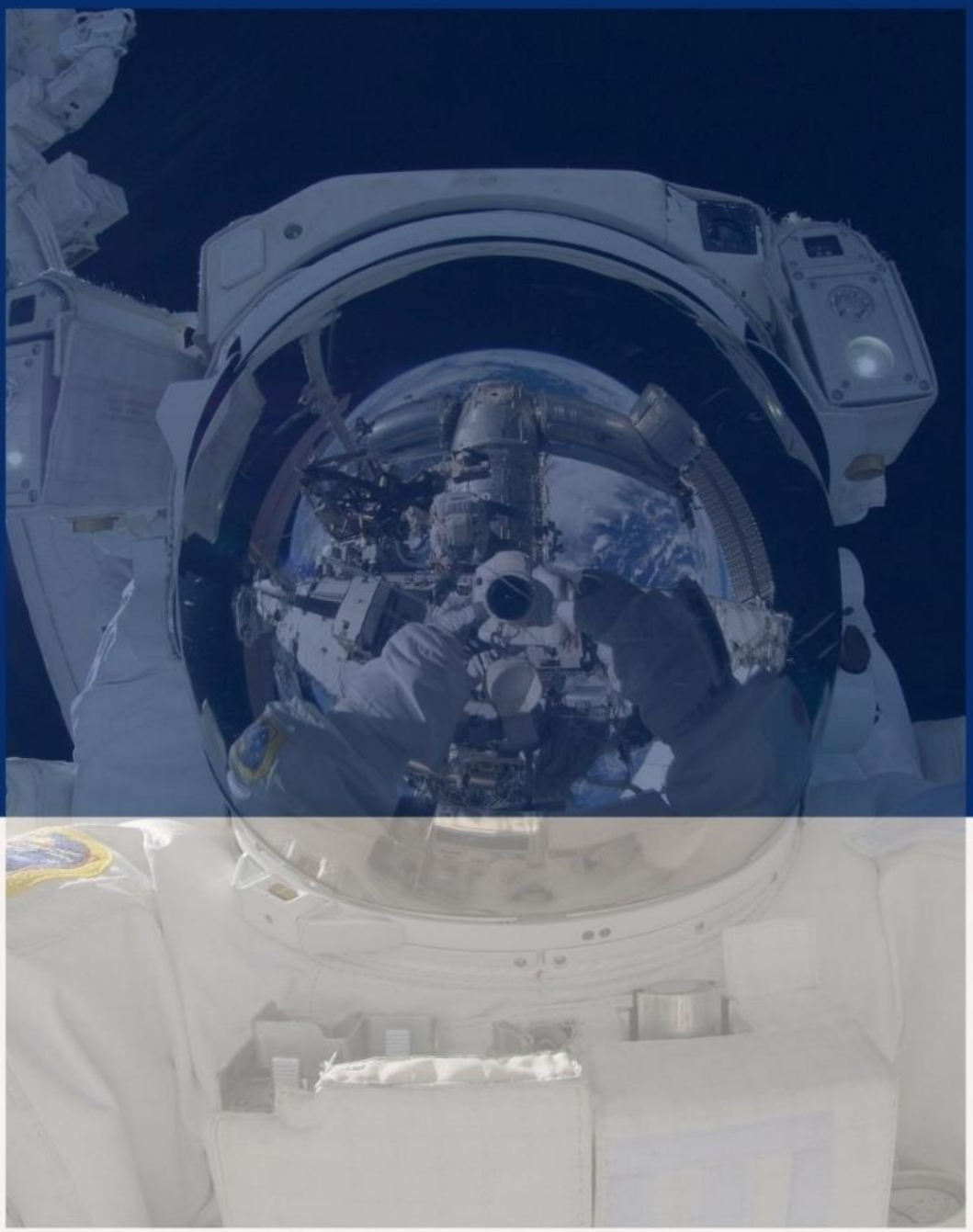
HASMUN

Kadir Has University Model United Nations Club

UNOOSA



AGENDA ITEM:

- Utilization of Satellites for International Communications and Security

UNDER SECRETARY GENERAL:
YAVUZALP ÖZMEN

ACADEMIC ASSISTANT:
KUBİLAY KALEMDAR

Preparation Paper/Study Guide for

HASTRAIN'22

United Nations Office for Outer Space Affairs

(UNOOSA)

Letter From Secretary General

Most distinguished participants and dearest guests;

It gives me the utmost pleasure and honor to announce that I will be the 8th Kadir Has University Model United Nations Conference Secretary-General for the year 2022.

In this modernized and corrupted world, a safe place where you can be seen and understood is created and called home. Be the inspiration for enhancing this world and the forerunner in doing so. The HASTRAIN'22 Academic and Organization team has made incredible efforts to provide you, the participants, with one of the best Model UN Conferences for the promises given above.

#welcomehome

Kindest Regards,

Samet Aba

Secretary-General HASTRAIN'22

Utilization of Satellites

for International Communications and Security

Introduction to the committee:

The United Nations Office for Outer Space Affairs (UNOOSA) promotes international cooperation in the peaceful use and exploration of space, as well as the application of space science and technology to long-term economic and social development. The Office assists any United Nations Member State in establishing legal and regulatory frameworks to govern space activities and strengthens developing countries' capacity to use space science technology and applications for development by assisting in the integration of space capabilities into national development programs.

(http://www.unoosa.org/oosa/en/aboutus/index.html, 18.7.2019)

In 1958, the United Nations Office for Outer Space Affairs was established. It began as a tiny specialist unit inside the UN Secretariat to support the ad hoc Committee on the Peaceful Uses of Outer Space. The section was transferred to the Department of Political and Security Council Affairs in 1962. Later that decade, it was renamed the Department's Outer Space Affairs Division. The Division was renamed the Office for Outer Space Affairs inside the Department of Political Affairs in 1992. The Office was transferred to the United Nations Office in Vienna a year later.

The United Nations General Assembly has approved a variety of international conventions to ensure the orderly conduct of space operations.

The Outer Space Treaty of 1967 is the most important accord. Among the Treaty's principles are the freedom of exploration and use of space for the benefit and interest of all countries, non-appropriation of outer space, including the Moon and other celestial bodies, and the prohibition

of the deployment of nuclear weapons or other types of weapons of mass destruction in outer space. To strengthen the framework designed by the Outer Space Treaty, four other treaties were adopted.

- The Rescue Agreement of 1968 requires States to assist an astronaut in case of accident, distress, emergency or unintended landing.
- The Liability Convention of 1972 establishes the standards of liability for damage caused by space objects.
- The Registration Convention of 1975 requires States to register all objects launched into outer space with the United Nations.
- The Moon Agreement of 1979 elaborates on the provisions of the Outer Space Treaty as they apply to the Moon and other celestial bodies.

That system of laws is supported by five sets of principles. These are the Declaration of Legal Principles Governing States' Activities in Outer Space (1963), the Principles Relating to International Direct Television Broadcasting (1982), the Principles Relating to

Earth Remote Sensing (1986), the Principles Relating to the Use of Nuclear Power Sources (1992), and the Declaration on International Cooperation in the Exploration and Use of Outer Space (1996).

Utilizing space technology to enhance socioeconomic development

Space technologies are now being used, among other things, for disaster management, environmental monitoring, urban planning, health applications, and communications. Space technology can be applied for socioecological development if some of these topics are coupled. To do aim, the UN has established "three unique worldwide Conferences on the Exploration and Peaceful Uses of Outer Space - UNISPACE Conferences - to engage States and international organizations to deepen their collaboration in the peaceful uses of outer space." (retrieved from https://www.unoosa.org/oosa/en/aboutus/history/unispace.html on 22.7.2019)

The inaugural UNISPACE conference took place in 1968, followed by the second and third conferences in 1982 and 1999, respectively.

In order to "create a venue for a worldwide discussion on major topics relating to space exploration and utilization that have brought significant scientific as well as economic and societal advantages for humankind," all three conferences had this objective. (ib.) The conferences usually put a heavy emphasis on advantages for developing nations in addition to strengthening international collaboration. The UNOOSA Programme on Space Applications was one result of the initial conference.

"Throughout the 1970s, the Programme implemented trainings and workshops, using space technology in such diverse areas as telecommunications, environmental monitoring and weather forecasting, remote sensing for disaster mitigation and management, agricultural and forestry development, cartography, geology, and other resource development applications." (ib.) Non-governmental and intergovernmental groups, in particular, were present in the 1982 second UNISPACE summit. They made a contribution to the local community building centers for the education of space science and technology.

These facilities "concentrate on enhancing institutional and human resources to fully realize the enormous potential of space technology for socioeconomic advancement." (ib.) Developing nations were encouraged to improve their domestic capacities for using space technology applications in addition to setting up regional centers.

The organization of UNISPACE III was made possible by the quick advancement of space exploration and technology. The most crucial strategies were to safeguard the environment and manage natural resources, enhance the use of space applications for human security, welfare, and development, and widen access to space research and its advantages for emerging nations. "The Space Millennium: Vienna Declaration on Space and Human Development (Vienna Declaration) completed UNISPACE III, which featured 33 suggestions as parts of a plan to face new problems in outer space operations." (ib.)

As previously said, outer space may provide many benefits to humanity, mostly through technology and creativity. It is critical that these benefits extend beyond the countries who have the resources to explore space. UNOOSA collaborates with a number of partners under the Enter to

Space 4 All program to provide chances for additional member states, particularly developing nations, to access space. 5 (Annual Report 2018) In 2018, the initiative Space 4 All was started. The purpose is to assist poor nations in gaining access to the benefits of space research and technology. "The project provides a wide variety of options in microgravity research, satellite development and deployment, in-orbit research, and access to labs in low Earth orbit, such as the International Space Station and the future China Space Station." (ib, p.20) To make this initiative a reality, a diverse set of stakeholders including governments, space agencies, private space companies, civil society, and academics required to be involved.

The Space 4 All program takes a broad approach to state capacity building. "It includes research chances to develop the technology required to launch devices into space, orbital possibilities, and a project to expand access to space data." (ib.) To maximize its impact, UNOOSA seeks cooperation with regional and national institutions, as well as intergovernmental organizations such as the European Space Agency. "The United Nations Office for Outer Space Affairs (UNOOSA) and the

European Space Agency (ESA) laid the groundwork for a future cooperation agreement to provide capacity-building to developing countries for accessing and using space-based technologies to plan, measure, and monitor their actions under Agenda 2030." The agreement is expected to be signed in 2019." (ib)

Predicting environmental disasters using space technology for global security

Space technology, among other applications, provides unique photos, data, and navigation services that might be utilized to anticipate environmental calamities. Existing technology already delivers real-time, homogeneous data from any location, even remote locations, on which strategic policy choices may be made. Aside from disaster resilience, space technologies can be used to increase agricultural output and profitability; combat disease spread; foster innovation, education, and research in science, technology, engineering, and mathematics (STEM) fields, and expand opportunities for women in these fields;

promote industrialization, productivity improvements through innovation, and economic growth; achieve better water management; and support the transition to clean energy. (Annual Report 2018, p. 36)

UNOOSA has launched the Space4Water portal to promote the use of space technologies and applications for better water management. Annual Report, page 38 The goal is to enable all stakeholders in the space and water communities to gain access to data and knowledge, to be creative, and to realize their full potential in contributing to a world where access to and sustainable management of water and sanitation for all is a reality. 19.7.2019 (https://www.space4water.org/) This can help forecast water shortages, which can cause upheaval and insecurity among the population. Water scarcity is a significant issue for underdeveloped countries, who are unable to adjust for water shortages that arise. Water resources will become more vital in the next years, not just in underdeveloped nations. Water scarcity may spark war and global insecurity. To foresee water shortages and respond to them, it is critical to improve nations' "capabilities in the use of space-related technologies,

applications, services, and information for recognizing and managing water resources" (General Assembly, 2013: p. 2).

Use of Space technology to limit orbital debris

Due to expanding commercialization of space, notably via the construction of ever-smaller satellites, global security is also concerned about orbital trash and retired assets. A rising number of objects in orbit means a greater possibility of collision, which might result in hundreds of fragments. While the risk of collisions and even an irreversible chain reaction (see: Kessler syndrome) is still debated, the principles outlined in the preceding chapter highlight another challenge for the international community: what if a decommissioned Soviet-era satellite collides with a private Indian mini-satellite? The Russian Federation is currently accountable. What if a US-based corporation deliberately guides an old satellite into a new one of a competitor? Who is responsible, particularly for damage caused by fragments as a result of the collision, because it

may be impossible to determine where a fragment originated? Who should legislate, govern, and enforce measures to prevent collisions, reduce the number of decommissioned spacecraft in orbit, and determine liability in the event of a collision? Another critical issue here is tracking; the previously mentioned situational awareness is essential for predicting trajectories and governing launches. Currently, the United States is providing some of this awareness. Could this be improved? Consider other global coordination systems, such as air traffic control (national governance with international standards), stock exchanges (self-regulation, market-based), or international organizations.

Potential methods for minimization of expense

Reusable launch vehicles, big lift rockets, and mining the Moon for fuel are three strategies to reduce the costs of human spaceflight. All three have benefits and drawbacks. The recent catastrophic loss of a satellite aboard SpaceX's Falcon 9 rocket during ground testing serves as a reminder that putting anything into space is inherently perilous. The flip

side of the difficulty coin is the cost of spaceflight. After all, speeding tens of tons of sophisticated machinery down an incredibly precise course at a precise velocity necessitates all of our technological knowledge and skill—yet even then, we occasionally fail to arrive at the right destination. The space community believes that decreasing the cost of launch is a necessary precondition for the "opening" of the space frontier. As a result, SpaceX and many other businesses are developing ways and technology to recover and reuse rockets after launch. After all, we don't abandon an ocean liner after just one journey. For a variety of reasons, accomplishing the aim of low-cost launch service has proven difficult. For one thing, the flight regime between Earth's surface and low Earth orbit (LEO) is the most difficult to operate in. A highly variable atmosphere, high gravity, hypersonic speeds (both to and from space), and a possible watery dunking upon return are all potential roadblocks to the development of a successful reusable flight system. Some people forget that the Space Shuttle (retired 5 years ago) was a largely reusable launch system—the Shuttle orbiter (with three complex cryogenic engines used for launch) returned to Earth, and the two solid

rocket boosters were recovered (falling back to Earth over the ocean) and reused after each flight. In the case of the Shuttle, reusability was a liability rather than an asset—the ongoing high costs of maintaining and operating the Shuttle system left little budget for anything else the agency wished to explore, such as human trips beyond LEO.

Still, the allure of reusable systems captivates—it simply seems so rational. However, our road into space is hampered by what my buddy Don Pettit refers to as the "Tyranny of the Rocket Equation." This equation, developed by Russian astronautics pioneer Konstantin Tsiolkovsky, simply states that for a rocket to deliver a payload to space, it must be almost entirely composed of fuel (propellant), typically accounting for more than 90% of the mass of a rocket designed to deliver payloads to orbit. The "non-propellant" 10% fraction of that mass includes not only the payload (the object you want to orbit), but also the airframe, shrouds, tanks, plumbing, avionics, and other items critical to the system's proper operation. Combining highly combustible

propellant with complex equipment creates a recipe for "difficult" and "dangerous" activity.

PRACTICAL TIPS

How to do your research:

If you're a first-timer, you might be wondering, "What do I do know?" MUNs have the goal of teaching you how to build and defend your own perspective. This perspective must be reasonably similar to the real-world position of the country you represent and may differ greatly from your personal viewpoint - but it is ultimately your creation. However, no one can predict how a country will act in the future. So, what are you going to do? Consider how they have acted in the past, what agreements they have signed and, more importantly, which they have not. Google, the press, and YouTube videos are good places to start to get an **overview** of the topic, but keep in mind that these sources need to generate attention and thus may be biased or sensationalist. Once you have a **general understanding**, look for academic releases and articles.

They will most likely be a difficult read, but they will provide you with the professional knowledge you need to have an informed discussion. Next, go to the websites of UNOOSA and your country's space agency (or responsible ministry). Look for press releases, statements, and speeches from conferences. **How is your country behaving?**

OPENING SPEECH

This is where you say, "This is what we want. This is what you can expect from us." You move from claim to claim, indicating your objective. Only afterwards, during the real conversation, you go through each of them individually. Everyone in the room needs allies at some point, and opening comments are the first chance to find out who they are. Be to the point, and straightforward once more.

There is a useful structure here that you may use both in the opening statement and later in the discussion:

- **Hook**: A question, comment, statistic, or tale that piques your audience's interest.

- **Action**: a call to action; what do you want the committee to do?
- **Point**: the content of your statement, in this instance your core policy views for the discussion

Here's an instance:

Honorable Chair, esteemed delegates,

As the delegation of ---------- we are delighted to be part of the 8th annual HASTRAIN'22 conference.

We hope that fellow delegates will engage in relevant debates, in order to make this conference productive. Let's all take wise decisions after considering every resolution. Bear in mind that the U.N. was created to make a better world and not to satisfy an individual will.

I wish you all success and an unforgettable experience.

-Yavuzalp Özmen

Under-Secretary General