III. Developments in space governance and the impact of the war in Ukraine

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The open-ended working group (OEWG) on reducing space threats through norms, rules and principles of responsible behaviours, which was established by the United Nations General Assembly in 2021, convened twice in 2022. While political circumstances following the invasion of Ukraine suggested that the talks would be challenging, states nonetheless met and exchanged views on the existing international framework governing space activities, and current and future threats to space systems. Examples of such threats in 2022 were a cyberattack on a communications satellite and jamming of the signals of navigation and communication satellites, including satellites owned by private entities (see section II).[1] Discussions at the OEWG referred to these incidents to acknowledge that non-kinetic threats to space systems are significant. Several stakeholders at the OEWG also noted the increase in the number of destructive direct-ascent anti-satellite (DA-ASAT) tests, the most recent being a test by Russia in 2021. The pledge by the United States not to conduct such tests encouraged several states to follow suit and fuelled momentum towards a US-led UN General Assembly resolution.

This section first reviews the sessions of the OEWG in 2022 and then presents an overview of state deliberations regarding the banning of destructive DA-ASAT tests. Finally, in light of the role of non-state actors in the war in Ukraine, the section looks at how governments cooperate with private companies in space, and the implications for space governance.

The open-ended working group on reducing space threats

Multilateral engagement in space governance took a tentative step forward in 2022. In 2020 the UN General Assembly had adopted a resolution on reducing space threats norms, rules and principles of responsible behaviours in outer space, proposed by the United Kingdom.[2] In a subsequent resolution in 2021, the General Assembly decided to convene an OEWG on this topic.[3] In line with that resolution, the group was set to meet for two sessions in each of 2022 and 2023. The first 2022 session was delayed due to procedural objections raised by the Russian delegation regarding sufficient time allotted for preparation and questions raised by Russia and Cuba regarding

[1] Zarkan, L. C., 'Commercial space operators on the digital battlefield', Centre for International Governance Innovation (CIGI) Essays on Cybersecurity and Outer Space, 29 Jan. 2023.

[2] UN General Assembly Resolution 75/36, 7 Dec. 2020.

[3] UN General Assembly Resolution 76/231, 24 Dec. 2021. See also Raju, N., 'Developments in space security', *SIPRI Yearbook 2022*, pp. 578–79.

participation of non-state actors.[4] As the first session was initially scheduled for 14 February, it is notable that Russia's objections were raised shortly before its invasion of Ukraine.[5]

While the timing indicated that progress on substance would be difficult, the OEWG thereafter convened twice in 2022 for substantive sessions, in May and September. Both sessions saw strong engagement that was not limited to traditional 'space powers', but also significant regional participation, including states from the Asia-Pacific and Latin American regions. The latter included initiatives to advance legal interpretation of 'due regard' under the Outer Space Treaty in line with 'responsible behaviour', submitted by the Philippines.[6] Furthermore, despite initial procedural objections by some states, the inclusivity of this process was also reflected in the approval granted for civil society and non-governmental organizations (NGOs) to participate in these sessions. This was a positive development, given that participation of non-state actors in UN processes can be contentious (see section IV).

Discussions at the OEWG's first session, in May, were constructive as they focused on applicable laws and gaps in the current space governance framework. The OEWG sought primarily to establish that voluntary measures such as norms, rules and principles of responsible behaviour are not contradictory to, but rather support, the development of legally binding measures. China and Russia advocated for the use of their jointly proposed Draft Treaty on the Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force against Outer Space Objects as a basis for new legal measures on space governance. They argued that the proposed treaty aligned more clearly with the objectives of the Conference on Disarmament regarding the prevention of an arms race in outer space (PAROS).[7]

The September session, which focused on current and future threats to space systems, proved more challenging due to the subjectivity of threat perceptions and sensitivities surrounding the discussion of the capabilities of various states. Russia indicated that it would initiate a new UN group of governmental experts (GGE) on PAROS and on the prevention of placement

[4] UN General Assembly Resolution 76/231 (note 3), para. 6; and Hitchens, T., 'No love from Russia for UN military space norms meeting', Breaking Defense, 9 Feb. 2022.

[5] On the war in Ukraine see chapter 1, section V, chapter 2, section I, chapter 5, section I, chapter 8, section V, chapter 10, section I, and chapter 12, section III, in this volume.

[6] United Nations, General Assembly, Open-ended working group (OEWG) on reducing space threats, 'The duty of "due regard" as a foundational principle of responsible behavior in space', Working paper submitted by the Philippines, A/AC.294/2022/WP.12, 11 May 2022.

[7] Conference on Disarmament, 'Draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects', Submitted by China and Russia, CD/1985, 12 June 2014; and UN General Assembly Resolution 76/23, 6 Dec. 2021. For a brief description and list of members of the Conference on Disarmament see annex B, section I, in this volume.

of weapons in outer space.[8] The GGE, established through a UN General Assembly resolution, would continue the work of the previous GGE on PAROS, which concluded in 2019, and would commence work in 2023.[9] The third and fourth substantive sessions of the OEWG, scheduled for January–February and August 2023, will determine the outcome and future of the working group, before the first session of the GGE is convened.

Banning destructive anti-satellite tests

The most recent destructive DA-ASAT test was conducted by Russia in November 2021 against one of its own space objects, generating a significant amount of space debris.[10] By 2022, while much of the debris had reportedly left orbit, hundreds of catalogued fragments remained there.[11] Since space debris poses an indiscriminate threat to all states conducting space activities, including the state responsible for the test, many delegates at the OEWG sessions raised this as a recurring issue.

In the week preceding the first session of the OEWG, the USA referred to Russia's destructive DA-ASAT test in 2021 and committed to not conducting such tests.[12] The US commitment was welcomed by many in the international community, as stakeholders have strongly recommended such tests be banned in the interest of safer, more secure and sustainable space activities.[13] Following the US commitment, Canada made its own pledge at the first session of the OEWG.[14]

Banning destructive DA-ASAT tests was referred to throughout the OEWG session as 'low-hanging fruit', being an issue that was possibly less controversial. This is because such a ban would be limited in scope, prohibiting only destructive tests against an object (excluding simulated tests or fly-bys), and would exclude development or, indeed, use of the same technology. However, the US commitment was not welcomed by all. Some states labelled

[8] United Nations, General Assembly, OEWG on reducing space threats, 2nd session, Statement by Russia, 12 Sep. 2022.

[9] UN General Assembly Resolution 77/250, 30 Dec. 2022. On the earlier GGE see Porras, D., 'Creeping towards an arms race in outer space', *SIPRI Yearbook 2020*, pp. 517–18.

[10] Raju, 'Developments in space security' (note 3), pp. 574–75; and Raju, N., 'Russia's anti-satellite test should lead to a multilateral ban', SIPRI Commentary, 7 Dec. 2021.

[11] Foust, J., 'Majority of tracked Russian ASAT debris has deorbited', SpaceNews, 29 Sep. 2022; and Foust, J., 'Starlink satellites encounter Russian ASAT debris squalls', SpaceNews, 9 Aug. 2022.

[12] White House, 'Remarks by Vice President Harris on the ongoing work to establish norms in space', 18 Apr. 2022.

[13] Ortega, A. A. and Zarkan, L. C., 'The road to a moratorium on kinetic ASAT testing is paved with good intentions, but is it feasible?', Fondation pour la recherche stratégique (FRS) Note no. 22/22, May 2022; Raju, 'Russia's anti-satellite test should lead to a multilateral ban' (note 10); and Byers, M. et al., 'Kinetic ASAT test ban treaty', Open letter to Volkan Bozkır, President of the UN General Assembly, Outer Space Institute, 2 Sep. 2021.

[14] United Nations, General Assembly, OEWG on reducing space threats, 1st session, Statement by Canada, 9 May 2022.

it 'hypocritical' considering that the USA had conducted ASAT tests in the past, including as recently as 2008.[15] Others suggested that the scope of the proposed ban was insufficient as it did not cover the development or deployment of DA-ASAT weapons, or other means of threatening or disrupting space systems.[16]

Other states subsequently made similar pledges, including Australia, France, Germany, Japan, South Korea, New Zealand, Switzerland and the UK. Based on this growing momentum, the USA proposed a resolution in the UN General Assembly calling on states to commit to not conducting destructive DA-ASAT tests.[17] While 155 states voted in favour, 9 voted against (including China and Russia) and 9 abstained (including India).[18] Notably, China, India, Russia and the USA are the only four states to have conducted destructive DA-ASAT tests. This voting pattern therefore indicates a difficult path ahead for consensus-based decision-making on space security governance, even for issues that some considered uncontroversial.

Cooperation between governments and companies

The role in space activities of non-state actors, particularly companies, has rapidly increased with the commercialization of the space domain. This trend was highlighted by dramatic developments in 2022. In February, in the wake of Russia's invasion of Ukraine, Mykhailo Fedorov, a Ukrainian vice prime minister and minister of digital transformation, made a series of appeals to private-sector entities. These included a request that SpaceX send user terminals for its Starlink satellite internet service to Ukraine, to which the company's chief executive officer (CEO), Elon Musk, responded positively.[19] This cooperation between SpaceX and the Ukrainian government had reportedly been planned for weeks prior to the public exchange on Twitter.[20]

Because Starlink was now being used by Ukrainian military forces, an official of the Russian Ministry of Foreign Affairs stated in October 2022 that 'quasi-civilian infrastructure' might be targeted for a retaliation strike.[21] It is

[15] United Nations, General Assembly, OEWG on reducing space threats, 2nd session, 'Responsible behavior as an elusive and diversionary concept for Prevention of an Arms Race in Outer Space (PAROS)', Working paper submitted by Iran, A/AC.294/2022/WP.22, 21 Sep. 2022, p. 5.

[16] United Nations, General Assembly, OEWG on reducing space threats, 1st session, General remarks by China, 9 May 2022, p. 4.

[17] UN General Assembly Resolution 77/41, 7 Dec. 2022.

[18] United Nations, Digital Library, 'Destructive direct-ascent anti-satellite missile testing: Resolution adopted by the General Assembly', 7 Dec. 2022.

[19] Mykhailo Fedorov (@FedorovMykhailo), Twitter, 26 Feb. 2022, <https://twitter.com/FedorovMykhailo/status/1497543633293266944>; Elon Musk (@elonmusk), Twitter, 26 Feb. 2022, <https://twitter.com/elonmusk/status/1497701484003213317>; and Brodkin, J., 'Ukraine asks Musk for Starlink terminals as Russian invasion disrupts broadband', Ars Technica, 28 Feb. 2022.

[20] Foust, J., 'SpaceX worked for weeks to begin Starlink service in Ukraine', SpaceNews, 8 Mar. 2022.

[21] United Nations, General Assembly, OEWG on reducing space threats, Statement by Russia (note 8), p. 2.

unclear whether this statement was solely intended as a general warning to US-based companies assisting the Ukrainian military, such as SpaceX, or if it also signalled an immediate willingness to carry out such an attack. In the latter case, Russian DA-ASAT attacks would be impractical and expensive against Starlink in particular, because the attack would require destruction of multiple space objects with multiple missiles. Furthermore, such action would not only be considered escalatory, but would constitute a use of force against another state's space object and potentially spark conflict in space with a broad impact, particularly on civilians. In any event, the statement highlighted the potential scope for future escalation with respect to space systems in the conflict in Ukraine. Indeed, some have noted that even cyber-attacks that begin in space can be escalatory and could lead to conflict on earth (see section IV).[22]

The 1967 Outer Space Treaty establishes that international law applies to outer space.[23] This includes provisions under international humanitarian law (IHL), as has been reaffirmed by several states.[24] However, at the second session of the OEWG on reducing space threats in September 2022, the Russian delegation argued that it is 'unreasonable and inappropriate' to discuss IHL in the OEWG.[25] Russia submitted this argument on the basis that discussing specifics of IHL is problematic because it raises 'admissibility of an armed conflict in outer space'.[26] Other states have adopted similar views and also argued against consideration of IHL issues in such talks.[27] While IHL applies to the space domain, these exchanges highlight the sensitivities surrounding discussion of the topic in the OEWG and similar forums.

Conclusions

The war in Ukraine has witnessed cyberattacks, as well as the threat of kinetic attacks, against space systems. These reveal the critical role played by space technologies and the need for further governance measures. In the light of continuing hostilities in Ukraine and differing views on priorities for space

[22] West, J., 'Where outer space meets cyberspace: A human-centric look at space security', CIGI Essays on Cybersecurity and Outer Space, 29 Jan. 2023.

[23] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty), Article III. For a summary and other details of the Outer Space Treaty see annex A, section I, in this volume.

[24] See e.g. United Nations, General Assembly, OEWG on reducing space threats, 1st session, Submission by the EU, A/AC.294/2022/WP.5, 5 May 2022, p. 1.

[25] United Nations, General Assembly, OEWG on reducing space threats, 2nd session, Statement by Russia, 12 Sep. 2022, pp. 4–5.

[26] United Nations, General Assembly, OEWG on reducing space threats, 'On counterproductive nature of consideration of the applicability of international humanitarian law (IHL) to outer space activities', Working paper submitted by Russia, A/AC.294/2023/WP.11, 30 Jan. 2023, p. 1.

[27] See e.g. objections to discussion of IHL by the Cuban delegation in the general exchange between member states at the 10th meeting, 2nd session of the UN OEWG on reducing space threats, 16 Sep. 2022, UN Web TV, 00:54:54–56:50.

governance, achieving consensus on future measures through multilateral deliberations will be challenging. The procedural objections raised by some regarding the extent of non-governmental stakeholders' participation in the OEWG on reducing space threats also highlights the difficulties of ensuring the inclusivity of these processes. However, as evidenced by the UN General Assembly resolution on banning destructive DA-ASAT tests, there is still scope for progress, albeit in small steps.