Capabilities

High-Value Analysis-Driven and Test-Driven Engineering Design Solutions

Company

ATA Engineering, Inc., (ATA) is an employee-owned small business that has been helping our customers solve their complex engineering problems in the areas of product design, structural dynamics, thermal analysis, aeroelasticity, acoustics, software development, computational fluid dynamics (CFD), structural mechanics, training, and testing since 1977. During that time we have gained a reputation for excellence in the engineering community and have had the opportunity to work on a very wide range of highly engineered products, including military and commercial aircraft, satellites and interplanetary spacecraft, launch vehicles, missile systems, transportation vehicles, mining equipment, rides and equipment for themed entertainment, and a variety of electronic and consumer products.

ATA is headquartered in San Diego, with offices in Albuquerque, Denver, Huntsville, Los Angeles, San Francisco, Seattle, and Washington D.C. We help our clients find success through advanced engineering solutions. Please contact us to discuss how we can help you with your application.

ATA headquarters in San Diego

Winner of NASA's George M. Low award

Additional Information

Awards

➤ NASA George M. Low Award
➤ NASA JPL Thomas H. May Legacy of Excellence
➤ NASA JPL Small Business Subcontractor of the Year
➤ NRO Commander Commemoration
➤ *Wall Street Journal* Top 15 Small Workplaces
➤ NCEO Innovations in Employee Ownership
➤ *San Diego Business Journal* 100 Fastest Growing Companies

Staff Details

➤ Regular full-time staff of more than 130
➤ More than 110 degreed engineers on staff, averaging 15 years of experience each
➤ Majority of engineers possess advanced degrees

Recent Clients

➤ General Atomics
➤ Jet Propulsion Laboratory
➤ Lockheed Martin Space Systems
➤ NASA
➤ NAVAIR
➤ Orbital ATK
➤ Pratt & Whitney
➤ Sandia National Laboratories
➤ ThinKom
➤ US Air Force Research Laboratory
➤ World-Leading Themed Entertainment Companies

SBA Program Data

➤ Small Business Categories: SB
➤ NAICS Codes: 541330, 511210, 332312, 541712
➤ DCAA-approved accounting system

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Key Service Offerings

Structural and Dynamic Analysis

- Loads determination
- Assessment of static and dynamic load effects
- Test-verified finite element model (FEM) development
- Detailed stress
- Durability
- Random, sine, and shock
- Aeroelasticity
- Coupled loads

Product Design

- Concept to production design development
- Requirements, specifications, and manufacturing drawings
- Third-party design reviews and design verification
- Design optimization
- Prototype development and testing
- Project management

Fluid Dynamics

- CFD simulation and visualization
- Fluid-structure and fluid-thermal-structural interaction
- Advanced modeling and methods development
- Chemically reacting flows and ablation analysis
- Aerodynamic design and wind tunnel test support

Mechanism/Nonlinear Dynamic Analysis

- Assembly, operation, and handling
- Deployable structures analysis
- Deployment and stage operation
- Nonlinear buckling and postbuckling failure analysis
- Impact and drop simulations
- Joint gapping and slipping
- Rigid and flexible body kinematic analysis

Robotics and Controls

- Control of dynamical systems
- Pointing and control of structure-borne optical systems
- Control-structure interaction
- Application to autonomous ground and air vehicles
- Implementation in traditional programmable logic controllers (PLCs) or advanced embedded controllers

Testing

- Modal and ground vibration
- On-site, real-time operational testing
- Environmental vibration
- Strain, acceleration, thermal, displacement, and force measurements
- Drop, shock, and support for pyroshock measurements
- Rotating and reciprocating machinery
- Acoustic array testing
- Sound-level measurements
- Accelerated fatigue testing
- Data postprocessing and analysis
- Aircraft free-play and stiffness
- Flight testing support

Vibroacoustics

- Acoustic test design (including wind tunnel testing) for measurement of fluctuating pressures and vibration responses
- Data processing and interpretation of test data
- Definition of fluctuating pressure environments for launch vehicles and aircraft during liftoff, ascent, and flight
- Vibroacoustic analysis of coupled fluid-structure systems through finite element analysis, boundary element analysis, and statistical energy analysis
- Correlation of vibroacoustic models to test data
- Active and passive interior noise reduction
- Environment noise propagation analysis

Thermal Analysis

- System and component-level thermal analysis and design
- Board-level and chip-level thermal analysis
- Forced and free convection, using empirical correlations, one-dimensional duct flow, and three-dimensional fluid flow
- Orbital and ground-based radiation heating
- Ablation and TPS sizing
- Design of active and passive thermal control systems
- Thermal-elastic analysis

Software

- Value-added reseller (VAR) for Siemens PLM software
- Commercial (ATA Suite) and custom software development
- Support hotline and web portal for technical questions
- CAE and custom software training
- Visit www.ata-plmsoftware.com to learn more

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