

Republic of Korea

Regarding the Works of the *Open-Ended Working Group on Reducing Space Threats Through Norms, Rules, and Principles of Responsible Behaviours*

Introduction

With more actors, access, and dependency, space is becoming increasingly congested, contested, and competitive every day. Furthermore, as most space systems have dual-use characteristics, it is hard to distinguish the purpose of each space system and the intention behind certain actions. This also increases the risk for miscommunication and miscalculation. Actions involving the outer space can result in the destruction, damage, denial, disturbance, or degradation of space systems of States. These threats to space security are distinct from space risks or hazards and thus require a focused attention.

Therefore, all nations, irrespective of their technological status vis-à-vis space, share a clear and urgent need to reduce such threats to ensure a safe, secure, and sustainable space environment as the world is increasingly reliant on space systems and services. Leaving a vacuum of space security norms, principles, and regulations unattended would inevitably lead to the detriment of all.

Reducing Space Threats Through Norms, Rules, and Principles of Responsible Behaviours

While existing international legal instruments, including five outer space treaties, provide some regulation of hazards and risks in outer space, they cannot adequately address current and potential space security threats. In fact, the international community is devoid of common understanding on what constitutes space threats and responsible behaviours to address them.

As such, the Republic of Korea believes that starting international discussions and cooperation centering on behaviour-based approach is timely, pragmatic, realistic, and appropriate in addressing threats in outer space. Accordingly, the Republic of Korea co-

sponsored the UN General Assembly resolutions on reducing space threats through norms, rules, and principles of responsible behaviours (A/RES/75/36, A/RES/76/231) and submitted a national report to the Secretary-General in reference to UN Resolution 75/36.

In its national contribution attached herewith, the Republic of Korea expressed its view that space threats should be defined based on the intention of action and behaviour rather than capabilities themselves as well as the need to take a holistic and comprehensive approach in light of the nature of outer space. Failure to properly define the challenges that we face would inevitably lead to a failure in response.

For example, the draft Treaty on Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force against Outer Space Objects (PPWT) does not cover all relevant threats. Nor can mere guarantees provide for international security in space. To ensure an effective response to challenges pertaining to space security, we believe that there is a need for more comprehensive development of the scope and definition, along with verification mechanisms.

Expectations for the OEWG and the Republic of Korea Commitment

Following the two UN General Assembly resolutions and in accordance with mandates given therein, we are at the stage of identifying space threats and areas where norms, rules and principles of responsible behaviours are in need. Our collective efforts toward this mission will contribute to forming a common understanding among the UN Member States. These efforts will also prove to be a meaningful starting point to foster space security and for the ultimate creation of a legally binding regime in this crucial domain.

The Republic of Korea is of the view that an effective approach should entail, inter alia, an appropriate set of transparency and confidence-building measures, norms of behaviours and political commitments. We believe that a multilateral pre-activity or pre-action notifications vis-à-vis space security related behaviours could be effective in terms of transparency and confidence-building and thus propose to discuss the details and feasibility of such a mechanism at a later stage in the OEWG process.

The Republic of Korea very much looks forward to the first OEWG meeting, the next

logical step, and exchanging views with all the Member States and relevant stakeholders in ensuring a safe, secure, and sustainable space for all. In addition, the UN OEWG process in itself is a transparency and trust-building measure that increases mutual understanding and communication between diverse actors.

We also look forward to building on the outcome of this first session and furthering our discussion at the regional level with ASEAN partners in particular by co-hosting a virtual space security seminar with the United Nations Institute for Disarmament Research and Secure World Foundation on May 23-24, 2022.

The Republic of Korea takes this opportunity to express its firm commitment to play its due role along with partner countries to this end and will continue to be constructively engaged in relevant fora.

Republic of Korea's National Report on the UNGA Resolution

A/RES/75/36

1. Why Space Matters

As the sphere of human activities in terms of economic, scientific and security expands beyond the earth toward space, it has become more important to **maintain safety, security, and sustainability** in space. Due to wide-ranging applications from telecommunications to navigation and weather forecasting with data collected, transferred and transmitted through satellites and communication devices, the world is increasingly dependent on space-based services and the broader space domain **in daily lives**.

In terms of **national defense**, at the same time, the future warfare is highly dependent on space: satellite information, ISR (Intelligence, Surveillance and Reconnaissance) capabilities, Command and Control (C2) system, radar, missiles and missile defense systems, and other high-tech military capabilities are all inseparable from space activities, which become **the concerns in terms of arms control**.

As a space-faring nation, the Republic of Korea (ROK) believes that activities in space is imperative for **both prosperity and security**. For instance, in the ROK's *Space Development Promotion Act*, Article 1 states that its purpose: to facilitate the peaceful use and scientific exploration of outer space and to contribute to national security, the sound growth of the national economy, and the betterment of citizen's lives by systemically promoting the development of outer space and by efficiently using and managing space objects. This epitomizes the ROK's view *vis-a-vis* space.

2. Risks/Hazards and Threats

With the advent of New Space era, space is becoming **increasingly congested, contested, and competed** by a number of actors and objects.

Even non-state actors are actively participating in space activities. The cross-cutting nature of space technology means that the challenges we are facing require responses which include **both civilian and military aspects**. Most of the space activities have **dual-use characteristics**, it is therefore, hard to distinguish the purpose or intention in advance. Some benign technologies or activities in space, unless used in such purpose, might become serious concern to one's security. Due to such nature **with limited capabilities to verify, combined with lack of transparency**, a certain move, action or activity in space could constitute threat or perception of threat to other countries. Against such backdrop, the ROK government's preliminary view on the concept of "risks/hazards" and "threats" are as follows:

Space Risks/Hazards

The ROK government views the concept of space hazards include consequences **not caused by deliberate actions**. In ROK's domestic law, we already have the definition of space hazards. In the abovementioned ROK's Act, Article 2 defines the term "space hazards" as risks of crash, collision of space objects in outer space. In the *1st National Basic Plan for Space Hazards (2014~2023)*, which is an official plan established on the basis of the Act, "space hazards" are defined as any risks caused by crash or collision of natural space objects and/or artificial space objects or solar storm which could give damage, injury or harm to people's safety and space assets.

The hazards in outer space include any risks or/and dangers causing damage, injury or harm to life and property in space or on ground caused by any space objects or/and phenomena emerged naturally or/and artificially, which include both natural space objects such as asteroid, meteoroid, and any other object formed naturally in space and artificial space objects designed and manufactured for use in outer space including space launch vehicles, artificial satellites, spaceships, and the components thereof.

Threats, and Impacts of Space Threats

The arms race in space will continue to spiral under the circumstances that states do not certain about the intention of others' activities. With lack of understanding on the intentions behind any given activities and lack of transparency, more countries will rely on counter-space measures for defense and this will make the **spiral of cyclical escalation of tensions** towards **potential weaponization of space** and even **aggressive actions**. Thus, the space threat and perception of those threat, no matter how we define, will impact international security.

We could find that some tries to define space threats based on the *capability itself* such as kinetic, non-kinetic, electronic and cyber capabilities. Use, demonstration or testing of those capabilities could threaten others. On the other hand, threats could be defined based on the **intention** of certain action or activities to the space system and people, and the ROK government preliminarily sees threat in that point of view. The ROK government sees that any activities **intended to destroy, damage, deny, disturb or degrade** space assets of other States should be deemed as a threat.

The ROK government believes that existing international legal instruments, including hard law documents such as the five Outer Space treaties, as well as soft law mechanisms such as the LTS Guidelines or Space Debris Guidelines provide some regulation of hazards and risks in outer space. On the other hand, the ROK government believes that there is no international legal regime specifically dealing with the deliberate threats of States to space assets or activities of other States. This may be partly attributed to the fact that the focus has been on regulating weapons or capabilities themselves,

This lack of progress, as well as the difficulty in identifying intent behind certain space activities of States, suggest that an approach based on observable behaviour is appropriate in regulating "threats" in outer space. Such an approach should focus on regulating deliberate threats of States,

as well as mitigating the possibility of misperceptions of threats that may provoke unnecessary tensions between States.

3. Responsible versus Irresponsible behaviour

Since **verifying intention in space is almost difficult and challenging** without official declaration from a space object's operator, we could only judge in light of what we can observe. In this context we should **encourage space actors to behave transparently and responsibly** and discourage **irresponsible behaviour**.

In this sense, the ROK government views that responsible behavior includes measures to **increase transparency and build confidence**.

Already put in place in the final report of the UN Group of Governmental Experts on Space TCBMs, we could refer from the specified measures to build trust in space, including : *information exchange on national space policy and goals, and exchange of information on military space expenditures; information exchange on activities in outer space, including orbital parameters, possible conjunctions, natural space hazards, and planned launches; notifications on risk reductions such as scheduled maneuvers, uncontrolled high risk re-entries, emergency situations, intentional orbital breakups; and voluntary visits to launch sites and command and control centers, and demonstrations of space and rocket technologies*. Also in this context, the ROK government sees that **space situational awareness (SSA)** is imperative. In order to increase visibility and predictability in space, sharing information gathered through states' SSA is what is more necessary.

On the other hand, the ROK government believes that irresponsible behaviour could include the very concept of "space threat" mentioned in this report, particularly the types of behaviour that constitute a violation of the United Nations Charter or key principles of international humanitarian law. One example would be deliberately, in an armed conflict, hampering the functions of a satellite predominantly used for civilian purposes.

Irresponsible behaviour could also include activities that are not themselves threats, but those that have the objective possibility of provoking miscalculation or misperception of threats among States. One specific example of that kind would be the testing or use of Direct Ascent Anti-Satellite weapons in a way that creates long-lived space debris without appropriate international consultations with potentially affected States.

4. Way forward

Due to differences in space capabilities among states, difficulties in reaching agreement in core concepts such as space weapons, and verification issues, it is premature to formulate a legally-binding treaty in the field of space security. However, leaving the vacuum of norm, principles, and regulations unattended, and letting the actors exercise free hands in the outer space would be detrimental in light of the ever increasing use of space.

The ROK government views that this resolution is not prescriptive nor exhaustive in our joint search of legally-binding norms in prevention of arms race in outer space, which would be desirable as an ultimate goal. In the meantime, we believe that our collective efforts towards defining threats and responsible behaviours will serve as meaningful stepping-stones toward a creation a legally-binding norms in the area of space security. These efforts may also help clarify the content of international legal norms so as to illuminate their scope of application to space security issues, and facilitate their application in light of rapid changes in space technology.

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