



USASMD/ARSTRAT

Test and Warfighter Solutions Center

FTS

Flight Test Services Division



Summary

- Full Service: Planning, coordination and execution of flight and ground tests
- Providing Solutions: Launch platforms
- Cost-saving Options: Economical targets
- Payloads: Custom re-entry vehicles: lethality-driven payloads, threat representative, full suite of instrumentation
- Data Collection: Ultra-high data rate telemetry/optics/infrared on mobile platforms
- Data Analysis: Trajectory, range safety, and link margin analyses and post-test data analysis at fidelity customized to the requirement

The Flight Test Services Division supports operational missile defense weapon systems with development, integration, and execution of flight and ground test programs.

The Flight Test Services (FTS) Division, within the Test and Warfighter Solutions Center (TWSC) of the Research, Development, and Acquisition (RDA) organization offers technology and value-driven capabilities for testing and evaluation to support the development and operational testing of integrated missile defense weapon systems. The division provides end-to-end flight test planning, design, development, integration and test execution, as well as flexible launch platforms and unique low-cost target solutions. The vision of the FTS is to provide integrated missile defense testing solutions through a diverse supplier base, and tailored development strategies focused on meeting requirements on a timeline at a cost responsible to our user – the Warfighter.

U.S. Army Space & Missile Defense Command/Army Forces Strategic Command

The Flight Test Services (FTS) Division develops assets and executes test and evaluation (T&E) programs responsive to the needs of U.S. and allied Warfighters.

- **End-to-End Service and Program Control:** FTS team members address all aspects of flight and ground testing, from initial test concept development through intensive planning, acquisition, test execution, and mission wrap. Team engineers, analysts, and range technicians work all aspects of the effort, providing a unified experience for the customer. In addition to relying upon range and system under test infrastructure, FTS fields mobile flight and ground test telemetry and instrumentation units, effectively reducing logistics costs for division customers while providing independent and validated performance data sources.
- **Innovation:** FTS provides clean-sheet solutions to address limitations in U.S. T&E capabilities. This division brings customer requirements to fruition, improving the testing regime of systems for the Warfighter.

- 25K Transportable Target Launcher (25K TTL)

The Flight Test Division is currently developing two launchers capable of launching 25,000-pound maximum static load rockets. The design is supportive of launching an array of existing and future concept rockets. These configurable rail launchers are over-road and C-17 air-mobile thus providing worldwide deployment capability. Their mobility allows unique launch positioning of test articles facilitating unique kinematic geometries. This pair of launchers enables simultaneous launches and provides new dynamics for testing a system's sensors and system performance.

- Economical Targets (ET-1)

The Economical Target-1 is the first in a line of low-cost test articles designed to supplement waning flight test inventories and provide a cost-effective alternative to expensive high-fidelity test articles. The ET-1 is focused on lot acceptance and aging and surveillance testing. Additionally, ET-1 can serve as an effective low-cost sensor characterization article. This approach leverages existing in-production rocket motors and has a production cost goal of less than \$500,000. A flexible architecture permits enhanced kinematic capabilities and signature tailoring in future versions while maintaining economical per round costs.

• **Payloads: Custom Re-entry Vehicles**

The payloads program is centered on providing responsive solutions to customer needs. Photonic hit grids are available enabling end-game reconstruction of the test article and interceptor collision. Customized internal payloads, including high-fidelity threat-based payload surrogates are also available. Innovative and validated instrumentation, including time-of-arrival sensors, explosive reaction sensors, and rupture gauges are also available. To ensure the data reaches the ground, sensors can be integrated with vehicle telemetry and have stand-alone post-intercept transmission.

• **Data Collection: Telemetry/Optics/Infrared**

FTS offers resource support for test events including four transportable telemetry stations operable from unimproved sites. These can be operated stand-alone or integrated with range or other systems. Integration with infrared and optical sensors (cueing) capability is currently being developed. FTS' mobile telemetry is capable of supporting very high data rate with the ultra-low bit error-rates required for reliable hit point detection data capture.

• **Data Analysis: 6-DoF, Trajectory, Pre/Post Test**

FTS performs trajectory, range safety, and link margin analyses as well as post-test data analysis at fidelity customized to the requirements.

From planning, development, instrumentation, launch services, data collection and data analysis, the FTS Division goal is to provide full service to Operational Weapon System Development and Testing through rigorous event-driven processes, lowered cost and custom requirements-based engineering.



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