

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

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

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



Three-step workflow

- Model threatening events using accurate physics-based modeling
- Perform assessments in various modes (one-on-one, one-on-all, all-on-one, all-on-all) then rank orders of potential threats
- Analyze dynamic web-based displays and textual reports

User output

SOTA provides a variety of outputs, including:

- 3D surface, contour and heatmap plots
- CSV and text-based data files that contain state vector and delta-V information for the vulnerabilities
- CZML files for each specific encounter that can easily be viewed in cesium

Vulnerability

SOTA provides a measure of vulnerability (or likelihood) of a threat object targeting another object using a Vanguard number. The Vanguard vulnerability metric can be configured to use different to support specific CONOPS.

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.

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.

Addressable events .

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