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Discussing Orbital Dangers

How States Negotiated in the UN's OEWG on Reducing Space Threats

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Executive Summary

The UN's Open-Ended Working Group on reducing space threats met in Geneva in May. The discussions highlighted how different states view the challenges of space weaponisation. There are four main areas of contention:

1. Defining space weapons and space threats: Potential space weapons can have both civilian and military utility, and different states perceive threats from such capabilities differently.
2. Defining responsible behaviours: Such behaviours must be defined clearly, while breaches must be attributed and assessed based on objective criteria.
3. Interpreting international law: States differ on whether International Humanitarian Law (IHL) and Law of Armed Conflict (LoAC) apply in outer space.
4. Separating space security from space sustainability: Some states have argued that space security must not be conflated with space debris mitigation.

The OEWG reflects international divisions, pitting Western states against Russia and China. Western states have placed greater emphasis on non-legally-binding measures and responsible behaviour, while China in particular, has sought legally-binding treaties and remains sceptical about the characterisation of 'responsible behaviour'.

I. Introduction

The Open-ended working group on reducing space threats through norms, rules and principles of responsible behaviours (OEWG) convened in Geneva between May 9 and May 13 2022, to discuss the fundamental issues concerning space security and further develop measures that help reduce threats in space.

Threats to satellites and other space assets have endured for decades and states have put forward proposals and discussed the various aspects of arms control in outer space bilaterally and multilaterally in the Conference on Disarmament (CD), United Nations (UN) and outside the UN's mandate.¹

Three phenomena cause the perception of the growing number of threats in space. First, the proliferation of counterspace space-based and ground-based capabilities has exacerbated the perception of threats to all national civilian and military satellites.² Second, the increase in commercial activities in space and the dual-use nature of space assets has caused state and non-state actors alike to worry about the misperception that might be caused by commercial satellites, which have both civilian and military utility.³ Finally, the growing view of outer space as a warfighting domain by many states and alliances has also fuelled concerns about the heightened weaponisation of space.⁴

The process of restarting arms control negotiations in outer space began in 2020 when the UN General Assembly adopted Resolution 75/36, which encouraged states to study existing and potential threats in space and work towards further developing shared ideas on norms, rules and principles in outer space.⁵ This resolution, in essence, kick-started the multilateral space threat-reduction process from the ground up.

This document closely examines the positions that states have taken in the OEWG on matters of space security. An analysis of the discussions helps policymakers and analysts get a glimpse into the future of multilateral space threat-reduction efforts, as they witness the formation of negotiating positions and informal coalitions among states. Further, such an analysis can assist India's policymakers in formulating a diplomatic position that is best suited to its national interests.

Our policy brief proceeds as follows. The next section breaks down the long list of issues discussed in the OEWG into six distinct topics and tabulates the position of each state in the six areas. The following section explores the broad themes that will shape the future meetings of the OEWG, both by the positions held by states as well as issues that are yet to be fully considered. The final section outlines India's position on space security, which has changed little over the past decade. In our conclusion, we forecast how the OEWG proceedings will move forward and how these deliberations will shape space arms control negotiations.

II. The State of Play in the OEWG

This section provides an assessment of the debates among countries in the OEWG. The proceedings of the OEWG resulted in various views being discussed, both on space safety and space security. To capture the areas of contention between states, we systematically analyse the working papers submitted by various states to the OEWG for consideration. We also examine statements made by countries where necessary to substantiate specific issues. We unbundle the contents of the working papers into six categories. While other documents such as the working paper submitted by Nigeria on behalf of the Africa Group are important, examining them is beyond the scope of this research brief.⁶

These categories are chosen based on the long-held disputes between states in previous debates on outer space safety and security. For example, when China and Russia tabled the Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (PPWT) in 2008, Western states were quick to dispute the definition of a ‘space weapon’ in the draft treaty.⁷ Similarly, during the European Union’s Draft Code of Conduct deliberations, the group of states led by Russia and China strongly disputed the fora in which the EU Draft CoC should be negotiated and disagreed on how non-legally-binding measures should be taken forward.⁸

Definition of threats in space: What capabilities and actions do states find threatening in outer space, and how do they define a threat? The definition of “space threats” is among the critical issues discussed in the OEWG. The approach to the definition sets the course of mitigating actions that countries agree to undertake. The definition of threats put forward by states varies from laying down specific actions and capabilities to broader trends in space weaponisation.

Preference of approach in negotiations: Do states prefer to regulate behaviour in outer space or do they prefer regulating capabilities that are deemed threatening? Many states have recognised the difficulty of controlling dual-use capabilities in space and believe that

regulating behaviours in outer space is a more pragmatic approach. Other states, however, prefer to regulate both capabilities (such as DA-ASATs or missile defences) behaviours in outer space.

Views on non-legally-binding measures: How do states view the role of non-legally-binding measures in reducing space threats and the proposals or pathways they put forward for implementing non-legally-binding agreements, including Transparency and Confidence-Building Measures (TCBMs)? While some states have tabled specific measures for immediate adoption, others have chosen to outline broad principles that all countries must abide by to reduce the risk of conflict that might arise out of misperception in outer space.

Views on legally-binding instruments: How do states view the role of legally-binding instruments in reducing space threats, and what are the proposals and pathways they put forward for negotiating such agreements? On this issue, some states mention only their preference for legally-binding instruments over TCBMs, while others have outlined the conditions that must first be satisfied to negotiate legally-binding treaties in the future.

Views on responsible and irresponsible behaviours in space: How do states define responsible and irresponsible behaviours in space, and what are the actions or behaviours that are either responsible or irresponsible? Some states have a clear definition of responsibility in space, while others have chosen to outline broad principles of responsible behaviour. However, some states have also rejected this dichotomy of responsible-irresponsible behaviour, arguing for judging actions on a case-by-case basis.

Preferred fora for negotiations: Finally, we assess states' preferences for the necessary fora for negotiating space security and space safety. The Prevention of an Arms Race in Outer Space (PAROS) has been on the Conference on Disarmament (CD) agenda since the 1980s. More recently, however, the issue of space security has gained greater prominence in the UN General Assembly and provides some states with the incentive to move negotiations away from the consensus-based approach of the CD. In parallel, many states also prefer the separation of space security and space sustainability, with the latter issue considered to be the mandate of the UN Committee on the Peaceful Uses of Outer Space (COPUOS).

This categorisation will help us identify the areas of agreement and contention among the participants of the OEWG and outline specific diplomatic approaches for India to pursue on space security matters. The table below provides a summary of the views held by various states. The Appendix provides a more detailed description of the deliberations.

State	Approach	Non-Legally-Binding Measures	Legally-Binding Instruments	Responsible Behaviour
United States	Behavioural approach	<p>TCBMs help promote peace, security and disarmament in space. TCBMs can be signed bilaterally among states or multilaterally. Initial steps for TCBMs can be as follows:</p> <ul style="list-style-type: none"> • Reaffirm commitment to international law. • Enhance communication and notification. • Operate national security spacecraft with due regard. • Maintain safe separation and safe trajectory when operating national security spacecraft. • Limit purposeful generation of space debris. 	Non-legally-binding measures can be progressively developed into legally-binding instruments.	Those actors who operate with openness, transparency, and predictability to maintain the benefits of space for all humanity.
United Kingdom	Behavioural approach	It is useful to create the elements of non-legally-binding measures by drawing or learning from other domains and seeking clarification on standards of behaviour and transparency measures. Elements from the GGE report of 2013 can be incorporated for formulating TCBMs.	Instruments where the use of a technology could be regulated or constrained such as one that prohibits the kinetic testing of direct ascent anti-satellite missiles or co-orbital weapons where long-lived debris is created.	Behaviours are the actions, activities or omissions of states, which either prevent/manage/limit (in the case of responsible behaviours) or can create (in the case of irresponsible behaviours) threats – or potential threats – to space systems.
Russia	Both	Commitment of No First Placement of Weapons as TCBM.	They can be based on the PPWT.	No views provided.

State	Approach	Non-Legally-Binding Measures	Legally-Binding Instruments	Responsible Behaviour
China	Both	<p>They can serve some positive role and supplement legally-binding instruments, but not replace them. Suggestions for TCBMs include the following:</p> <ul style="list-style-type: none"> • No first placement of weapons in space. • Dialogue and exchange of national space strategies and policies. • Launch notifications. • Space facility visits. • Cooperation on debris mitigation. 	<p>Must strike a balance between space security and space sustainability.</p>	<p>Binary distinction can be used as a political tool. But responsible behaviour can include principles of common, universal security and abandonment of unilateral advantages. Adherence to basic principles of international law and existing treaties.</p>
European Union	Behavioural approach	<p>They are important in reducing space threats and can lead to legally-binding treaties.</p>	<p>They can be negotiated eventually. Legally-binding and non legally-binding measures are not mutually exclusive.</p>	<p>Responsible behaviours should consider the full range of outer space activities.</p>
Canada	Behavioural approach	<p>Non-legally-binding instruments and TCBMs must be implemented as soon as possible.</p>	<p>Non-legally-binding standards of international behaviour could be adopted as legally-binding instruments once they are accepted by the majority of the States.</p>	<p>Those behaviours that promote safety, security and sustainability of outer space activities.</p> <ul style="list-style-type: none"> • Damage to space environment and debris-creation which is man-made. • Interference with satellite C&C. • Non-cooperative RPO. • Secondary damage to human life.

State	Approach	Non-Legally-Binding Measures	Legally-Binding Instruments	Responsible Behaviour
France	Behavioural approach	They can be developed as a "good user guide" for States. Non-legally-binding measures can be modelled after the recommendations made by the Group of Governmental Experts on Developments in the Field of Information and Telecommunications in the Context of International Security.	Norms in space serve as the basis for legally-binding agreements.	No views provided on responsible and irresponsible behaviours.
Germany	Behavioural approach	Flexible, non-legally-binding instruments are pragmatic at this stage.	A shared understanding of responsible behaviours could pave the way for legally-binding agreements.	Adherence to existing international laws and the promotion of consultation between states.
South Korea	Behavioural approach	Further develop the recommendation by the GGE report from 2013. The use of SSA capabilities can increase visibility and predictability in space.	Norms, rules and principles are a starting point for legally-binding measures.	Responsible behaviours are those actions that increase transparency and confidence-building. Irresponsible behaviours are those actions that violate the UN Charter or the key principles of international humanitarian law.
ASEAN	Both	Flesh out understanding of international space law and understanding of existing international treaties that regulate space activities.	Legally-binding instruments must be universal, comprehensive and non-discriminatory.	No views provided.

III. Consensus and Contention in the OEWG

The previous section mapped the diverse views expressed by the major powers in the OEWG. Although we see states agree on some fundamental issues, such as the threats posed by space weapons to space-based assets and ground-support infrastructure, there is also a sharp disagreement on the scale and scope of these threats and the measures that must be taken to address them. In this section, we discuss the prominent themes that will shape the discussions in future meetings of the OEWG and how states might approach them.

The **first significant issue** of contention in the OEWG is the definition of terminologies such as space threats and space weapons. If states wish to reduce space threats through norms, rules and behaviours, they must first agree on clear definitions. States have chosen to define space threats through four lenses: intentions, capabilities, harmful effects and combination of the intentions, capabilities and the effects of harmful actions. Even when some states view threats through the same lens, they might consider them in different frames of reference. For instance, both China and the US view space threats from the perspective of capabilities. However, while China focuses on the threats posed by US ground-based missile defence systems, the US perceives the deployment of space weapons that have the potential to disrupt or deny the use of space as threats.

Defining space weapons remains a challenge due to the dual-use nature of satellites and the close connection of DA-ASATs and missile and missile defence systems. Although not all satellites have the capabilities to perform complex manoeuvres for offensive operations,⁹ some satellites, particularly those that provide on-orbit services,¹⁰ could be misperceived as offensive capabilities. *Space weapons, therefore, may have to be defined in the context of their use-case rather than simply by their physical features.*

The contentious issue of defining space threats also extends to the definition of armed attacks in space. Space weapons, both kinetic and non-kinetic, can be used by states for

self-defence and counter-espionage.¹¹ In this context, some states might use non-kinetic means of attack — either by using cyber attacks or directed energy weapons — to temporarily disrupt an adversary’s reconnaissance and signals intelligence satellites. If the damage caused is temporary and reversible, and carried out for national defence, then would such an action be considered an armed attack? This unique dilemma was brought up in the OEWG by Guoyu Wang, a legal scholar from China, who said that armed attacks against space assets could only be defined on a case-by-case basis, based on objective and subjective standards.¹²

The **second prominent issue** in the OEWG deals with how states approach responsible and irresponsible behaviours in space. Since the OEWG is themed around the development of norms, rules and responsible behaviours, which can later be adopted as legally-binding instruments, states must agree on the following criteria:

1. Responsible behaviours must be defined to be narrow enough to distinguish between different types of actions but also broad enough to avoid being fixated on a limited set of actions in space.
2. Responsible and irresponsible behaviours must be measurable, universally applicable and sufficiently verifiable so that they can be translated into legally-binding instruments later.
3. States must devise mechanisms to attribute irresponsible behaviours in a manner such that it avoids arbitrary judgement and politicisation of actions in space.

The **third issue of significance** in the OEWG relates to how different states interpret the existing international laws applicable in space, including international humanitarian law and Law of Armed Conflict (LoAC).¹³ For example, legal scholar David Koplow from Georgetown University argues that space assets, particularly commercial satellites, might be exposed to an armed attack under the LoAC, as states increasingly depend on commercial space services for military operations. Under the LoAC, any asset of a state used for military purposes might be targeted by the adversary during armed conflict.¹⁴ Koplow argues that countries must separate their civilian and military assets to the greatest extent possible. Another legal scholar, Cassandra Steer from Australian National University, disagrees with Koplow’s assessment and argues that the attack on dual-use civilian space assets may apply only under certain conditions and is highly contingent on the necessity and proportionality of an attack.¹⁵ For example, the

Philippines sought to clarify the duty of due regard in outer space,¹⁶ and due regard can play a role in reducing miscommunication and risks in outer space.¹⁷

Initiatives such as the Manual on International Law Applicable to Military Uses of Outer Space (MILAMOS)¹⁸ and the Woomera Manual¹⁹ aim to clarify the role of international law concerning military operations in space. However, deliberation among states regarding the degree to which humanitarian law and international customary law apply in outer space remains in the foreground.

The **fourth issue of prominence** in the OEWG is the separation of space security matters from space safety and sustainability.²⁰ The UN has pursued two separate tracks for building norms in the areas of space security and space sustainability. On the one hand, the Group of Governmental Experts on Outer Space Activities of 2013, whose work focused exclusively on space security submitted its consensus report to the UN General Assembly.²¹ The report, known popularly as the GGE report on TCBMs, consisted of a series of recommendations for implementing non-legally-binding measures, such as information exchanges regarding orbital parameters, budgets and space doctrines.²²

The UN COPUOS, on the other hand, pursued the negotiation of the Long-Term Sustainability (LTS) Guidelines, building on the earlier Debris Mitigation Guidelines, through the LTS Working Group. The work of this group resulted in the adoption of 21 guidelines on the long-term sustainability of space.²³ These guidelines include several measures, such as strengthening the Registry Convention, exchanging data on space objects and their orbital parameters, exchanging space weather forecasts and promoting space sustainability.

Some states have argued that risk reduction in outer space must be the only mandate of the OEWG, while the problem of space debris generation must remain the mandate of the UN COPUOS. This point has been raised by Canada, Russia and the United Kingdom, who have all mentioned that space safety must not be conflated with space security. However, the calls for such stringent separation may not be practical for two reasons. First, the deliberate creation of space debris directly affects the security of satellites.²⁴ The US self-imposed ban on DA-ASATs is justified on such grounds, that is, to reduce the generation of space debris in outer space. Furthermore, since a state's intentions can not be determined with complete certainty, any action in outer space that

leads to the generation of debris may be carried out deliberately to disrupt the space operations of another state.

Second, the technologies used to track space debris and manage space traffic, such as ground-based radars and electro-optical telescopes, are closely linked to the technologies that might be used to verify space security agreements in space.²⁵ Indeed, drawing a clear distinction between Space Situational Awareness (SSA), Space Domain Awareness (SDA) and Space Traffic Management (STM) has proven to be a challenge, as the technologies required to perform the functions required either overlap or are cross-cutting.²⁶ Therefore, bridging the distinction between space safety and space security may be necessary at some point, if not immediately. While efforts are underway to explore the synergies between space security and space sustainability, this issue will likely be given serious consideration in the upcoming meetings on the OEWG.²⁷

The four areas of contention discussed above, in our view, will shape the working of the OEWG in future meetings. They are not, of course, the only set of issues up for debate. The strengthening of the Registry Convention, the role of SSA capabilities in building TCBMs and the application of elements and mechanisms from other legal regimes will also be of prominence.

IV. India's Position on Space Risk Reduction

Space security has long concerned Indian policymakers and the scientific community. India began its space programme in 1962 and became a space-faring nation when it launched its first satellite, the *Aryabhata*, in April 1975.²⁸ India actively participated in multilateral space diplomacy, even as India's space programme grew in scale and scope. India has signed and ratified the Outer Space Treaty of 1967, the Rescue Agreement of 1968, the Liability Convention of 1971 and the Registry Convention of 1974. While India has signed the Moon Treaty, it has not ratified it. India has also been an active participant in the PAROS process both in the CD and the UNGA.²⁹

Space security did not become prominent in India till January 2007, when China conducted its first DA-ASAT test. Soon after China's test, India's then foreign minister, Pranab Mukherjee, said that the ASAT test would undermine the peaceful uses of outer space, and India would "continue to be closely engaged with the multilateral effort towards keeping outer space free of weapons."³⁰ India's concerns over China's counterspace capabilities prompted politicians and the scientific community to pursue India's own response against space threats, culminating in India's ASAT test of March 2019.³¹

India's position concerning PAROS and risk reduction has remained relatively consistent for over a decade. India's position on space security issues, which has been reiterated over the years in the CD, has three distinct elements:

1. India's goal is to negotiate legally-binding instruments that enhance security in outer space.
2. India is open to negotiating non-discriminatory, universally-applicable TCBMs, as they are useful and complementary to legally-binding instruments. However, TCBMs must not be substituted for legally-binding instruments.

3. Ad hoc and partial arrangements are not the way forward to address the weaponisation of outer space.

While India has laid down its preferences, it has also been open to negotiating other proposals. India actively considered and deliberated the draft text of the PPWT by Russia and China, even though the draft treaty did not gain India's support. India also participated in negotiating the EU's Draft Code of Conduct.³² The EU's CoC failed to garner support from the BRICS countries (Brazil, India, Russia and China), who opposed the CoC because the negotiations did not follow the consensus-based framework within the UN's mandate.³³

India was also a participant in the Group of Governmental Experts (GGE) on further practical measures for the prevention of an arms race in outer space in 2019. The GGE's work focused on discussing the general obligations under a future legally-binding treaty in space, the definitions involved and the elements of verification and TCBMs.³⁴ Although the work of the GGE produced many draft reports, a final consensus report could not be reached.³⁵

While the ASAT test of March 2019 did not change India's position on multilateral negotiations, it widened India's room to negotiate its preferences with the established space powers. Since conducting its ASAT test, India held two space dialogues in Japan in 2019 and 2020. India is also set to hold defence and space security dialogues with France in 2022,³⁶ and it intends to hold a dialogue on similar lines with the US. Furthermore, India and the US have also agreed to cooperate on sharing SSA information to create conditions for space safety and space sustainability.³⁷

India's bilateral agreements and talks with partners help boost a shared understanding of space security. Still, the lack of active participation in multilateral fora reduces India's opportunities to shape international negotiations in ways that favour its goals and interests.

V. Conclusion

The last decade has seen a considerable increase in the number of HPC's technical This issue brief has summarised the views of states in the OEWG and provided an analysis of the debates. Till the date of writing, the OEWG has met only once, and therefore, it is too early to make concrete judgements about the future space security negotiations. However, with the information at hand, it is possible for us to point towards broader trends in outer space arms control.

It is evident that a clear sprint to legally-binding instruments is not possible. This is because a large number of states agree that the starting point outer space arms control needs to begin with non-legally-binding instruments. Also, because states have not agreed upon the foundational standards of behaviours and threats in outer space, the process of moving towards legally-binding agreements. The US, in this regard, has set a new bar for other countries to follow, namely the ban on destructive DA-ASAT testing. Indeed, America's unilateral ban received wide support, particularly from the EU and NATO member-states. This does not mean, however, that the ban will be set in stone as a norm.³⁸

The negotiation process, which has been rejuvenated in the UNGA, will likely remain within the confines of the UNGA. Years of deadlock in the CD, where negotiations are carried out by consensus, has led states to move negotiations out of the body.³⁹ Attempts to negotiate a Code of Conduct by the EU outside the mandate of the UN, attracted strong opposition. Therefore, *the UNGA appears to be the most suitable forum for negotiation for the near future.*

Finally, while there are nuanced differences in approach between states, *the key divisions apparent in the OEWG are between the Western states on the one hand and Russia and China on the other.* The former prefers to take forward negotiations through the lens of responsible and irresponsible behaviours. The latter two prefer to build on the provisions of the PPWT.

VI. Appendix

ASEAN

The Members of the Association of Southeast Asian Nations (ASEAN) jointly submitted a working paper that outlines the members' significant concerns regarding space security.⁴⁰

Definition of threats in space: The ASEAN working paper does not provide a specific definition of threats in outer space. Instead, the paper states that the possible weaponization of outer space or turning outer space into a domain of space warfare could threaten international peace and security in outer space.

Preference of approach in negotiations: The working paper does not identify a specific approach for negotiation. However, the paper mentions that countries must negotiate an agreement that prohibits the placement of weapons in outer space and prohibits the threat or use of force against outer space objects. Therefore, ASEAN members may be open to both behavioural and capabilities approaches.

Views on non-legally-binding measures: Although the ASEAN paper does not delve into the specifics of non-legally-binding measures, it mentions the need to discuss issues of TCBMs in regional fora like the ASEAN Regional Forum (ARF).

Views on legally-binding instruments: The paper highlights ASEAN's preference for negotiating universal, comprehensive, non-discriminatory and multilaterally-verifiable legally-binding instruments on PAROS.

Views on responsible and irresponsible behaviours in space: The paper does not mention ASEAN members' views on responsible and irresponsible behaviours in outer space.

Preferred fora for negotiations: ASEAN members prefer to negotiate an agreement on PAROS in the CD. However, the working paper also mentions ASEAN's openness to

working with bodies such as COPUOS and UNOOSA on issues of international cooperation and peaceful uses of outer space.

Canada

Canada has been an active participant in matters of space security and space sustainability. Canada's working paper builds on previous statements and papers submitted in various international fora.⁴¹

Definition of threats in space: Canada's working paper does not provide a specific definition of threats in space. However, the paper mentions that outer space is a contested, congested and competitive domain, where establishing the knowledge of the operating environment is difficult. These factors, the paper notes, could contribute to misunderstanding and miscalculation in outer space.

Preference of approach in negotiations: The working paper highlights the preference for a behavioural approach for reducing space threats.

Views on non-legally-binding measures: Canada holds the view that non-legally-binding measures and TCBMs must be implemented as soon as possible. The paper mentions that "publication of national policies on the use of outer space, registration of space objects with the UN, and advance notification of launches in accordance with The Hague Code of Conduct" can function as simple and effective TCBMs.

Views on legally-binding instruments: Canada believes that non-legally-binding standards of international behaviour could be adopted as legally-binding instruments once the majority of the states have accepted them.

Views on responsible and irresponsible behaviours in space: The working paper suggests that those behaviours that promote safety, security and sustainability of outer space activities are deemed as responsible. Non-responsible behaviours constitute the following actions: 1. Damage to the space environment and debris-creation, which is man-made; 2. Interference with satellite command and control assets; 3. Non-cooperative rendezvous and proximity operations (RPO); and finally, secondary damage to human life.

Preferred fora for negotiations: The paper does not highlight a preferred forum for negotiation, though it notes the stagnation in CD.

China

China is among the four countries that have successfully launched a DA-ASAT against a live target. It has also been a long-time participant on the PAROS agenda and tabled the draft of the Treaty on Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force against Outer Space Objects (PPWT) with Russia.⁴² China submitted two sets of working papers to the OEWG. The first paper is pursuant to UN Resolution 75/36,⁴³ while the second is China's paper pursuant to UN Resolution 76/230.⁴⁴ Both documents express views that are from the draft of the PPWT.

Definition of threats in space: China does not provide a specific definition of threats in space. Instead, China's papers mention that the threats to space security arise from the risk of weaponisation, which includes declaring space as a war-fighting domain.

Preference of approach in negotiations: China prefers both behavioural and capabilities-based approaches for negotiating steps to reduce space threats. China not only seeks to implement measures such as no-first placement of weapons in outer space but also seeks to limit missile defence capabilities.

Views on non-legally-binding measures: The working paper mentions that non-legally-binding measures, which include TCBMs, can serve some positive role and supplement legally-binding instruments, but not replace them. No first placement of weapons in space. Accordingly, the paper highlights some measures that could function as non-legally binding measures. These include 1. Dialogue and exchange of national space strategies and policies; 2. Launch notifications; 3. Space facility visits; and finally, the cooperation on debris mitigation.

Views on legally-binding instruments: While the two working papers submitted by China do not highlight specific conditions for negotiating legally-binding instruments, the papers mention that legally-binding instruments "must strike a balance between space security and space sustainability."

Views on responsible and irresponsible behaviours in space: Both working papers submitted by China highlight its contention with the dichotomy of responsible-irresponsible behaviours. The working paper mentions that such a binary distinction can be used as a political tool. However, it is also mentioned that responsible behaviour can include principles of common, universal security, abandonment of unilateral advantages and the adherence to basic principles of international law and existing treaties.

Preferred fora for negotiations: China prefers to negotiate an agreement on PAROS in the CD, while it also prefers to negotiate other aspects of space governance in the UN.

European Union

Members of the EU have submitted two sets of working papers, one that highlights the scoping of the OEWG⁴⁵ and the second paper, which highlights the existing frameworks for reducing threats in outer space.⁴⁶ The two papers do not highlight specific preferences; instead, they provide a consensus view of the EU members.

Definition of threats in space: The two working papers do not provide specific definitions of threats in space. However, the paper on the scoping of the OEWG mentions that the destruction of objects in outer space and the interference with space services pose challenges to space security.

Preference of approach in negotiations: The EU members collectively express their preference for non-legally-binding measures that help develop norms, standards, guidelines and best practices for responsible behaviour in outer space.

Views on non-legally-binding measures: Although the working papers of the EU stress the importance of TCBMs, they do not highlight specific steps for implementation.

Views on legally-binding instruments: The working paper on scoping mentions that “any future legally binding framework in the scope of space security should be effective, should be verifiable and should cover all relevant threats, be they Earth-to-space, space-to-space, or space-to-Earth.”

Views on responsible and irresponsible behaviours in space: The EU working papers do not provide definitions of responsible or irresponsible behaviours. The working paper on scoping mentions the following: “Globally-shared principles of responsible behaviour contribute to increase international cooperation in space, commit to mutual non-interference in the peaceful exploration and use of outer space, facilitate an equitable access to outer space and increase transparency and confidence in the conduct of space activities.”

Preferred fora for negotiations: The EU members do not specify their preferred fora for negotiating issues regarding space security.

France

France submitted two working papers to the OEWG. The first paper describes the current context that calls for establishing norms, rules and principles of responsible behaviours in outer space.⁴⁷ The second paper outlines the existing frameworks for reducing space threats.⁴⁸

Definition of threats in space: The working papers submitted by France do not define threats in outer space.

Preference of approach in negotiations: France prefers the behavioural approach for reducing space threats as it views the capabilities approach to be irrelevant or ineffective due to the dual-use nature of space.

Views on non-legally-binding measures: France’s preference for non-legally-binding measures is akin to what it calls a “good user guide”. France also believes that norms and behaviours in outer space can be modelled after the guidelines prescribed by the Group of Governmental Experts on Developments in the Field of Information and Telecommunications in the Context of International Security.

Views on legally-binding instruments: France believes that norms in space serve as a basis for future legally-binding agreements, which can be reached if a consensus on verification can be obtained from other countries. France also stresses studying the application of

existing international laws such as International Humanitarian Law (IHL) and customary international laws.

Views on responsible and irresponsible behaviours in space: The working papers submitted by France do not provide specific definitions of responsible and irresponsible behaviours in space.

Preferred fora for negotiations: France does not highlight its preferences for specific international fora for negotiating measures on reducing space threats.

Germany

Germany submitted one working paper to the OEWG. This brief paper highlights the broad principles that the working group must follow to come to a common understanding of space threats and responsible behaviours.⁴⁹

Definition of threats in space: Germany does not provide a specific definition for space threats. Instead, the working paper mentions that space threats must be defined by looking at the combination of capabilities and behaviours.

Preference of approach in negotiations: Germany believes that the behavioural approach to reducing space threats is the most pragmatic way to strengthen space security.

Views on non-legally-binding measures: Germany's working paper does not outline specific measures that must be considered in the OEWG.

Views on legally-binding instruments: Germany believes that a shared understanding of responsible behaviours could pave the way for legally-binding agreements.

Views on responsible and irresponsible behaviours in space: The working paper submitted by Germany does not provide specific definitions of responsible and irresponsible behaviours in space. Instead, it calls on countries to develop a shared understanding of responsible behaviours. The paper further mentions that preliminary avenues for developing such shared understanding can be developed through adherence to existing international laws and promoting consultation between countries.

Preferred fora for negotiations: Germany does not highlight its preferences for specific international fora for negotiating measures on reducing space threats.

Italy

Italy has submitted one working paper to the OEWG for consideration.⁵⁰

Definition of threats in space: Italy's paper defines space threats as those threats that deliberately arise from intended acts with hostile intentions.

Preference of approach in negotiations: Italy prefers the behavioural approach for reducing space threats.

Views on non-legally-binding measures: Italy mentions in the working paper that "norms, rules and principle of responsible behaviours should be elaborated and put in place in order to promote security, safety and sustainability in outer space and to safeguard the long-term use of the space environment for peaceful purposes."

Views on legally-binding instruments: Italy believes that legally-binding agreements can be negotiated after successfully implementing voluntary TCBMs.

Views on responsible and irresponsible behaviours in space: Italy believes that voluntary measures of responsible and irresponsible behaviour be an intermediate step to negotiating successful legally-binding treaties.

Preferred fora for negotiations: Italy has not specified its preferred international fora for negotiating the reduction of space threats.

Russia

Russia has been an active participant in matters of space security, going back to the times of the Soviet Union when it made several attempts to negotiate a bilateral ASAT arms control agreement with the United States. Most recently, Russia and China tabled the

draft of the PPWT in 2008, which was subsequently revised in 2014.⁵¹ Russia's working paper for the OEWG is predominantly derived from the draft of the PPWT.⁵²

Definition of threats in space: According to Russia's working paper, "Military threat [in space] is characterized by the real possibility of conflict between states and by the high state of readiness." The working paper does not elaborate on the condition of readiness or what constitutes a real possibility of conflict.

Preference of approach in negotiations: Russia's working paper suggests that it prefers a combination of behavioural and capabilities approaches.

Views on non-legally-binding measures: Russia considers TCBMs as an important element of legally-binding instruments. Russia is of the view that no-first placement (NFP) of weapons in space is an unprecedented and significant TCBM.

Views on legally-binding instruments: Russia believes that measures to negotiate legally-binding instruments should be started without delay, and these instruments can be based on the draft PPWT.

Views on responsible and irresponsible behaviours in space: The paper does mention Russia's views on responsible and irresponsible behaviours in outer space.

Preferred fora for negotiations: Russia has not specified its preferred international fora for negotiating PAROS or the issue of reducing space threats. However, Russia has strongly advocated for separating the issue of space debris from space security challenges. Russia has mentioned that space debris is the mandate of COPUOS.

South Korea

South Korea has submitted one working paper to the OEWG for consideration.⁵³

Definition of threats in space: South Korea defines space threats as follows: "[A]ny activities intended to destroy, damage, deny, disturb or degrade space assets of other states should be deemed as a threat."

Preference of approach in negotiations: The working paper highlights South Korea's preference for a behavioural approach as it is difficult to determine the intent behind certain activities in space.

Views on non-legally-binding measures: South Korea's preferences for TCBMs are similar to the recommendations made in the final report of the UN Group of Governmental Experts on Space TCBMs. Further, the working paper also highlights the importance of space situational awareness (SSA) capabilities for increasing visibility and predictability in space.

Views on legally-binding instruments: South Korea believes that it is premature to negotiate legally-binding measures as there is no shared understanding of threats and responsible behaviours in outer space.

Views on responsible and irresponsible behaviours in space: The working paper notes that responsible behaviours are those actions that increase transparency and confidence-building. Further, the paper also notes that the actions that violate the UN Charter or the key principles of international humanitarian law can be considered as irresponsible behaviours.

Preferred fora for negotiations: South Korea does not highlight its preferences for specific international fora for negotiating measures on reducing space threats.

United Kingdom

The United Kingdom (UK) has spearheaded the revitalisation of space security matters in the past three years. In particular, it sponsored UN Resolution 75/36, which requested the Secretary-General to seek views on the norms, rules and behaviours that can be established to reduce space threats. The working paper submitted to the OEWG draws its contents from the abovementioned resolution.⁵⁴

Definition of threats in space: Although the working paper does not clearly define threats in space, the UK establishes the parameters that help evaluate the threats in space. The paper notes that the definition "should focus on the harmful effects that can result from

the behaviours of states in terms of how they deploy or use capabilities that can inflict damage to, or interfere with, the space systems of another state.”

Preference of approach in negotiations: The UK prefers the behavioural approach for negotiating PAROS. This was also clearly indicated in the statement made by the UK’s representative in the OEWG, who said that framing the problem of space threats in terms of norms, rules and principles of responsible behaviours is more useful, as dual-use capabilities are difficult to verify.⁵⁵

Views on non-legally-binding measures: The working paper notes that on non-legally-binding measures, it is useful to borrow or learn from other domains and seek clarification on standards of behaviour and transparency measures.

Views on legally-binding instruments: Concerning legally-binding instruments, the UK notes its preference for those that regulate or constrain the use of technologies such as debris-creating direct-ascent and co-orbital ASATs. Such agreements, the paper notes, “must be comprehensive, verifiable, contain definitions and be implementable”.

Views on responsible and irresponsible behaviours in space: The UK views those behaviours that do not follow an understood pattern of action as irresponsible. Further, the paper notes that a holistic framework of responsible space behaviours can be developed by drawing links between space threats and how such threats will impact national, regional and global security.

Preferred fora for negotiations: UK’s working paper has not specified preferred fora for negotiating legally-binding measures and non-legally-binding instruments to reduce space threats.

United States

On 18 April, 2022, United States Vice President Kamala Harris announced her country’s unilateral ban on the testing of destructive DA-ASATs in space. This announcement set a new benchmark for other states to follow, and hopefully result in the norm of not testing destructive ASATs in outer space.⁵⁶ The US is a long-running participant in issues related to space security, both bilaterally and multilaterally. The United States was the

first country to deploy a direct-ascent ASAT. It was also the first country to destroy a live satellite by using a direct-ascent ASAT on two occasions. The first in September 1985, when the US launched the ASM-135 ASAT from an F-15 fighter jet. The second use of an American ASAT was in January 2008, when the US used a modified SM-3 interceptor to shoot down a dysfunctional reconnaissance satellite.

The US submitted one working paper to the OEWG.⁵⁷ The principles of responsible behaviours mentioned in this paper are drawn from a memorandum published by the US Department of Defense in 2021.⁵⁸

Definition of threats in space: The working paper does not provide a clear-cut definition for space threats. Instead, the paper says that the threats against satellites can come from some states that have operationalized and stockpiled a variety of ASAT systems “that could be used to, or have the potential to, deny, disrupt, degrade, or destroy civil, commercial, or national security space capabilities and services.”

Preference of approach in negotiations: The US prefers the behavioural approach for reducing risks in space. The working paper mentions that voluntary, non-legally-binding norms of responsible behaviour have the ability to adapt quickly to the changing technological environment and allow for the exploration of space to be carried out in novel ways.

Views on non-legally-binding measures: The US believes that TCBMs help promote peace, security and disarmament in space. The paper also notes that TCBMs need not be signed multilaterally, as states may also choose to develop TCBMs bilaterally or on a regional basis.

Views on legally-binding instruments: The US believes that non-legally-binding measures can be progressively developed into legally-binding instruments.

Views on responsible and irresponsible behaviours in space: The US defines responsible space actors as those “operate with openness, transparency, and predictability to maintain the benefits of space for all humanity.” Although the working paper does not prescribe specific rules of responsible behaviour, it goes on to provide broad recommendations for discussion: 1. Reaffirm commitment to international law; 2.

Enhance communication and notifications; 3. Operate national security spacecraft with due regard; 4. Maintain safe separation and safe trajectory when operating national security spacecraft; and 5. Limit purposeful generation of long-lived space debris.

Preferred fora for negotiations: The working paper does not specify the preferred fora for negotiations. However, the paper notes that states must continue discussions on space security in all international fora, including the CD.

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