Ploughshares

SPECIAL REPORT

The Open-Ended Working Group on Reducing Space Threats

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By Dr. Jessica West

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Acronyms and abbreviations

ABM	Anti-ballistic missile
ASAT	Anti-satellite
COPUOS	Committee on the Peaceful Uses of Outer Space
DA	Direct-ascent
GGE	Group of Governmental Experts
GNSS	Global navigation satellite system
GPS	Global Positioning System
HCoC	The Hague Code of Conduct against Ballistic Missile Proliferation
ICRC	International Committee of the Red Cross
ICT	Information and communications technologies
IHL	International humanitarian law
ISO	International Organization for Standardization
ITU	International Telecommunication Union
MEV	Mission Extension Vehicle
NFP	No first placement
NGO	Nongovernmental organization
OEWG	Open-Ended Working Group
OST	Outer Space Treaty
PAROS	Prevention of an arms race in outer space
PPWT	Prevention of the Placement of Weapons and Threat or Use of Force
RPO	Rendezvous-and-proximity operation
SSA	Space situational awareness
TCBM	Transparency and confidence-building measure
UNGA	United Nations General Assembly
UNIDIR	United Nations Institute for Disarmament Research

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Summary

The focus of the Open-Ended Working Group (OEWG) is on reducing space threats through norms, rules, and principles of responsible behaviour. While the first session featured discussions on existing legal and normative frameworks, and the second current and future threats, this third session considered recommendations on possible norms, rules, and principles of responsible behaviours relating to threats by states to space systems, including how they might contribute to the negotiation of a legally binding instrument on the prevention of an arms race in outer space (PAROS).

Introducing the session, Chair Hellmut Lagos of Chile stressed that the topic of concern was global in nature, affecting all states and persons. The Chair asserted that there could be no progress if states viewed the occasion as a struggle between different groups and interests. Instead, he positioned it as a significant step within the broader multilateral framework of space governance.

At the end of the session, the United Kingdom claimed that the breadth and strength of engagement were encouraging. In all, 42 states plus the European Union, the Association of Southeast Asian Nations (ASEAN), and the Holy See took the floor, as did the International Committee of the Red Cross (ICRC). Nongovernmental organizations (NGOs) Project Ploughshares, Secure World Foundation, and the International Organization for Standardization (ISO) spoke informally.

It is possible that consensus may emerge from the significant debate on the applicability of international law, including international humanitarian law (IHL), to outer space. Russia and China acknowledged that IHL applies to outer space, as it does everywhere, but did not agree that it was an appropriate topic for the OEWG.

Interest was also converging on the following:

- avoiding the deliberate or intentional creation of space debris
- avoiding armed conflict and the use of force in outer space
- building on growing support for a moratorium against destructive tests of direct-ascent (DA) anti-satellite (ASAT) missiles
- awareness of the harmful effects of non-kinetic interference with space systems
- a need for rules on such actions as notifications and consultations prior to conducting rendezvous-and-proximity operations (RPOs) with foreign satellites
- a desire to protect space systems that provide critical infrastructure/essential services to civilians
- the value of existing transparency and confidence-building measures (TCBMs), such as publishing policies and prelaunch notifications, and the desire to expand upon them
- the need for greater sharing of information, including space situational awareness (SSA) data
- the use of diplomatic tools and channels to address concerns and settle disputes
- a need to create new mechanisms to facilitate communication, information exchange, and deconfliction.

At the heart of this discussion was the primacy of the principle of peaceful use that shapes the content of the Outer Space Treaty, as well as the right of all states to use outer space freely and equitably, without discrimination.

There was also widespread recognition that the adoption of norms of responsible behaviour could facilitate the development, implementation, and verification of additional legal arms control measures in the future – a goal shared by many states.

Nonetheless, some states continued to see a dichotomy between laws and norms, seeking to narrow the parameters of the discussion to legal considerations only, while claiming that the adoption of norms was an attempt to override or disregard law. It was clear that a few states, while participating in the discussion, continued to object to the premise of the process.

Seeking to build connections between different diplomatic priorities and initiatives, Brazil called for a ban on all destructive ASAT tests by combining the ongoing political commitment to "no first placement" of weapons in outer space, and the newly adopted resolution not to conduct destructive direct-ascent missile tests against space objects. Brazil also noted that most arms control agreements, including the Chemical Weapons Convention, had included elements related to both behaviours and capabilities in dealing with control and verification challenges posed by dual-use technology.

Despite disagreement on appropriate measures, there was wide concern for the effects of potential weaponization and use of force in outer space.

Finally, open, inclusive participation was eroded through continued efforts to restrict non-government stakeholders from engaging in the formal discussion.

'No consensus on consensus': A protracted debate on participation and rules of procedure

The first day's discussion was almost entirely consumed by protracted procedural debate on the rules of participation and engagement by non-state entities, the topics to be discussed, and the application of consensus rules.

Meeting procedures were established in UN General Assembly Resolution 76/231, which, in addition to mandating the general topics to be discussed, stipulates that the meetings are to be conducted

> with the participation of intergovernmental organizations and other entities having received a standing invitation to participate as observers in the work of the General Assembly, as well as organizations and bodies of the United Nations, and with the attendance of other international organizations, commercial actors and civil society representatives, in accordance with established practice, and further decides that the Chair may also hold intersessional consultative meetings with interested parties to exchange views on the issues within the mandate of the open-ended working group.

Although observer organizations, including the ICRC, which has a standing invitation to the UN General Assembly (UNGA) as an observer and speaks during formal sessions of the UNGA First Committee, spoke formally during the first session, Russia repeated its objection to such participation, which it had used to block the ICRC from speaking formally during the second session. Russia asserted that nongovernmental organizations may only contribute to the working group in written form or during separate informal meetings, and that States Parties had the right to reconsider even this access if "NGOs" were "abusive" or undermined cooperation.

The United Kingdom, which spearheaded the OEWG process at the UNGA, defended the right of permanent observers to speak during formal sessions, as they do at the General Assembly.

Discussion over participation devolved into one on how consensus is to be applied to the proceedings. The OEWG's work is based on consensus. Consensus is generally applied to the substantive outcomes of discussion, including any recommendations, but not rules of procedure, which are set by the authorizing bodies, in this case the UNGA. However, Russia claimed that "there is absence of total, clear, complete understanding" of the meaning of procedural concepts such as "permanent observer," "standing practice," and "traditional practice." The United States accused Russia of forcing consensus over procedural rules such as participation to block substantive discussion. Ireland, among others, suggested that Russia was attempting to change the rules of the UNGA.

After significant discussion, the Chair ruled that there was clarity regarding the OEWG procedures and mandate provided by the UNGA, which allowed the ICRC to take the floor, and that the rule of consensus must not be misused. Other NGOs were allotted time during informal discussion.

Russia issued a note verbale, declaring that the issue regarding the ICRC remained unre-

solved and challenging the Chair's ruling.

Russia also objected to the organization of discussion topics, some of which, it claimed, "do not enjoy consensus support." Russia expressed surprise that the PPWT (Prevention of the Placement of Weapons and Threat or Use of Force) treaty was not a formal item on the agenda. (Note: PPWT will be the focus of a new GGE process to begin later this year.) China urged an approach that included specific discussion on the placement of weapons in outer space and the use of force.

Two additional items were added to a revised indicative timetable of discussion:

- norms, rules, and principles related to the prevention of the placement of weapons in outer space
- norms, rules, and principles related to the prevention of the use of force or threat of use of force against space objects or their use.

Debating OEWG Objectives

Although the OEWG has a clear mandate from the UNGA "to make recommendations on possible norms, rules and principles of responsible behaviours relating to threats by States to space systems, including, as appropriate, how they would contribute to the negotiation of legally binding instruments," debate about the objectives of the discussion continued.

Clarity and conflict prevention

Most states viewed norms as an essential tool to enhance security and prevent conflict, pointing to their role in making behaviours in outer space more predictable by mitigating misperception, miscommunication, and misinterpretation; avoiding confrontation; and building trust.

The Republic of Korea (South Korea) saw making recommendations on norms as a process that contributed to the implementation, clarification, and interpretation of international law. Canada described norms as complementing international law by focusing on actions that, although technically lawful, might in some contexts be viewed as threatening or escalatory and lead to unnecessary disputes or even conflict.

Australia emphasized that, to have much impact, each recommendation must have a clear scope, clear and consistent definition, and be both equitable and verifiable. Austria argued that recommendations should be broad enough to apply to future activities and capabilities. Both the United States and France pointed to the criteria for TCBMs in the 2013 consensus report by the Group of Governmental Experts (GGE), which stipulated that measures must use clear, concrete language; must eliminate causes of mistrust, miscommunication, or error regarding the intentions and activities of states; and must be verifiable.

France further stipulated that norms must also focus on actions or effects, respond to an identified collective problem, be technical and non-political, be non-discriminatory and universal, be transposable to legal instruments, and respect the interests of future generations.

"Legal" norms and instruments

While respecting the value of non-binding TCBMs, China objected to what it described as the use of norms, or 'soft law' to judge 'hard law', arguing that such use would reduce the value of the legal system. China called for a discussion of only strictly legal terms, principles, and norms; Russia echoed this position.

China also questioned the use of descriptors 'responsible' and 'irresponsible' in relation to behaviour, arguing that such use resulted in a flawed dichotomy. Iran claimed that the very concept of 'responsible behaviour' lacked consensus, arguing that trying to find consensus on "possible norms" using such terms could end up with "no possible norms" or agreement, and urging that those not in favour of norms be acknowledged. India was concerned that legal activities could be labelled irresponsible but continued to participate in and support the work of the OEWG.

Instead of norms, China, Russia, and Iran called for the negotiation of a legally binding instrument on PAROS, arguing that soft law cannot serve as a replacement. Germany argued that such norms are politically binding and need to be respected.

A step toward legal instruments

While most states supported the objective of a legally binding instrument on PAROS, norms were overwhelmingly viewed as a step toward such an agreement – in what New Zealand described as an "iterative process." As noted by Mexico, norms and TCBMs can be converted into law. Brazil expressed hope that the upcoming GGE on PAROS would be an opportunity to translate the recommendations of the OEWG into progress on a legal agreement, pointing to previous progress on cyberspace. The Netherlands noted that space security is about not only weapons but shared values, including safety and sustainability. Describing norms as the "what" and shared values as the "why," the Netherlands argued that a legally binding instrument is the "where to."

Commercial activities

Although the OEWG was focussed on state behaviour, Russia and China frequently pointed to perceived threats from commercial actors for which states are legally responsible. China argued that the OEWG should study the political and legal consequences of commercial participation in armed conflict and how "continuing state supervision" (see Article VI of the Outer Space Treaty [OST]) applies to such conduct.

Key points by topic

The following is a summary of key points of discussion pertaining to the 11 topics of the (Third revised) Indicative timetable.

TOPIC 1 Norms, rules, and principles derived from existing international legal and other normative frameworks

THE APPLICABILITY OF INTERNATIONAL LAW

Canada asserted that "outer space is not lawless." Indeed, consensus in the room was that international law applies to outer space, and that states accept a core responsibility to apply all relevant laws.

All principles of the Outer Space Treaty were seen to be foundational to the governance of space activities, with emphasis on the following:

- Activities should be carried out for the benefit and interest of all countries.
- Outer space is free for exploration and use by all states.
- Outer space activities are to be conducted in accordance with international law and the maintenance of international peace and security.
- Weapons of mass destruction are banned from placement in outer space or on celestial bodies, including the Moon; military activities are banned on celestial bodies, including the Moon.
- States bear international responsibility for national activities in outer space, including those of nongovernmental entities, which are subject to state supervision.
- States are liable for damage caused by objects launched into outer space.
- Space activities are to be conducted with due regard for the interests of other states.
- Space activities are to be conducted so that they avoid harmful contamination.
- States have a duty to conduct international consultations prior to any activities that may cause harmful interference with those of another state AND states with such concerns may likewise request consultation.

The value of subsequent treaties, including the Liability Convention and Registration Convention, was also noted.

But states saw the principles differently. For example, states with developing and emerging space programs emphasized the principles of equality and non-discrimination that underpin free access to and use of outer space. Iran, Nigeria, Pakistan, India, Switzerland, and Syria all expressed concern that the development of norms of responsible behaviour not be used to discriminate against the activities of developing counties. The United States emphasized safety and non-contamination. State responsibility for and continuing oversight of all national space activities, including those of nongovernmental or private actors, were emphasized by China and Iran, which perceived threats from commercial space activities.

However, the overall support for the OST provides a basis for the development of rules and

norms that pertain to all its principles.

PEACEFUL USE AND PURPOSES

Overall, discussion at the OEWG is framed by what Mexico referred to as "the primacy of peaceful use"—the lens through which rules should be interpreted. However, the OST does not restrict activities in outer space to peaceful purposes, which it does not even define. Still, its preamble recognizes the common interest of all humankind in the exploration and use of space for peaceful purposes. As well, maintaining international peace and security is a duty identified by Article III of the OST, which echoes Article II of the UN Charter.

States including Mexico, members of ASEAN, Russia, the Republic of Korea, Algeria, the Philippines, Cuba, as well as the Holy See, referred to outer space as a domain to be used for "exclusively" peaceful purposes. China also argued that responsible behaviour must be both legal and peaceful.

Importantly, peaceful use was viewed not only as an obligation but also as a right; the prevailing view was that identified norms should not restrict the peaceful uses of outer space. Indeed, Pakistan argued that states with significant military capabilities in outer space have the primary responsibility to prevent an arms race and conflict there.

INTERNATIONAL HUMANITARIAN LAW

There appeared to be a trend toward consensus that IHL, as part of international law, was applicable to outer space, although it was not clear that all states would recognize this principle in an outcome document.

China shifted its previous objection about the applicability of IHL to IHL's relevance to the OEWG, which China argued is focused on "PAROS and preventing weaponization and armed conflict in outer space" and not on how armed conflict is to be conducted.

Although Russia has acknowledged that IHL is part of international law, it issued a paper on the "counterproductive nature of considering the applicability of IHL to outer space," arguing that such recognition allowed the admissibility of armed conflict in outer space. But such activity is, Russia argued, not admissible because activities in outer space are only for peaceful purposes and "space is a place where there should be no conflict."

Almost all other states viewed the recognition of IHL as imperative. Australia and Mexico argued that this recognition did not promote or endorse armed conflict in outer space; as Australia noted, it reminded us that any potential hostilities that might take place there were regulated. Switzerland noted that IHL imposed limits on the use of force. The United Kingdom asserted that recognizing IHL in outer space would help to promote restraint, while the Philippines argued that it could help to prevent conflict by raising the political cost of warfighting.

The ICRC urged placing humanitarian concerns at the centre of norms, claiming that efforts to minimize the risks of civilian harm should apply to peacetime as well as armed conflict.

OTHER RELEVANT LAWS

While states agree that all international law is applicable to outer space, the following were

highlighted during discussion:

- The United Nations Charter, in particular Article 2, contains the obligation to settle international disputes by peaceful means and to refrain from the threat or use of force. Although Article 51 of the Charter provides a right to self-defence, Switzerland described it as "highly restrictive."
- Brazil, Russia, and Austria pointed to the applicability of the Environmental Modification Convention, which bars harmful modification of the environment – including outer space – as a means of war.
- South Africa mentioned the Paris Agreement on climate change.

OTHER GOVERNANCE FRAMEWORKS

States also identified other governance frameworks that should inform the identification, development, and promotion of norms of responsible behaviour in outer space. These include:

- the Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries
- UN Space Debris Mitigation Guidelines
- UN Guidelines for the Long-term Sustainability of Outer Space Activities
- The Hague Code of Conduct against Ballistic Missile Proliferation (HCoC)
- the 2013 consensus report by the GGE on Transparency and Confidence-Building Measures
- work at the UN Disarmament Commission on TCBMs.

TOPIC 2(a) Norms, rules, and principles relating to counterspace capabilities, including Earth-to-space and Earth-to-Earth threats

DIRECT-ASCENT ANTI-SATELLITE MISSILES

Concern was expressed over testing Earth-based missile systems against objects in outer space. The United States, the Republic of Korea, and Austria saw DA ASAT missiles as the most pressing threat to outer space. Other states expressed significant support for the growing initiative to refrain from destructive testing of these missiles; UN Resolution A/RES/77/41 to this affect was adopted by the UN General Assembly in 2022.

The greatest fear expressed was that such tests would result in debris, which could damage the space environment and the sustainability of space activities. The Philippines argued that the risk of harm by such debris was greater for more modest space activities and assets of developing countries.

Discussion revealed ways to expand on this DA-ASAT initiative. The United States and Japan proposed to limit all destructive or otherwise intentional actions that cause debris. Switzerland proposed that all use of ASAT capabilities, terrestrial and space-based, that produce debris should be banned.

However, China noted that the proposed moratorium on testing failed to mention development, production, deployment, and the actual use of ASAT weapons. Russia described the moratorium as a political ploy to deny states without such capability a "shield" for their space assets.

BEYOND DEBRIS

Germany noted the threatening nature of the missiles being tested and wanted to ban not only their use but also the threat of such use. France urged progress on norms related to activities that don't cause debris but are still threatening or are likely to be viewed as threatening.

Austria, Saudi Arabia, and Brazil also mentioned threats to ground-based space infrastructure such as ground stations, vulnerability to non-kinetic threats such as cyber, and consequences for disruption to, or loss of, satellite function and control. Italy argued that norms should acknowledge the harmful and destabilizing consequences of non-kinetic interference.

Türkiye (Turkey) urged that laser weapons not be used against satellites.

QUESTIONING THE TOPIC

Some states did not support the discussion of Earth-based threats to space capabilities. Iran argued that the focus should instead be on co-orbital ASATs (discussed next). China reiterated its previous position that Earth-to-space and Earth-to-Earth threats fell under existing rules of international law and/or the UN Committee on the Peaceful Uses of Outer Space (COPUOS).

TOPIC 2(b) Norms, rules, and principles relating to counterspace capabilities, including space-to-Earth and space-to-space threats

CAPABILITIES V. EFFECTS

Much discussion centred on the extent to which threats stemmed from capabilities or from how they were used and/or their effects. Russia focused on capabilities, urging the prohibition of the placement of weapons in space, or their manufacturing or testing, as well as threats/use of force against space objects. France argued that the concept of "weapons" was ambiguous and banning them did "not eradicate grounds for mistrust, miscommunications, misunderstandings." Brazil argued that both distrust and the risk of weaponization should be addressed.

Austria outlined a range of co-orbital capabilities, including projectiles, collisions, RPOs, mechanical objects like sprayers, non-kinetic capabilities like cyber and lasers, and electronic interference such as spoofing. Uses of these capabilities, while often below the threshold of force, could easily result in conflict escalation.

KINETIC CO-ORBITAL COUNTERSPACE CAPABILITIES

Risks posed by debris generated through destructive activities in space continued to animate the discussion of co-orbital capabilities and activities. Brazil and the Philippines point-

ed to the greater vulnerability of the space capabilities of developing countries, which are less able to monitor the space environment or to manoeuvre their assets to evade debris.

New Zealand, the United Kingdom, Brazil, Austria, Germany, the Philippines, and Japan advocated for an extension of the commitment not to conduct destructive DA ASAT missile tests. Proposals included no destructive tests of any counterspace capabilities, and no engagement in such destructive activities as deliberate collisions or using non-kinetic capabilities like lasers, which can result in debris.

Brazil argued for a ban on all destructive ASAT tests, suggesting the combination of two active initiatives at UNGA: the ongoing political commitment to "no first placement" of weapons in outer space, and the newly adopted resolution not to conduct destructive direct-ascent missile tests against space objects.

Austria saw as threatening those actions that could lead to misinterpretation, misunderstanding, and conflict escalation. Germany favoured a ban against not only use but threat of use of kinetic co-orbital counterspace capabilities against space objects.

NON-KINETIC CO-ORBITAL CAPABILITIES

Concerns about non-kinetic capabilities extended to non-destructive, harmful interference of lasers, cyber, radiofrequency, and similar capabilities with space objects that could result in the loss of functionality or permanent damage. Egypt raised a concern about directed energy, which New Zealand noted could also produce debris.

Austria suggested a norm against testing or using kinetic and non-kinetic co-orbital capabilities. Other proposals focused on avoiding actions that resulted in a loss of functionality or control, or permanent damage to space systems. The United Kingdom specified the avoidance of jamming or spoofing that negatively impacted civilian activities over large areas or caused permanent damage to the imaging sensors on satellites.

RENDEZVOUS-AND-PROXIMITY OPERATIONS

Most states were concerned that RPO activities could be dangerous and believed that rules and procedures to mitigate risks were needed. Some proposed principles and norms for activities that use RPO capabilities, focusing on safety, transparency, communication, consultation, and consent.

China claimed that states should not conduct "malicious" RPO activities against foreign satellites. Germany and the Philippines submitted a paper that recommended that consent be required for all docking or physical activities involving another satellite. France wanted such physical contact banned. New Zealand and Switzerland argued that even non-physical interactions, such as shadowing, should not be conducted without consultation and/or consent. Sweden also emphasized the need for communication.

RE-ENTRIES AND OTHER CONCERNS

The Philippines argued that a lack of transparency on the re-entry of objects into Earth's atmosphere also posed a threat, and called for greater transparency, as well as communication and coordination.

The United Kingdom suggested that states provide advance notification of defence or national security exercises. Australia recommended the use of communication channels to resolve security concerns and enable the provision of SSA information.

As well as calling for a ban on the "weaponization" of space systems, Nigeria called for "concrete non-usage assurances" to safeguard states without space-weapon capabilities and to ensure non-interference.

TOPIC 3 Norms, rules, and principles relating to operations involving dual-use capabilities

THE 'WEAPONS' CHALLENGE

Russia's proposal to ban all weapons from outer space inspired much discussion on the challenge of banning specific capabilities or hardware because so much space technology, including emerging capabilities for RPO, served dual purposes.

An exchange between China and the United States about the U.S. Mission Extension Vehicle (MEV) that is designed to service satellites illustrated the misperceptions and tensions that such dual-purpose potential produced. China called the MEV a "weapon," which the United States denied, pointing to the open and transparent way in which the technology had been developed and tested. It was also pointed out that China had developed similar capabilities. The United States proposed the adoption of "general principles of responsible behaviour" to reduce the risk of miscalculation.

The United Kingdom noted that the varied use of some technology made verification and determining intent difficult, particularly in the absence of significant transparency and trust. It encouraged the development of norms and rules that would enhance transparency, communication, and safe practices, while limiting harm to assets and civilians on Earth.

Australia wanted these norms and rules to apply to all activities and behaviour in space.

CONCERNS ABOUT DISCRIMINATION

Iran and Pakistan were concerned that efforts to restrict potentially threatening dual-purpose technology would result in discriminatory export practices that would deny access to technology for peaceful purposes, especially by emerging space programs. For others, the focus on rules of behaviour regarding use of capabilities, rather than restrictions on specific technologies, was a key benefit of the norms approach. Iran called for "legal norms" to assure all states of access to space technology.

DEALING WITH DUAL-USE/-PURPOSE

Russia insisted that physical weapons could be restricted by focusing on either design or use. In contrast to statements it made during the second session in September 2022, Russia argued against intent as a barometer to determine whether a capability is a weapon or not, noting that this approach could be abused and quipping that "the road to hell is paved with good intentions."

China noted that dual-use and dual-purpose capabilities were not unique to outer space

and should not be used to stall arms control negotiations or ban weapons. It claimed that there were technical means to differentiate between military and civilian objects and activities. Yet China also posited that the development of commercial space systems for military use, such as the SpaceX Starshield program, blurred military and civilian activities, "allowing some to build up military capability under the pretext of civilian use," and contributed to the militarization and weaponization of space.

DUAL-USE AND CIVILIAN PROTECTION

The Philippines argued that because many space systems served both military and civilian users, it was difficult to exercise the humanitarian principle of military distinction in an armed conflict. Therefore, space should not be a domain for armed conflict.

COMMERCIAL CAPABILITIES AND ACTIVITIES

Both Russia and China raised the issue of commercial participation in armed conflict. China urged the OEWG to study the political and legal consequences of such participation, specifically, state responsibility and the definition of supervision and authorization for space activities. It called on states to use these legal obligations to "prevent commercial activities from posing security threats to other countries or exacerbating the risk of weaponization of outer space."

Although resisting discussion of IHL, Russia asserted that commercial support for combat troops blurred the difference between military and commercial capabilities, increasing the potential for harm to critical space infrastructure and civilians on Earth. Russia argued that commercial or "quasi-civilian infrastructure" could be a legitimate target for response strikes.

TOPIC 4 Norms, rules, and principles related to the prevention of the placement of weapons in outer space

WEAPONS IN SPACE

Russia called for the preservation of outer space for "purely peaceful purposes," arguing that the "placement of weapons is the most irresponsible behaviour possible in outer space." It called out Western states for what it claimed was a policy to place weapons in space and to use outer space for military dominance but did not identify any specific efforts. Russia also wanted a general ban on weapons intended to strike space objects.

China was concerned that a deployment of weapons in outer space could be a precursor to armed conflict and wanted perceived legal gaps filled. It sought efforts to "prevent the comeback of such crazy weapons"—a reference to the long defunct 'rods from God'. China wanted the OEWG to promote a norm whereby states would not place weapons of any kind in outer space or on the Moon and other celestial bodies.

Indonesia, the Philippines, and Pakistan were also concerned about the potential placement of weapons such as the space-based anti-ballistic missile (ABM) systems mentioned by Pakistan.

Switzerland noted that weapons capabilities in outer space could precipitate conflict in

space and were also ideal military targets. It argued that "placement of any weapons systems in space should not be considered responsible." Austria claimed that a commitment not to place weapons in space could be an outcome of the OEWG, while France argued that the difficulty of verifying such a ban (see dual-use above) meant that the ban would not be operationalized.

NO FIRST PLACEMENT

In 2014, Russia initiated a political commitment not to be the first to place weapons in outer space (no first placement or NFP), which it considered a TCBM in line with the objectives of the OEWG. Since then, 32 states have signed on (see A/RES/77/42). Pakistan, Cuba, and Algeria expressed support for NFP; Mexico, while supportive, warned that it must not be used to support subsequent placement of weapons in outer space. Brazil indicated that it has supported both NFP and the moratorium on destructive tests of Earth-based ASAT missiles. Noting that both efforts are insufficient, it argued that partial commitments can lead to more comprehensive measures.

A TREATY PREVENTING THE PLACEMENT OF WEAPONS IN OUTER SPACE

Russia and China have long advocated for a new treaty that would prohibit the placement of weapons in outer space as well as the threat or use of force against space objects (see draft PPWT). Russia noted the renewal of the UNGA-mandated GGE on PAROS, which will resume discussions in November, and sought to establish that the new GGE was not intended to be an "alternative" to the OEWG but to build on it.

Cuba, China, Algeria, India, Brazil, Mexico, and the Philippines expressed support for the PPWT. Brazil, while a long-time supporter, noted that "it has not prospered due to concerns of many states regarding definitions and verification of compliance"; it called for complementary discussions on both norms and a legal initiative on non-weaponization. So did Algeria.

CHALLENGES TO BANNING WEAPONS

While the United Kingdom agreed in principle that the outcomes of the OEWG could inform the upcoming GGE, because many different tools would be needed to comprehensively address the numerous concerns that states had regarding security in outer space, it disagreed with Russia's suggestion that non-binding initiatives could undermine legal ones. The United Kingdom argued that the draft PPWT faced "significant practical difficulties" because of dual-use systems and dual-purpose capabilities that made defining, verifying, and attributing weapons capabilities difficult, while not altering underlying behaviours that provoke security concerns. The United States added that weapons capabilities and intentions could also be concealed. New Zealand noted that the prohibition of weapons in space did not address the acute problem of Earth-to-space weapons.

DUAL-USE/-PURPOSE AND VERIFICATION

Russia argued that only objects designed as weapons would be banned, which for others raised the question of how to differentiate and verify weapons from non-weapons. While China noted that the OST was signed without formal verification measures, the United States pointed out that Article XII of the treaty makes "stations, installations, equipment

and space vehicles on the moon and other celestial bodies" open to access by representatives of other states. Such reciprocity acts as a de facto inspection clause. Mexico argued that current technological development should provide a wealth of opportunities for new verification measures.

Brazil recalled that most arms trade agreements, including the Chemical Weapons Convention, include elements related to both behaviours and capabilities in dealing with control and verification challenges posed by dual-use technology.

TOPIC 5 Norms, rules, and principles related to the prevention of the use of force or threat of use of force with regard to space objects or with their use

USE OF FORCE IN OUTER SPACE

Russia argued that the draft PPWT provided a clear definition of the use of force or the threat of such use in outer space: "any intended action to inflict damage to an outer space object under the jurisdiction and/or control of other states" or the clearly expressed intention for such action. To this definition Russia added specific details such as the destruction or damage of objects, interference with normal functioning of space objects either temporary or permanent, and causing a change in the "orbital parameters" of a space object. Russia called on states to adopt obligations not to use space objects as weapons; not to elaborate, test, deploy, or use space weapons for ABM or ASAT purposes; not to destroy, harm, or interfere with the normal functioning or flight trajectory of space objects of other states; and not to promote or help others to conduct such activities. (It should be noted that the use of force against one's own space objects, such as for testing or demonstration purposes, was not covered by this approach.)

EXISTING INTERNATIONAL LAW ON THE USE OF FORCE

States expressed consensus that Article 2 of the UN Charter, which requires states to settle disputes peacefully and refrain from threat or use of force, applied to outer space. Article 3 of the OST clearly stipulates that international law applies to outer space. But states did not agree that such a prohibition was sufficient.

New Zealand suggested that any additional instrument related to the use of force in outer space would be "duplicative of international law" and that such redundancy could create uncertainty about the applicability of international law to outer space. Canada and the United States noted that the language in the draft PPWT did not merely restate international law but sought to define key concepts that were not yet defined in international law; this action risked "muddying" international law." The United States also raised concerns about the emphasis on "intention" in the draft PPWT.

CALL FOR ADDITIONAL LAW

States including Iran, Mexico, Algeria, Iraq, and Pakistan wanted additional legal measures. China argued that the UN Charter only provided "basic principles" steeped in legal ambiguity and that definitions for key concepts such as "armed attack," "use of force," and "self-defence" were not clear and must be negotiated. Brazil suggested that this could be a role of the

OEWG, while the Philippines argued that such work was necessary but best done elsewhere.

USING NORMS TO REINFORCE LAW

Peru and the Philippines raised the possibility that the OEWG could reaffirm the position that international law sufficiently barred the use of force in outer space. Australia argued that new norms of responsible behaviour could help to reinforce the non-use of force in outer space by mitigating poor transparency and communication practices.

Proposals for norms included not resorting to the threat or use of force against the objects of other countries or on the Moon and celestial bodies, reinforcing the UN Charter principle of the non-use of force, and using channels of communication to resolve security situations.

TOPIC 6 Norms, rules, and principles relating to outer space objects or activities that should enjoy protection

THE NEED FOR SPECIFIC PROTECTIONS

Austria noted that the discussion of protection for specific persons, activities, or objects stemmed from a humanitarian concern as well as the principle of due regard as set out in the OST. It urged states to consider the human costs of both destructive and non-destructive activities against satellites.

Canada and the United States emphasized protections for persons and critical infrastructure, including human-spaceflight and human-inhabited space objects, and space systems that provide essential infrastructure or public services such as the Global Positioning System (GPS). China agreed that protections for astronauts enjoyed international consensus and were of the utmost importance.

While the United States pointed to IHL for guidance, the Netherlands stressed that protections for human populations and the space environment must extend beyond existing law, urging states to refrain at all times from activities that would impair essential civilian services and protected persons and objects.

Brazil noted that the Information and Communications Technologies (ICT) GGE faced challenges discussing IHL, but still included protections for critical infrastructure in its list of adopted norms of behaviour.

While GPS and other global navigation satellite systems (GNSS) are frequently cited as critical infrastructure, the United States also pointed to the safety implications of interfering with space traffic management services. The Netherlands noted the use of space systems for humanitarian operations on Earth. Speaking to the needs of developing countries, the Philippines urged protections for space systems involved in scientific research and climate change monitoring/mitigation.

China insisted that all protections for critical infrastructure consider both the users and the severity of the consequences of damage. It favoured protecting all civilian activities linked to the peaceful use of space. It was not clear how systems such as GNSS, which often serve both military and civilian users (see dual-use above), would be treated.

The ICRC, Germany, Switzerland, and the Philippines argued that protections for essential infrastructure and services should apply during times of peace as well as war. China supported discussions that apply to peacetime only, arguing that issues related to protections during armed conflict veered into IHL and were beyond the scope of the OEWG.

Germany argued that states should not impair space-based services needed for strategic stability, such as the command and control of nuclear weapons and nuclear early warning. China insisted that discussions of "strategic stability" were not appropriate for the OEWG. Along with Brazil, the Philippines, Austria, and the United Kingdom, Germany wanted protections against both kinetic and non-kinetic harm or interference, including cyber.

France cautioned that the impact on humans on Earth from interference with satellites systems was not always apparent; any discussion of protected persons, objects, or services should not legitimize hostile acts against those not included. Brazil added that this applied to military satellites as well.

Calling the discussion "provocative," Russia argued that the focus on protected activities and objects was unclear and poorly linked to PAROS.

TOPIC 7 Norms, rules, and principles relating to information exchange on space policies

CONSENSUS ON INFORMATION EXCHANGE

Numerous states referred to the consensus recommendations in the 2013 GGE report on TCBMs, one of which was the provision of information relating to space policies. The United Kingdom supported renewed efforts to share information related to policies, strategies, doctrines, and budgets, particularly emphasizing the sharing of information related to military programs. New Zealand urged the inclusion of information related to the development of technical capabilities.

Many states saw the need for a mechanism to facilitate information exchange. Switzerland suggested that relevant information should be transmitted to an easily accessible depository, such as the office of the UN Secretary-General, and favoured the establishment of a new mechanism to exchange information on military activities and expenditures. France called for the creation of a standing consultative mechanism open to all states that would embody the provisions of Articles 9 and 11 in the OST. Many states praised the development of a Space Security Portal by UNIDIR, Secure World Foundation, and the Republic of Korea as a useful mechanism to facilitate the sharing of such information.

France noted that while TCBMs are not in themselves norms, they enable a climate of trust that allows the development of norms of responsible behaviour.

TOPIC 8 Norms, rules, and principles relating to information exchange and risk reduction notifications related to outer space activities as well as to consultative mechanisms

There was strong agreement on the value of information exchange, notifications, and consultations to reduce risks in outer space.

NOTIFICATIONS

There was overwhelming support for prelaunch notifications, which some states already issue voluntarily in the context of The Hague Code of Conduct. States identified other activities that might warrant notifications, including re-entry, space debris and recovery of debris on Earth, military operations and exercises, hazardous close approaches, manoeuvres that might cause harm to others, and other on-orbit dangers.

Türkiye and Canada remarked that notice of potential on-orbit dangers must be conveyed in advance.

CONSULTATIONS

Austria called for reinforcing requirements in the OST and the International Telecommunication Union (ITU) constitution on consultation and registration, arguing that the OEWG could provide guidance to states on how to better implement these obligations through norms, offer legal clarification, and create new mechanisms to facilitate implementation (see below). China suggested that the scope of OST's Article 9 restricted the rights to consultation to specific states affected by an activity and warned against widening the scope beyond what is specified in the OST.

The United States urged the use of consultation mechanisms to communicate and seek resolution to concerns in a timely manner.

MECHANISMS

Austria, India, Norway, and Russia supported strengthening existing mechanisms, including the Registration Convention and The Hague Code of Conduct. The Philippines praised the value of regional platforms for information exchange.

But states also saw the need for new mechanisms and developments, including:

- a formal venue for consultations to clarify military, national security, or ambiguous activities
- national points of contact
- information exchange and notifications
- deconfliction
- regular institutional dialogue within the UN
- permanent communication channels with other states.

Citing Russia's ASAT missile test in 2021, Canada explained the difficulty in exercising timely consultations in the absence of adequate pre-notification practices and mechanisms.

Russia claimed that information exchanges already took place in other forums and that such exchanges should not be duplicated except in the context of adopting "legally binding norms" on threats, including possibly intrusive measures for verification.

TOPIC 9 Norms, rules, and principles relating to international cooperation, including with respect to space surveillance and tracking and space situational awareness

SSA is the capability to identify and track objects in orbit. The United Kingdom stressed that access to reliable orbital data that accurately characterized objects and activities in outer space was essential to monitor the behaviour of states. But few states possessed the requisite capabilities.

States expressed significant support for cooperation and capacity building. Thailand called on states with advanced capabilities to assist developing states. Referring to the 1997 Declaration on International Cooperation, Brazil claimed that cooperation should promote space science and technical applications as well as development, and facilitate the exchange of expertise and technology.

DATA SHARING

Japan, Switzerland, Germany, the Philippines, New Zealand, and the United Kingdom all called for sharing of SSA data. India called for the creation of additional SSA capabilities to create a hub for data exchange and collaboration.

While the United States and China pointed to the dual military/civilian use of SSA capabilities as a concern, the United States indicated that technical safeguards and non-proliferation commitments had facilitated its own bilateral cooperation with others, providing data either for free or at a nominal cost. China posed a series of questions pertaining to legal responsibilities stemming from the provision of SSA data if there were collisions or if civilian data were diverted for military purposes.

NEW MECHANISMS FOR DATA SHARING

Several states indicated a need for new mechanisms to facilitate access to SSA data. Iran called for states with SSA capabilities to create a comprehensive database within a UN framework that could be accessed by all. Switzerland suggested a universally accessible space catalogue. China argued that any cooperation on SSA data should be informed by the principles of openness, transparency, and equality; be voluntary; and be done through the UN.

States acknowledged overlap with other UN mandates for safety and sustainability. Russia argued that such overlap meant that no new mechanisms were needed; instead, it urged states to support its proposal for SSA information exchange at COPUOS. The United States asserted that data-sharing efforts related to security and to safety need not be mutually exclusive.

COOPERATION ON DATA STANDARDS

The United States, the United Kingdom, and China indicated the challenges to cooperation posed by different national standards for SSA data, which made sharing difficult and the data possibly unreliable. The United States and United Kingdom promoted efforts to create international standards that would enable cooperation and improve reliability; the British suggested that the work of the ISO could be of assistance.

TOPIC 10 Approaches for further developing norms, rules, and principles, including in relation to how they would contribute to the negotiation of legally binding instruments, including on the prevention of an arms race in outer space

According to the United Kingdom, the OEWG illustrated the advantages of focusing on security concerns and threats from the perspective of behaviours, activities, and omissions; it argued that divergent views on what is considered threatening or responsible are not an argument against this perspective but a reason to have the discussion and build a shared understanding.

Australia suggested that further progress could be made by reconstituting this working group following the end of its current mandate. Japan also pointed to a need for more discussion, particularly on ways to reduce misunderstandings related to RPOs and the interpretation and practice of the key concepts of due regard and harmful interference; it called for implementation and sharing of best practices to avoid actions that cause physical damage to objects in space. Noting the rapid pace of technological development, Israel urged a gradual and cautious approach in developing non-binding norms rather than legal agreements.

THE GGE ON PAROS AND OTHER FORUMS

Australia proposed advancing the development of norms by connecting it with other diplomatic venues such as the Disarmament Commission, the Conference on Disarmament, and the Summit of the Future. It urged the impending GGE on PAROS to consider how responsible behaviour could help to meet the objectives of preventing an arms race in outer space, while cautioning that any recommendations must have a clear scope, clear and consistent definitions, and be equitable and verifiable; Australia noted that the most successful arms control instruments have emerged from the iterative development of norms and TCBMs.

Brazil pointed to the example of the 2015 GGE report on cyber security, noting that it contained a list of non-binding rules and principles that had been built upon by subsequent GGE and OEWG processes. South Africa and Algeria also praised the work of the OEWG, describing it as complementary to the upcoming GGE on PAROS.

A FUTURE LEGAL AGREEMENT

States including Brazil, Indonesia, Pakistan, Algeria, China, Russia, and Cuba expressed a desire for the OEWG discussions to support the development of a new legally binding instrument on PAROS, with many viewing norms as an interim step in this process.

The United States described non-binding norms as a "steppingstone" to a future legal agreement, emulating the development of the OST. While noting that norms and legal measures are mutually reinforcing, the United Kingdom made the point that norms did not have to be legally binding or codified to bring security benefits.

Russia viewed norms as "legal" insofar as they "permit, prohibit, prescribe" and as such were "mandatory," while also conceding that norms could be "politically binding." However, norms were not an end in themselves. Russia stated that it did not view the new GGE as in competition with the OEWG but saw the work of the two as complementary.

TOPIC 11 Norms, rules, and principles relating to other aspects of outer space activities

Other issues raised by states as deserving of attention included ABM defence systems and space-based missile defence, mega-constellations of satellites, and national sovereignty.

China and Russia called out U.S. investments in, and testing of, ABM systems including space-based defences (the United States denied having a program or funding to produce space-based interceptors); China called for a norm to refrain from developing and deploying ABM systems that might be diverted to ASAT systems, and from proliferating ASAT capabilities. China and Cuba called for states to refrain from declarations of outer space as a warfighting domain. The United States highlighted Russian and Chinese investments and tests of their own ABM systems.

Commercial capabilities were also in the spotlight – specifically the SpaceX Starlink and Starshield constellations. Iran argued that they violated national sovereignty and posed a threat to states. China suggested that such "giant constellations" harmed access to space by developing states by crowding them out and increasing the risk of collision.

China raised the need to govern and coordinate the use of natural resources in outer space such as radiofrequency and orbital positions; the United States suggested that this was a topic for the ITU.

Recommendations by states

Following is a compilation of recommended principles and behaviours raised by states in both the discussions and submitted papers. **Points in italics were mentioned most frequently or generated the most agreement among states.**

Many of the recommended actions are intimately linked and correlate with multiple principles. For example, efforts to avoid environmental contamination, harmful interference, and the use of force are related to operating safely and with due regard for others. The objective of this listing is to provide the reader with an overview of the scope of recommendations to date, and not a set framework by which they should be interpreted or adopted.

Underpinning all these recommendations are three core principles:

- the free use of space by all for peaceful purposes
- international cooperation
- the applicability of international law to outer space.

Equitable access to and use of space

- Norms should not be used to deny the right of any state to use outer space for peaceful purposes (non-discrimination).
- All states have an equal and equitable right to participate in space security governance.
- All states have the right to an optimal level of security.
- States should not use domestic laws to impose unilateral sanctions.
- States that conduct activities for peaceful purposes must be assured that there will be no undue interference by other states (non-usage assurances).

Operating with due regard for others

- Operating safely
    - States should maintain safe separation and safe trajectory of spacecraft.
    - *States should avoid endangering the lives of humans in outer space.*
    - States should not conduct or knowingly support proximity operations that impair the safe operation of space systems of another state.
    - States should not test capabilities that impair the safe operation of a satellite by another state.
- States should *consult, seek consent in advance*, and/or coordination when:
    - approaching or following an active satellite
    - *conducting rendezvous-and-proximity operations/physical contact with a satellite under the jurisdiction or control of another state/operator*
    - conducing operations that could impair safe operations by another state

    - conducting a space launch/re-entry that affects other states, including those identified as potential drop zones for debris/rocket stages that could injure people and damage or destroy property.
- States should establish, maintain, and utilize communication channels to communicate and resolve concerns in a timely manner.
- States should respond to inquiries from other states seeking clarification, coordination, consultation, or consent as expeditiously as possible.
- *States should provide advanced notification/information* for the following activities:
    - *space launch*
    - re-entry
    - manoeuvres
    - military exercises and technology demonstrations
    - any planned, scheduled, or predicted activities
    - changes in planned launches/activities.
- States should notify potentially affected parties of high-risk events, such as:
    - potential collisions
    - on-orbit breakups
    - loss of control of a space object
    - uncontrolled high-risk re-entries
    - close approaches/manoeuvres.
- *States should designate a point of contact to facilitate notifications and information exchange* and acknowledge receipt of, and respond appropriately to, notifications.

Sharing information

- States should register space objects and other relevant information with the United Nations in a timely manner.
- States should provide public access to national registries of space objects.
- *States should share information relating to national space programs and activities*; this involves:
    - *publishing/sharing information about national space policies, strategies, doctrine, expenditures, and activities, especially those related to militaries*
    - committing to regular dialogue about space programs, launches, and activities, including capabilities being deployed/developed.
- *States should share orbital information/space situational awareness (SSA) data*; this includes:
    - sharing open-access SSA data and catalogues to the greatest extent possible
    - sharing, as possible, SSA information relating to incidents that might cause misunderstandings, such as damage to space objects

- using multilateral platforms/organizations to aggregate, verify, publish/make available SSA data
- promoting cooperation and capacity building to collect, share, and make use of SSA data
- participating in efforts to improve the reliability of SSA data collected through a variety of sources/algorithms/software
- supporting efforts by the ISO to provide effective standardization/verification of SSA data.

Avoiding contamination of the space environment

- *States should avoid the intentional creation of space debris.*
- *States should not engage in activities that cause physical damage/destruction of space objects or long-term debris* such as:
  - destructive tests of anti-satellite missiles or other Earth-based capabilities, including by non-kinetic means, against objects in space
  - destructive tests of co-orbital capabilities, including non-kinetic tests
  - deliberately colliding with other satellites
  - using robotic arms to inflict damage on other satellites
  - ejecting projectiles or similar objects at target satellites/objects.

Avoiding harmful interference

- *States should not cause physical damage or harmful interference to critical space systems* or essential services, including by cyber/electromagnetic means.
- States should not conduct or knowingly support activities (e.g., through cyber, electromagnetic or laser interference) that lead to a loss of operational control over, or irreversible damage or permanent loss of, space systems by another state.
- *States should not cause permanent loss of satellite functionality OR command-and-control through laser, radiofrequency, cyber, or physical attacks/cyber activities against ground control.*
- States should not physically force other satellites to disrupt normal operations or to manoeuvre to safety.
- States should not cause permanent damage to imaging sensors on capabilities of another state.

Responsibility for national space activities

- States must authorize and provide continuing state supervision for all nongovernment space activities.
- States should establish national regulatory and supervisory frameworks for nongovernment space activities to enforce/implement internationally agreed principles of

responsible behaviour.

- States should respect local landing rights and avoid violations of sovereignty, including by nonstate actors.
- States should ensure that satellites that are under national jurisdiction and control or operating on their behalf do not conduct counterspace testing activities that impair the safe operation of satellites under the jurisdiction and control of another state or violate local landing rights/sovereignty or pose security risks.

Objects/services warranting special protection

- *States should refrain from conducting and/or supporting activities that would impair space systems necessary for the provision of essential civilian services on Earth and for the protection and functioning of persons and objects specifically protected under international law*, particularly the following:
    - systems critical to the production and maintenance of objects indispensable to the survival of the civilian population or otherwise enabling the delivery of essential civilian services, including but not limited to foodstuffs; agricultural areas for the production of foodstuffs, crops, and livestock; drinking water installations and supplies; irrigation works; electricity; and communications
    - systems necessary for the protection and functioning of persons and objects specifically protected under international law, such as astronauts; medical personnel, activities, and facilities; humanitarian relief personnel and objects; civil-defence organizations; cultural property; and the natural environment
    - air traffic or emergency services
    - GNSS
    - scientific research facilities and personnel
    - space systems used for climate change adaptions/mitigation
    - operations and persons involved in human spaceflight.
- States should not impair the provision of space-based services used for strategic stability and early warning.
- Whenever feasible, operators should segregate the military use of space systems (including satellites, communication links, and ground stations) from civilian use; such separation is particularly necessary for systems that provide essential civilian services and for the protection and functioning of persons and objects specifically protected under international law.
- States should consider segregating from the internet the communication links on which critical space systems depend.
- States should identify, register, mark, announce, and/or otherwise indicate/differentiate those space systems within their jurisdiction or control that are to be spared from the effects of military space operations.
- States should cooperate to increase the resilience of satellite services for humanitarian relief and emergency response in times of armed conflict and other emergencies.

Non-use of force

- States should abstain from aggressive rhetoric that threatens the use of force against space systems (in the absence of any legitimate claim to self-defence).
- States should commit not to use or threaten to use force against space objects.
- States should commit not to cause permanent loss of function or command/control of satellites belonging to other countries.
- States should refrain from aggressive space policies/strategies.
- States should commit not to seek hegemony/dominance in outer space.
- States should agree not to declare outer space a warfighting domain.
- States should prohibit the use of outer space for warlike ends.
- States should commit not to destroy, threaten, or encroach upon the normal functioning of, or alter the trajectory of, space objects of other states; or to assist or incite others to engage in such activities.
- *States should commit to resolve disputes peacefully*.
    - States should establish, maintain, and use communications channels to resolve concerns about international peace and security that arise from space activities.
- *States should not resort to the threat/use of force against the space objects of other countries.*
- States should not carry out hostile activities/threats on the Moon or other celestial bodies.

Non-weaponization

- States should commit not to use space objects in the atmosphere or outer space as weapons against any target on Earth.
- States should commit not to manufacture, test, or deploy weapons in space for any task or end, including anti-missile defence, against targets on Earth or in the air, and to eliminate any systems already possessed.
- States should commit not to be the first to place weapons in outer space.
- States should stop developing counterspace capabilities, such as co-orbital warfare capabilities.
- States should commit not to develop and deploy missile defence systems that could be used for anti-satellite purposes, and not to proliferate anti-satellite capabilities to other states or nonstate entities.

Mechanisms

- States should establish a common mechanism of deconfliction with national contact-points; this mechanism would allow quick contact and coordination with another state, as well as clarification and resolution of issues of security and safety.
- States should use existing multilateral and regional platforms for information exchange.

- *States should establish permanent communication channels with other states*.
- *States should create channels/contact points for notifications.*
- States should create a consultative mechanism that brings together civilian, military, and commercial stakeholders.
- States should create a space catalogue that is accessible to all to help verify space behaviours.
- States should create mechanisms for sharing/exchange/standardization of SSA data.

Informal meeting

The Chair held an informal meeting to collect input from civil society participants. Copies of their remarks are available online:

- Secure World Foundation
- International Organization for Standards
- Project Ploughshares.

The Republic of Korea indicated that it would prefer to hear NGO voices during the next formal session.

The way ahead

The Chair closed by charting the path forward, which includes circulation of an "elements" paper for feedback from states, as well as intersessional meetings and consultations ahead of the final session in August when recommendations are to be adopted.

The United Kingdom praised the open and inclusive engagement, noting that while there might not yet be consensus on key issues, almost all states recognized that principles, rules, and norms were an important part of the toolkit to implement the existing legal framework. Germany suggested that consensus was within reach. Sweden highlighted the cross-regional support for participation and inclusion of international organizations, civil society, and commercial actors, describing the process itself as a valuable TCBM.

Looking forward to the next session, Sweden emphasized the importance of the full and equal participation of women. Brazil referred to the discussion as a "race against time."

The final session will be held in Geneva from August 28 to September 1, 2023.

Appendix I: Participants

42 STATES

Algeria
Australia
Austria
Brazil
Canada
Chile
China
Cuba
Denmark
Egypt
France
Germany
India
Indonesia
Iran
Iraq
Ireland
Israel
Italy
Japan
Mexico
Netherlands
New Zealand
Nigeria
Norway
Pakistan
Peru
Philippines
Republic of Korea
Russia
Saudi Arabia
Singapore
South Africa
Sweden
Switzerland
Syria
Thailand
Türkiye
Ukraine
United Arab Emirates
United Kingdom
United States of America

2 STATE GROUPS

Association of Southeast Asian Nations

European Union

4 NONGOVERNMENTAL ORGANIZATIONS

International Committee of the Red Cross

International Organization for Standardization

Project Ploughshares

Secure World Foundation

+ Holy See

Appendix II: Additional resources

Online documentation

Formal documentation related to all sessions of the UN OEWG can be found online via the UN Office of Disarmament Affairs:

- Documents are available here.
- Some statements are available here.

Live coverage of the meetings

Real-time coverage of the meetings of the third session of the OEWG are available via @JessicaWestPhD courtesy of Project Ploughshares:

Day 1, Monday, January 30

- Morning meeting
- Afternoon meeting

Day 2, Tuesday, January 31

- Morning meeting
- Afternoon meeting

Day 3, Wednesday, February 1

- Morning meeting
- Afternoon meeting

Day 4, Thursday, February 2

- Morning meeting
- Afternoon meeting

Day 5, Friday, February 3

- Morning meeting
- Afternoon meeting

Live recordings of the meetings

Live recordings of the proceedings are available via UN TV:

Day 1, Monday, January 30

- Morning (Meeting 1)
- Afternoon (Meeting 2)

Day 2, Tuesday, January 31

- Morning (Meeting 3)
- Afternoon (Meeting 4)

Day 3, Wednesday, February 1

- Morning (Meeting 5)
- Afternoon (Meeting 6)

Day 4, Thursday, February 2

- Morning (Meeting 7)
- Afternoon (Meeting 8)

Day 5, Friday, February 3

- Morning (Meeting 9)
- Afternoon (Meeting 10)

Project Ploughshares is a Canadian peace research institute with a focus on disarmament efforts and international security, specifically related to the arms trade, emerging military and security technologies, nuclear weapons, and outer space.

For more information please visit: www.ploughshares.ca.