



## The principles of self-defense in space

March 31, 2015

Chairs: Mr Ben Baseley-Walker, UNIDIR

Ms Victoria Samson, SWF

The United Nations Institute of Disarmament Research (UNIDIR), in collaboration with the Secure World Foundation (SWF), held a small meeting on March 31, 2015 in Geneva, Switzerland, on the topic of self-defense in outer space. The meeting gathered diplomats, as well as representatives from the International Telecommunication Union (ITU) and the International Committee of the Red Cross (ICRC), to discuss the principle of self-defense in space and key issues related to the right of self-defense from their national perspectives. The discussion focused on four issues arising from security in outer space: the concept of an armed attack for outer space, proportional responses, the principle of distinction in outer space, and frequency interference.

The meeting began by raising several questions related to international security in outer space. Considering that outer space is a highly globalized domain, the challenges faced are distinct from those in the terrestrial domain. This is particularly the case in situations of armed attacks, where the threshold for a definition remains an issue for states, especially in regards to how they consider the question within their national doctrines. As an increasing number of countries are using space as a socio-economic resource, a vast majority of space services are civilian, while most of the space assets themselves are dual use – making the linkages between civil and military activities more complex. In this context, how can jamming, hacking, or spoofing a satellite be defined as an armed attack or a threat to international peace and security? What is the threshold for the use of force in this situation? There is also the question of what constitutes a proportionate response to an attack against space assets, especially with third parties involved, and what might be considered an appropriate target for response. Finally, how can states evaluate the impact of damages to or the loss of space assets due to downstream effects or loss of function?

Next, there was a brief discussion of some of the issues of dual use of outer space systems and responsible behavior for space actors. The question was asked, what might trigger the use of self-defense in outer space? How does a state's sovereignty extend in the sphere of space? A participant felt that attribution was a major concern in self-defense and in terms of frequency interference, and questioned what level of interference would be considered too much to lead to response. One suggestion was that norms of behavior in outer space would allow states to share common agreements and understandings on how to address the security issues which would ultimately be beneficial.

On the matter of use of force in self-defense, one participant explained that their country has a universal understanding of self-defense in terms of legal basics, but the principle is not yet defined and detailed enough for appropriate use and has different interpretations. One solution to this was seen to be the establishment of guidelines for space activities in self-defense. Although article 51 of the UN Charter authorizes the use of force for self-defense, there are considered to be limits in terms of how force can be used in space. This was perceived as the rationale for Russia and China drafting a treaty on the “Prevention of the Deployment of Weapons in Outer Space, [and of] the Threat or Use of Force Against Outer Space Objects” in an attempt to create a clear definition of the use of force. The treaty calls for the definition of the use of force or threat as intended military actions, and the distinction with other actions of use of force that are results of agreements among states. The key word is “intended action to inflict damage.” This requires certain criteria to differentiate between intended and unintended military actions in space, and this distinction would allow for some basis to define the proportionality of actions. It was also underlined that the issue of self-defense should be raised in both the UN 1<sup>st</sup> and 4<sup>th</sup> Committees.

With regards to frequency interference, it was noted that the ITU never qualifies interference as intended or unintended. Indeed, the ITU considers frequencies in satellite orbits as a limited common resource of humanity, and as such, it has to be used efficiently and equally. The way to secure frequencies was seen to be recording them through a master international frequency register. It was suggested that there be the creation of a registry for frequencies, and to apply “naming and shaming,” if necessary. In practical terms, this would mean states that have signed the ITU convention and have registered their assets or/and their frequencies would be protected by the ITU community, and violations will be resolved within it, by “putting the issue on the table.”

On the issue of armed attack and international law, it was noted that there is a shared view among scholars that cyber operations that lead to the loss of functionality of an object constitute an attack, as per article 49 of Additional Protocol 1 of the Geneva Convention. In an outer space context, jamming electromagnetic communication has never been considered an attack. Therefore, there would be a differentiation between jamming and the loss of functionality of a civilian asset in defining an attack. It was made clear that the question of how force might be used in conflict (*in bello*) and the application of articles 2 and 3 of the Geneva Convention (which define the scope of application in a conflict) is independent from the question of definition of aggression/use of force in the *ad bellum* law (which determines a set of criteria that should be met prior to a conflict).

One representative noted their national space policy considers that all states have the right to explore space, and that both international law and the right to self-defense do apply, with no distinction, to every state’s dimensions, including outer space. Whether or not an action constitutes a sufficient armed attack in space has to be examined on a case by case basis, as states have not defined what an armed attack is in other domains. The question of what amounts to a proportional response to an attack is also not clearly understood at this time. With regards to jamming, the purposeful interference of a system was seen as an infringement to a nation’s rights.

Another perspective put forward was that there are similarities between cyber and outer space, however the legal framework in outer space is much more advanced, with several treaties implemented and principles defined such as the peaceful use of outer space. The threshold of what

amounts force in space is seen as an important concept, and this participant's perspective was that jamming does not equal an armed attack, given that countries do have legitimate reasons to jam some signals. It was underlined once again that international humanitarian law does apply to outer space, and the principle of proportional response goes along with the recognition of self-defense.

One participant then raised the issue of discriminate and indiscriminate attacks, environmental modification, and space activities under the Outer Space Treaty and their attribution to states, such as the licensing of commercial satellites. One participant suggested that timing is critical, as very soon there may be too many types of satellites, and defining what is an attack would become impossible. Another participant stated that their country has no clear position on self-defense, but believes international humanitarian law applies to outer space and other domains. The country considers that armed attack has to be defined with a scale and criteria for outer space, and that self-defense is only allowed as part of an on-going operation.

Looking at other initiatives to tackle the challenges of self-defense concepts in outer space, it was noted 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, smaller states may want a safe space environment, but they do not consider themselves part of the problem. A thought-provoking question posed during discussions was whether there could be value in merging the European Union's proposed draft International Code of Conduct (ICOC) with the draft treaty on the "Prevention of the Deployment of Weapons in Outer Space, [and of] the Threat or Use of Force Against Outer Space Objects." If a proposed ICOC draft included the principle of self-defense from the draft treaty, it was suggested it could have the potential to create a new single instrument that would combine both civilian and military aspects of outer space, while also potentially reinvigorating discussions within the Conference on Disarmament. Some responses to this suggestion were that the combined instrument would be too large to find common ground for negotiation. However, it was reiterated that the European Union does aim to have a global instrument on outer space issues, not an instrument only for Europeans.

One representative stressed that the main concern for their country is the idea of including self-defense in some documents related to the peaceful use of outer space. It was argued that this would be moving in the wrong direction and that states should instead be creating mechanisms to avoid self-defense and the military use of space. Another participant concluded the discussions by urging all states to increase transparency, trust, and security in outer space, and to be mindful of the necessity for proportionality when exercising the right to self-defense.