

CAPABILITIES OVERVIEW

WHY TMCS ENGINEERING

One engineering team for hardware, software, panels, fixtures, integration and support.

TMCS engineers custom test, measurement and automation systems end to end — from requirement analysis and architecture through in-house software, panels and fixtures to commissioning and support. As an NI Authorized System Integrator, we combine NI platforms, PLCs and custom electronics into unified, scalable test ecosystems for R&D, production and field maintenance.



2013

Established

9+

Fortune 500 companies
served

500

Projects executed

8+

Global coverage

80+

Team members

01 CORE ENGINEERING CAPABILITIES

01

Automated Test Equipment

Modular, rack, portable and bench ATE for PCBs, ECUs and electromechanical assemblies.

NI PXIe · JTAG · RF · flying probe

02

End-of-Line Testing

Production-line verification with fixtures, sequencing and traceable pass/fail results.

NI TestStand · PLC · fixtures

03

Hardware-in-the-Loop

Real-time simulation rigs for steering, VCU and controller validation.

NI VeriStand · PXIe · C/Simulink models

04

High-Speed Data Acquisition

Lab, field and rugged DAQ for pressure, temperature, current, sound and vibration.

CompactDAQ · CompactRIO · LabVIEW

05

Endurance & Performance Rigs

Automated high-cycle benches for gearboxes, axles, motors and drives.

Torque & RPM sensors · PLC · DAQ

06

Simulators & Indigenisation

Software-driven replacements for legacy, OEM-dependent testers and simulators.

COTS hardware · LabVIEW

07

SCADA & Line Traceability

QR traceability, torque logging, BOM validation and live production dashboards.

LabVIEW SCADA · OPC-UA · MySQL

08

Panel Engineering

Panel design, refurbishment, rewiring and complete electromechanical setups.

In-house panel build

09

Software, Resources & Training

LabVIEW (6.0 to latest), PLC and Python development; engineer deployment and training.

LabVIEW · PLC · Python

02 IN-HOUSE ENGINEERING STACK

Hardware

- ✓ NI PXI / PXIe
- ✓ NI CompactDAQ & CompactRIO
- ✓ PLC systems
- ✓ Embedded & custom electronics

Software

- ✓ LabVIEW (6.0 to latest)
- ✓ NI TestStand & VeriStand
- ✓ Python
- ✓ SCADA / OPC-UA, MySQL

Mechanical & Electrical

- ✓ Custom fixtures & variant adaptors
- ✓ Panels & rewiring
- ✓ Hydraulic & pneumatic actuation
- ✓ Acoustic-chamber test setups

Execution & Support

- ✓ Installation & commissioning
- ✓ On-site and remote support
- ✓ Cross-continent assistance
- ✓ Training & resource deployment

03 CAPABILITIES PROVEN IN DELIVERED SYSTEMS

 ATE	• Modular ATE – PCB Fault Diagnosis • VayuMATE PCB Test & Validation • Compact PCB Tester • Missile Actuator Tester	 EOL	• VCU Test Bench (dual-station) • E-Axle Test Bench • ABS Solenoid Test Bench
 HIL	• Steering HIL Test Rig (EPAS/HPAS) • AutoHIL – VCU-HMI simulation	 DAQ	• Propellant DAQ • Rugged Dataloggers • Power Window Regulator • BLDC Motor Drive (12 DUTs)
 Endurance	• Gearbox Endurance Test Bench (100,000+ cycles) • BLDC drive endurance	 Simulators	• Fly-By-Wire Ground Tester – Mirage-2000 • Aircraft Re-Fuelling Simulator – Mirage-2000
 SCADA	• Line Traceability & Assembly Line Monitoring		

04 WHY TMCS ENGINEERING

01 Single-Vendor Ownership One team responsible for hardware, DAQ, software, automation and integration.	02 100% Custom-Built Every system engineered around the customer's DUT and specification.	03 Authorised NI Partner Certified system integrator for scalable test solutions.	04 Certified Professionals Skilled LabVIEW architects and developers.	05 Compliance Driven CE-certified systems built to global standards.
06 Domain Expertise 10+ years across transportation, aerospace and defence.	07 Indigenised COTS Approach Lower OEM dependency, easier maintenance and reduced downtime.	08 In-house Technology Customised solutions powered by in-house technology.	09 Industry Leadership Trusted by 9+ Fortune 500 global clients.	10 Timeliness Timely, complete and transparent project delivery.

05 HOW WE ENGINEER

1 Understand Requirements Deep technical discovery and application analysis.	2 Design & Architecture Test strategy, hardware selection and system architecture.	3 Development & Integration Software, panels and fixtures built and integrated in-house.	4 Deployment & Support Installation, commissioning, training and long-term support.
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QUALITY & PARTNERSHIP

AS9100D certified

ISO 9001:2015 certified

NI Silver Alliance Partner

CE-compliant systems

Have a test challenge? Let's engineer it.

Share your DUT, test specifications and volumes – TMCS will propose a test architecture tailored to your R&D, production or field requirements.

Phone	+91 20 6763 6001
Email	marketing@tmcs.in
Web	www.tmcs.in
Office	3rd Floor, MCCIA Building, Tilak Road, Pune 411002, Maharashtra, India
Factory	Satyam Industrial Estate, Sr. No. 25, Mahadev Nagar, Nanded Gaon, Sinhagad Road, Pune 411041