

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



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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
Weather
Display Tool**

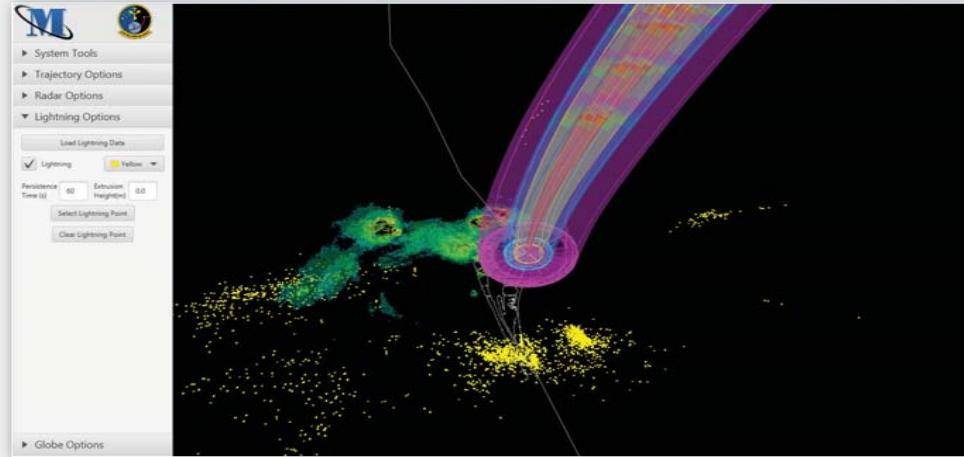
System Overview

Millennium's **SENTRY™ Weather Display Tool** is designed to provide improved situational awareness to the launch weather officers by aggregating the most important data into a fully interactive three dimensional display. The system automates many launch tasks performed by the LWO enabling faster responses to rapidly changing weather conditions.

The **SENTRY™ Weather Display Tool** ingests planned vehicle trajectory data, real time weather reflectivity data, and real time lightning strike data and plots it on an interactive 3D globe. The user can pan, tilt, and zoom the camera to expose details that current top-down two-dimensional displays do not capture. Additionally, the system is capable of displaying full volume radar scans with complete set of elevation angles, exposing the structure of cloud formations.

The **SENTRY™ Weather Display Tool** offers a customized solution that can be adapted to meet the safety requirements of airports, spaceports, and launch and other operational ranges by combining multiple weather data sources into a single situational awareness display.

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



Demonstration of the SENTRY™ Weather Display Tool user interface

Features

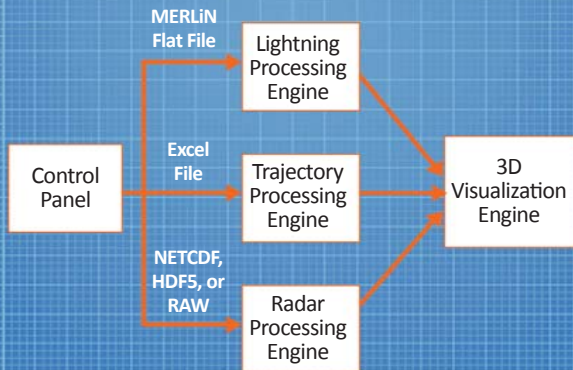
- User-controlled customized 3D or 2D map display
- Plotting of vehicle trajectories including nominal and three sigma boundaries
- Trajectory volumization based on distances specified in the Range's Lightning Launch Commit Criteria
- User-controlled color, thickness, and transparency of trajectory lines and volumes
- Simultaneous near real-time graphing of multiple weather radar reflectivity data sweeps at differing elevation angles
- Support for HD5, NetCDF, and Vaisala RAW radar data files
- User defined dBZ interval, color palette, and transparency of radar graphics
- Near real-time graphing of lightning strike data from multiple sources
- User-controlled lightning persistence time and color, and vertical extrusion capability to expose volume intersections
- Individual lightning strike selection for providing detailed strike information
- Built-in measurement tool for calculating point to point slant distances in 3D space
- Leverages the latest CoRE application framework

Benefits

- Customizable integration to existing or future weather data systems
- Automating the calculation of slant ranges to increase decision accuracy resulting in higher degree Vehicle Safety and Mission Assurance
- Aggregating trajectory, radar, and lightning data makes rule violations more easily and reliably identifiable. Enabling quick weather decisions, reducing over-conservatism and enhancing Mission Assurance
- Flexible user interface enabling increased launch and landing opportunities allowing weather experts to choose individual configurations that work best for their needs

The Process

Millennium's SENTRY™ Weather Display Tool



SENTRY™ Weather Display Tool Architecture