Secure World Foundation

SWF is a private, endowed operating foundation dedicated to the secure and sustainable use of space for the benefit of Earth and all its peoples. SWF works with governments, industry, international organizations, and civil society to develop and promote ideas and actions for international collaboration that achieve the secure, sustainable, and peaceful uses of outer space.

Our Focus

Space Sustainability

Ensuring that all of humanity can continue to use outer space for peaceful purposes and socio-economic benefit over the long term.

Space Policy and Space Law Development

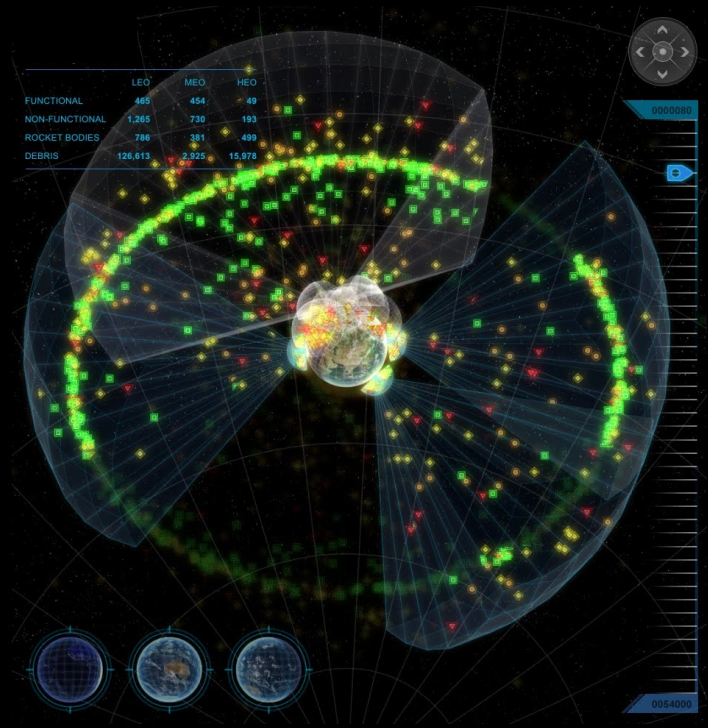
Promoting and assisting in the development of international and national norms, laws, and policies to foster responsible behavior by States and private sector actors.

Human and Environmental Security

Promoting improved governance and international cooperation in the delivery of information derived from space systems, and promoting cooperative efforts for the protection of our planet from the threat of near-Earth objects (NEOs).

Image credit: Lockheed Martin

Space Situational Awareness



To learn more about Secure World Foundation please visit *www.swfound.org*

Promoting Cooperative Solutions for Space Sustainability

What Is Space Situational Awareness?

Space situational awareness (SSA) is broadly defined as information about the space environment and its effects on our activities in space. SSA has three main components:

- **Tracking of objects in space.** There are nearly 1,300 active satellites in orbit around Earth operated by more than 60 countries and private entities. These satellites share space with an estimated 500,000 pieces of space debris that could damage or destroy those satellites in a collision.
- **Monitoring space weather.** The Sun's activity can create solar storms and explosions of charged particles that can damage satellites or power grids on Earth
- **Characterization of space objects.** Information about the behavior of space objects over time, electromagnetic signals and emissions, radar and optical imaging can provide clues as to their function and capabilities.
- **Predicting threats.** By maintaining a catalog of space objects and detecting new events, SSA can provide warning of potential threats to satellites such as collisions with debris, solar storms, or even intentional attacks.

Why is Improving SSA Important?

Improving SSA is critical to the long-term sustainability of outer space. It provides knowledge that allows everyone who uses space to evaluate the impact of their activities and make informed decisions. SSA makes using space safer and more efficient and enables protection of valuable satellites and space-based services. SSA also provides a level of transparency to reduce tensions, help verify agreements between countries, and prevent accidents or misperceptions from triggering or escalating conflict.

SWF's Interest in SSA

Secure World Foundation works as a facilitator and information source among States, international bodies, and space actors to promote dialog and cooperation. It supports initiatives to increase the amount of SSA information available to all actors and dialog between States, satellite operators, and other actors to develop partnerships and increase data sharing.

Who Does SSA?

Although historically done by the U.S. and Russian militaries, today there are a growing number of countries, academic and scientific institutions, commercial companies, satellite operators, and even private citizens who are providing various types of SSA data. Significant sources include:

- **U.S. Joint Space Operations Center (JSpOC)).** Operated by the U.S. military, the JSpOC utilize data from a network of more than 30 radars and optical telescopes around the globe. Some data is made public through the http://Space-Track.org website.
- **Space Data Association (SDA).** A non-profit entity, the SDA provides physical and radiofrequency interference warning services to participating satellite operators.
- **International Scientific Optical Network (ISON).** Managed by the Russian Academy of Sciences, ISON consists of 23 academic and scientific telescopes in 11 countries.

Over the last few years, there has been increased activity from the private sector on SSA. Multiple companies are now developing or providing data and analysis services to governments and satellites operators.

Additional SWF Resources

For more information , visit our website at http://swfound.org/resource-library/

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