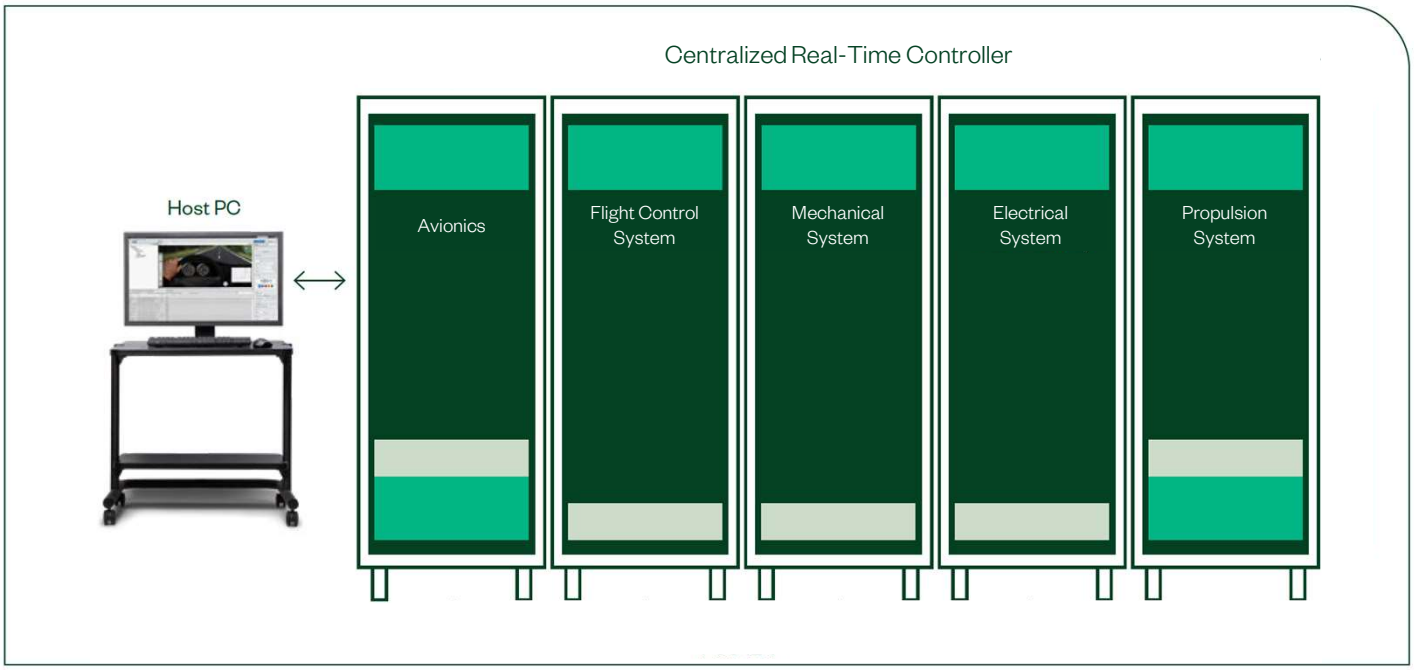

FIGURE 01

Aliaro Full Aircraft HIL Simulator

NI + ALIARO ADVANTAGE:

- Scalable system design (can be distributed)
- Efficient system reconfiguration: Rapidly adapt to changing test requirements and system configurations/models
- Multivendor test environment with ASAM XIL/Python support
- High-power and mixed-signal I/O capabilities

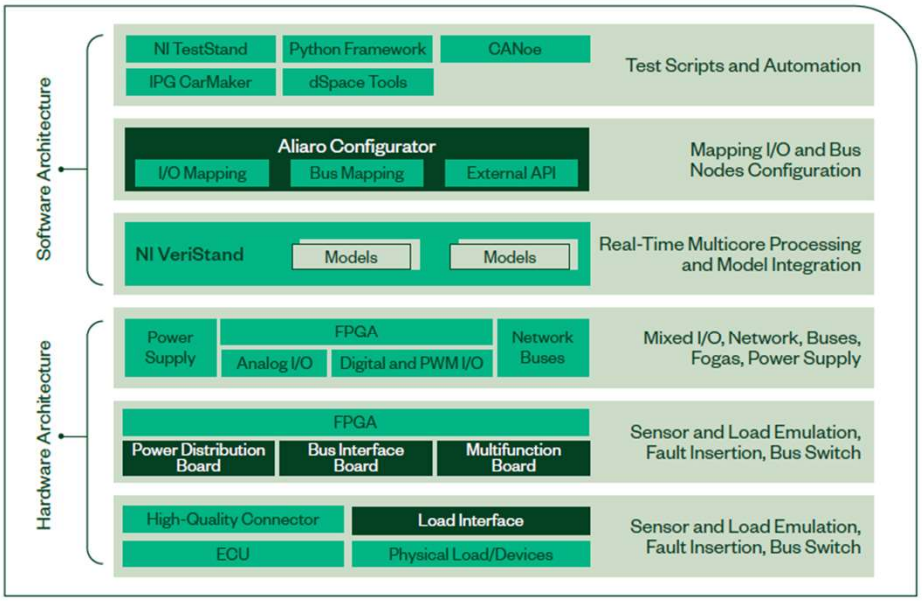

FIGURE 02

Open Platform HIL Architecture

Aliaro xMove Configurator Software

- Decrease downtime during system reconfiguration
- Change and update a large number of channels
- Save channel and system configurations
- Use included API for external access