LETTER FROM THE BUREAU

"The earth is the cradle of humanity, but mankind cannot stay in the cradle forever"
Konstantin Tsiolkovsky

Greetings distinguished delegates,

Spearheaded by swift advancements in the domain of space technology and coupled with the endless opportunities that the universe presents itself with, we as the international community are at a crucial juncture in the history of the mankind's conquest of treading into the depths of the universe.
Our efforts in this session of United Nations General Assembly Fourth Committee (SPECPOL) shall be crucial in determining the trajectory of mankind's journey into the cosmos.

The agenda at hand is of paramount importance not only to us but to successive generations of human species as well and we shall strive to effectively discharge our role in shaping a better world.
The Bureau has made tireless efforts to offer an intellectually stimulating affair in addition to breaking-down the complexities and build an environment of learning, analysis and growing.

Over the course of three days of simulation, we expect an exemplary representation of national policy aided by an intricate understanding of the nuances of diplomacy and policy-making.

The Bureau has abundant faith in you to not leave any stone unturned in this exercise of yours, we advise you to thoroughly cover all the aspects of this resource guide and wish you the best and hope that your meticulous strategies and tireless efforts bear fruition.

Warm Regards,

Siddhant Agarwal
Co-Chairperson

Sahil Rai
Co-Chairperson

COMMITTEE BACKGROUND

The Special Political and Decolonization Committee (Fourth Committee) examines a wide range of topics, including a group of five agenda items linked to decolonization, the impacts of atomic radiation, information-related issues, a thorough examination of the subject of peacekeeping operations as well as an examination of special political missions, the United Nations Relief and Works Agency for Palestinian Refugees in the Near East (UNRWA), Israeli Practices and settler colonialism, and other topics.

"International cooperation in the peaceful uses of outer space" is a subject of crucial importance to the United Nations and under the mandate of the Fourth Committee (Special Political and Decolonization Committee) of the General Assembly.[1]

The issue pervades discussions at the Committee on the Peaceful Uses of Outer Space (COPUOS), most particularly at its subsidiary bodies, the Scientific and Technical Subcommittee and the Legal Subcommittee. COPUOS discusses ways and means of maintaining outer space for peaceful purposes, space and sustainable development, and space and climate change; the discussions at the Scientific and Technical Subcommittee include space debris, disaster risk reduction, use of nuclear power sources, the threat from near- Earth objects, space weather and long-term sustainability of outer space activities; and the Legal Subcommittee addresses the issue of definition and delimitation of outer space, space debris mitigation measures, and national legislation related to outer space.

The Office for Outer Space Affairs, with a mandate to support the work of the Committee and its subsidiary bodies, is often called upon to provide substantive inputs to be used as the basis for discussions and documentation, and frequently these relate to space security.

[1] https://www.un.org/en/ga/fourth/

AGENDA OVERVIEW AND PAST EFFORTS OF THE UN

Outer space has always been regarded as a territory that belongs to all of humanity. Only one year after the first satellite launch into space, the United Nations recognised the necessity of preserving the use of outer space for the benefit of all humanity and formed an ad hoc committee on "Questions of the Peaceful Use of Outer Space" by the General Assembly in Resolution 1348 (XIII). This was succeeded by the Committee on the Peaceful Uses of Outer Space (COPUOS) established by the General Assembly in Resolution 1472 (XIV), which was established in 1958 to control space exploration and utilisation. COPUOS was essential in the development of the five outer space treaties and five principles[2].

Because space research began during the cold war arms race and could not have proceeded without advances in missile technology, many all around the globe were concerned that it would create the groundwork for a new type of conflict in which the Earth would be simply one battleground. As a result, the UN General Assembly enacted its first resolution on the subject in November 1957, only one month after Russia launched its first Sputnik satellite. The GA urged in Resolution 1148 "the joint study of an inspection system designed to ensure that the sending of objects through outer space shall be exclusively for peaceful and scientific purposes."

In 1976, the GA adopted the Convention on Registration of Objects Launched into Outer Space[3]. Since then, 72 states have joined the convention and regularly submit reports of launches originating in their territories. Since there are 193 UN Member States, this is quite a small number of participants. According to UNOOSA, 92% of all satellites, probes, landers, manned spacecraft and space station flight elements launched into Earth orbit or beyond have been registered with the Secretary-General since the convention. In 1967, the GA adopted the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies. This treaty, prohibits the placement of nuclear weapons and other weapons of mass destruction (such as chemical and biological weapons) in space. However, it does not prohibit the basing of conventional weapons there.

[2] https://www.unoosa.org/pdf/publications/st_space_11rev2E.pdf

[3] See 3235 (XXIX), https://www.unoosa.org/oosa/en/spaceobjectregister/index.html Members states' registrations official record

TREATIES[4]	PRINCIPLES
THE OUTER SPACE TREATY	THE DECLARATION OF LEGAL PRINCIPLES
THE RESCUE AGREEMENT	THE BROADCASTING PRINCIPLES
THE LIABILITY CONVENTION	THE REMOTE SENSING PRINCIPLES
THE REGISTRATION CONVENTION	THE NUCLEAR POWER SOURCE PRINCIPLES
THE MOON AGREEMENT	THE BENEFITS DECLARATION

[4] https://www.unoosa.org/pdf/publications/st_space_11rev2E.pdf

- The 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies ("Outer Space Treaty")

The foundation of international space law is the Outer Space Treaty. One of its guiding principles is to forbid states that have ratified the agreement from stationing or deploying WMD in Earth orbit, on the Moon, or on any other celestial body. The development of military bases, facilities, and fortifications as well as the testing of weapons on the Moon and other celestial worlds are forbidden. However, some incredibly destructive attack methods, including kinetic bombardment, may still be used because the treaty does not forbid the employment of conventional weapons in space.

The treaty further declares that space exploration should be done for the benefit of all nations and that space should be available for all states to explore and use.

- The 1968 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects launched into Outer Space ("Rescue Agreement")[5]

According to the Rescue Agreement, each state that has signed it is obligated to offer any aid that is reasonable in saving the crew of a spacecraft that has landed on its soil, whether by accident, distress call, emergency, or unintentional landing. Every state party in a position to assist in the search and rescue effort shall do so if necessary if the crisis occurs outside the borders of any country. An international pact known as the Rescue Agreement, which is also known as the Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space, lays out states' rights and obligations for the rescue of people in space.

- The 1972 Convention on International Liability for Damage Caused by Space Objects ("Liability Convention")

International accountability applies to every space object launched within a nation's boundaries. This means that State A is entirely responsible for any damages caused by the space object, regardless of who launched it, whether it was

[5] See 2345 (XXII) onwards

launched from State A's territory or facility or if State A caused it to happen. The 1972 Space Liability Convention, sometimes referred to as the Convention on International Liability for Damage Caused by Space Objects, expands upon the liability guidelines set forth by the 1967 Outer Space Treaty. In 1978, when the nuclear-powered Soviet satellite Kosmos 954 crashed onto Canadian territory, the only claim ever made under the Convention was made.

- The 1975 Convention on Registration of Objects Launched into Outer Space ("Registration Convention")

States are required by the treaty to inform the UN of the orbit of every space object. The Convention on Registration of Objects Launched into Outer Space (often referred to as the Registration Convention) was adopted by the UN General Assembly in 1974 and came into force in 1976. As of December 2018, 70 states had approved it.

- The 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies ("Moon Agreement")

The 21 articles of the Moon Treaty contain a variety of provisions. The Moon should be used for the benefit of all nations and peoples of the world, according to Article 1 of the treaty. It further states that national acquisition of lunar resources "by claim of sovereignty, usage or occupancy, or any other method" is not possible. It also conveys the desire that the Moon's riches be used only for peaceful purposes rather than serving as a catalyst for international strife.

- The Declaration of Legal Principles Governing the Activities of States in the Exploration and Uses of Outer Space (1963)

All space exploration must have noble objectives, and all States that respect international law are welcome to take part. No country has the authority to assert ownership over space or any celestial object. International law must be followed when conducting space operations, and the nations engaged in these operations are responsible for the governmental and non-governmental entities involved. Both individuals and the objects sent into space are subject to the laws of the nation to which they belong. Once they have been identified, items, pieces, and components found outside of a nation must be returned. A nation is liable for any international repercussions if it sends an object into space.

- The Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting (1982)

Such actions must be taken in accordance with a state's sovereign powers. In order to improve people's quality of life, said activities should aid in the free exchange of ideas and knowledge in the cultural and scientific fields, promote educational, social, and economic development, particularly in developing nations, and offer entertainment while respecting the political and cultural integrity of said states. All states are entitled to participate in these activities equally and are accountable for everything that takes place within their borders.

- The Principles Relating to Remote Sensing of the Earth from Outer Space (1986)

I. The method of detecting the Earth's surface from space using the characteristics of electromagnetic waves emitted, reflected, or diffracted by the sensed objects is known as "remote sensing," and it is used to enhance land use, natural resource management, and environmental protection.
II. The term "primary data" describes the unprocessed information gathered by remote sensors carried by a space object and transferred to the earth via telemetry in the form of electromagnetic waves, photographic film, magnetic tape, or other ways from space.
III. The items produced by processing primary data to make it usable are referred to as "processed data."
IV. Data that has been understood as well as data and knowledge from other sources are all considered to be "analysed information."
V. The use of remote sensing space systems, main data gathering and storage facilities, and activities including the processing, analysing, and distributing of processed data are all referred to as "remote sensing activities."

- The Principles Relevant to the Use of Nuclear Power Sources in Outer Space (1992)

States launching space objects with nuclear power sources on board must protect people, populations, and the biosphere from radioactive threats. Nuclear power sources on board spacecraft must be designed and used in such a way that, under

expected operating or accidental scenarios, there is a high degree of certainty that the hazards are maintained below acceptable levels.

- The Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries (1996)

States are free to determine all aspects of their participation in international cooperation for space exploration and usage on a fair and mutually accepted basis. All States must contribute to the creation and promotion of just and mutually agreeable international cooperation, especially those with pertinent space capabilities and plans for space exploration and utilisation. Rising nations and those with budding space programmes should pay close attention to the advantages and interests derived from international collaboration with nations that, in this regard, have more developed space capabilities.

SPACE-DEBRIS

It has been widely acknowledged that the existing space debris environment puts spacecraft in Earth orbit at risk ever since the Committee on the Peaceful Uses of Outer Space published its Technical Report on Space Debris[6] in 1991.

“Space debris" refers to all non-functional man-made objects in Earth orbit or re-entering the atmosphere, including their fragments and components. The likelihood of collisions that could result in possible damage will consequently rise as the population of debris continues to increase. In addition, if debris makes it through Earth's atmospheric re-entry, there is a chance of damage on the ground. Therefore, swift use of suitable debris reduction methods is viewed as a sensible and essential step. If debris escapes Earth's atmosphere on re-entry, there is also a possibility of damage on the ground.

Therefore, it is believed that it is wise and essential to take early action to adopt the proper debris mitigation methods in order to protect the ecology of space for future generations. In the past, breakups that resulted in long-lasting debris, both accidental and intentional, and debris purposely produced during the functioning of launch vehicle orbital stages and spacecraft have been the main sources of space debris in Earth orbit. The fragments left over after collisions are anticipated to contribute significantly to space debris in the future.

Measures to reduce the production of potentially damaging space debris can be categorised into two main groups: those that limit production over the long term and those that limit production in the short term. The former entails limiting the creation of mission-related space debris and preventing fragmentation. The latter deals with end-of-life processes that remove orbital stages from defunct spacecraft and launch vehicles from areas where operational spacecraft are present.

A crucial treaty regarding debris and space responsibilities, The Liability Convention went into force in September 1972. The Liability Convention indicates that States will be responsible to pay remuneration for harm brought about by its space objects on the outer layer of the Earth or to

[6] AC105_483E(See Pg.22, Section B)

aeroplanes, and at risk for harm because of their shortcomings in space. The Convention likewise accommodates strategies for the settlement of cases whereby space debris represents a potential harm.

The Registration Convention went into force on 15 September 1976. Expanding upon the Outer Space Treaty, the Rescue Agreement, and the Liability Convention, the Registration Convention requires states to identify every space object launched into space and to share that information with the United Nations. The Convention also addresses issues with States Parties concerning their space objects and their potential liability

Even with perfect compliance with all accords, there are still certain instances today.
On January 11, 2007, a satellite's end-of-life voluntary destruction by a Chinese ballistic missile resulted in the creation of more than 3,000 long-lasting orbital debris. On the other hand, because the satellite's altitude (250 km) was much lower, the United States' voluntary destruction of one of its reconnaissance satellites (USA 193) on February 20, 2008, did not carry the same weight and caused the resulting debris to re-enter the atmosphere in less than a few week.

According to the Kessler Syndrome[7], when there are more objects in space, especially between low Earth orbit and geosynchronous orbit, there will be more collisions between those objects. According to the Kessler Syndrome, even the presence of debris in low Earth orbit will result in collisions because of the instability of the Earth's atmosphere.

REFERENCE LINKS

- A/RES/50/27
- Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space
- IADC Space Debris Mitigation Guidelines
- Database of COPOUS' annual reports to the Fourth Committee
- Consolidated database of Treaties and Principles adopted by the United Nations
- Report of the Scientific and Technical Committee on the work of its thirty-sixth session (Recommendation: Refer to the reports of past sessions)

[7] http://www.castor2.ca/07_News/headline_010216_files/Kessler_Collision_Frequency_1978.pdf (For Technical understanding)

- Members states' progress

TRANSPERENCY AND CONFIDENCE BUILDING-MEASURES

Space capabilities today offer a wide spectrum of critical civilian, commercial, and military-related applications, services, and benefits to a wide spectrum of users. These benefits are accompanied by growing anxiety concerning the safety and security of these assets, as well as the stability and sustainability of the space environment.

Transparency is characterized not only by openness in conveying information on space activities, but also by better under- standing the intentions of other space actors. In addition to information-sharing, a number of other confidence-building measures are recognized as being desirable, including consultations and notifications, as well as restraint mechanisms. Despite this compelling logic, space actors have treated TCBMs with a selective and guarded mindset.

A body of principles and rules governing space activities, including the special international status of outer space and celestial bodies, was established during the second half of the twentieth century. Not surprisingly, the expanding number of space actors, objects, and debris has multiplied the threats to safe and secure space operations. Accordingly, the norms established by the 1967 Outer Space Treaty (OST) are more relevant than ever.

At its forty-fifth session in December 1990, the General Assembly adopted two space-related resolutions: the UNGA resolution 45/55A on "Prevention of an arms race in outer space" (PAROS) and the resolution 45/55B on "Confidence-building measures in outer space." The latter resolution requested that the Secretary-General, assisted by a group of governmental experts, conduct a research project entitled "Study on the Application of Confidence-Building Measures in Outer Space." The study, carried out between 1991 and 1993, reviewed various aspects related to the application of different confidence-building measures in space.

Many familiar with the consensus-based work of the UN argue that the evolution of space-related realities is proceeding faster than the UN's uneven pace. It has been pointed out that the UNCOPUOS is perhaps being side-lined by other initiatives, including those of private actors. An example of such an initiative is the

establishment, by private telecommunications operators, of the Space Data Association (SDA), which enables sharing of Space Situational Awareness related data among its members. Indeed, private actors are increasingly relevant for deliberations on space activities. Nevertheless, the UNCOPUOS will remain an essential platform with global reach encouraging TCBMs and other space sustainability- related activities, including establishing a mechanism for improved SSA-sharing.

The Group of Governmental Experts (GGE)[8] on Outer Space TCBMs received its mandate through the UNGA resolution 65/68 of January 2011, initially tabled in the First Committee. The GGE, comprised of fifteen experts from different countries, held three sessions (one in 2012 and two in 2013) and in July 2013 concluded a consensus report addressing the need to implement a range of transparency measures, promote international cooperation, consultations, outreach activities, as well as multilateral coordination to enhance space safety and security. The GGE also endorsed the EU's initiative on the International Code of Conduct for Outer Space Activities.

In short, the main purpose of TCBMs is to reduce the incentives and strengthen the disincentives associated with space-faring actors taking harmful, and potentially destabilizing, actions in space. Such actions could be of technical nature (e.g., noncompliance with space debris mitigation guidelines, satellite malfunction, unintentional interference, inaccurate orbital prediction) or the intentional disruption of satellite services and even an attack on space assets.

REFERENCE LINKS

- Report of the Secretary-General on transparency and confidence-building measures in outer space activities- A/72/65-2017
- Report of the Group of Governmental Experts on Transparency and Confidence-building measures in Outer Space Activities-A/68/189
- Views of Member States on TCBM
- Role of United Nations entities in supporting Member States in the implementation of transparency and confidence-building measures in outer space activities- A/AC.105/1116

[8] Advance copy of the report of GGE (See paragraph 82-86) https://front.un-arm.org/wp-content/uploads/2021/06/final-report-2019-2021-gge-1-advance-copy.pdf

GLOBAL NAVIGATION SATELLITE SYSTEMS

Global Navigation Satellite Systems (GNSS) is the generic term for space-based systems that transmit signals that can be used to provide three services: Position, Navigation, and Timing (PNT). The best known and most popular of the GNSS is the US Global Positioning System (GPS), although the Russian GLONASS system is also well known but really less used and other systems are being developed, most notably Galileo by the European Union, Compass by China, IRNSS by India, and QZSS by Japan.[9]

The International Committee on Global Navigation Satellite Systems (ICG) works to optimise the advantages of Global navigation satellite systems (GNSS) for sustainable development. It encourages coordination among top satellite operators. ICG also provides a forum for debate and information sharing on broad patterns in user requirements, applications, and technological advancement.

A critical component of any successful rescue operation is the knowledge of position accurate. Knowing the precise location of landmarks, streets, buildings, emergency service resources, and disaster relief sites reduces reaction time and saves lives in case of disaster, or other type of crisis situation. This information is critical to disaster relief teams and public safety personnel. GNSS data can contribute in every phase of the disaster management cycle (see the picture below) which is typically composed of three phases: (1) preparedness/prevention, (2) emergency response, and (3) recovery
For the preparedness/prevention phase, GNSS can support risk assessment tasks by allowing the precise monitoring of ground profiles (e.g., for landslides and earthquakes), sea level (e.g., for tsunamis), and infrastructure (e.g., for nuclear plant, bridges). GNSS could also support the broadcast of Early Warning Alert Message via their satellites downlinks in order to inform people to take particular measures in case a crisis/disaster is approaching. During the emergency response phase, GNSS can be useful for assessing the damage (e.g., support to the delivery of reference damage maps with geospatial information). It can also support the efficient management of rescue teams in the field (e.g., increase safety of the rescuers, coordination and logistic support to the operations, aid to aircraft/car navigation in difficult environment). Indeed GNSS data allows the real-time monitoring and tracking of teams and material, thus participating in the

[9] Detailed description of all GNSS has been published by the United Nations International Committee on GNSS (UN ICG) in 2010 through a report (www.oosa. unvienna.org/pdf/publications/icg_ebook.pdf)

improvement of the situational awareness. As for the post-disaster/recovery phase, GNSS data can be used to support the restoration of the infrastructure, thanks to more efficient management of reconstruction crews and materials on the ground. Moreover, the analysis of GNSS data gathered before and during the disaster can be used to better model the causes of a disaster and better predict their future occurrence. Note that the combined use of GNSS with data from aerial- and/or space-based Earth observation systems, such as the European system Copernicus allows improved performance during disaster management operations.

REFERENCE LINKS

- International Committee on Global Navigation Satellite Systems document-A/AC.105/SERIES
- Recommendations made by Working Group B on Enhancement of GNSS Performance, New Services and Capabilities
- International Committee on Global Navigation Satellite Systems (ICG): Past Annual Meetings