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SWF Statement to the Intersessional Meeting of the GGE on Further Practical Measures for PAROS

Feb. 29, 2024

NYC, NY

Thank you, Mr. Chair. As this is the first time that Secure World Foundation is taking the floor, let me congratulate you on your appointment. We wish you all success in leading this body and put ourselves at your disposal for support in any way we can. We also wish to thank Member States for the opportunity to provide our perspective and insight on this topic, further practical measures for the prevention of an arms race in outer space.

My name is Victoria Samson and I am the chief director of space security and stability for the Secure World Foundation. SWF is a non-profit organization dedicated to the secure and sustainable use of outer space for the benefit of all peoples of the Earth. We work with governments, intergovernmental organizations, industry, academia, and civil society to develop and promote international cooperation to achieve the secure, sustainable, and peaceful uses of outer space.

When discussing how to prevent conflict on Earth from extending to space, or vice versa, a formal treaty-making process should not be the only solution. The high degree of technological change makes it difficult to settle on a specific legal answer, and the growing number and diversity of States engaging in space makes it difficult to find a quick consensus. Focusing solely on new treaty mechanisms are unlikely to yield the near-time benefits that are so desperately needed. If the focus is on norms, rules, and principles of responsible behavior, we can start to see a positive impact now, and this could also lay the foundation for future treaty regimes. It has been said today already but I would like to emphasize this: non-legally binding approaches and legally-binding commitments are not mutually exclusive, but rather are very often complementary in nature.

One of the strongest ways to improve security and stability of the space domain is to increase the transparency of space activities. A key way to do this is by improving space situational awareness (SSA) collection, analysis, and sharing. Having an informed, objective, and trustworthy view of what is happening on orbit will do much to mitigate concerns about activities of space actors. Making space object registries more accessible, transparent, and interoperable will help with that too, as will promoting the expedited registration of space objects once they have been launched. To underline this point, improving the quality of and

access to SSA data for all States would do much to strengthen the stability and reliability of space assets and thus the domain itself.

A second way is to focus on specific examples of norms of behavior that the international community could agree upon. An example that could have some traction is an agreement not to deliberately create long-lasting debris on orbit through testing of destructive DA-ASAT missile tests.

Along those lines, SWF appreciates the growing number of countries which have made the commitment not to conduct destructive direct-ascent antisatellite (DA-ASAT) missile testing (37 countries), as well as the overwhelming support of UNGA Resolution 77/41, “Destructive direct-ascent anti-satellite missile testing,” passed in December 2022, by a recorded vote of 155 in favor to 9 against. Destructive DA-ASAT missile tests directly threaten the safety of our space systems and the long-term sustainability of the environment within which they operate. These tests can create long-lasting orbital debris which threatens national assets, commercial spacecraft, human spaceflight platforms, and many of the space-based services humanity uses on a daily basis. Such debris poses a direct threat to future economic activity and innovation in low Earth orbit by raising the costs of current and future operations and creating uncertainty for investors and operators.

Discussing further the extent of consequences from destructive DA-ASAT missile tests, I would like to draw attention to the statement of support which SWF coordinated from the global space industry of the test moratorium. This includes operators of space systems, providers of space-based services, and users of space-derived services; the industry members in that statement encouraged additional countries to make similar declarations. When we initially released the statement in November 2023, we had 26 companies from 10 countries in support of it; the latest number of industry actors in support of this is 38 companies from 11 countries. We have more who have reached out to us to add their name to this list and continue to be open to new signatories.

Another area that is a high priority to address is rendezvous and proximity operations (RPO) on orbit. A wide variety of governments and commercial entities around the world are developing RPO technologies for military, intelligence, civil, and commercial uses. While many of these uses could yield immense benefits for space security and stability, a failure to be transparent about them could create misperceptions or mistrust that increase instability and risk of conflict. The international community should be focusing on developing norms of behavior for discriminating between commercial and civil RPO and national security RPO and for increasing the safety of all kinds of RPO.

A fundamental TCBM that is often over-looked is a commitment to sharing information about national policies, budgets, doctrines, and legislation related to space security and stability. Often, the only information about national activities on orbit is what can be found in news reports, which often are limited to reporting what actually happened and then conjecturing why it is being done, allowing for lots of room for misinterpretation. Article XI of the Outer

Space Treaty already obliges States to share “to the greatest extent feasible and practicable...the nature, conduct, locations and results of” space activities. However, this language is not clearly instructive in how States can comply.

One tool which has already been mentioned today but I will bring up again that can help with sharing information is the space security portal co-developed by UNIDIR and SWF. The Space Security Portal is an interactive map of the global space security governance landscape. It provides profiles of the space security-related policies of all UN Member States, in addition to various intergovernmental organizations and multistakeholder initiatives. This tool seeks to support informed participation by relevant stakeholders in activities designed to advance space security and support transparency, information sharing, confidence and capacity building in outer space governance.

The idea of developing common definitions as a step to having a common understanding of what PAROS means, given that the world has changed so much since the United Nations first started discussing PAROS, came up numerous times today. I would like to point out one tool that could also be useful in this matter, which was also co-developed by UNIDIR and SWF, is the Lexicon for Outer Space Security. It aims to serve as an accessible global reference point for terminological issues related to space security. The Lexicon is an evolving project: the list of terms to be included in this first edition was developed by drawing from salient terms used in space security discourse at the multilateral level, and through consultation with a geographically representative and linguistically diverse committee of space and disarmament experts. New terminology will be added in the future as the space landscape evolves. The terms featured in this first edition are divided into three main groups: 1. Acronyms commonly used in space security. 2. Common definitions of frequently used concepts and acronyms in space security to facilitate a broad understanding of what can sometimes be a technical topic. And 3. A selection of terminology frequently used by States in space policy discussions that could benefit from further clarification to achieve a common understanding.

There has been a lot of discussion today about article 4 obligations of the Outer Space Treaty. The OST is very clear that weapons of mass destruction cannot be placed into orbit. I would like to talk a little bit about why that is a concern.

We already have a strong sense of what might happen to satellites if a nuclear weapon were to detonate while on orbit. From 1958-1962, the United States and USSR both conducted high altitude nuclear explosions (HANE), which varied from ~20 km to about 540 kilometers in altitude. Together, they conducted around 18 tests (11 by the United States, 7 by the USSR).

The most well-known was a 1962 test called Starfish Prime, held by the United States in October 1962, where a 1.4 Mt nuclear warhead was exploded at an altitude of about 400 km. The radiation released from that explosion managed to destroy about a third of the active satellites on orbit; of course, this was just a few years after Sputnik, so that meant that the total number of satellites in orbit was 24 and of those, 8 were destroyed.

The space environment has changed radically since then, as many countries have acknowledged today. One of the ways in which it has changed is through the number of satellites on orbit; today, there are over 9500 satellites in orbit. So the sheer number of satellites that would be affected by a nuclear explosion in orbit is vastly greater.

In general, much depends on the size of the warhead and the altitude at which the warhead is set off. Satellites in the vicinity, unless they've been hardened against this, would have their electronics fried; it should be pointed out that most satellites these days are not hardened against a nuclear attack. Next, as a second-tier type of effect, the radiation released from the explosion would super-charge something called the Van Allen belt, which is a place of highly radiated ions. Satellites pass through this belt repeatedly while they orbit Earth, and thus they would pick up more and more radiation until they most likely would suffer failure.

This is not a surgical weapon: it is hard to control the effects. This is not a capability that could solely be focused on and have the consequences felt by one satellite. Many other satellites, including those of both allies and enemies of the actor, would also be harmed by this. If the explosion happened in low Earth orbit, people on both the International Space Station and the Chinese space station would be in danger as well.

Finally, moving away from discussions about the effects on spacecraft, a nuclear explosion in orbit would be geopolitically highly escalatory. Even during the height of the Cold War, arms control treaties made sure to spell out that national technical means would not be interfered with because of this.

Looking ahead, the key now is to sustain the momentum and to work on enabling more progress. In addition to broadening the number of countries joining the DA-ASAT test moratorium, the global community needs to examine pathways to move from voluntary pledges to legally-binding agreements that solidify these commitments and to ban that type of test. Destructive DA-ASAT missile tests are relatively easy to define and attribute, and a verification regime could be created to promote compliance and accountability. We also need to find ways to make progress on other key space security issues, such as uncoordinated close approaches of space objects, that could lead to meaningful reduction in the risk of conflict extending into outer space and helping secure space for all actors. Finally, as has been pointed out numerous times today already, there is an existing legal framework that should be fully realized and thus we encourage those who have not already signed and ratified the OST, to do so. Mr Chair, Secure World Foundation wishes you and each Member State all the luck in your discussions. Thank you for your time and this opportunity to provide input.