

Hearing of the Subcommittee on Space and Aeronautics

U.S. House of Representatives

“Space Situational Awareness: Examining Key Issues and the Changing Landscape”

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Madam Chair, Ranking Member, and other distinguished members of this subcommittee, thank you for the opportunity to testify today on this important issue. Secure World Foundation is dedicated to ensuring the long-term sustainability of space activities so that all of humanity can continue to use space for benefits on Earth. Space situational awareness (SSA) is the foundation of space sustainability and working to improve SSA capabilities for all space actors is a major part of our work.

On January 29, 2020, two dead U.S. government satellites nearly collided about 560 miles above the city of Pittsburgh. The last actual on-orbit collision between two satellites occurred on February 10, 2009, when a dead Russian satellite collided with an active U.S. commercial communications satellite. The Iridium-Cosmos collision generated nearly 2,000 tracked pieces of orbital debris bigger than a softball, most of which will remain on orbit for decades to come.

Thankfully, in this latest incident, both objects passed by each other harmlessly at an estimated distance of about 60 feet.

Comparing the two events highlights what has and has not changed with SSA in the intervening eleven years. The biggest change is in the availability of SSA data and who is providing it. In 2009, the only public source of data on close approaches between space objects was the U.S. military's Joint Space Operations Center. By contrast, the first public notice of the incident this past January came from a tweet sent three days before the event by an American commercial SSA company, LeoLabs, which operates its own network of ground-based tracking radars that feed into its own catalog of space objects. What has not changed is that we cannot yet predict whether two objects in orbit will or will not collide. We can only give an estimated probability of collision, which may change over time.

In 2009, the Iridium-Cosmos collision served as a wake-up call for the entire space community to the threat that orbital debris poses to active satellites, as well as the importance of SSA for detecting and avoiding future collisions. Eleven years later, the recent incident should serve as an alarm that there is still a lot more work to do.

As a result of the Iridium-Cosmos collision, U.S. policy was changed in 2010 to broaden the SSA mission of the U.S. Air Force to provide close approach warnings to all satellite operators globally. This was an important step that has improved the situation, but only so much. SSA capabilities today are dangerously insufficient to deal with the emerging challenges from the growing number of space actors, large constellations, orbital debris hazards, and a more complex and competitive geopolitical environment.

The key policy issue still to be resolved is the transition of responsibilities for civil SSA from the Department of Defense to another agency as the first step in establishing a national space traffic management regime. The executive branch has worked on this issue for eight years across two

administrations, resulting in Space Policy Directive 3 issued by the Trump Administration in June 2018. However, Congress has not yet enacted the required changes in authorities or budget to implement SPD-3, or an alternative, and thus the issue hangs in limbo.

Beyond SSA itself, there is the broader issue of implementing a holistic strategy for ensuring the long-term sustainability of space in accordance with existing national policy direction. While the United States has made limited progress on developing orbital debris mitigation standards, it has made zero progress on developing the capabilities to remove existing orbital debris, let alone actually doing so. Neither have we made much progress on implementing a space traffic management regime, enforcing orbital debris mitigation standards, or modernizing the oversight and licensing of U.S. commercial space activities. All of this relies on improved SSA capabilities.

It is critical that Congress act on this issue now. Improving SSA is fundamental to everything the United States does in space and all the benefits we derive from space. This includes protecting human exploration and science, ensuring critical weather and climate data, protecting important national security capabilities, and enabling economic growth and innovation in the commercial space sector. Taking these policy steps on civil SSA will enable a giant step towards ensuring the long-term sustainability of space activities for the United States, and that humanity can continue to utilize space for benefits on Earth.

Thank you for your time, and I welcome your questions.