



EXCELLENCE IN MISSION-CRITICAL AEROSPACE & DEFENSE SYSTEMS

NI Silver Alliance System Integration Partner



Company Highlights

OVERVIEW

Established in 2013, TMCS is a leading provider of industrial automation, test, measurement and control solutions that empower clients to achieve superior technological performance. As a trusted NI System Integration Partner, TMCS specializes in developing customized solutions that seamlessly integrate advanced measurement hardware, intelligent software and precision control architectures.

Today, TMCS stands as a global technology partner to industries that include Automotive, Aerospace, Defence, Appliances and more. TMCS delivers innovation, reliability and excellence across projects.

VISION

To be a global leader in
Test & Measurement,
delivering innovative and
reliable solutions worldwide.

MISSION

Delivering value-driven,
on-time Test & Measurement
solutions for Manufacturing
and R&D globally.

Message Co-Founder & CEO



I believe Indian engineering can stand shoulder-to-shoulder with the world's best. With the right vision and commitment, we don't just follow global standards, we have the capability to define them.

At TMCS, our mission is to engineer advanced test and automation solutions that help industries innovate with speed, safety and confidence. From aerospace and automotive to defence and heavy engineering, we enable clients to validate and scale with reliability. Founded on the belief that Indian engineering can match global standards, TMCS has delivered high-value test systems across international markets by integrating NI platforms, PLCs and custom electronics into unified ecosystems.

Looking ahead, our vision is to lead the future of validation and automation through AI-driven, cloud-enabled systems and digital twin capabilities showcasing the strength of Made-in-India engineering on the global stage.

Why TMCS?

Trusted engineering partner delivering smart, reliable and scalable solutions for complex test challenges.



Decade of Excellence

Partnering globally through technology and trust.



Certified Professionals

Skilled LabVIEW Architects & Developers.



Authorized NI Partner

Certified System Integrator for scalable test solutions.



Compliance Driven

CE-certified systems built to global standards.



Industry Leadership

Trusted by 9+ Fortune 500 global clients.



Technology

Customized solutions powered by cutting-edge in-house tech



Domain Expertise

10+ years across transportation, aerospace & defence.



Supply Chain Solutions

Empowering global supply chains with localized support



LabVIEW Excellence

NI & third-party hardware integration expertise.



Global Presence

Offices in Pune, Hyderabad and Germany.



Processes

Driven by improvement, focused on satisfaction.



Timeliness

Timely, complete and transparent project delivery.

Industries We Serve



Aerospace & Defence

Trusted partner for Aerospace & Defence industries with scalable, indigenized testing solutions.



Automotive & EV

Powering innovation in Automotive & EV with advanced testing, automation and engineering solutions.



Appliances

Providing smart test and automation solutions for Appliances to ensure quality and reliability.



Power Electronics

Delivering end-to-end test automation for Power Electronics to ensure efficiency and reliability.



Medical Devices

Ensuring precision and reliability in Medical Devices with advanced test and automation solutions.



HCV & Construction

Supporting HCV (Heavy Commercial Vehicles) & Construction sectors with efficient, high-quality test and automation solutions.

Aerospace & Defence Offerings



TEST SYSTEMS

End-to-end testing for prototypes and production.

Automated Test Equipment (ATE) and End-of-Line (EOL) setups tailored for reliability and efficiency.



SOFTWARE SOLUTIONS

Powering automation with intelligent software.

LabVIEW (6.0 to latest), PLC and Python for testing, control and data analytics.



HARDWARE SOLUTIONS

Robust platforms for complex engineering needs.

NI hardware, PLC systems, and embedded solutions for seamless integration.



ELECTROMECHANICAL SYSTEMS

Precision in mechanics and electronics.

Panel refurbishment, rewiring, and complete electromechanical setups for testing and automation.



EXECUTION & SUPPORT

Global project support, on-site and remote.

Installation, commissioning and cross-continent assistance for smooth operations.

Defense Solutions Portfolio

Our Defence Solution Portfolio delivers reliable test, measurement and automation solutions for demanding applications. The offerings support data acquisition, real-time monitoring, system validation and performance evaluation across development, production and maintenance activities. Designed for accuracy, repeatability and robustness, these solutions operate effectively in harsh environments. Scalable architectures and engineering expertise enable efficient deployment, consistent results and informed decision-making throughout the system lifecycle.

01

Automated Test Equipment (ATE) & End-of-Line (EOL) Systems

- Modular ATE for PCB Fault Diagnosis
- Fly-By-Wire Tester
- Compact Test Equipment for PCB Fault Diagnosis
- Radio Altimeter Tester
- Missile Actuator Testing System
- Remote & On-Site Calibration ATE

02

Data Acquisition Systems (DAQ)

- DAQ for Propellant Testing
- DAQ for Wind Tunnel Applications
- DAQ for Vibration & Noise Analysis
- DAQ for Strand Burner
- Closed Vessel Propellant Test Systems

03

Verification & Validation Systems

- Firing Console Systems
- Proof Pressure Testing
- Calibration Test Systems





“TMCS proudly contributes to the Make in India initiative by delivering indigenous engineering, testing and automation solutions that strengthen India’s manufacturing ecosystem and global competitiveness.”

Case Studies



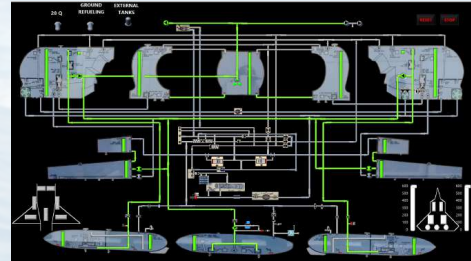
**MODULAR AUTOMATED TEST EQUIPMENT –
PCB FAULT DIAGNOSIS**



**FLY-BY-WIRE GROUND TESTER –
MIRAGE-2000**



MISSILE ACTUATOR TESTER



AIRCRAFT RE-FUELING SIMULATOR



DATALOGGERS



COMPACT PCB TESTER



PROPELLANT DAQ

Modular Automated Test Equipment – PCB Fault Diagnosis



CHALLENGE

Existing testing systems face several challenges, including their black-box nature, which makes interpretation difficult, and the wide variety of PCB functionalities that complicate testing. Conventional ATEs are often non-intuitive, relying on complex terminology and different test approaches require multiple ATEs. This results in high dependency on external suppliers, limiting efficiency, scalability and ease of use in testing operations.

SOLUTION

- COTS-Based Modular ATE: Flexible, off-the-shelf hardware
- All-in-One Testing Approach: JTAG, Signature, RF, Flying Probe, ICFT, OCFT
- Modular Architecture: Scalable and customizable for diverse PCB types
- User-Friendly Interface: LabVIEW-based software guides fault identification

PLATFORM

- NI PXIe Platform: Reliable, high-performance hardware for advanced testing

KEY BENEFIT	DESCRIPTION
Ease of Use	Software-guided fault detection, minimal training needed
Modular & Scalable	Adapts to various PCB types and test requirements
Reduced Downtime	Quick maintenance with COTS hardware.
Lower OEM Dependency	Minimal reliance on external suppliers.
Comprehensive Testing	Multiple test methods for complete PCB diagnostics.

Fly-By-Wire Ground Tester – Mirage-2000



CHALLENGE

The current testing landscape faces significant challenges, including high acquisition costs for imported systems and limited support from international O.E.M.s. Frequent system failures, dependence on proprietary O.E.M. cards and the risk of component obsolescence further hinder operational efficiency, increase maintenance burdens and constrain long-term sustainability of mission critical testing processes.

SOLUTION

- Indigenized COTS-Based System: Reduced cost and International O.E.M. dependency
- Software-Controlled Testing: User-friendly and flexible operation
- Rugged & Portable O-Level Tester: Field-ready for lab and fleet use

PLATFORM

- NI's Compact DAQ-Based System: Reliable, high-performance data acquisition

KEY BENEFIT	DESCRIPTION
True Plug & Play	USB-based ease of use
Portability	Easy deployment in labs or operational fleet
Cost-Effective	Lower expenditure for defense budgets
Built-in Self-Diagnostic Tests	Enhanced reliability and reduced downtime
Compliance	Suitable for lab and fleet-level testing

Missile Actuator Tester



CHALLENGE

Testing operations face several challenges, including the need for multiple instruments and extensive operator training, which increase the risk of human error. Separate equipment for lab and field use limits flexibility, while the lack of portability hampers efficient on-site testing, reducing overall productivity and operational effectiveness.

SOLUTION

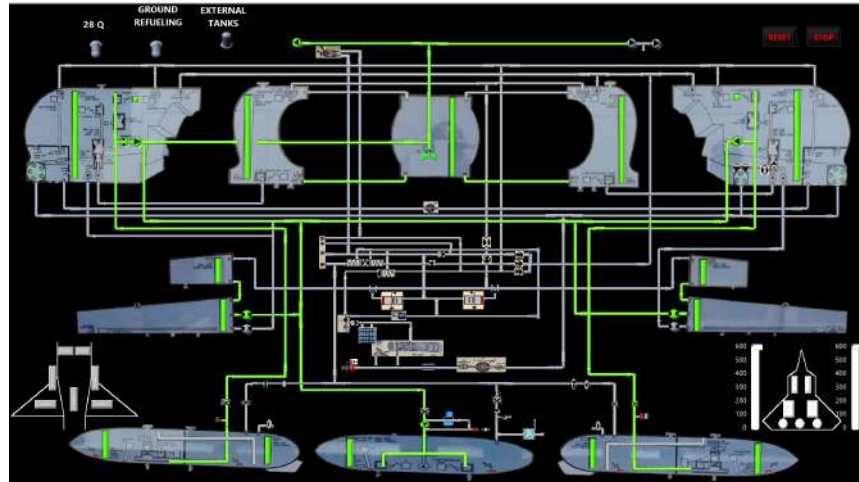
- Portable COTS-Based System: Compact and field-ready
- Integrated Software-Controlled Testing: Synchronized and automated operations
- Seamless Lab & Field Use: One system for all environments

PLATFORM

- NI's Compact DAQ-Based System: Reliable, high-performance data acquisition

KEY BENEFIT	DESCRIPTION
Reduced Human Error	Software-guided testing minimizes operator mistakes
Ease of Service & Maintenance	COTS hardware allows quick support and maintenance
Cost-Effective	Single system works for lab and field, reducing CAPEX
Portable & Field-Ready	Compact system usable in any environment
Integrated Testing	Automated, synchronized operations simplify testing

Aircraft Re-Fueling Simulator – Mirage-2000



CHALLENGE

The existing simulator from International O.E.M. used for training faced several challenges that includes vintage, electrical-based design, requiring frequent maintenance. Its bulky, space-consuming form factor further limits operational efficiency, limited support from the OEM exacerbates downtime and restricts effective usage.

SOLUTION

- Computerized Simulator: Modern, software-driven system
- PC-Based Installation: Runs on standard computers
- Custom-Built: Tailored to end-user requirements
- Future-Ready: Scalable to VR-based training

PLATFORM

- NI's LabVIEW-Based Software: Reliable and flexible for simulator control

KEY BENEFIT	DESCRIPTION
Compact & Lightweight	Eliminates bulky, space-consuming hardware
Scalable Solution	Supports future upgrades and VR-based training
Cross-Platform Compatibility	Works with multiple aircraft types seamlessly
Modern & Software-Driven	Replaces vintage electrical systems with computerized control
Customizable	Tailored to specific end-user requirements

Dataloggers



CHALLENGE

Current measurement systems face key challenges, including limited ability to quantify critical physical parameters such as vibration and noise. The absence of ruggedized units restricts field applications, while the lack of high-sampling, real-time data acquisition systems hinders accurate and timely analysis, reducing overall effectiveness and reliability in monitoring and testing operations.

SOLUTION

- Scalable Hardware: Flexible channel count to meet diverse needs
- Portable & Ruggedized: Field-ready for harsh environments
- High Sampling Rates: Accurate real-time data acquisition
- Multiple Data Inputs: Collect data from various sources simultaneously

PLATFORM

- LabVIEW Software
- cRIO & Field DAQ Solutions

KEY BENEFIT	DESCRIPTION
Plug & Play	Quick installation and easy operation
No License Required	Hassle-free usage without additional software licenses
Portable & Ruggedized	Field-ready for harsh environments
High Sampling Rates	Accurate real-time data acquisition
Scalable Hardware	Flexible channel count to meet diverse measurement needs

Compact PCB Tester



CHALLENGE

The MRO & BRD teams of Indian Armed Forces have long faced logistical hurdles in routing faulty P.C.Bs to distant D-level testing facilities for fault diagnosis. This leads to increased maintenance costs and extended downtime for mission-critical platforms.

The I-level PCB Testing System is developed for base-level maintenance. It enables quick & reliable testing by supporting passive components validation, basic voltage line checking, resulting in faster fault diagnosis of simpler faults.

SOLUTION

- Robust cDAQ-Based Test Setup: Reliable and portable
- Scalable Deployment: Enables large-scale installation of similar systems
- Hanger/Base Level Testing: Quick diagnostics at the production or maintenance site

PLATFORM

- NI's Compact DAQ-Based System

KEY BENEFIT	DESCRIPTION
Cost-Effective	Avoids dedicated lab ATEs for all maintenance units
Time-Saving	Preliminary testing reduces effort before modular ATE use
Portable & Efficient	Enables quick diagnostics at hanger or bay level
Scalable Deployment	Can be deployed across multiple sites or production lines
Reliable & Robust	cDAQ-based setup ensures dependable testing performance

Propellant DAQ



CHALLENGE

Propellant testing requires precise measurement of rapidly changing chamber pressure during ignition and firing under harsh conditions. Capturing accurate ignition delay, peak pressure, and pressure–time characteristics is challenging due to high dynamics, safety constraints, and signal noise. A reliable, high-speed data acquisition system is essential to ensure repeatable results and meaningful performance analysis.

SOLUTION

- Integrated pressure sensors for static and dynamic pressure measurement
- High-speed DAQ hardware with software-controlled monitoring
- Real-time data logging and P–T curve plotting
- Robust system design ensuring signal consistency (± 10 V range)

PLATFORM

DAQ-based system with pressure sensors, monitoring software, and firing console

KEY BENEFIT	DESCRIPTION
Accurate Ignition Measurement	Precisely captures ignition delay and peak chamber pressure (Pmax)
Real-Time Data Visualization	Displays live pressure–time (P–T) curves during propellant firing
High Measurement Reliability	Ensures consistent, repeatable results across multiple test cycles
Fast Data Acquisition	High-speed DAQ enables capture of rapid pressure transients
Data-Driven Evaluation	Supports detailed analysis for propellant performance optimization

VayuMATE

Advanced PCB Test & Validation System



VayuMATE verifies electrical, functional and parametric integrity of PCBs with high fault coverage and rapid isolation. Its modular PXI architecture, LabVIEW software and advanced diagnostics enable efficient, scalable and accurate testing for SRU, LRU and avionics systems, ensuring faster troubleshooting and reduced test time.

Esteemed Clients



Our Global Footprint Defined by TMCS Excellence



9+

Fortune 500
Companies Served

500

Projects Executed

8+

Global Coverage

80+

Team Members

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Awards & Certifications

 Delivering Precision with Quality – ISO 9001:2015 Certified by Quality Research Organization	 Delivering Precision with Quality – AS 9100D Certified by MQA Certification Services
 TLC 2019 Pune – Recognizing commitment, inspiring excellence and celebrating true contribution	 Committed to Excel – Showcasing Innovation and Indigenisation Excellence at NAIS-2025, Kochi
 Honoring Esteemed Exhibitors of Auto EV India 2024 – Driving Innovation in Automotive & EV Technology	 Together Towards Progress – Celebrating Innovation and Excellence at SIAT 2024
 Appreciating TMCS for professionalism and commitment in building success with SPXFLOW	 Recognizing excellence in blood donation – Spreading awareness, saving lives and inspiring hope

Let's Connect!



Revolutionize Your Industry Today

Your trusted partner for automation, testing and system integration. We specialize in delivering innovative, reliable and scalable solutions for industries seeking excellence in test, measurement and control systems.

Our expert team is ready to understand your requirements and provide tailored solutions that enhance performance and efficiency. From concept to commissioning, TMCS ensures seamless execution and long-term support.

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