

Capabilities

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

Our Company

ATA Engineering, Inc., (ATA) is a 100% employee-owned small business that has been helping our clients 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 2000. In supporting numerous commercial and government programs with precision and efficiency, our team has earned a reputation for excellence in the engineering community. Such engagements comprise a 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 electronic and consumer products.

We are committed to supporting our clients through advanced engineering methods. Please visit www.ata-e.com to learn more and connect with our team.



ATA is headquartered in San Diego, with offices in Albuquerque, Berkeley, Denver, Huntsville, Los Angeles, and Washington D.C.

Highlights

Awards

- ▶ Small Business Administration Tibbetts Award
- ▶ NASA George M. Low Award
- ▶ NASA JPL Thomas H. May Legacy of Excellence Award
- ▶ NASA JPL Small Business Subcontractor of the Year
- ▶ SNC (Sierra Space) Small Business Excellence Award
- ▶ Motiv Space Systems Outstanding Partner Award
- ▶ The Wall Street Journal Top 15 Small Workplaces
- ▶ NCEO Innovations in Employee Ownership
- ▶ NRO Commander Commemoration

AS9100 Certification

- ▶ AS9100 Certificate #11002708

Staff Details

- ▶ Regular full-time staff of more than 200 employee-owners
- ▶ More than 160 degreed engineers on staff, averaging 15 years of experience each
- ▶ Majority of engineers possess advanced degrees

Selected Clients & Contracts

- ▶ General Atomics
- ▶ Jet Propulsion Laboratory
- ▶ Lockheed Martin
- ▶ NASA
- ▶ NAVAIR
- ▶ Northrop Grumman
- ▶ Polaris
- ▶ Raytheon (Pratt & Whitney)
- ▶ Sandia National Laboratories
- ▶ US Air Force Research Laboratory
- ▶ World-Leading Themed Entertainment Companies

Business Information

- ▶ Nontraditional Defense Contractor
- ▶ Primary NAICS codes: 541330, 541715, 513210
- ▶ UEID: PNZEUK9JC187
- ▶ CAGE: 1PWF2
- ▶ DCAA-compliant accounting system

Key Service Offerings

Structural & Dynamic Analysis

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

Design

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

Fluid Dynamics & Propulsion

- CFD simulation and visualization
- Fluid-structure and fluid-thermal-structural interaction
- Advanced hypersonics analysis
- Chemically reacting flows and ablation analysis
- Fully coupled simulation of structural, fluid, thermal, and ablation physics
- Aerodynamic design and wind tunnel test support
- Flutter and full-system aeroelastic stability analysis
- Use of advanced machine learning methods to improve computational accuracy and efficiency

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

Composites & Material Characterization

- Development of novel material models
- Use of advanced material models in extreme environments
- Polymer, ceramic, carbon, metallic matrix composites
- Application of machine learning algorithms to material characterization

Testing

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

Acoustics

- 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 thermal protection systems sizing
- Design of active and passive thermal control systems
- Thermoelastic analysis

Software & Software Development

- Value-added reseller (VAR) for Siemens Digital Industries Software
- Commercial (ATA Suite) and custom software development
- Support hotline and web portal for technical questions
- CAE and custom software training
- Visit <https://www.ata-e.com/software/> to learn more