

SELF-DEFENSE IN SPACE: A SUMMARY OF DISCUSSIONS

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Why Self-Defense in Space is a Critical Issue

The principle of self-defense as it relates to national security space activities and capabilities is growing in importance. As more nations depend increasingly on space assets for their national security and socioeconomic development, the loss of these space assets – whether real or theoretical – and actions taken in response to those losses could spark or escalate conflict on Earth. Moreover, certain types of military actions in space could have long-lasting negative impacts on the space environment. The question of self-defense in space has also become a sticking point in international discussions on space security and sustainability, hindering progress on establishing best practices and norms of behavior.

Grappling with these challenges is not new, and there are steps the space community can take to address them. Other domains such as air, maritime, and cyber have developed broad agreements on how the principle of self-defense applies to military activities to help avoid or de-escalate crises, reduce human suffering and environmental damage, and even ban certain weapons or warfare techniques. Bilateral, international, and public discussions of the issues surrounding self-defense in space could help national governments, militaries, and space agencies think through the various aspects and ripple effects of potential conflict in space that could harm international security and stability. Ultimately, tackling this issue can help ensure that space remains a stable, predictable, and sustainable domain over the long-term, and that humanity can continue to use space for benefits on Earth.

Because this issue is in its infancy as it applies to space, a significant amount of background work needs to be done before it is possible to have a chance of resolving it. To explore these issues, the Secure World Foundation (SWF), a private organization that promotes cooperative solutions for space sustainability, convened a series of events in 2015 to explore various aspects of self-defense in space.

The Role of Non-binding “Manuals” in Establishing Norms for Military Activities and Warfare

The first SWF event on this topic took place on March 23, 2015, when SWF partnered with the George Washington University Law School’s Military Law Society to hold a panel discussion in Washington, DC. The event was intended to provide an overview of international law as it applies to military activities, including conflicts and warfare, and examples of how it has been interpreted or defined in certain domains, such as air and cyber, and why to date there have not been any significant attempts to clarify how international law applies to military activities in space. The discussion also examined the current status of international law as applied to military activities in the space domain, and discussed potential benefits of further clarifying the existing norms and interpretations.

Panelists provided an overview of international law as it applies to military activities in both peacetime and war. They noted that the traditional binary condition of either peace or war has given way to a more fluid spectrum between those two ends, and that along the spectrum there are different levels of adversarial or hostile action, as well as different options for States to respond. Specific examples were given from the cyber domain, which over the last few years has seen a range of incidents from enabling operations to disruption to outright attack.

A major theme of the panel was the valuable role that “manuals” created by international experts and practitioners play in the actual decisions made by military commanders. The San Remo Manual on International Law Applicable to Armed Conflicts at Sea is widely used by military maritime forces; the Harvard Manual on International Law Applicable to Air and Missile Warfare is used by military aviators; and the recently completed Tallinn Manual on International Law Applicable to Cyber Warfare is having an impact as well. Panelists also discussed the potential value of a future Manual on International Law Applicable to Military Activities in Space.

International Perspectives on Self-Defense in Space

International opinion on self-defense can be broadly divided into three perspectives. The first perspective is that there can be no self-defense in space because it violates the principle of peaceful purposes enshrined in the Outer Space Treaty, which in their definition does not include military activities in space. The second perspective is that States have an inherent right to defend their satellites against potential attacks, but that defining the limits and boundaries on that right should be avoided so as to preserve the maximum freedom of action for national policies and activities. The third perspective is that States have the right of self-defense, but the boundaries and restrictions on that right are uncertain. This ambiguity creates a barrier to creating new agreements that mention the right of self-defense in space because States are not sure of the implications of doing so.

The second SWF event attempted to discuss these differences in perspectives. SWF partnered with the United Nations Institute of Disarmament Research (UNIDIR) to hold a meeting in Geneva, Switzerland, on March 31, 2015, which brought together diplomats from the Conference on Disarmament and representatives from the International Telecommunication Union (ITU) and the International Committee of the Red Cross (ICRC) to exchange views on national perspectives. The discussion focused on four issues arising from self-defense in space: the concept of an armed attack for outer space, proportional responses, the principle of distinction in outer space, and frequency interference.

A question was asked as to what might trigger the use of self-defense in outer space and how a State's sovereignty extends into space. Attribution is a major concern in self-defense and in terms of frequency interference, and the question arose as to what level of interference, if any, would be considered enough to validate a use of force in response. It was suggested that norms of behavior in outer space would allow States to share common agreements and understandings on how to address the security issues. With regards to frequency interference, it was noted that the ITU never qualifies interference as intentional or unintentional. It was suggested that there be the creation of a registry for frequencies, and to apply "naming and shaming," if necessary. One participant pointed out that international discussions on the outer space issue have not yielded end results thus far due to the different levels of players in space. Indeed, emerging and developing States may want a safe space environment, but they do not consider themselves part of the problem, or are hesitant to get involved in what they perceive as "big power politics."

Exploring Scenarios on Self-Defense in Space

The third event in this series attempted to explore specific issues with self-defense in space using scenarios. SWF, in collaboration with George Washington University's Space Policy Institute (SPI), held a workshop on Sept. 9, 2015, in Washington, D.C., that brought together legal, policy, and military experts to consider and discuss three scenarios involving self-defense and conflict in outer space.

The first scenario looked at the role commercial operators can play in national security considerations, how hosted payloads are factored into decisions about actions, and if/when pre-emption can be justified. It included uplink jamming of a commercial satellite that prevented command and control and degraded military capability, raised the question of options that commercial operators or States have to respond to intentional jamming, and of the potential role the ITU may play in this type of situation. It went on to examine the legal standards for preemptive attacks on satellites in self-defense, and what constitutes proportionate responses. The second scenario discussed the threshold for armed attack and cross-domain proportionality. In it, one country's satellites in Low Earth Orbit (LEO) started to experience anomalies after passing over a suspected ground-based laser weapons installation in another country. In this scenario, participants looked at what the burden of proof would be to determine if one country was indeed responsible for damage to another country's satellites; what legal remedies would be available to the country suffering the satellite damage; whether a purported laser attack on satellites constituted an armed attack; and what a proportionate response would be to such an attack. The third scenario dealt with hybrid warfare and collective self-defense. As tensions rose, jamming originating from a disputed border region interfered with a space-based satellite navigation system and ultimately resulted in the creation of an intentional debris field in LEO. Participants discussed whether such an action constituted an armed attack, and options for response.

There were a few general conclusions from the discussion. The first was that there is an overall lack of legal and political governance mechanisms to deal with many of the situations in the scenarios, especially radiofrequency interference. This leaves few non-military options for States to respond to intentional acts. The second insight was that while many of the legal and policy issues with conflict in space are no different from those in other domains, the space world in general has no experience or capacity for making the kinds of decisions that their air, land, and maritime counterparts do in determining legal requirements under international humanitarian law. The third conclusion was that many countries lack the institutional capacity to engage meaningfully on international negotiations involving self-defense in space. This indicates there is a need for significant consultations, engagement, and information sharing before the space community should consider broad international negotiations for political or legal agreements involving self-defense in space.