



SOTA decreases risk to satellite missions and increases survivability against threats by assessing a space object's vulnerability to another object's actions or events

The Space Object Threat Assessment (SOTA) product:

- Uses automated vulnerability analysis to ensure mission assurance for space based systems
- Is designed to support real-time, live or simulated data, or offline for analytical studies, training and exercise activities
- Provides a software engine with time dynamic web-based displays that include color coded visualization and output for ease of sharing SOTA results

Four-step workflow

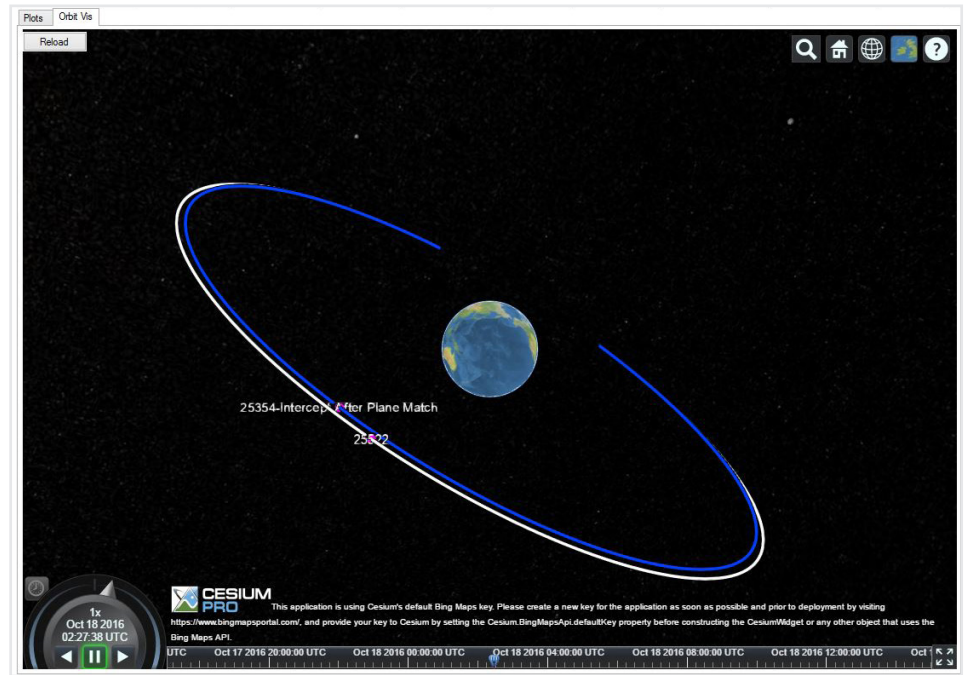
- Model threatening events using accurate physics-based modeling
- Perform assessments and rank orders of potential threats
- Assess in various modes; one-on-one, one-on-all, all-on-one, all-on-all
- Analyze results through dynamic plots, 3D visualizations, and text reports

Time dynamic

The vulnerability assessments can be synchronized to run in current time or in the future to predict vulnerabilities for future exercise execution. SOTA can also be used to support near real time assessments based on latest available data.

Vulnerability

SOTA provides a measure of vulnerability (or likelihood) of a threat object targeting another object using a Vanguard number. The Vanguard vulnerability metric provides insight into how likely a specific action is and how soon it could happen.



3D visualization

3D visualization that provides time-dynamic color coded vulnerability, indicating low or high threats, and to visualize the orbits of the space objects.

User output

SOTA provides a variety of outputs, including

- 3D surface, contour and heatmap plots
- Text-based, CSV data tiles that contain Delta-V and maneuver timing information for the vulnerabilities as they evolve over time
- CZML files for each specific encounter that can easily be viewed in Cesium

Addressable event types

- Co-orbital
- Orbital intercept
- Plane matching
- Proximity Operations
- Rendezvous

SOTA leverages AGI's pedigree software to assess vulnerability of any space object due to the action of another space-based object. SOTA provides analytical output and 3D visualization. Allow SOTA to make your mission critical studies, training, operations or exercise events more effective.