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Open-ended working group on reducing space threats through norms, rules and principles of responsible behaviours

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Item 6(c) of the agenda

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, including on the prevention of an arms race in outer space

Contribution of the Arab Republic of Egypt to the Open-ended working group on reducing space threats through norms, rules and principles of responsible behaviours

Submitted by the Arab Republic of Egypt*

I. The most prominent threats, current and potential risks, and security threats to space systems:

1. Threats to the outer space component of outer space systems

(a) Types of threats to the outer space component:

- Complete destruction of space objects;
- Deliberate fragmentation of space objects;
- Use of directed energy weapons to destroy the electronic devices of space objects.

(b) Sources of threats to outer space assets and objects:

- The weaponization of space and the arms race are currently deemed to be among the most dangerous sources of threats leading to the destruction and fragmentation of space systems. The arms race is no longer confined to technologically advanced countries. It also casts a shadow on emerging countries in the field of spacefaring. It should also be noted in this regard that the use of weaponization as a tool for managing armed conflicts between countries poses a threat to international peace and security.
- The phenomenon of orbital debris poses a threat to the physical integrity of space assets, since the increase in debris objects and fragments may potentially bring about the destruction of space objects or disable them in whole or in part as a result of their collision with space debris.
- Lack of traffic discipline in outer space may expose space objects to collisions, since outer space lacks any central mechanisms or devices capable of regulating the

* This document is submitted late due to circumstances beyond the control of the submitting authority.



movement of objects in space. For instance, the International Telecommunication Union regulates radio signals and frequencies in a manner that prevents any conflict between them. Moreover, the publicly available documentation is not deemed to be sufficiently accurate to ensure effective control of the movement of objects in space. This constitutes a major obstacle and threat to countries' ability to determine the appropriate orbits for the launching of satellites used for development and other peaceful purposes.

- The use of nuclear energy sources in some space objects may damage other nearby objects in the event of any damage or radiation leakage in space.

2. Threats to the terrestrial infrastructure and facilities

(a) Types of terrestrial threats:

- Acts of sabotage or destruction of ground receiving stations;
- Use of directed energy weapons to damage ground space equipment;
- Cyberattacks on data in ground stations.

(b) Causes of terrestrial threats:

- Terrorist acts targeting the territorial infrastructure of space systems;
- The inability of some countries to develop their space-related capacities, which motivates them to obtain information concerning space systems illegally by stealing data from ground stations or hacking their databases.

3. Threats to channels of communication between spatial and terrestrial components

(a) Types of threats to channels of communication:

- Eavesdropping;
- Acts of jamming and obstruction;
- Interference in frequencies between converging satellites.

(b) Causes of threats to channels of communication:

- Some States may seek to damage space systems through responsible or irresponsible behaviour or behaviour that poses a threat in this area and could potentially have an impact on international security.

II. Determination of acts or activities that may constitute responsible or irresponsible behaviour or that pose a threat in this area, and determination of their potential impact on international security:

1. Distinguishing between responsible and irresponsible behaviour

- The criterion for distinguishing between responsible and irresponsible behaviour by States in this area is the extent to which the States' behaviour or activities are consistent with international legal norms, the Charter of the United Nations and the agreed norms applicable to the maintenance of outer space as a safe, stable and sustainable environment, free from any arms race or armed conflict.

- All causes of the above-mentioned threats to outer space, terrestrial threats, and threats to channels of communication are examples of acts that can be deemed to constitute irresponsible behaviour on the part of States in outer space.

2. The possible impact of irresponsible behaviour on international security acts that are deemed to constitute irresponsible behaviour tend to have many negative effects on the international community, including the following:

- The emergence of political conflicts as a result of political competition with respect spatial resources;
- The pace of the arms race in outer space and the threat of the use of force in that context;
- Lack of trust or declining trust between States, which undermines opportunities for the peaceful use of space;
- The tendency of States to increase the dual use of satellites in violation of international rules and norms.

III. Proposal of key means for promoting the application of rules, norms and principles of responsible behaviour and for reducing the risks of misunderstanding and miscalculations in outer space:

1. States should be required to provide complete and reliable data on:
 - The orbits and age of space objects that they own and that are registered with the United Nations Committee on the Peaceful Uses of Outer Space;
 - The frequencies of radio signals used by space objects that they own and that are registered with the International Telecommunication Union.
2. States that possess space monitoring and control networks should be required to publish accurate data on space objects.
3. It is important to draft an international treaty or convention aimed at preventing and criminalizing the use of positive weapons that pose a threat on the spatial and terrestrial fronts with a view to supplementing previous treaties or updating existing treaties to reflect changes in the space environment.
4. It is important to agree on binding protocols governing the activities of States in outer space pending the adoption of a comprehensive and binding legal agreement on the subject.
5. It is necessary to establish an international working group to prepare a file of technical and specialized space-related definitions and terms, such as the concept of responsible State behaviour, the aim being to promote the use of standard concepts and to provide guidance for the drafting of international, regional or subregional working documents, such as agreements, treaties and codes of conduct. They should be similar to the definitions and terms used in the field of disarmament, such as conventional, ultra-conventional, nuclear, chemical and biological weapons.
6. It is important to focus on culture-building transparency measures such as the issuance of pre-launch notifications and implementation of the Space Debris Mitigation Guidelines issued by the Committee on the Peaceful Uses of Outer Space.