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REPORT

Recommendations by states from the Third Session of the United Nations Open-Ended Working Group on Reducing Space Threats

January 30 to February 3, 2023

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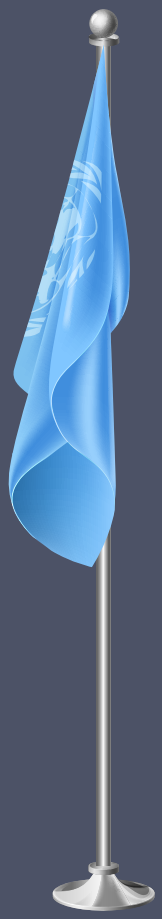

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Session summary

The focus of this Open-Ended Working Group (OEWG), which first gathered in 2022, is on reducing space threats through norms, rules, and principles of responsible behaviour. While the first two sessions featured discussions on existing legal and normative frameworks, and 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 countries 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, and the Holy See took the floor, as did the International Committee of the Red Cross. Nongovernmental organizations Project Ploughshares, Secure World Foundation, and the International Organization for Standardization 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 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 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, 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 insist on 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 very premise of the meeting.

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 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.

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.

A compilation of recommendations

The following principles and behaviours were recommended by states and reflect the content of 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.

More information

- The final meeting will be held in Geneva from August 28 to September 1, 2023.
- See the full report: The Open-Ended Working Group on Reducing Space Threats: Recap of the Third Session, January 30 to February 3, 2023.
- See as well reports for session 1 and session 2.
- Additional research on outer space security can be found on www.ploughshares.ca; click on Research and Reports.

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.

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