

Company Overview

Incorporated in 1995, Millennium Engineering and Integration Company (Millennium) is one of the nation's premier high-end engineering solution providers specializing in lifecycle development and implementation of atmospheric, space and ballistic systems. Millennium is an employee-owned, AS9100 and ISO 9001 registered company, and appraised as CMMI-DEV Level 3. We employ cleared, highly-educated personnel leading vital engineering, test, and operations efforts for the Army, Air Force, Navy, Missile Defense Agency, Department of Homeland Security, Federal Aviation Administration, Office of the Secretary of Defense, NASA, NOAA, and Commercial Space Providers. We have dozens of prime government contracts delivering subject matter and engineering expertise in all phases of the systems engineering lifecycle - from concept development through operational testing. We focus on delivering solutions for solving the most complex, vital programs in our Nation's interest. Our engineers are expanding the capabilities of today's classified and unclassified space, air, ground, sea, and Homeland Defense Systems and advancing the technologies of tomorrow's systems.



Shaping the Future of Technology

Technical Solution Specialties

- Mission Planning and Flight Analysis
- Satellite Engineering and Operations
- Missile, Defense and Weapon Systems
- Systems Engineering and Integration
- Mechanical Engineering and Analysis
- Integration, Test, and Evaluation
- Design and Rapid Prototyping
- Sensor Technologies and Power Systems
- Launch Systems and Ranges
- Software Design, Modeling, and Simulation
- Command, Control, and Communications
- Safety, Reliability, Quality and Mission Assurance
- Program Integration and Management
- Unmanned Aerial Vehicle Solutions
- Situational Awareness and Risk Mitigation



**Millennium Engineering
and Integration Company**

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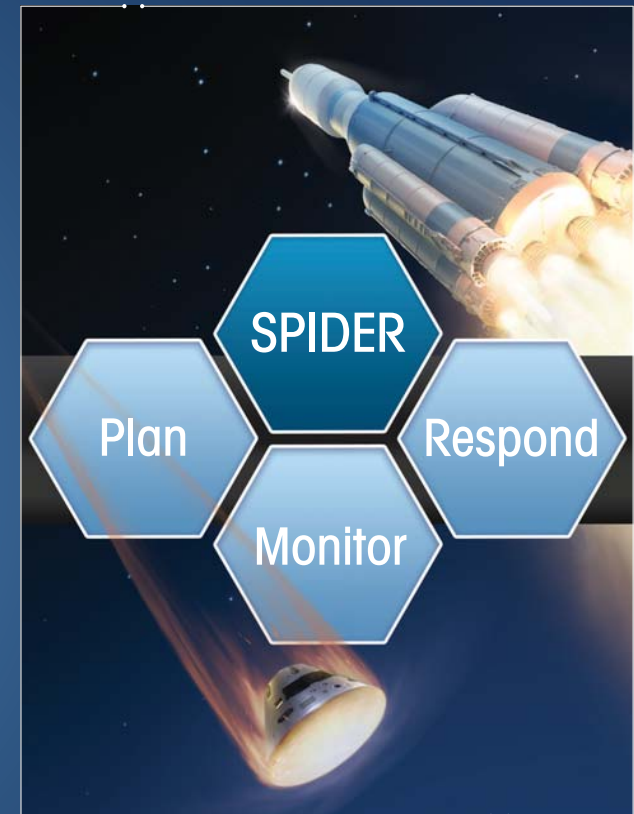
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SPIDER

Space Program Integrated Data and Estimated Risk

National Airspace System Integration
Situational Awareness and Response

System Overview

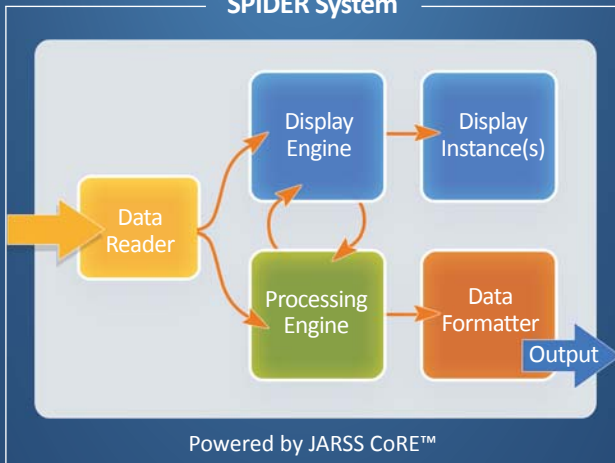
Millennium's **Space Program Integrated Data and Estimated Risk (SPIDER)** system is designed to provide situational awareness for launch and reentry vehicles, Unmanned Aerial Vehicle (UAV) and National Airspace System (NAS) traffic, and interfaces to existing systems for rapid response to off-nominal conditions.

Meeting requirements for Federal Aviation Administration (FAA) Office of Commercial Space Transportation (AST) use, SPIDER is an expansion of the **Space Data Integrator (SDI)** demonstration system developed by Millennium, used to illustrate how current launch and reentry vehicles can be integrated into the NAS.

SPIDER ingests launch and reentry vehicle telemetry data and offers operators a real-time display of current vehicle characteristics to include: present position, a drag corrected instantaneous impact point (IIP), hazard areas, and other points of interest. SPIDER also provides outputs for integrating vehicle and risk mitigation data into NAS traffic management situational awareness systems.

SPIDER offers a customized solution to meet safety requirements of airports, spaceports, and launch ranges for the integration of spacecraft, boosters, UAV, and other aircraft into a single situational awareness system.

SPIDER System



SPIDER — Providing Unparalleled Launch and Space Vehicle Situational Awareness and Risk Mitigation

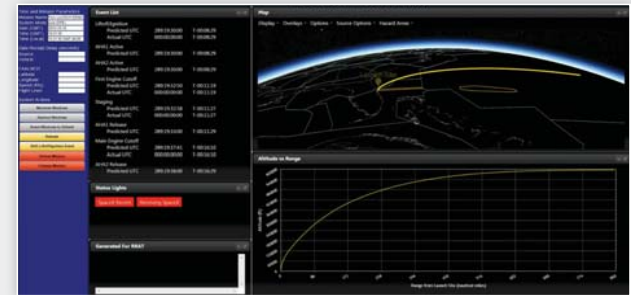


Built upon Millennium's proven Joint Advanced Range Safety System (JARSS) Configurable Real-time Environment (CoRE)™, SPIDER provides a flexible solution for the needs of launch and test ranges, spaceports, airports, and the FAA. Evolving from JARSS to perform real-time calculations and display drag-corrected models and analysis, SPIDER allows an operator enhanced capability to recognize off-nominal conditions. By providing an interface to Millennium or third-party hazard area generation tools, SPIDER significantly improves the ability to respond to those off-nominal conditions and quickly identify and clear the potential impact areas of air traffic, thereby preventing collision with space debris.

With the ability to receive or transmit data to a telemetry processor, SPIDER can be used to monitor spacecraft, launch boosters, UAV, airborne launch platforms, and other vehicles in a single integrated situational awareness display.

Features

- Situational Awareness Display
- User Controlled 2D or 3D Map Display
- Vehicle Present Position (PP) and History Trace
- Vehicle Nominal Trajectory
- Drag-Corrected Instantaneous Impact Point (IIP) and History Trace
- Vehicle Mark Events with Nominal and Actual Times
- User Defined Data Input (Aircraft ID, Flight Plan Information, etc.)
- Traffic Flow Management System (TFMS) and NAS Integration
- Third-Party Risk Assessment Tool Integration
- Customized Alarms and Notifications for Off-Nominal Conditions
- Multiple Target Tracking for Use During Modernized Fly-Back Booster Operations



SPIDER - Enhanced Space Data Display - Powered by CoRE™ Situational Awareness for Recognition and Rapid Response

Benefits

- Customizable Integration to Existing or Future Systems
- NAS Integration for Airspace Awareness
- Vehicle Safety and Mission Assurance
- Situational Awareness of Nominal and Off-Nominal Conditions
- Drag-Corrected Real-Time Calculated Impact Point Generation
- Real-Time Tracking Provided by JARSS CoRE™
- Easily Incorporate New Vehicles and Formats
- Single Integrated Display of Airspace with Launch, Reentry, Suborbital, UAV, and Other Aerial Vehicles