

Letter From Under Secretary General

Distinguished delegates,

It is my utmost pleasure to welcome you to ANKAMUN 2020! I am Duygu LAK and I will be serving as the under secretary general responsible for UNOOSA. Having been participated in numerous conferences in different positions, I am about to complete my second year in this fantastic community. Personally, I am a passionate advocate that such conferences are perfect opportunities to not only practice public speaking and negotiation skills, but also to develop thorough understanding of the prevailing problems the world is facing. Being fully aware that the academic experience through the sessions is of crucial importance, we, as the academic team will be striving to provide you with a successful conference.

The following pages intend to guide you through the issues that will be debated through committee sessions. Please note this guide only provides the basis for your investigation. It is your responsibility to find as much information necessary on the topics and how they relate to the country you represent. The more information and understanding you acquire on both the topic and your country's stance, the more you will be able to influence the caucuses as well as the resolution writing process.

Please feel free to contact, if and when you face challenges in your research or concerning the general rules of procedure. I heartily wish that your experience within the committee will be full of innovation and inspiration.

Yours sincerely,

Duygu İSLAK

Agenda Item: Advancing the legal framework of space colonisation

Terminology

“Satellite” is a small body which orbits a larger one as well as being described as a natural or an artificial moon. Earth-orbiting spacecraft are also called satellites. While deep-space vehicles are technically satellites of the sun or of another planet, or of the galactic center, they are generally called spacecraft instead of satellites.

“ National Aeronautics and Space Administration (NASA)”

U.S. Civilian Space Agency created by Congress. Founded in 1958, NASA belongs to the executive branch of the Federal Government. NASA's mission to plan, direct, and conduct aeronautical and space activities is implemented by NASA Headquarters in Washington, D.C., and by nine major centers spread throughout the United States. Dozens of smaller facilities, from tracking antennas to Space Shuttle landing strips to telescopes are located around the world. The agency administers and maintains these facilities; builds and operates launch pads; trains astronauts; designs aircraft and spacecraft; sends satellites into Earth orbit and beyond; and processes, analyzes, and distributes the resulting data and information.

NASA shares responsibility for aviation and space activities with other federal agencies, including the Departments of Commerce, Transportation, and Defense. Much of the work on major projects such as the Space Shuttle and the Space Station is done in the private sector by aerospace companies under government contract.

From its inception, NASA has been directed to pursue the expansion of human knowledge of phenomena in the atmosphere and space. NASA's programs of basic and applied research extend from microscopic sub-atomic particles to galactic astronomy. In addition to enhancing scientific knowledge, thousands of the technologies developed for aerospace have resulted in commercial applications. Science offices at NASA Headquarters carry out a wide range of research activities to fulfill NASA's science goals.

“ Orbit” is defined as the path described by a heavenly body in its periodic revolution.

“Asteroid” is a rocky object in space that can be a few feet wide to several hundred miles wide. Most **asteroids** in the solar system orbit in a belt between Mars and Jupiter.

To “colonize” is to establish control and power over a certain area, deeming it as one's territory.

“Meteor” is a meteoroid which is in the process of entering Earth's atmosphere. It is called a meteorite after landing.

“International Space Station”

The **International Space Station** (ISS) is a space station (habitable artificial satellite) in low Earth orbit. The ISS programme is a joint project between five participating space agencies: NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe), and CSA (Canada). The ownership and use of the space station is established by intergovernmental treaties and agreements.

The ISS serves as a microgravity and space environment research laboratory in which crew members conduct experiments in biology, human biology, physics, astronomy, meteorology, and other fields. The station is suited for the testing of spacecraft systems and equipment required for missions to the Moon and Mars.

To “launch” means to send something on its way, such as when a rocket's engines are ignited to send it from Earth into space.

Introduction

As part of human consciousness, the urge to explore outer space was always present, as evident from the myths and legends of various cultures. Nevertheless in early stages of humanity, the scientific incapability was a massive challenge. Through several decades of technological development , *incentives of which were military purposes* , space science started to occupy a primary position on nations' domestic agendas.

In 1957; the launch of the satellite Sputnik by USSR was the milestone in human history, achieving to exceed the limits of earth. However, little did the people know that this would become the beginning of what is now known as the **“Space Race” of the Cold War.**

The beginning of the space race was seen by many as a new era with major potential for the improvement of mankind, which was a period involving numerous projects. Those projects concerned issues of grave importance, such as colonisation of space, asteroid and lunar mining, exploration of other terrestrial planets along with advancements on communication and navigation technologies. Yet, as several governments and now private companies joined the space race, space appeared to be a zone which needed to be regulated by laws.

Throughout the sessions, the committee's fundamental target would be to enhance the prevailing regulations on space, adjusting the articles in accordance with the newly discovered issues; ranging from colonisation of space to management of space debris, asteroid mining and demilitarization of outer space. Such advancement on the legal framework is vital, since it is an issue constantly evolving and nations are gradually becoming intrigued by what space has to offer.

About the UN Office for Outer Space Affairs

The United Nations Office for Outer Space Affairs (UNOOSA) was established by the General Assembly in Resolution 1348, on December 12, 1958.¹ It was created as a body

within the Committee on the Peaceful Uses of Outer Space (COPUOS). It was tasked with regulating the exploration, and use of space for the benefit of all humanity; for peace, security and development along with studying legal problems arising from space exploration. Having played crucial roles in adapting the five treaties and five principles of outer space, the committee sustains adopting new agendas with the fast paced technological developments.

The United Nations Office for Outer Space Affairs works to promote international cooperation in the peaceful use and exploration of space, and in the utilisation of space science and technology for sustainable economic and social development . *The Office assists any United Nations Member States to establish legal and regulatory framework, to govern space activities and strengthens the capacity of developing countries to use space science technology and applications for development by helping to integrate space capabilities into national development programmes.*

Issues regarding the scientific and technical aspects of the space activities, namely the long-term sustainability of outer space research, global navigation satellite systems, near-Earth objects, space weather and climate occupies a major position on UNOOSA agenda. Contrarily, *the Legal Subcommittee for UNOOSA also carries great responsibility, striving to respond the legal questions such as the application and implementation of the UN treaties and principles, capacity building in national space legislations, definition and delimitation of outer space and space debris mitigation.*

Despite being formed in a time when space was yet another field of rivalry, nevertheless the Committee grew quickly and reached a number of 84 Member States and Non-Governmental Organizations. With its mandate, the Committee intends to regulate both international and commercial usage of space while remaining accountable to international space law and supporting the Outer Space Treaty.

Historical Background

In the aftermath of the Second World War in 1945, United States, referred as the democratic West, and the Soviet-communist system formed the two major authorities of the global political-economic arena. The conflict between the opposing political philosophies, provoked the cold war, a period of two blocks striving to achieve greater technological and military capacity. A “war”, at its core, was not direct, but based on constant competition between the two superpowers. While, in the early stages of the Cold War, the counteractions were intended to manage political and economic prosperity, the war gradually extended to an arms and space race. The Space Race led to pioneering efforts to launch artificial satellites, space exploration and human spaceflight in low Earth orbit and to the Moon.

The Soviet Union achieved the first successful launch on October 4, 1957 with orbiting of Sputnik 1, also sending the first human to space with the orbital flight of Yuri Gagarin in 1961. Soviet Russia sustained its missions for numerous years, spending major budgets for researches and space rockets. In 1963 Valentina Tereshkova managed to be the first woman cosmonaut.

While the USSR attempted several crewed lunar missions, but eventually canceled, the "race" peaked when US landed the first humans on the Moon with Apollo 11. It was another milestone in history of space science.

The Space Race has left a legacy of increased space related development and advances. It sparked increases in spending on education and research and development, which led to many spin-off effects. The so-called Cold War, lasted in 1991, when the Soviet Union officially dissolved.

Naturally, after the beginning of the Cold War, the fear of Outer Space being used for military purposes had drastically risen and it consequently spread through the international community. This, as a result, led to the creation of multiple organizations with the intent of governing how outer space can be used in order to assure it does not become the next frontier for conflict.

Colonisation Of Space

The possibility of colonizing space or any terrestrial planet is an idea that becomes more possible as technology sustains advancing. Being offered by many researchers, namely Stephen Hawking, Planet Earth will need to be evacuated in a distant future and humanity should be in search for a new home. Despite how intriguing the process is, there are many challenges to overcome.

In the first place, such projects are estimated to be quite expensive and do not offer entrepreneurs any guarantee to succeed. Mars One, a Dutch company striving to establish human presence on Mars, estimated that their first mission, supposed to launch in the 2030s, would cost around \$6 billion USD, which may result in a lack of funds for some nations. ***The situation requires the private sector to be encouraged to collaborate with governments on financing such projects and nations to consider private sectors while forming the regulations.***

Secondly, colonizing, and even traveling to Mars with a large group requires very advanced technology, which may only be accessible to some countries. The space-faring countries, as defined, have a relatively strict authority on such issues, since the greater contribution they make, leaving other nations at disadvantage. This requires all member states to ratify any action on space, as the basic principles of Outer Space Treaty defines space as a zone free from any claim of sovereignty. ***That being said, if nations do not come to a consensus on an orderly way to colonize on Mars, it could result in a loss of resources and benefits available, and defeat the purpose of colonizing in the first place .***

Additionally, once nations colonize, it creates the issue of how Mars will be governed. Since political leaders cannot simply travel back and forth, there needs to be a form of government that can, if needed, discuss with other political leaders to work out problems regarding Mars in a timely manner. ***Even though the scenarios appear to be distant, such legal measures could prevent a possible space race or potential conflicts.***

If handled peacefully, colonisation of space would likely result in economic benefits, eventual survival of humans in outer space, assistance to nations in their aspirations to explore in outer space, contributions to scientific discovery which could lead to more advanced space technology and advancements to national security.

Such conflict could be prevented in advance through a legal framework regarding the situations of an outpost or colonisation and addressing the issue of sovereignty claim. The concept is of extreme sensitivity since space is recognised as a zone free of sovereignty claim and is of common utilisation of humanity. ***Therefore, it is imperative that this issue is discussed because going about this in an orderly manner will result in problems that will affect relations among nations.***

Lastly, it is of prominent importance to address issue of sustaining space as a neutral zone in case of an outpost; having equal opportunities on establishing bases

on space and providing equal chance of research for nations, on your committee's final report.

The Clearance of Space Debris

Space debris is defined as “the natural or human made particles that circle the Earth” that can remain there for millions of years. In the last six decades since 1950s, more than 140 satellites have been exploded, leaving over a thousand inactive loads that circle the Earth constantly spreading debris.

Since 1949, more than 5,000 rockets of various sizes have been launched into outer space. These rockets, as well as a variety of satellites, pieces of technology, and tools used by astronauts, have remained in orbit for decades. Over time, these objects have created space debris, through deterioration and collision that is still present in our atmosphere today. This material that is present in space can be as large as a broken-off section of a rocket or as small as a microscopic chip of paint. These pieces of material orbit at such high speeds that even the smallest pieces can cause damage. According to NASA, in low Earth orbit (closer than 1,250 miles, or 2,000 km to Earth), orbital debris circle the Earth at speeds of between 4 and 5 miles per second (7 to 8 km/s).

In the past few decades, commercial businesses have begun setting their own satellites into orbit. These companies include news broadcasters, TV channels, telecommunication centers, and technology companies, such as Google. The satellites range in size and use, but all greatly contribute to the amount of debris in outer space.

Current space law regime does not impose any obligation to launching states or private entities to restrain space debris. Even though the Liability Convention regulates the responsibility of launching state for the damages its space objects induces to other states, when the damage is caused by space debris, it is frequently impossible to detect whose space object is the source of the debris and to determine the responsible state. *Thus, there is no efficient and preventative system provided to reduce the hazard of space debris.*

Given that space debris is an issue that has only recently come to the attention of the greater international community, there are various resolutions currently in the works that focus more directly and urgently at space debris.

Exploration and Mining of Space Resources

Based on known terrestrial reserves and growing consumption in both developed and developing countries, key elements needed for modern industry and food production could be exhausted on Earth within 50 to 60 years. With a rising world population, which currently stands at 7.5 billion but is projected to reach 9.7 billion by 2050, theoretically limited supply of resources on Earth, issues an increasing demand. This situation precipitates the possibility of utilising asteroids and space objects as resources of energy.

Nonetheless, numerous private and government entities sustain devoting funds and expertise into its development, such projects are not currently being practised due to concerned legal questions as well as financial and transportational challenges. The legislations involved with the peaceful usage or exploitation of space needs legal adjustments and ratifications by all member states.

As the provider of the basic framework of international law, the Outer Space Treaty states that outer space cannot be subject to a claim of sovereignty and the exploration and usage of outer space shall be exercised in the benefit of all States and be the sphere of all human beings.

Thus, no single power shall control the space, as a reflection of the Cold War era concerns in which the Treaty was drafted. The Treaty aims to prevent any countries to declare space and celestial bodies as their property and use them for military purposes. The reading of the treaty results in the deduction that a public or private entity is allowed to ‘use’ the space and celestial bodies and own the recourses obtained from it as long as it does not claim sovereignty or serve military acts. This opinion is strengthened by the Treaty itself via explicitly stating ***the forbidden activities such as usage for military purposes but not mining or similar activities to operate resources***.

The main discussion regarding the property issue is originated from the Article I of the Treaty which goes as follow: ***“the exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.”***

Wording of the statement of use ***‘for the benefit ...of all countries’*** can be read as a suggestion for the share of knowledge and resources of space between countries, while it can also be read as a binding clause that obliges states to share and redistribute the wealth and resources they gained from the space with other states, regardless of who has participated in the activity and who has not.

Another opinion argues that usage of space resources to generate efficient and cleaner energy to Earth or supporting the researches of exploration and settlement in space already satisfies the requirement of the Treaty for lunar activities to be carried ***“for the***

benefit and in the interest of all countries”. Thus, the share of financial profit is unnecessary.

Furthermore, Article II states that “outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.” This Article was created as a means of preventing future space colonialism however, it does not mention the appropriation of a celestial body in regard to its natural resources.

It also doesn’t mention anything regarding property rights. The gap in the legislation was tried to be filled in 1979 with the “Moon Agreement”, though its principles would also include other celestial bodies and asteroids.

The Agreement states that “...the Moon and its natural resources are the common heritage of mankind...” and suggested that all exploitation of those resources shall be governed by an “international regime”. Initially the Moon Agreement was supported 14 by the Member States however; the United States later on withdrew their support on the basis that it would hinder any private investment directed at space exploration.

Overall the Moon Agreement managed to gather only 16 ratifications and none of those were by Member States who were active in Space.

United States, under the Obama administration in 2015, was the first country to give its private companies the right to own, sell and profit from resources extracted from asteroids and other “celestial bodies”. For instance, with six Apollo missions, the US brought 842 pounds of lunar material, owned and controlled it exclusively. There has been no claims against US regarding this issue that it violates the international law which constitutes customary international law via silence.

In 2017, Luxembourg became the first European country that allowed the commercial actors based within its country to appropriate natural resources in outer space. This was done with the intent of generating investment in the country through removing the uncertainty in regulations.

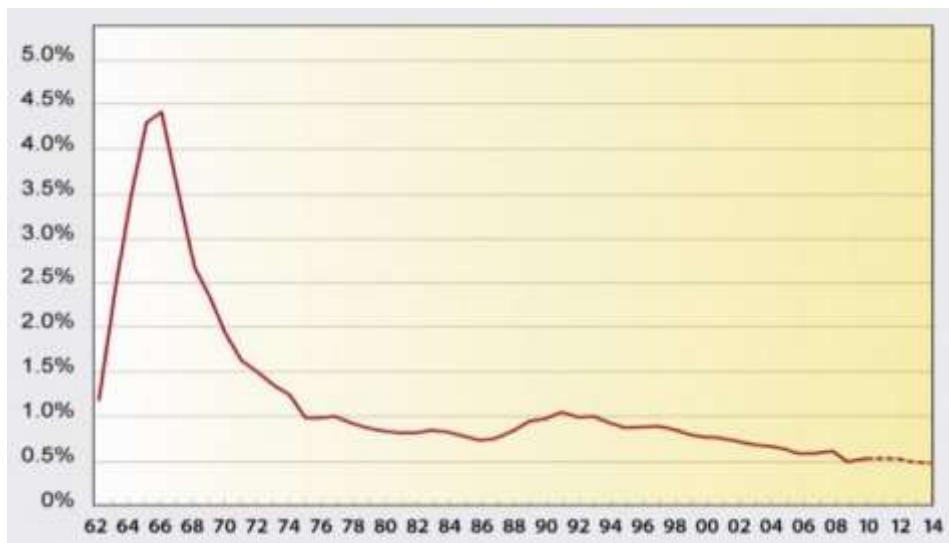
In the light of given different approaches, the destiny of the mining and property rights over mined material of states and companies are unclear. Unless this gap is filled, it might discourage the countries and the companies from making investments to excavate lunar area for materials they are not sure they will be able to possess and prevent further researches.

Financing Space Programmes and Privatization Of Space

Throughout the Cold War, the space race continued with each country outdoing the other in space exploration progress; which stimulated governments to make massive investment for their national space agencies. The situation sustained until the budget

set for other governmental bodies did not suffice; enforcing an increase on scientific research investments.

A prevailing example of the issue is: In contrast to the possessing 4.41% share of the federal budget it had in 1966, the budget for NASA has never totaled over 1% of the overall federal budget for over a decade. Having spent around \$44 billion dollars through the times of the space race, in recent years the agency has received less than half of that amount around \$18 billion dollars for its annual budget.



Especially in the modern world of divisive politics in which budgeting priorities are heavily debated, “**government funded space exploration**” have been deprioritized. Since spending for space exploration has not kept up with inflation, major budget cuts have caused many space programs to shut down. For example, the Space Shuttle program, which brought astronauts and important cargo pieces to the International Space Station, was discontinued in 2011 due to NASA budget cuts.

To fill the void left by discontinued programs, many private companies have received commissions from NASA, ESA (European Space Agency), ISRO (Indian Space Research Office) and many other government-assisted departments to perform important functions.

For instance, when the Space Shuttle program was cancelled, NASA has formed Commercial Resupply Services contracts with commercial space company **SpaceX** and **Orbital ATK** to deliver cargo to resupply the International Space Station (ISS). While American astronauts currently have to borrow a ride from the Russian vehicle Soyuz to reach the ISS, NASA is working on the Commercial Crew Program in conjunction with SpaceX and Boeing to develop spacecraft that can carry astronauts to low-Earth orbit and the ISS.

Proponents of privatized space travel also point out that the private sector often transforms government developed technologies into lucrative or affordable technologies and products for the general public. The space industry is especially full of opportunities, both for its natural resources and tourism. On the natural resources side, precious metals, minerals, and energy are available in infinite supply in space. For instance, one average half-kilometer S-type asteroid is worth more than \$20 trillion dollars.

Multiple companies have also started low-Earth orbit technology to allow people to be launched into space for a short trip. For example, **Virgin Galactic** famously offers short flights into space for \$250,000 dollars. Although the current price is cost prohibitive, limiting this service's potential market, private companies have time to develop government technologies to be more cost-effective in the future. Altogether, these private space exploration companies will take advantage of the opportunities to push existing technology to create jobs and boost the economy.

It is without a doubt that private industries have grown exponentially in this age of innovation, both in magnitude and abundance. With many private companies all developing new space technologies, there is more competition for innovation, which may also lead to faster growth in the field of space technology.

However, while companies are often able to implement decisions and fund projects faster than federal counterparts, they also have to deal with different aspects. While NASA has to answer to the interests of the government and taxpayers, private companies have to take into account profitability, the interests of a variety of shareholders, and most significantly ***reliance on a secure contract with United Nations and other authorities***. Having been, one of the most controversial issues on UNOOSA agenda, the concerning legislative framework is demanded to be advanced. ***The growing commercial and private space companies require for a greater extent within the International Space Law, which would include damage insurance for private satellites, involvement of private companies in the Space Liability Convention in the self-interest of all States and renewing the Outer Space Treaty with respect to the new developments.***

Additionally, since profitability is a major factor in a lot of decision making, programs that focus on the general development of space exploration and knowledge, but lack immediate commercial applications, may not be developed. This suggests that there is still a place for the government in space exploration research and development.

Although there are pros and cons to privatizing space exploration, current trends suggest that many of NASA's space exploration responsibilities are being shifted towards the private sector under government contracts.

Demilitarization Of Space

Like many other scientific breakthroughs, the capability of space exploration came as a result of military research and development. The merits of long-distance rockets as weapons were realized during World War II, which led to the founding of missile programs by both the United States and the Soviet Union. Throughout the Cold War, the space race continued with each country outdoing the other in space exploration progress, from Sputnik to the Apollo moon landings.

The launch of the USSR's Sputnik Satellite in 1957, amidst the cold war, earmarked the era of mankind's exploration of outer space and also opened the debate for the militarization of space. The development of Germany's V-2 missile after the Second World War enabled both the United States of America and USSR to develop their space programs, following which both countries realized that space was a key strategic milestone in the theater of war.

Although there was discussion among nations such as the United States, Canada, France, and the United Kingdom about creating a system to inspect the purpose of satellites even before the launch of the Sputnik, in order to prevent potential military acts in space, the legislations concerning the issue is nevertheless imprecise.

Subsequently, the substantial increase in space exploration with satellites then lead to the development of anti-satellite defense systems such as missiles as well as Inter-Continental Ballistic Missiles (ICBM) by the USA and USSR. The USA then went on to develop other space weapons programs such as the Nike-Zeus program, the Sentinel Program, and Project Defender, two of which make use of Anti-Ballistic Missiles (ABM) and orbiting satellite weapons systems.

The USSR also took many steps to gain the advantage in the arms race for space including developing programs such as the Fractional Orbital Bombardment System (FOBS) and the Polyus Orbital Weapons system in 1987. This was followed by the implementation of the Russian Space Forces in 1992 and the Strategic Rocket Forces in 1997, which creates the Russian Space Forces in 2001.

Other member states such as China responded to these developments by testing weapons systems of their own, such as the FY-AC polar orbit rocket in 2007. Thus, starting the arms race in outer space.

Since then, and as of 2014, there are over one thousand one hundred active satellites orbiting the earth per the report sponsored by the Satellite Industry Association (SIA); one hundred seventy-five of which are for military purposes and over eight hundred forty of which are for civilian use.

Eleven member states of the United Nations have acquired space launch capability, conducting over seventy-five launches per year across a total of twenty-two launch sites which are currently in operation. Furthermore, over sixty member states and regional organizations currently have satellite systems in orbit. The United States Space Surveillance Network has cataloged over seventeen thousand objects currently in orbit around Earth.

Aside from the above, the economic impact of man's exploration of space is significant. According to a 2014 SIA report, the satellite and rocket industry crossed

one hundred and ninety-five billion USD in revenues, with a growth rate of seven percent, with the world economic growth rate being a relatively meager 2.3%.

It has been demonstrated that Outer Space Exploration is not just a fascination but is vital to our progress as a civilization and our economy. However, the sheer rate of growth of the rocket industry and its participating members with their potentially conflicting agendas ***could open space industry to potential militarization.***

Thankfully, the world community has not yet taken steps to militarize outer space. However, reification of militarization still exists and is a grave issue. It is encouraging to note that there exist treaties that prevent the militarization of space to some extent including treaties such as but not limited to, the Outer Space Treaty which reinforces that all states under international law are free to explore and make use of outer space for peaceful purposes. Furthermore, the treaty also explicitly prohibits the placement of Weapons of Mass Destruction in outer space (WMD).

However, there are still areas in which the Outer Space Treaty lacks effectiveness.

It is worth mentioning that addressing such concerns through legislations on global platforms is of great importance to all Member States of the ICAO because militarization threatens the security of all states.

One of the core complications to be handled is absence of a formal definition as to what constitutes the militarization of space. Whether this definition will encompass not just weapons present in space, but also anti-satellite ground based weapons and specifically intercontinental ballistic missiles.

Substantially, it is an urgency to establish a stringent framework for assessing whether equipment being sent to space have potential military capabilities. Maintaining international security and world peace is of paramount importance, for which UNOOSA holds primary responsibility in ensuring the above.

The question of national sovereignty, as well, regarding the use of Outer Space and the aforementioned framework should be considered as a significant aspect of the debate. While the Outer Space Treaty was a drastic step forward in assuring the peaceful usage of outer space, improving UNOOSA's current effectiveness by developing innovative solutions is vital. International cooperation, productive debate and dialogue, and diplomacy will be paramount if committee is to be successful.

It has been established that while the Outer Space Treaty has taken many steps towards ensuring the peaceful usage of outer space, it has shortcomings; ones that are potentially disastrous in the contemporary world if not addressed immediately.

The Outer Space Treaty, as mentioned previously, explicitly prohibits the placement of Weapons of Mass Destruction in outer space. However, the treaty merely stops such acts and fails to ban the installation of any other sort of weapon in outer space.

Furthermore, weapons that function on different principles than WMDs such as spatial/explosive mines are not prohibited either.

Another contemporary issue is that while the Outer Space Treaty prohibits the testing of weapons and any military maneuvers on celestial bodies such as our Moon and other Planets, the regulations do not explicitly prohibit the testing of any weapons in outer space per se. The only time this issue is addressed is in a draft of the International Code of Conduct for Outer Space Activities, which prohibits the placement or testing of weapons in outer space. However, this is merely a draft and is not internationally ratified or recognised.

The ambiguity in the definition of certain terms is demonstrated as the primary cause of concern, for complications and imprecision of the treaties.

The final issue that arises is the lack of a stringent framework to check if an object being sent into space has destructive capabilities and if it classifies as a weapon. Today, more and more governments are being reliant on civilian satellites for their purposes; which could then be targeted. It is, therefore, important for member nations to reach a consensus on establishing a stringent framework to check for the same. It has been demonstrated that if left unchecked and unguided, the arms race in outer space will undoubtedly lead to its militarization and finally a lack of security internationally.

Historical Grounds of Former Treaties

While not comprehensive, the United Nations has taken several steps to try and ensure the peaceful usage of outer space since 1958, with the creation of the Committee on Peaceful Use in Outer Space (COPUOS) which reinforced the idea that "outer space should be used for peaceful purposes only" and further warned about the danger of nuclear weapons in outer space.

This was then followed by a treaty that banned testing of nuclear weapons in outer space, in the atmosphere, and under water in 1963 to prevent the proliferation of WMDs. However, this treaty was met with opposition from North Korea, China, and France, all of whom refused to sign the treaty.

The first real treaty, the Outer Space Treaty, constructed by COPUOS was adopted by the UN General Assembly in 1967 and was the first of its kind to ensure international relations between member states (except for Iran which did not ratify the resolution) with regards to the use of outer space.

Subsequently, this was followed by the implementation of the 1968 Rescue Agreement, which put forth the rights of astronauts in space as well as procedures for recovering astronauts from space as well as the recovery of space satellites.

In 1972, the Liability Convention also took effect, detailing how member states would be liable for any damage their machines caused in outer space as well as procedure for settling the same. Both of the above was adopted by the General Assembly.

The Registration Convention of 1975 took a significant step towards ensuring confidence-building measures and transparency of space missions being undertaken by member states to improve trust. The convention required member states to publish the name of the launching States, the registration number of the satellite, the time and location of launch, as well as the type and function of the space vehicle. The United Nations was tasked with being a centralized database for the information.

Finally, the Moon Agreement of 1979, which prevented the testing of weapons on or militarization of the Moon was adopted by the General Assembly. However, this did not prohibit the use of military personnel for peaceful purposes such as scientific research.

Legal Implications on Outer Space

Space law can be defined as the body of law regulating space-related actions. Space law, much like general international law, consists of a variety of treaties, international agreements, conventions, and United Nations General Assembly resolutions as well as rules and regulations of international organizations.

Most of the fundamentals of international space law were devised by the Legal Subcommittee of the UN Committee for the Peaceful Uses of Outer Space (COPUOS). *Those fundamentals are that no nation can make territorial claims to outer space and celestial bodies within it; that nations have free access to space; that all nations are free to conduct scientific investigation in space; that national rights to space objects launched by them are preserved; and that nations will cooperate in rendering assistance to crews of spaceships in emergencies.*

The principles which mentioned above, form the basis of the founding five treaties that are the framework of international space law. These treaties are;

- Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (The Outer Space Treaty),
- Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Space Objects Launched into Outer Space (The Rescue Agreement),
- Convention on International Liability for Damage Caused by Space Objects (Liability Convention)
- Convention of Registration of Objects Launched into Outer Space (Registration Convention),
- Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (Moon Agreement)

The Outer Space Treaty (1967)

The Outer Space Treaty is widely regarded as the constitution of outer space and the fundamental part of the international legal regime governing all outer space activities.

The Treaty entered into force on 10th October 1967; with 95 ratifications and 27 signatures through negotiations in UNCOPUOS.

The initial focus of the drafters of the Outer Space Treaty was the exercise of sovereign control in outer space. The primary principle of the Treaty is that space is the common inheritance of all mankind and that all nations have access to space and the resources incorporated within it, and that the territory in outer space, on the moon or other celestial bodies cannot be claimed by any nation.

In the light of the aforementioned principles, key provisions of the Outer Space Treaty is as follows:

Freedom of Use: According to the Article 1 of the Treaty; space is unrestricted for the observation and use of all States, which is to be carried out both for the benefit and in the interests of all States. The freedom of scientific investigation, which is to be facilitated and promoted by international cooperation is included in this principle.

No appropriation: This principle derives from the Article 2 of the Treaty which is as follows; *“Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”*

This extensively accepted principle can be seen as controversial for the commercial space industry, as it could foreseeably limit the rights of a state or entity that may have invested significant capital into a space project with the accurate purpose of utilizing one or more specific areas of space.

Incorporation of international law: Article 3 of the Treaty is the foundation of this principle which reads as; “*States Parties to the Treaty shall carry on activities in the exploration and use of outer space, including the Moon and other celestial bodies, in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international cooperation and understanding.*”

In accordance with principles of corresponding interest for all state parties, Article 3 reaffirms the acknowledgement that space activities have impact on the entire international community, not just the supervising state and the legal immunity of other States must be taken into consideration when a State exercises its right of freedom of use of outer space.

The Rescue Agreement (1968)

The Agreement, elaborating on elements of articles 5 and 8 of the Outer Space Treaty, provides that States shall take all possible steps to rescue and assist astronauts in distress and promptly return them to the launching State, and that States shall, upon

request, provide assistance to launching States in recovering space objects that return to Earth outside the territory of the Launching State.

The Agreement was created by a 19 December 1967 consensus vote in the United Nations General Assembly and came into force on 3 December 1968. Despite containing more specificity than the rescue provision in Article V of the Outer Space Treaty, *the Rescue Agreement still suffers from vague drafting and the possibility of differing interpretation.*

The Outer Space Treaty does not provide a definition for the term "astronaut", and as a result it is unclear whether this provision applies to, for example, a space tourist a person who clearly has not received the training of a traditional astronaut.

The Rescue Agreement adds some clarity to the issue by referring to the "personnel of a spacecraft" rather than "astronauts". However, this phrase again leaves uncertain whether someone simply along for the ride such as a tourist on a Virgin Galactic flight would be considered part of the "personnel of a spacecraft".

Concerning other vague aspects, ***the financial burden of a rescue mission is also not addressed in the agreement.*** The Rescue Agreement does provide that the launching state must bear the costs for the recovery of a craft that crashes into another state's territory. However, the agreement makes no mention of the cost of the rescue of astronauts.

Liability Convention (1971)

Elaborating on [Article 7 of the Outer Space Treaty](#), the Liability Convention provides that a launching State shall be absolutely liable to pay compensation for damage caused by its space objects on the surface of the Earth or to aircraft, and liable for damage due to its faults in space. The Convention also provides for procedures for the settlement of claims for damages.

In 1978, the crash of the nuclear-powered Soviet satellite Kosmos 954 in Canadian territory led to the only claim filed under the Convention.

Registration Convention (1975)

The **Convention on Registration of Objects Launched into Outer Space** was adopted by the United Nations General Assembly in 1974 and went into force in 1976.

The convention requires states to furnish to the United Nations with details about the orbit of each space object, concerning the name of launching state, an appropriate designator of the space object or its registration number, date and territory or location of launch, basic orbital parameters (nodal period, inclination, apogee and perigee) and general function of the space object.

Having been ratified by 69 state parties, The European Space Agency, European Organization for the Exploitation of Meteorological Satellites, the European Telecommunications Satellite Organization, and the Intersputnik International

Organization of Space Communications have submitted declarations of acceptance of rights and obligations according to the convention.

Deficiencies Of Current Framework

As mentioned beforehand, the committee's main aspect of focus would be to adjust the framework for more comprehensive legislations and fill in the legal gaps. Since the developments on space technology are brand new and progressively evolving, it was a challenge to form proper law systems. Therefore, the international law regarding the outer space activities did not emerge as fast as the developments in the space technology. As a result, the international community had to respond to these unprecedented events in a quick manner by addressing the immediate concerns, leaving new advancement unanswered.

The initial international laws drafted were about the peaceful uses of outer space as there was a fear of weaponization of space (particularly nuclear weapons) by the United States and USSR. Hence, the initial international space law was concerned with the actions of states and the prevention of militarization of outer space. The complementary laws followed a similar pattern. However, with the increase of private actors and commercial activities in outer space; the current regulations are not sufficient. As of now, the international space law makes little to no mention of commercial activities and the regulation of private actors are entirely up to the country of their registry. Due to the vagueness of the international law, states are mostly free to interpret it however they see fit while creating their national statutes.

This complexity may later cause serious consequences. Unlike the time of the Cold War, where international community had to address the issue after it emerged, this committee will grant the international community the chance to address the issues in advance.

Space law can be defined as the body of law regulating space-related actions. Much like general international law, it consists of a variety of treaties, international agreements, conventions, and United Nations General Assembly resolutions as well as rules and regulations of international organizations.

Most of the fundamentals of international space law were devised by the Legal Sub-Committee of the UN Committee for the Peaceful Uses of Outer Space (COPUOS). Those fundamentals are that no nation can make territorial claims to outer space and celestial bodies within it; that nations have free access to space; that all nations are free to conduct scientific investigation in space; that national rights to space objects

launched by them are preserved; and nations will cooperate in rendering assistance to crews of spaceships in emergencies.

Emphasizing the motives of forming new legislations, the fundamental cause would be that modern technology has been significantly developed and advanced since the negotiations of the last space treaty during 1970s. While the space activities exclusively belonged to States in that time, now there are many private companies that are announcing their expectations to start space tourism in decades, launching refillable manned space crafts and with many satellites in orbit. Even though the private sector became an important actor for space the current treaty regime is completely blind to this issue and this legal gap should be considered before an incident occurs.

The main issue that hinders UNOOSA has been the urgency to respond to the comprehensiveness of the prevailing space technologies, correspondingly ensuring the security and conservation of space. *It will be of paramount significance that delegates strive to resolve vagueness of former treaties, clarify the scope of certain articles and precisely explain the aforementioned problematic aspects.*

This would require the committee to form adjusted articles in the light of the previously discussed issues, such as disarmament of outer space, lunar and asteroid mining activites and clearance of space debris, along with amendments on former space conventions.

Necessary Advancements on Rescue Treaty

The Rescue Agreement states an absolute duty to return rescued astronauts to the launching authority if the landing was due to ‘accident, distress, emergency or unintended landing.’

The Rescue Agreement was written at a time when spacecraft were launched by states and where the states were the parties solely responsible for their operation.

In a near future where private companies step into the space *the main question arising from Rescue Treaty would be the definition of an astronaut.* The Agreement itself uses the term ‘ personnel of a spacecraft’ who must be returned to their home countries when an offense is committed.

A high status was given to the astronauts by the Outer Space Agreement where they were addressed as ‘envoys of mankind’ . Article I of the Outer Space Agreement may even be read as not approving any paying passengers and may not guarantee the safety of space tourists.

In addition to the controversial situation of the astronauts, the former treaty regime is completely silent about the situation of possible space passengers which induces a need to be clarified so that *private space companies can know how their personnel and passengers will be treated under international law.*

Another problem is the omission of the Agreement for the situation where the astronauts are not nationals of the launching authority. The Rescue Agreement requires the landing state to ***return the rescued astronauts ‘to representatives of the launching authority.’*** For instance where the space craft is operated by the United States but the astronauts are nationals of Germany and Great Britain, passengers can only demand return to the United States and not to their home countries; while Germany and Great Britain would have no right to demand the return of their nationals which will induce a conflict with fundamental human rights and the Agreement. ***In contradiciton, the Universal Declaration of Human Rights establishes an explicit right of a person to return to his or her own country.***

Imprecise Aspects of The Liability Convention and Passengers' Rights

The first question arising from the Convention is whether states might be held responsible for the space activities of private actors.

The wording of the Convention might defend that no responsibility is imputable to states, since it imposes liability on ‘*launching states*’ without any reference to an indirect responsibility for the private entities as its Article II goes as follows:

“A launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the Earth or to aircraft in flight.”

Therefore, even if the Convention is found to be applicable to the damage caused by private entities such as satellite television programs, it will not impose any responsibility to them and to which extend the country they are operating in would be liable is an unanswered question.

Property Rights in Space

As the provider of the basic framework of international law, the Outer Space Treaty states that outer space cannot be subject to a claim of sovereignty and that the exploration and usage of outer space shall be exercised in the benefit of all states and be the sphere of all human beings.

Thus, no single power shall control the space, as a reflection of the Cold War era concerns in which the Treaty was drafted. The Treaty aims to prevent any countries to declare space and celestial bodies as their property and use them for military purposes.

However, it has been criticized for not addressing the issues of modern day. The reading of the treaty results in the deduction that a public or private entity is allowed to ***‘use’ the space and celestial bodies and own the resources obtained from it as long as it does not claim sovereignty.***

This opinion is strengthened by the Treaty itself via explicitly stating ***the forbidden activities such as usage for military purposes but not mining or similar activities to operate resources.***

For instance, with six Apollo missions, the US brought 842 pounds of lunar material, owned and controlled it exclusively. There has been no claims against US regarding this issue that it violates the international law which constitutes customary international law via silence.

The main discussion regarding the property issue is originated from the Article I of the Treaty which goes as follow: “*the exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.*”

Wording of the statement of use ‘*for the benefit ...of all countries*’ can be read a nonbinding suggestion for the share of knowledge and resources of space between countries, while it can also be read as a binding clause that obliges states to share and redistribute the wealth and resources they gained from the space with other states.

Even it is interpreted as a requirement of sharing the benefits, it is not clear how to ensure it or how much of the gain will be shared. One approaches to answer this question is that OST is a ‘*non-self-executing treaty*’ which means the nations will appreciate how much they believe they need to be sharing.

Second approach is that after the expenses are deducted, benefits should be shared evenly among states regardless of who has participated in the activity and who has not.

Even though the profit is not shared, usage of space resources to generate more efficient and cleaner energy to Earth or supporting the researches towards the exploration and settlement in space already satisfies the requirement of the Treaty for lunar activities to be carried ‘*for the benefit and in the interest of all countries*’.

In the light of given different approaches, the destiny of ***the mining and property rights over mined material of states and companies are unclear***. Unless this gap is filled, it might discourage the countries and the companies from making investments of millions of dollars to an activity to excavate lunar area for materials they are not sure they will be able to possess and prevent further researches in outer space.

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