Hypersonic Technologies

• Maneuvering Hypersonic
• GPS Denied M&S
• Swarming M&S

• Glide Body M&S/T&I
• All-Round-Up Integration
• Land/Underwater Launch

Hypersonic GNC, GPS Denied and Autopilot M&S/Prototyping

- GPS/INS & GPS Denied Technology Design and Development
- Multiple Model Control Mixing for Performance Enhancement of Hypersonic Vehicles (e.g., Adaptive controllers to maintain HV performance within a region subject to aerodynamic knowledge uncertainties in both directions.)
- Hypersonic Weapons & Precision: Guided Munitions Design and Development (e.g., High Explosive Guidance Mortar & Munitions)
- Development of INS simulation software fusing data from various navigation sensors in a GPS-denied (A2/AD) environments
- HV Aerodynamic/Engine/Airframe Data analysis to capture critical dynamic transitions: Target Tracking, Data Fusion and Information Modeling
- Development of applied/robust and adaptive guidance and control algorithms to 6-DOF hypersonic vehicle simulation in preparation for HWIL demos; implementation of guidance laws
- Establishment of MBSE environment integrated with Simulink M&S capabilities for new missile systems with focus on GNC and related control design engineering linked to HWIL prototyping

Propulsion/Launch

- Launch vehicle preliminary design, sizing, and trajectory analysis: support to experimental design/build/test program for a rocket technology demonstrator and its associated test facility
- R&D/Development of hypersonic airbreathing propulsion analysis, modeling and test: liquid rocket engine testing, analysis, design
- Turbine Based Combined Cycle powered hypersonic aircraft development; Model validation, data validation and adjustment, instrumentation, test measurement uncertainty, and flight tests

Contact: Michael L. Martin, EVP, MDS Space Systems Program Lead
mmartin@mdsse.com • Direct Phone: (703) 433-2513 • A Veteran Owned Small Business
Huntsville AL • Sunnyvale, CA • Colorado Springs CO • Eglin Afb, FL
www.mdsse.com