

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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Millennium is an Equal Opportunity/Affirmative Action Employer. Millennium does not discriminate on any basis prohibited by applicable law including race, color, religion, sex, nation origin, disability, age, citizenship status, Vietnam era or special disabled veteran's status in recruitment, employment, promotion, compensation, benefits, or training. It is Millennium's policy to maintain a work environment free from discrimination on the basis of sexual orientation.



**Millennium Engineering
and Integration Company**



World-Class System Integration
for End-To-End Mission Assurance

SENTRY™

**Millennium's
Autonomous
Flight
Safety System**

System Overview

Millennium's Autonomous Flight Safety System **SENTRY™** is a suite of products that allows for range safety mission planning, mission simulation, flight mission data generation and real-time onboard mission monitoring. **SENTRY™** brings the vehicle termination decision process onboard the vehicle.

Pre-flight mission planning is completed in the **SENTRY™** Mission Planning (**Sentry™** MP) tool and the decisions are based on the pre-calculated flight safety rules that are generated by Millennium's AFSS Flight Analyst Workstation (**FAWS™**). Along with our simulator and dynamic displays, **FAWS™** gives the analyst an environment to verify the flight safety rules through unlimited nominal and non-nominal simulations. Once verified, these rules are then converted for upload to the third party onboard Autonomous Flight Safety Unit (AFSU) decision engine software which calculates the instantaneous impact position for the vehicle in real-time using sensor data. During flight, this AFSU software compares the current vehicle state with the flight safety rules and determines if the vehicle is posing a threat or unsafe condition and then determines if termination is necessary.

SENTRY™

Millennium's Autonomous Flight Safety System

FAWS™

FAWS provides and utilizes pre-flight mission planning and safety analysis to generate the Flight Safety rules. FAWS then simulates off-nominal missions with high-fidelity precision and dynamic displays to test and validate the rules and mission data.

Ground Support Console

Mission data loader and on-vehicle AFSSU checkout, Real-time Telemetry Situational Awareness Display

3rd Party AFSSU

FAWS™ tested/verified Mission Data Load on the flight unit.

SENTRY™ Architecture —
The Complete Autonomous Safety System

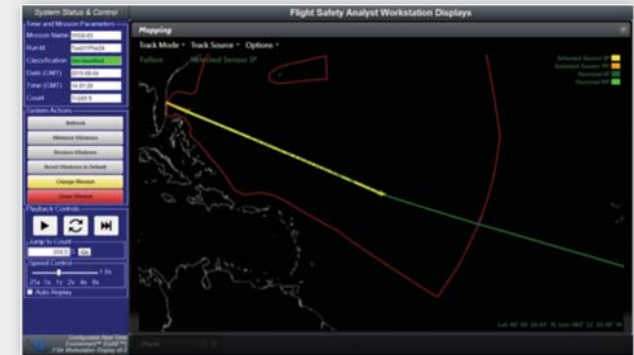
The Future of Flight Safety Begins with Millennium's Suite of Products — SENTRY™



Millennium's Autonomous Flight Safety System provides a more cost-effective and accessible means of ensuring safety during flight with uncompromising reliability and accuracy. The autonomous system greatly increases efficiencies in operations, improves launch site geographic flexibility and anomalous situation responsiveness. Millennium has an extensive history of providing Flight Safety System products and expertise.

Features

- Provides modular ground support capabilities
- Millennium-unique navigation module
- Navigation filter
- Model-based software architecture
- Direct Interface to Core Autonomous Safety Software (CASS)
- Low COST
- Provides mission data loads and verification
- Enables time synchronization of GPS and IMU signals
- Real-time tracking available through CoRE™



FAWS™ Dynamic Display - Powered by CoRE™
Fast Results for Iterative Rule Design

Benefits

- Vehicle-agnostic
- Modular and flexible
- Fulfills national safety approval requirements
- Increased data fidelity
- Turn-key solution from Mission Planning to Post Launch Operations
- System flexibility and lower cost
- Customizable and user-friendly graphical user interface
- Only system that includes automated rule generation and load capability