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The road to a moratorium on kinetic ASAT testing is paved with good intentions, but is it feasible?

U.S. Vice President Kamala Harris declared on Monday, April 18, 2022 the United States' commitment not to test anti-satellite missiles and called on the international community to follow its example¹. The announcement was made during the Vice President's visit to the Space Force base in Vandenberg, California, five months after a Nudol missile was fired at a satellite in low Earth orbit², at an altitude of 480 km³. *"Without clear norms we face unnecessary risks in space. The United States will continue to be a leader in order to establish, to advance, and demonstrate norms for the responsible and peaceful use of outer space"*, she said. The previous day, NBC News obtained a document according to which the Biden administration had informed Congress of its commitment to reducing *"the most pressing threats to the security and sustainability of space"*⁴. Back in March 2022, when describing to the Conference on Disarmament the systems that may *"undermine the international system"*, the US representative mentioned both *"the ground-based ASAT missiles intended to destroy satellites in low Earth orbit and ground-based ASAT lasers probably intended to blind or damage sensitive space-based optical sensors on low Earth orbit satellites"*⁵.

¹ The White House, [Remarks by Vice President Harris on the Ongoing Work to Establish Norms in Space](#), 18 April 2022.

² Pavel Podvig, ["Russia hits its own satellite in an ASAT test"](#), russianforces.org, 15 November 2021.

³ Nivedita Raju, ["Russia's anti-satellite test should lead to a multilateral ban"](#), Stockholm International Peace Research Institute, 7 December 2021.

⁴ Ken Dilanian, Courtney Kube, ["Biden admin to announce self-imposed ban on anti-satellite weapons tests"](#), NBC News, 18 April 2022.

⁵ Michael Aho, [United States Remarks for Conference on Disarmament Subsidiary Body 3 – Prevention of An Arms Race in Outer Space](#), 22 March 2022.

Vice President Harris made her declaration less than a month before an open-ended working group on space threat reduction is set to meet at the United Nations in Geneva⁶. The working group was established in December 2021 at the suggestion of the United Kingdom in the First Committee of the United Nations General Assembly⁷ and is a follow-up to resolution 75/36, titled “Reducing threats from outer space through norms, standards and principles of responsible behaviour”, adopted in December 2020⁸.

Ten years after the launch of Sputnik-1, a multilateral treaty on the exploration and use of outer space was signed by the United States, the United Kingdom and the Soviet Union on January 27, 1967⁹. So far, this treaty – commonly known as the Outer Space Treaty – has helped to maintain safety and security in space and on Earth by laying out a series of principles that have guided, and continue to guide, activities in space. However, as many have pointed out over the years, the Outer Space Treaty presents certain gaps when it comes to arms control and disarmament¹⁰, and the fact that, under it, the testing of kinetic ASATs is considered legal, is a significant one.

A commitment not to test kinetic ASATs, such as the one made by the United States, does not just positively impact space security, it is also relevant for the purposes of space safety. The former is understood as the protection of space systems and their components from intentional actions and threats caused by external or unauthorized actors, and the latter consists of measures taken to reduce accidental damage to space systems and their components, including space debris, which can indiscriminately damage any type of object placed in space. It reaffirms the idea of a feedback loop between space security and space safety issues, with one affecting the other and *vice versa*¹¹.

Outer space is a shared domain where individual actions have collective consequences¹². With the emergence of new space actors (both states and industry players), and the increase in stakeholders, new economic and strategic issues are integrated into the discussion. The sustainability of space activities and the stability of the domain are two sides of the same coin, which creates an interconnection between safety and space security¹³.

The creation of space debris through the use of kinetic ASATs threatens both: because of their very high speed in orbit, even small pieces of debris can damage or destroy satellites if they collide¹⁴. Additionally, when the altitude of orbital debris is high, it generally stays in Earth’s orbit longer¹⁵. Debris left in orbits below 600 km falls typically back to Earth after a few years and

⁶ United Nations Office for Disarmament Affairs, [Open-ended working group on reducing space threats](#), 2022.

⁷ United Nations General Assembly Resolution 76/231 [Reducing space threats through norms, rules and principles of responsible behaviours](#), 16 December 2020.

⁸ United Nations General Assembly Resolution 75/36, [Reducing space threats through norms, rules and principles of responsible behaviours](#), 16 December 2020; Jessica West, “[The UK process on norms and space security](#)”, Project Ploughshares, July 2021.

⁹ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, entered into force 10 October 1967, U.S.T. 2410, 610 U.N.T.S. 205.

¹⁰ Jessica West, Almudena Azcárate Ortega, “[Space Dossier 7: Norms for Outer Space: A Small Step or a Giant Leap for Policymaking?](#)”, United Nations Institute for Disarmament Research, 17 March 2022.

¹¹ Laetitia Cesari Zarkan, “[What’s in a word? Notions of ‘security’ and ‘safety’ in the space context](#)”, 2021.

¹² Laetitia Cesari Zarkan, Valentin Degrange, Hugo Peter, “[Entre force et diplomatie spatiale : le missile russe Nudol s’invite à la table des négociations](#)”, *Notes d’actualités de l’IESD*, Institut d’études de stratégie et de défense de l’Université Jean Moulin Lyon 3, 1 December 2021.

¹³ United Nations, [Conference on Disarmament Holds Thematic Discussion on the Prevention of an Arms Race in Outer Space](#), 1 June 2021.

¹⁴ Union of Concerned Scientists, “[Space Debris from Anti-Satellite Weapons](#)”, April 2008.

¹⁵ National Aeronautics and Space Administration: https://www.nasa.gov/news/debris_faq.html

burns up in the atmosphere. Above this altitude, debris can remain in orbit around the Earth for decades or even centuries, thus accumulate as it is produced, increasing the risk of collision with other satellites and creating more debris. Moreover, if they are low enough, the orbits of pieces of junk can change easily, making them difficult to track. Space debris therefore poses a severe danger to space assets as well as to the services that they provide to all humankind.

For this reason, the protection of outer space and the safeguarding of space infrastructure in orbit is essential, not only for States and military forces but also for industry actors. Hence the need to, as formulated by Jessica West, a Senior Researcher at Project Ploughshares, “*bring the conversation to the wider audience, and the audience to the conversation*”¹⁶. Direct-ascent anti-satellite missile testing creates pieces of junk which can collide with any space objects using the orbit as well as whatever launching vehicles that may cross paths with the debris, thus risking damage as well as the impairment of the services these assets provide. This threat has negative repercussions on all the stakeholders, including non-governmental organisations and industry actors.

Industry satellite operators contribute to various services, including military and humanitarian applications. Therefore, their voice should be included in the international debate to assert their particular interests on the one hand, and to allow the reinvigoration of the discussion through the emergence of new ideas on the other. In this regard, the satellite operator Planet, which provides an Earth observation service, published an open letter on April 11, 2022, calling on the U.S. government to “*lead international efforts to prohibit the use of debris-creating anti-satellite weapons*”¹⁷, a week before the announcement by Vice President Kamala Harris.

Other non-governmental organizations and companies had also denounced the direct ascent anti-satellite missile test conducted by Russia in November 2020, which generated thousands of pieces of debris in orbit. The US company Astroscale issued a statement judging the intentional and useless destruction of any object in space as irresponsible¹⁸, an assertion echoed by the Secure World Foundation the same day¹⁹.

Concern over the use of debris-generating kinetic ASATs is not new. States and non-governmental entities alike have been condemning the intentional destruction of space assets using kinetic means for many years, and to this day it remains one of the most pressing space security concerns for many²⁰. Despite this, States have shied from calling illegal the use and testing of these assets²¹, a position that has been made possible by the open-ended permissiveness of current space law²².

¹⁶ Jessica West, Panel on “[What to Expect: the OEWG on Reducing Space Threats](#)”, BASIC, 21 April 2022

¹⁷ Planet Labs PBC, “[A Call for the United States Government to Lead International Efforts to Prohibit the Use of Debris-Creating Anti-Satellite Weapons \(ASATs\)](#)”, 11 April 2022.

¹⁸ Astroscale, “[Statement on Russian Federation ASAT Test](#)”, 16 November 2021.

¹⁹ Secure World Foundation, “[Statement on Russian ASAT Test](#)”, 16 November 2021.

²⁰ Laetitia Cesari Zarkan, “[A new edge in global stability: What does space security entail for states?](#)”, Observer Research Foundation, 13 October 2021.

²¹ Almudena Azcárate Ortega, “[Return of ASATs and counterspace technologies: A slippery slope to weaponisation?](#)”, Observer Research Foundation, 19 October 2021.

²² Almudena Azcárate Ortega, “[Placement of Weapons in Outer Space: The Dichotomy Between Word and Deed](#)”, Lawfare Blog, 28 January 2021.

To address this problem, different initiatives – particularly focused on the ban of ground-based ASAT weapons – have been introduced by numerous experts in recent years: there have been calls for a more comprehensive arms control regime for outer space²³ or threat reduction to regulate destabilising striking capabilities²⁴. A former Canadian diplomat also proposed the adoption of an additional protocol to the Outer Space Treaty addressing the weaponization of outer space²⁵. A recent initiative that has garnered significant support from experts specialising in the space field is a letter by the Outer Space Institute, which urges the United Nations General Assembly to take up consideration of a kinetic anti-satellite test ban treaty²⁶.

Altogether, these voices bring a new perspective to the traditional diplomatic talks²⁷. The role of non-governmental entities and, more specifically, of civil society, has an increasing impact on decision-making discussions²⁸. Even if the establishment of new international regulations for space is a matter to be ultimately led and determined by states, non-governmental entities can play a key role in shaping space security²⁹. Their particular insight, derived from their unique know-how, can add significant value to discussions among states and contribute to the optimization of policymaking.

Recognising the contribution that non-governmental entities can make to the space security debates, States decided that the aforementioned open-ended working group, convened pursuant to UN General Assembly Resolution 76/231, would be open to these actors³⁰.

During the deliberations of the open-ended working group, and if the first session – which was held on the week of 9 May – is anything to go by, it is likely that the issue of kinetic ASATs and the creation of space debris through their use will feature prominently. This was highlighted as one of the primary concerns of states in their statements leading up to this UN meeting³¹, collected in a Report of the Secretary General published in July 2021³². And now the United States' announcement places this matter front and centre again. During the first session of the OEWG, several states noted the U.S. commitment, with several offering their praise. The most notable was Canada, which followed with a commitment of their own “not to conduct destructive direct- ascent anti-satellite missile testing”³³.

This announcement speaks of a willingness by the United States to lead the way in adopting norms for peaceful and responsible behaviour in outer space. When addressing this issue, Vice President Harris declared that “*Rules and norms are shared principles that guide the behaviour of*

²³ Thomas Cheney, “[Time for an ASAT Test Ban Treaty](#)”, in *Arms Control Idol: Ideas for the Future of Strategic Cooperation and Community*, Centre for Science and Security Studies, King’s College London, March 2021.

²⁴ Nivedita Raju, “[A Proposal for a Ban on Destructive Anti-Satellite Testing](#)”, Stockholm International Peace Research Institute, n° 74, April 2021.

²⁵ Paul Meyer, “[Could an optional protocol be the way to stop the weaponization of outer space?](#)”, *International Journal: Canada’s Journal of Global Policy Analysis*, Vol. 76, n° 2, 3 June 2021.

²⁶ Outer Space Institute, “[Re: Kinetic ASAT Test Ban Treaty](#)”, 2 September 2021.

²⁷ Laetitia Cesari Zarkan, *op. cit.*

²⁸ Secure World Foundation, [Space Policy and Sustainability Issue Briefing for the Incoming Biden Administration](#), December 2020.

²⁹ Almudena Azcárate Ortega, James Reville, [Space Industry Workshop Report](#), United Nations Institute for Disarmament Research, 5 November 2021.

³⁰ United Nations General Assembly Resolution 76/231, *op. cit.*

³¹ Jessica West, Almudena Azcárate Ortega, *op. cit.*

³² United Nations Office for Disarmament Affairs, [Report of the Secretary-General on reducing space threats through norms, rules and principles of responsible behaviours \(A/76/77\)](#), 13 July 2021.

³³ [Canada Statement to the first session of the OEWG on Space Threats](#), May 2022.

*people and of communities. They are common understandings of what is right, what is wrong, and what is acceptable, whether it is the way we interact with our colleagues at work or the way nations interact with each other on the world stage. Rules and norms provide us all with a sense of order and stability*³⁴.

The adoption of mechanisms to address space security concerns has been a topic of debate among diplomats for almost forty years³⁵. In the early 1980s, the Conference on Disarmament and the First Committee of the United Nations General Assembly began debates on the issue of “prevention of an arms race in outer space”³⁶. In 1983, the General Secretary of the Communist Party of the Soviet Union, Yuri Andropov proposed that the Soviet Union and the United States agree to a complete ban on anti-satellite weapons. He indicated that “*the U.S.S.R. [would assume] the commitment not to be the first to put into outer space any type of anti-satellite weapon*”, imposing a “*unilateral moratorium on such launchings for the entire period during which other countries, including the U.S.A., will refrain from stationing in outer space anti-satellite weapons of any type*”³⁷.

In 1985, the Conference on Disarmament established an *ad hoc* committee to identify and discuss related issues, such as the legal protection of satellites, nuclear power systems in outer space and various confidence-building measures³⁸. Traditionally, states were divided between those who believed that non-binding norms to complement the existing UN space treaties could suffice to address space security concerns and those who advocated for additional legally-binding instruments. This is no longer the case, however, as states have started to recognise the potential of combining the two approaches for greater effectiveness³⁹.

States have explicitly acknowledged that “*possible solutions to outer space security can involve a combination of legally binding obligations and political commitments, and that work in both of these areas can be further pursued in a progressive, sustained and complementary manner, without undermining existing legal obligations*”⁴⁰. The mandate of the open-ended working group stays true to this: to provide recommendations on a non-binding framework to indicate what does and does not correspond to responsible behaviour in order to reduce the risks of misunderstandings and misinterpretations in space⁴¹. Ahead of the first meeting of the open-ended working group, on the week of 9 May, the U.S. invited other states to join in committing not to use debris-creating kinetic ASATs by leading by example. While the commitment is laudable – debris creation is dangerous, and any action to stop or mitigate it is a positive step –, the current status of geopolitics affects how others react to the U.S. announcement as well as whether or not they follow up with similar commitments.

³⁴ [Remarks by Vice President Harris on the Ongoing Work to Establish Norms in Space](#), *op. cit.*

³⁵ Jessica West, Almudena Azcárate Ortega, *op. cit.*

³⁶ United Nations Office for Disarmament Affairs, [Fact Sheet: Outer space and Disarmament](#), January 2022.

³⁷ John F. Burns, “[Andropov issues a promise on antisatellite weapons](#)”, *New York Times*, 19 August 1983.

³⁸ Nuclear Threat Initiative, [Paros Treaty](#), 5 April 2021.

³⁹ Michael Aho, *op. cit.*

⁴⁰ United Nations General Assembly Resolution 76/231, [Reducing space threats through norms, rules and principles of responsible behaviours](#).

⁴¹ United Nations General Assembly Resolution 75/36, [Reducing space threats through norms, rules and principles of responsible behaviours](#).

Some might be tempted to criticise the U.S. for committing not to use technology that it has already used in the past⁴² while urging other states whose spacefaring capabilities are not as advanced – and which have never tested such technologies – to do the same. This may be seen by some countries as something that would limit their military capabilities. In this sense, Chinese Foreign Ministry spokesman Wang Wenbin called the U.S. pledge a “*hypocritical practice of expanding its military superiority under the pretext of arms control*”⁴³. Now the ball is in the United States’ court to prove that this is not a form of “lawfare” to place limitations on other states and block the development of military systems.

Moreover, some powers may be tempted to test ASAT weapons to ensure they have mastered the technology before committing to never use it again. After India carried out an ASAT test in 2019, experts explained that this operation was a reaction to China’s ASAT test⁴⁴, reminding that it was not India’s original thinking to develop such capabilities when developing its national space programme⁴⁵ but rather a signal “*to Beijing that it too possessed the capability to hold Chinese space assets at risk – should Indian satellites ever become victim to a Chinese attack in the future*”⁴⁶.

The United States’ pledge certainly shook up discussions of the open-ended working group in Geneva, and contributed to moving the space security dialogue forward after several years without much substantive progress.

However, the U.S.’ approach was not the only one addressed by the group. Attention has been drawn to the draft treaty proposal by Russia and China, which aims to prevent the placement of weapons in outer space⁴⁷. This proposal was first introduced in 2008, and its most recent version was presented in 2014. Many maintain that a legally-binding instrument should be considered the end goal of any space security negotiation, and Russia, in a recent document submitted to the secretariat of the open-ended working group, indicated that the Russian-Chinese draft treaty proposal could serve as the basis for devising such an instrument⁴⁸.

During the first session of the OEWG, States recognised the compatibility of political commitments and legally binding obligations as complementary tools to address space security concerns. Furthermore, delegates also affirmed the applicability of international law, including the space treaties and the UN Charter, especially stressing the importance of the principle of “*due regard*”, enshrined in Article IX of the Outer Space Treaty and understood to refer to “*self-restraint in space activities on the part of States Parties based on reciprocity and equality of States, (...) strengthened by the obligation of international cooperation*”⁴⁹. Despite finding the

⁴² Secure World Foundation, [Global Counterspace Capabilities Report](#), April 2022.

⁴³ EurAsian Times Desk, “[‘Stop The Hypocritical Practice’ – Russia, China Respond To US Pledge To Ban ‘Destructive’ Anti-Satellite Weapon Tests](#)”, *EurAsian Times*, 19 April 2022.

⁴⁴ Rajeswari Pillai Rajagopalan, Panel [What to Expect: the OEWG on Reducing Space Threats](#), BASIC, 21 April 2022.

⁴⁵ Victoria Samson, “[India and space security](#)”, *Space Review*, 9 May 2011.

⁴⁶ Ashley J. Tellis, “[India’s ASAT Test: An Incomplete Success](#)”, Carnegie Endowment for International Peace, 15 April 2019.

⁴⁷ United Nations Office for Disarmament Affairs, [Outer Space](#).

⁴⁸ Document of the Russian Federation on the scope of work of the UN Open-Ended Working Group (OEWG) established pursuant to UN GA resolution 76/231 [Reducing space threats through norms, rules and principles of responsible behaviours](#).

⁴⁹ Setsuko Aoki, Open-Ended Working Group, Agenda item 6(a), [Topic 1: Taking stock of the existing international legal and other normative frameworks concerning threats arising from State behaviours with respect to outer space](#), 9 May 2022.

above points of convergence of opinions, there were also some points of contention: States disagreed on the applicability of international humanitarian law to the outer space domain, and on the need of the group to discuss it. During the sessions, a thorough analysis was provided by experts who examined best practices in the maritime and air domains and how they could serve as inspiration for further development of a legal framework applying to outer space⁵⁰. Experts also underscored the importance of transparency and confidence-building measures, considering them as “behaviour-oriented”, with effective and timely exchange of information to avoid misunderstanding, asserting that “*transparency neither expose States, nor creates vulnerability to adversaries*”⁵¹.

As space activities play an increasingly important role in society today, for civilian, humanitarian, governmental, economic, financial, and military purposes, among other fields, the number of security and safety measures in place is likely to increase as space systems will need protection from threats and risks on all fronts. Although the number of space-related legal frameworks globally has risen substantially in recent years, and more stakeholders than ever before benefit from space technologies, the tide may be turning. Despite the recent investments in the use and exploration of outer space, this domain is no longer the exclusive playground of a handful of states as it once was. The risk that anti-satellite missions could be conducted to assert power and weaken and reduce a rival’s forces and capabilities is the more concerning because it has consequences for all the space actors and beneficiaries. The lack of a legal framework on this matter is hazardous because many space assets are perceived as dual-use – meaning they can fulfil both military and civilian functions –, or as dual-purpose – designed to fulfil a benign objective (such as debris removal or on orbit servicing), but they can be repurposed to harm other space objects. Thus, certain actors could consider these objects to be targetable due to their perceived operational ambiguity.

Pushing back against the use of anti-satellite technology, whether they are kinetic or non-kinetic, will require addressing the disruptive effects of these technologies by raising awareness on the need for a more sustainable and stable space domain, an endeavour that could be pursued by both states and civil society groups, in compliance with the 2007 Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space which already highlight the need to avoid the intentional destruction of space objects and other harmful activities, and to curtail the production of mission-related space debris⁵². The focus should be on strengthening the political and legal frameworks that govern space operations and building monitoring capacity to check potential abuse by states.

Furthermore, while a pressing concern, the use of kinetic ASATs is certainly not the only issue that was discussed at the first session of the OEWG. In fact, many consider it the “low hanging fruit” of space security, and the very least that states could ban. Nevertheless, one such commitment is better than none at all, as any initiative seeking to make outer space more secure and sustainable benefits humankind as a whole⁵³.

⁵⁰ Almudena Azcárate Ortega, Open-Ended Working Group, Agenda item 6(a), [Topic 4: Applicable elements of the legal regimes governing aviation and the sea in the context of threats arising from State behaviours with respect to outer space](#), 12 May 2022.

⁵¹ Nivedita Raju, Open-Ended Working Group, Agenda item 6(a), [Topic 5: Voluntary mechanisms and regimes applicable to outer space in the context of threats arising from State behaviours with respect to outer space](#), 13 May 2022.

⁵² United Nations Office for Outer Space Affairs, [Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space](#).

⁵³ Aaron Bateman, “[One Giant Leap: U.S. Limits on Anti-Satellite Tests Can Strengthen Space Security](#)”, *The National Interest*, 26 April 2022.

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