



design
testing
certification
support



FMS Aerospace

Innovative Solutions to
AIRCRAFT DESIGN & FLIGHT TEST PROBLEMS

What Can FMS Aerospace Do For You?

Our dynamic team of engineering experts help companies take every imaginable kind of aircraft design or modification idea from concept to reality.

With a proven track record of success in consistently solving complex engineering problems, we can help you gain full control of your aircraft development project and ensure that your program is completed on time and on budget.

Turn key solutions from design concept to certification

- ✓ Initial Type Certification Programs
- ✓ Aircraft Modification Programs & Custom Applications
- ✓ Civil & Military Programs
- ✓ Structural Design & Analysis
- ✓ Aero Loads Development
- ✓ Structural Testing & Loads Verification
- ✓ Fatigue & Damage Tolerance
- ✓ Mechanical Systems Design
- ✓ Design Change Substantiation
- ✓ CAD / Solid Modeling
- ✓ Airworthiness Engineering
- ✓ Flight Test Program Management
- ✓ Engineering Test Pilots
- ✓ Flight Test Engineering
- ✓ Ground & Flight Test Instrumentation & Data Acquisition
- ✓ Performance Data Analysis
- ✓ Flight Characteristics Data Analysis
- ✓ Airplane Flight Manual Development
- ✓ Vibration & Structural Dynamics
- ✓ Aeroacoustics
- ✓ Special Mission Sensor Integration
- ✓ Datalinks

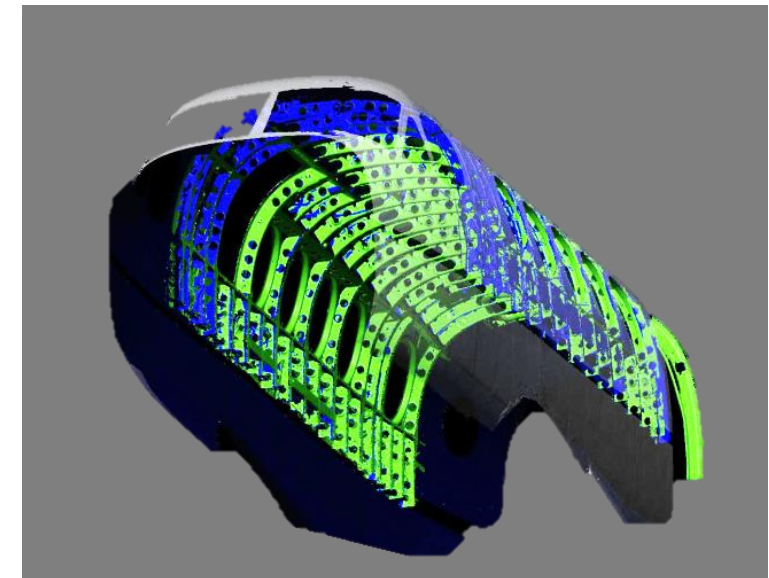
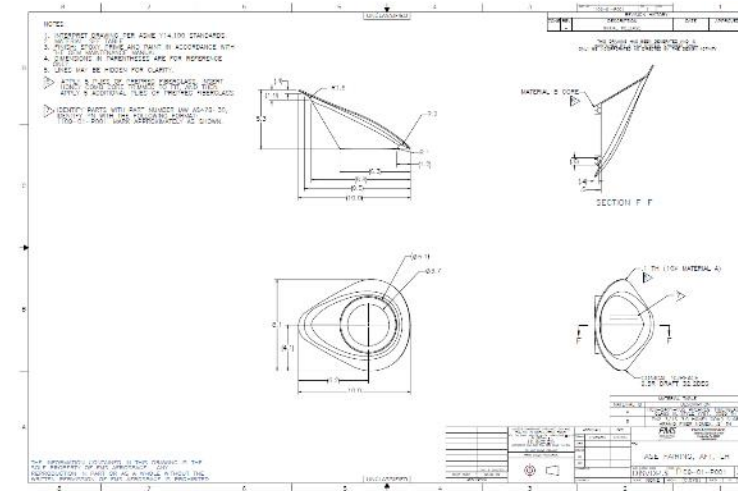
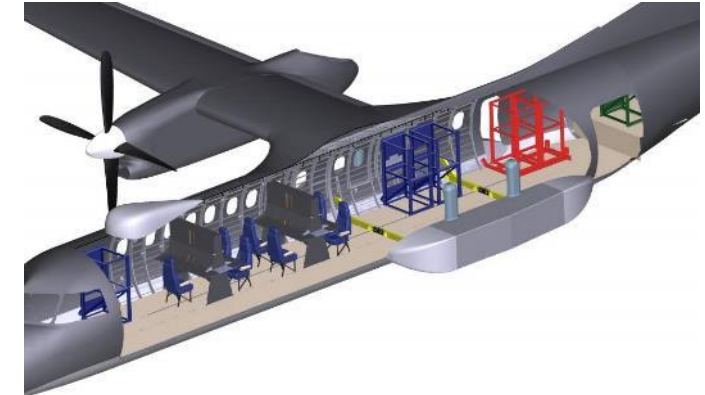
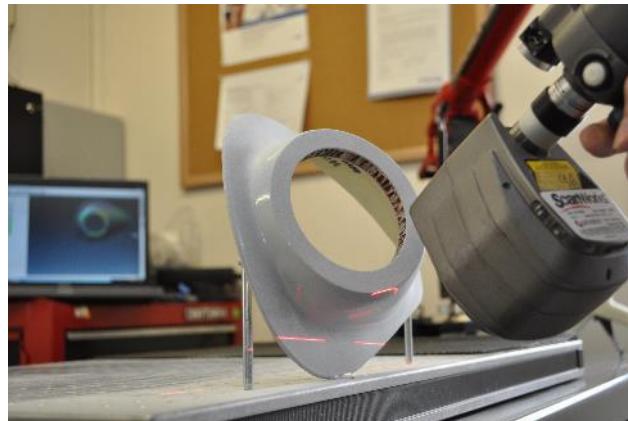


CUSTOM DESIGN ENGINEERING SOLUTIONS

Engineering solutions customized to the unique requirements of your program.

We understand that every project is different and specialize in working with you to develop an answer that satisfies the specific requirements, specifications and objectives of your product development effort – within a budget that fits your needs. Engineering consulting providing a total end-to-end solution...

- ✓ CAD / Solid Modeling
- ✓ Latest Cutting Edge 3-D Scanning Technology
- ✓ Finite Element Analysis (FEA)
- ✓ Computational Fluid Dynamics (CFD)
- ✓ Standard & Non-Standard Aviation Materials
- ✓ Radome Design
- ✓ Sensor Mounts
- ✓ Workstations & Equipment Racks
- ✓ STC & Field Approval Support
- ✓ DER / DAR Design Approvals
- ✓ Lifecycle Management

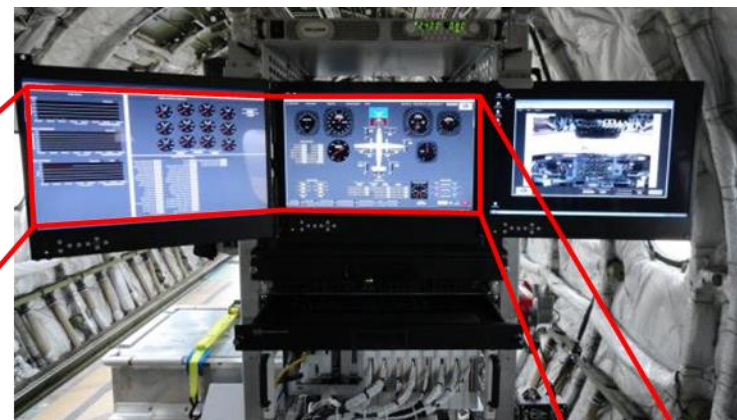


INSTRUMENTATION & DATA ACQUISITION SOLUTIONS

Advanced digital data acquisition systems utilizing the latest technology.

Featuring real-time data post-processing and display capabilities for monitoring of critical parameters and analysis automation.

- ✓ User-Defined Data Acquisition Solutions
- ✓ Robust, Ruggedized, Cost-Effective, Low Failure Rate
- ✓ Custom Software & User Interface Development
- ✓ Analog & Digital Data Acquisition
- ✓ All Measurement Types
- ✓ Precision Pitot-Static Measurements & Calibrations
- ✓ Advanced Static & Kinematic GPS Positioning
- ✓ Static Structural Testing Support
- ✓ Real-Time Stress Monitoring
- ✓ Fatigue Spectrum Development
- ✓ Structural Vibration Characterization
- ✓ Caution & Warning Exceedance Alarms
- ✓ Structural Health Monitoring Systems
- ✓ Aeroacoustics
- ✓ Noise Level Measurements



FLIGHT TEST SOLUTIONS

Aircraft development & certification flight testing can be expensive and time-consuming - but **it doesn't have to be...**

When you decide to engage the services of our experienced engineering flight test experts to create a customized plan for your flight test program, you are guaranteed to minimize your flight test program costs, while ensuring that your critical mission requirements are satisfied and that your product hits the market on time. Flight Test Experts in the following specialty areas:

- ✓ Flight Test Engineers
- ✓ Qualified Engineering Test Pilots
- ✓ R&D and Certification Ground & Flight Test Plans
- ✓ Proven Effective & Safe Envelope Expansion Techniques
- ✓ Early Identification of Potential Problems
- ✓ Flight Characteristics, Handling Qualities, Stability & Control
- ✓ Stall Characteristics Development
- ✓ Performance
- ✓ Engine & Propeller Changes
- ✓ Powerplant Cooling & Operating Characteristics
- ✓ Systems Testing
- ✓ Avionics Integration
- ✓ Autopilot / Autothrottle Mode Development
- ✓ Flight Test Program Management
- ✓ Aircraft Configuration & Weight & Balance Control
- ✓ Airplane Flight Manuals & Supplements
- ✓ Approved Flight Test Safety & Risk Management Processes

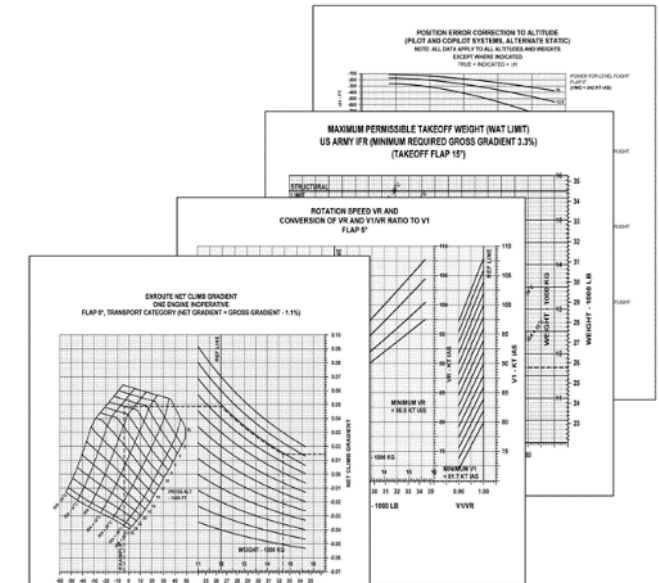


FLIGHT SCIENCES SOLUTIONS

Performance & flight characteristics test techniques and data analysis methods fine-tuned & testing over numerous flight test programs

If you have any aircraft performance or stability and control problem that needs to be solved, it's **highly likely that we have the answer**. Our dedicated Flight Sciences team is well known for rapidly producing accurate and reliable results.

- ✓ Mathematical modeling and estimation of airplane performance
- ✓ Drag estimation
- ✓ Field performance determination, including Transport Category
- ✓ Climb performance & WAT limits
- ✓ Takeoff flight path, net climb gradient and obstacle clearance
- ✓ Takeoff, approach, and landing reference speed determination
- ✓ Mission range and duration analysis & optimization
- ✓ Air data calibrations and airspeed/altitude position error determination
- ✓ Installed power & thrust
- ✓ **Publication quality** flight manual performance charts & tables
- ✓ Stability derivative determination
- ✓ Flight characteristics troubleshooting
- ✓ **Results in the fastest time & at the least expense possible**

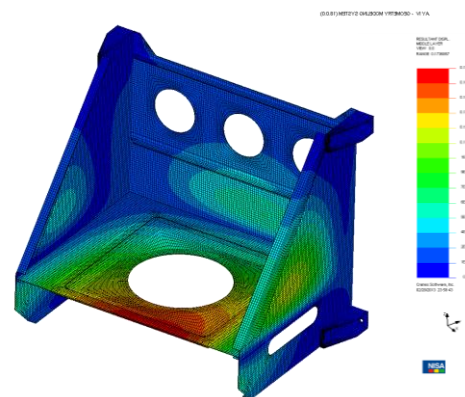


AIRWORTHINESS ENGINEERING SOLUTIONS

Intimate knowledge of the airworthiness process & rapid identification of requirements that need to be addressed to certify your aeronautical product.

Extensive experience and familiarity with civil and military airworthiness requirements and certification processes, including Special Missions and Restricted Category certification, so your aircraft certification program will proceed smoothly from inception to completion.

- ✓ US Army, USAF, FAA, Transport Canada, CAA, EASA, NASA Standards
- ✓ Certification Basis Definition
- ✓ Identification & Compliance Demonstration with Airworthiness Regulations & Design / Operational Specifications
- ✓ Compliance Plan Development
- ✓ Liaison & Negotiation with Airworthiness Authorities
- ✓ Issue Paper Preparation
- ✓ Type Board Meeting Support
- ✓ Conformity Inspection Support
- ✓ Test Witnessing



ENGINEERING PROGRAM MANAGEMENT SOLUTIONS

Engineering program management solutions to meet the requirements of level of involvement, control, and budget of any program

Whether you just want advice in one or two areas of your program or a complete start-to-finish management and program tracking solution, we have the answer.

- ✓ Design Team Management
- ✓ Expert Consultant Assistance & Oversight
- ✓ Flight Test Program Management
- ✓ Certification Program Management
- ✓ Coordination with Vendors & Other Engineering Organizations
- ✓ Parts & Equipment Procurement
- ✓ Program Scheduling & Major Milestone Tracking
- ✓ Identification & Tracking of Key Issues
- ✓ Engineering Project Cost Estimation
- ✓ Program Budget & Schedule Tracking & Control



CONTACT US

Call or email us today to talk about the unique requirements of your aircraft design, development or certification program and how to get the engineering resources that you've been looking for in place right away.

Call us at: 256-763-0062

Find us on the web at: <http://www.fmsaero.com/contact-us>

