

Axient Program Highlight: Hypersonics



Executive Summary

The Arnold Engineering Development Complex (AEDC) operates and conducts developmental testing and evaluation on almost 70 aerodynamic and propulsion wind tunnels, rocket and turbine engine test cells, space environmental chambers, arc heaters, and ballistic ranges. Axient provides contract services to fully support aerospace research, development, test and evaluation activities at the AFTC. Work is primarily performed at Arnold AFB, TN, as well as other AF installations and original equipment manufacturer facilities.

Axient has:

- Executed >\$50M in Hypersonic test portfolios across DoD since 2016
- Facilitated and provided test and evaluation (T&E) expertise in test and analysis efforts in Hypersonic testing across AFTC, Commercial Facilities, etc.

Hypersonic Combined Test Force (CTF)

Axient supports the AEDC Hypersonic CTF in its role as the Executing Test Organization (ETO) for all USAF hypersonic programs. Its role is expanding to include testing for MDA, DARPA, etc. ETO roles include program management and technical support and interface, schedule, and coordination of hypersonic requirements, analyses, etc. across the enterprise. Axient supports the Test Resource Management Center (TRMC) in program integration tasks and helps facilitate US hypersonic infrastructure gaps.

CUSTOMER

Air Force Test Center (AFTC)
Arnold Engineering Development
Complex (AEDC)

AXIENT'S HYPERSONIC SUPPORT

ARCs/Space & Missile CTF

- Material testing, facility planning, test technique design

Hypersonic Signatures

- Address signature concerns for hypersonic vehicles

Technology Branch

- Hypersonic Test Techniques development (nozzle, inlet, and aftbody integration)

Modeling & Simulation (M&S)

Computational Fluid Dynamics (CFD)/

Technology Branch

- Analysis behind current test techniques, predict/understand performance

Wind Tunnels/Flight CTF

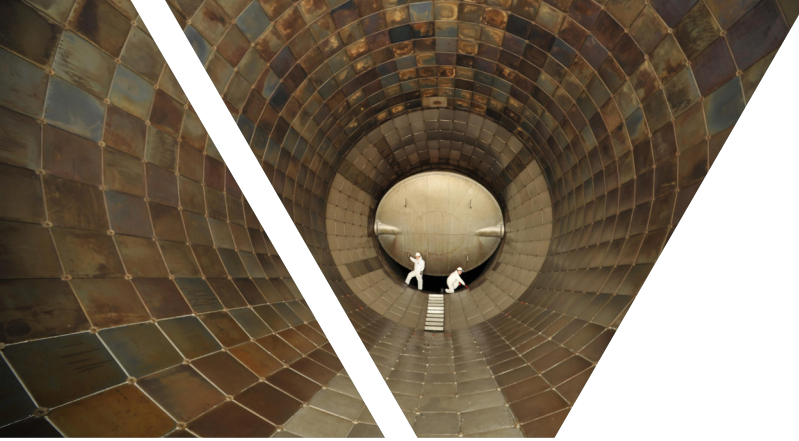
- Aerodynamic, control, heat transfer

Aerodynamic and Propulsion Test Unit (APTU)/Hypersonic Systems Test Branch (TSTH)

- Airbreathing engines, SCRAMjet, inlet, fuel

Test Techniques/G-Range

- Freeflight subscale testing of RV's and scramjets



About Axient

Axient is the result of the merger of four leaders in the defense and civil markets: QuantiTech LLC, Millennium Engineering and Integration LLC, Systems Engineering Group, and Dynamic Concepts LLC. Axient is headquartered in Huntsville, Alabama and has provided premier services and solutions to the Federal Government for more than three decades. Customers choose Axient because they know they can trust our people and count on our performance. With over 2200 employees and locations in Alabama, Tennessee, Florida, California, New Mexico, Colorado, and the National Capital Region, we provide local expertise and program management to our customers which means faster response times and an easier partner to reach. Axient is certified in the following: ISO 9001:2015, AS9100 Rev D, CMMI-DEV Maturity Level 3, and has a DCMA Purchasing System, DCMA Property System, and DCAA Accounting System. Our history of success is attributable to our core philosophy of putting mission and customers first, empowering our program leaders, and eliminating barriers to success for our customers by providing value-added, mission-oriented services and solutions.

Axient Test Engineering & Analyses

- Provide expert Test Engineering and Analysis to ETO and Arnold AFB Participating Test Organizations (PTO) or test Facilities
- Interface planning, Instrumentation requirements, etc. between the OEM and the Participating Test Organization (PTO)
- Analysis Expertise includes:
 - Aerodynamic Analyses
 - Aerothermal
 - Aeropropulsion
 - Stage/Store Separation
 - Weather Erosion
 - Lethality
 - Sensor/Seeker
 - Aero-Optics
 - Vehicle signatures
 - Computational Fluid Dynamics

Axient Hypersonic Test Facility Requirements & Design

Develop design requirements for future test facility (J5) (combustion, heating, cooling, high pressure air, flow nozzle CFD; ARCs material test facility).

Locations

Huntsville, AL (HQ) • Arlington, VA • Wallops Island, VA • Dahlgren, VA • Washington DC • Greenbelt, MD • Columbia, MD • Pax River, MD • Aberdeen Proving Ground, MD • Tullahoma, TN • Warner Robins AFB, GA • Eglin AFB, FL • Melbourne, FL • Cape Canaveral, FL • Johnson Space Center, TX • Corpus Christi, TX • Albuquerque, NM • Cannon AFB, NM • Holloman AFB, NM • Yuma Proving Ground, AZ • Colorado Springs, CO • Hill AFB, UT • Moffitt Field, CA • Vandenberg AFB, CA • Armstrong Flight Research, CA • Los Angeles, CA • Pasadena, CA • Glendale, CA • Michoud Assembly Facility, LA