Report by the Chair of the Group of governmental experts on further practical measures for the prevention of an arms race in outer space[1]

New York, 31 January 2019

I am pleased to convene this meeting today, which focuses on the work of the Group of governmental experts on further practical measures for the prevention of an arms race in outer space. The Group was established pursuant to resolution 72/250, adopted by the General Assembly on 24 December 2017.

In accordance with that resolution, I am mandated to convene this informal meeting today "so that all Member States can engage in interactive discussions and share their views on the basis of a report on the work of the Group to be provided by the Chair in his own capacity".

As specified in the programme for this consultative meeting, I have suggested dividing the time as follows. Our meetings today will be devoted to interactive discussions and the sharing of views among Member States on the main substantive topics considered by the Group at its first session.

These topics include: (1) The existing legal regime in outer space and elements of general principles; (2) Elements of general obligations; (3) Elements related to monitoring, verification and transparency and confidence-building measures; and (4) Elements related to international cooperation, institutional arrangements and final provisions.

At the outset of the discussion of each substantive topic, I will provide a brief summary of the main points raised during the meetings of the Group.

Time permitting, and after discussion has been exhausted among Member States on a topic, I will open the floor to observers and representatives of non-governmental organizations.

At the first session of the Group, it was suggested that this consultative meeting should also serve as a platform for engagement with the broader outer space community. I have therefore arranged for our meetings tomorrow to be devoted to exchanges between Member States and three panels, respectively composed of representatives from national space agencies, commercial space actors and civil society.

[1] In accordance with paragraph 5 of resolution A/RES/72/250, report by the Chair of the Group of Governmental Experts on further practical measures for the prevention of an arms race in outer space provided in his own capacity

This will be an open informal meeting. This means observers and NGOs may attend and participate on the condition that they respect the private nature of the discussion. This means that there should be no public reporting of any kind on the meeting, including on twitter or other social media.

For members of the press who might be in the room, this meeting should be considered off the record and there should not be any reporting on the discussion. It is my hope that these modalities should facilitate a frank and open exchange among all participants.

Before we start with our substantive discussions today, I will first provide a general overview of the work completed so far. I suggest that in the spirit of an informal consultation, we keep our remarks focused on the topic at hand. After my presentation on topic 1 (The existing legal regime in outer space and elements of general principles), I will invite delegations to take the floor to address that item, or to make any statements of a general nature.

General overview

As you are aware, resolution 72/250 requested the Secretary-General to establish a United Nations Group of Governmental Experts, with a membership of up to 25 Member States, chosen on the basis of fair and equitable geographical representation, to consider and make recommendations on substantial elements of an international legally binding instrument on the prevention of an arms race in outer space, including, inter alia, on the prevention of the placement of weapons in outer space.

In accordance with the resolution, the Secretary-General invited 25 Member States, selected on the basis of equitable geographic distribution, to nominate experts to participate in the Group. The group is comprised of experts from the following Member States: Algeria, Argentina, Australia, Belarus, Brazil, Canada, Chile, China, Egypt, France, Germany, India, Islamic Republic of Iran, Italy, Japan, Kazakhstan, Malaysia, Nigeria, Pakistan, Republic of Korea, Romania, Russian Federation, South Africa, United Kingdom and United States.

Prior to the first session, the Group benefited from an International Workshop on the Prevention of an Arms Race in Outer Space, which was convened in Beijing in July 2018 by the Office for Disarmament Affairs, together with the Ministry of Foreign Affairs of China and the Ministry of Foreign Affairs of the Russian Federation. That workshop made a valuable contribution to the preparations for the Group.

In particular, the workshop enabled the nominated experts to come together before the official session to discuss all issues relevant to their mandate, including: the evolving space security landscape and the prospects for and consequences of an arms race in and the weaponization of outer space; the status of international efforts to prevent an arms race in outer space, including the relevance and sufficiency of applicable norms and principles; and possible elements related to an international legally binding instrument on the prevention of an arms race in outer space, including, inter alia, on the prevention of the placement of weapons in outer space.

The preparatory workshop enabled the nominated chair of the Group to identify a set of issues that should be addressed and to seek views on working methods. The workshop also greatly benefited from the participation of invited non-governmental experts, who were able to deliver presentations and support discussions on technical matters.

The GGE held its first session in Geneva from 6 to 17 August 2018.

The group was guided by a detailed indicative timetable, designed to focus discussion on the various thematic areas that could be addressed in a possible legally binding treaty and including the following aspects:

- The international security situation, including current trends and developments and the identification of indicators for an arms race in outer space;
- The existing legal regime applicable to the prevention of an arms race in outer space;
- The application of the right to self-defense in outer space;
- General principles, including those contained in existing instruments and those additional ones that may be required;
- General obligations, including scope and objectives, elements related to the control of arms, equipment and technology, elements related to the control of behavior, and elements on the possible limitation and regulation of the use of force;
- Definitions;
- Monitoring, verification and transparency and confidence-building measures, including the role of existing measures and the elaboration of new ones;
- International cooperation and capacity building;
- Final provisions and institutional arrangements; and
- Organization of work for the second session.

During its session, the Group benefited from technical presentations made by external experts and by the United Nations Institute for Disarmament Research, who briefed the group on a variety of topics. The Group also greatly benefited from the active engagement, presentations and working papers by its own members.

It was my sense that members of the Group seemed willing to work within the established mandate, contributing to the debate on elements of a possible legally binding instrument, while exploring different approaches towards this goal.

The draft treaty on the prohibition of placement of weapons in outer space was a recurring point of reference as the debate progressed, but substantive exchanges were not limited to it or by it.

With assistance from UNODA and UNIDIR, I circulated a comprehensive version of the "grid" proposal that was made and discussed by members of the Group so that each expert can provide inputs on as many elements as they deem necessary. Due to the complexity of the issues under consideration, the deadline for receiving these inputs was extended until mid-January.

Those inputs, and the discussions from the first session, have informed my preparation of the first draft of the report, which is in the making for submission to the Secretariat for the processing. That draft will be discussed and finalized by the Group at its final session in March of this year.

Already, a number of experts have expressed their intention to submit working papers prior to the second session. I wish to extend an invitation to all delegations to submit written proposals, through the Secretariat, to be made available to the experts for their consideration at the second session. I would appreciate if any such working papers can be limited to a maximum of two pages and submitted no later than **Friday, 1 March**.

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1. The existing legal regime in outer space and elements of general principles

I will now turn to the first substantive topic: the existing legal regime in outer space and elements of general principles.

The Group considered that principles, rules and norms contained with the existing international treaties, conventions, instruments and other sources are relevant for the objective of preventing an arms race in outer space. These principles, rules and norms have played an essential role in fostering cooperation in the peaceful use of outer space.

Yet, the view was expressed that the existing legal regime remains insufficient to prevent an arms race in outer space. A legally binding instrument on the prevention of an arms race in outer space would fill a gap in the international legal regime applicable to outer space, including in the maintenance of international peace and security. It was therefore considered that any instrument that may be pursued in the context of an agreed outcome of the PAROS GGE should build upon and extend existing international law, especially the 1967 Outer Space Treaty.

Experts generally affirmed or recognized the relevance to the prevention of an arms race in outer space of principles codified in the Outer Space Treaty. These principles included:

(i) The applicability of the United Nations Charter in outer space;

(ii) The freedom of access to outer space without discrimination and on the basis of equality;

(iii) The non-placement of nuclear weapons or other weapons of mass destruction in outer space;

(iv) The use of the moon and other celestial bodies exclusively for peaceful purposes;

(v) State responsibility for the activities of their nationals in outer space;

(vi) The liability of launching States for damage;

(vii) The requirement to give due regard to the interests of others in the use and exploration of outer space; and

(viii) The duty to consult before proceeding with any activity that could cause potentially harmful interference with the outer space activities of others.

Experts generally affirmed or recognized the relevance to the prevention of an arms race in outer space of principles contained in the Charter of the United Nations, including:

(i) The prohibition of the threat or use of force;

(ii) The peaceful settlement of disputes;

(iii) The right of individual and collective self-defence; and

(iv) The precedence of the United Nations Charter over other international obligations.

Experts also generally affirmed or recognized the relevance of principles contained in disarmament and non-proliferation treaties, including:

(i) The right to develop technology for peaceful purposes;

(ii) The need to avoid hampering the economic or technological development of States;

(iii) Non-discrimination; and

(iv) The objective of general and complete disarmament.

There was no dispute that international law, and the Charter of the United Nations in particular, applies in outer space. There were concerns, however, about engaging in a discussion on the application of international humanitarian law due to the possibility that such a discussion could signal acceptance of the notion that armed conflict could be conducted in outer space.

In particular, any attack in low-earth orbit could create long-lasting debris that could persist for decades or longer, posing a serious hazard to any spacecraft operating at the same altitude. An attack in higher orbits could create debris that persists indefinitely. A small number of attacks resulting in the breakup of outer space objects could negatively impact wide areas of earth orbit and pose a consequent hazard to the safety and security of space operations, and could result in unpredictable incidental harm to other spacecraft.

There was some convergence on the notion that it would be useful to avoid any attempt to determine what constitutes a possible scenario for the use of force in outer space as per UN Charter Aticle 51 and instead to focus on the regulation of behaviour as may be agreed by States. This included the possible prohibition or limitation of harmful or hostile acts. There was no single view, inter alia, on how to deal with intentional interference with or disruption of a space object that does not result in permanent damage.

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2. Elements of general obligations

I will now turn to the second substantive topic: elements of general obligations.

The matter of what general obligations should be included in a possible legally binding instrument was closely linked with its scope.

The Group discussed various possible threats to outer space activities and which of these threats can and should be effectively and verifiably addressed in an instrument. It was considered that threats exist on a continuum from low-intensity, characterized by reversible and disruptive impacts, to high-intensity, characterized by irreversible and destructive impacts. These threats can affect outer space objects as well as associated terrestrial infrastructure and the end-users of space-based services.

One expert presented a useful scheme for classifying specific threats, in order of growing intensity. These included the following: (i) electronic warfare, including jamming and spoofing of radio transmissions; (ii) cyber-attacks, including directly on outer space objects as well as on space related terrestrial infrastructure and commercial operations; (iii) directed energy attacks, which can be launched from ground-, air-, sea- or space-based platforms and currently have the capability of blinding, dazzling or damaging sensitive equipment; (iv) orbital-based anti-satellite systems with the capability to rendezvous with and physically interact with or impact space objects; (v) ground-based anti-satellite weapons, which can destroy space-based objects through kinetic or explosive impacts; and (vi) nuclear detonations.

While threat perceptions varied among experts, they considered that a PAROS instrument should address at least three scenarios: Space-to-space attacks; Space-to-ground attacks; and ground-to-space attacks. Attacks against terrestrial infrastructure related to outer space objects were also discussed.

Threats generally involve existing capabilities already in operation that could emanate from systems more easily distinguished as military systems and as weapons, though addressing dual-use technologies is of great concern.

“Dual-use” systems with legitimate civilian applications would be more difficult to distinguish from military systems intended to be used to carry out attacks. One such capability includes on-orbit servicers, which are satellites designed to manoeuvre close to another object, inspect it, dock with it, and refuel or repair. Another capability includes active debris removal. The problem of dual-use capabilities was regarded as one of the challenges for the development of an effective and verifiable legally binding instrument. Nevertheless, addressing outer space objects designed for use as a weapon in space, or for targeting objects in space, or for targeting earth objects from space should be considered central to any instrument on PAROS.

Experts considered that there could be a varied approach to rules on harmful or hostile acts (attacks) against outer space objects, based on the nature of the threat, taking into account challenges associated with attribution, verification and the dual-use application, civil and military, of outer space objects and capabilities. Experts also considered that any instrument should prohibit the use of outer space objects to attack terrestrial targets. The need for the instrument to be flexible enough to address future developments and threats was also emphasized.

Some experts placed high priority on regulating behaviour, including by prohibiting various types of intentionally harmful or destructive acts. There was some emphasis on prohibiting in particular intentional acts that could result in the generation of long-lasting debris in earth orbit.

The view was also expressed that an instrument should not discriminate among various means of attacking space objects on the basis of its potential to generate debris. Different views were expressed on the sufficiency of the 2007 debris mitigation guidelines in the context of the prevention of an arms race in outer space.

There was convergence, however, on addressing attacks against outer space objects, regardless of whether such attacks originated from other space-based systems or if they were launched from a terrestrial-based missile.

A number of experts regarded the prohibition on placing any weapon in outer space as the primary purpose of any legally binding instrument. There was a robust discussion on the potential dual-use nature of space activities complicating effective verification of such a prohibition. It was suggested that an instrument could prohibit the placement of outer space objects specifically designed for use as a weapon.

A number of experts expressed support for a comprehensive approach, which would include both regulation of behaviour and control of capabilities, equipment or technology. Experts considered that the instrument could cover research, development, production, manufacturing, stockpiling and testing of certain capabilities. While the view was expressed that the instrument should also address the covert development of weaponizable capabilities by commercial or non-state entities, some experts cautioned against the inclusion of export controls on the grounds that they could negatively impact, in a discriminatory manner, access to and the right to develop technology for peaceful purposes, while being ineffective in addressing the problem of dual-use capabilities.

Definitions

The discussion on definitions was ultimately linked to the matter of general obligations. Experts expressed various views on whether an instrument would require an article on definitions. Some considered that the need for definitions should emanate from the scope.

It was noted that explicit definitions might not be required if the underlying concepts were sufficiently clear. Specific terms on which definitions may be sought included: (i) “space object”; (ii) “armed attack” in the context of acts of violence against space objects; (iii) “space weapon”; (iv) “placement in outer space”.

Various views were expressed on possible definitions of these terms, and on even whether precise definitions would be useful or achievable.

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3. Elements related to monitoring, verification and transparency and confidence-building measures

I will now turn to the third substantive topic: elements related to monitoring, verification and transparency and confidence-building measures.

It was considered that some degree of verification would be possible for rules covering the various possible harmful or hostile acts that could be included in an instrument. As an example, it was noted that the United States considered that the prohibition against the placement of nuclear weapons in outer space was verifiable by national technical means in the 1960s.

Many experts considered that the strictness of the verification approach could vary for each prohibited act, and that acts subject to stronger prohibitions could be subject to more stringent verification. They also considered that verification in outer space did not necessarily have to be perfect in order to be effective.

Verifying the nature of an object placed in outer space was considered a key challenge. There was discussion of some novel approaches, such as mandating "keep out" zones which would limit the distance one could approach without consent a space object owned by another party. Pre-launch inspections were also suggested.

The Group also discussed the importance of building capacity in space situational awareness as a means for characterizing or verifying the behavior of outer space objects. Some experts considered the possible value of societal verification, and they supported increasing the public sharing of data from national sensors and space object catalogues.

In light of the fact that the national technical means of States vary considerably, a number of experts emphasized the importance of multilateral verification of a legally binding instrument.

The view was also expressed that verification measures could be subsequently negotiated and incorporated as a protocol to a legally binding instrument.

It was stressed that voluntary transparency and confidence-building measures could not substitute for a legally binding instrument. It was also noted, however, that disarmament and arms control treaties can incorporate compulsory or non-compulsory transparency measures.

In this connection, a number of experts suggested various measures that could form the basis for elements in a legally binding instrument, including certain measures contained within the 2013 report of the group of governmental experts on transparency and confidence-building measures in outer space activities.

Such measures included: (i) information exchanges on military strategies and doctrines; (ii) pre-launch notifications; (iii) pre-launch inspection of dual-capable space objects; (iv) enhanced registration of space objects; (v) public access to national space registries; (vi) notification of scheduled maneuvers; (vii) familiarization visits to space facilities and launch sites; and (viii) technology demonstrations.

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4. Elements related to international cooperation, institutional arrangements and final provisions

I will now turn to the fourth and final substantive topic: elements related to international cooperation, institutional arrangements and final provisions

With respect to international cooperation, a number of experts considered that the instrument should contain operative provisions on the right to develop technology for peaceful purposes and positive obligations for international cooperation in promoting the peaceful uses of outer space. It was emphasized that an instrument should be designed to avoid hampering peaceful activities or hindering access to dual-use technologies, such as orbital robotics and active debris removal.

Support was expressed for including provisions on capacity-building related to various aspects of an instrument and its implementation, including assistance in the development of national legislation, reporting and transparency, verification, space situational awareness and the responsible use of outer space. The role of regional organizations in this regard, including the African Union and European Union, was considered. A distinction was made between provisions on national assistance to parties to carry out their obligations under an instrument and on more general aspects of capacity-building. One expert recalled the proposal for the development of a United Nations data platform for the exchange of information on events in outer space.

Various views were expressed on the institutional arrangements, including on the need for a dedicated secretariat or an implementation support unit. A number of experts emphasized the importance of limiting the institutional costs as much as possible. Possible supporting roles for existing United Nations entities were recognized, including the International Telecommunications Union and the United Nations Office for Outer Space Affairs.

Experts expressed various views on the requirements for entry into force. While there was some recognition that participation of major space-faring nations would be absolutely essential for the effectiveness of an instrument, there was also recognition of the need to learn the lessons of the Comprehensive Nuclear-Test-Ban Treaty. Many experts supported an approach based on a low number of ratifications, e.g. 20, in addition to the participation of a qualified category of States.

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