

Forum:	Special Political and Decolonization Committee (GA4)
Issue:	Addressing issues concerning the use of Space for State espionage
Student Officer:	Filippos-Akylas Kaloudis
Position:	Co-Chair

PERSONAL INTRODUCTION

Dear Delegates,

My name is Filippos Akylas Kaloudis, and I am an IB1 student in Doukas School. Although a Science enthusiast, I was intrigued by international diplomacy and politics so I joined my school's Model United Nations on 9th Grade and have keenly participated in the Club's activities since then. I have always been eager to represent diverse delegations and debate on a broad spectrum of topics from all the UN Committees. I have participated in many national and international MUN Conferences as delegate and acted also as MUN Mentor for new members of my School's MUN Club. This conference will be my third Student Officer position this year and I am really honoured to serve as Co-Chair in the Special Political and Decolonisation Committee (GA4).

The Special Political and Decolonisation Committee is responsible for a diverse set of political issues, including, amongst others, the peaceful uses of outer space. The technological advances of the last decades have enhanced the exploration and "commercialization" of outer space. Space technology is vital for global navigation and communication systems, yet there are certain risks though related to the use of outer space such as threats to States' National security and this is one of the topics addressed in the upcoming PS MUN 2023.

I strongly believe that MUN is more than an academic experience by getting to know the policies of different countries, students can understand the geopolitical considerations behind politics and global affairs, and can develop negotiation and problem-solving skills, enabling them to address complex topics in a diplomatic and co-operative way, skills extremely helpful for our life.

Starting from the present Study Guide, which aims to introduce you to the topic, take the opportunity for further respective research in conjunction with your country's policy. I am looking forward to a fruitful debate in the Committee and remain at your disposal, should you have any questions or need any clarifications as regards the process or the subject. Feel free to contact me at philip.kaloudis@outlook.com.

Sincerely,

Filippos Akylas Kaloudis

INTRODUCTION

“He who knows the enemy and himself will never in a hundred battles be at risk”, quotes Sun Tzu, Chinese military general, strategist, and philosopher in his famous book “The Art of War”. Espionage is one of the oldest political and military arts, considered also by academics to be the second oldest profession in the world. Espionage belongs to intelligence operations which consist of the collection, analysis and evaluation of information regarding the strength, activities and potential course of actions of States or other organizations and is a component of a State’s decision-making as well as its foreign policy, national security and defence policy.¹ Espionage is considered to be a form of intelligence, using illicit and deceitful means.

Throughout the centuries, it has undertaken various forms, depending on the level of threat that a State has had to address and also the political and public perception. The Cold War was the era of intelligence; the most powerful States had already established structured intelligence systems and trained spies, who infiltrated another State’s organizations in order to collect information.

More elaborate techniques emerged in the context of modern espionage such as aerial reconnaissance, photography, interception and decryption of radio signals, cryptography, taping of telephone tablets etc. The space race between the USSR and the US and the subsequent space evolution further enhanced the methods of espionage, through the use of digital means, satellites and in general space technology. The launch of the first satellite in 1957, inspired States which were initiating space programs to utilize satellites for reconnaissance/espionage purposes. Initially, the satellites were launched in low orbit and photographed military operations in other countries. Emerging technologies resulted in more advanced forms of space espionage regarding the collection of data such as digital photography and further dispatching through encrypted means of communication.

Space espionage mainly aimed to depict military operations in other countries, the deployment of soldiers and the existence or transfer of weapons from one area to another. In the Post-Cold War period and during the 9/11 attacks in the US, State espionage, utilizing the aforementioned advanced technologies, focused further on terrorist groups, organized crime groups, hacktivists and hackers.

Considering the different type of threats which states are facing, they tend to engage in espionage actions under the pretext of national security. Although such actions could be considered a threat to pacifism, as they could trigger unsubstantiated conflicts and further enhance injustice within societies, it is also argued that the existence of spy satellites can deter states’ aggression and reduce conflict. Historically,

¹ “Espionage.” *Cambridge Dictionary*, dictionary.cambridge.org/dictionary/english/espionage.

espionage was kept secret in order to remain useful. Space espionage, which is “public”, is effective despite being apparent to the relevant espionage targets. Information collected by States having such capabilities, allows them to monitor areas or actions of concern and, thus, are much more likely to be surprised by enemy activity. Spying from space could also render a state’s informational advantages transparent to other states, affecting thus not only the potential outcome in case of a conflict but also enhance effective negotiations between State leaders before conflicts occur.

DEFINITION OF KEY TERMS

Cyber Espionage

The use of computer networks to gain illicit access to confidential information, held by a government or other organization.²

Cyberspace

A virtual world consisting of links between computers, Internet enabled devices and other relevant infrastructure components.³

Dual Use

Dual-use goods, technology and applications are items that can be used both for civilian and military applications. Such goods are subject to registration/regulations since they can be classified as destined for civilian use and then converted for use for military purposes.⁴

Espionage

The activity of secretly collecting and reporting information, especially secret political, military, business, or industrial information.⁵

Outer Space

The space immediately outside the earth's atmosphere. Outer space is considered as global commons, beyond the limits of any national jurisdiction.⁶

² “What Is Cyber Espionage.” *IGI Global*, www.igi-global.com/dictionary/cyber-espionage/54755.

³ “Cyberspace.” *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., www.britannica.com/topic/cyberspace.

⁴ “What Are Dual-Use Goods?” *Dow Jones Professional*, 26 Sept. 2022, www.dowjones.com/professional/risk/glossary/dual-use-goods-definition/.

⁵ “Espionage.” *Cambridge Dictionary*, dictionary.cambridge.org/dictionary/english/espionage.

⁶ “Outer Space Definition & Meaning.” *Merriam-Webster*, Merriam-Webster, www.merriam-webster.com/dictionary/outer%20space#:~:text=Definition%20of%20outer%20space,broadly%20%3A%20interplanetary%20or%20interstellar%20space.

Satellite

An electronic device that is sent into space and moves around the earth or another planet. It is used for communicating by radio, television, etc. and for gathering information.⁷

Space Object Register

The Space Object Register is a Register of objects launched into outer space, established as a mechanism to monitor the peaceful use of outer space and also to identify the state origin of space objects as a means to identify international responsibility.

Space Race

The Space race was a Cold war competition in the context of the series of competitive technology demonstrations between the United States (US) and the and the Union of Soviet Socialist Republics (USSR) as regards aerospace capabilities.⁸

State Sovereignty

The legal authority and responsibility of an independent state to govern and regulate its political affairs without foreign interference.⁹

BACKGROUND INFORMATION

Mechanisms and States' practice of espionage

States engage in intelligence activities in the context of national security, military or law enforcement/police purposes using intelligence agencies, thereby legitimizing such activity. However, when similar activities by foreign actors are executed within their territory, they denounce and penalize them as actions of violation of their territorial sovereignty.

Intelligence may be conducted on three levels: strategic/national, tactical and counterintelligence. Strategic intelligence addresses information about foreign countries, tactical intelligence addresses information relevant to military operations,

⁷ "Satellite." *Satellite Noun - Definition, Pictures, Pronunciation and Usage Notes | Oxford Advanced Learner's Dictionary at OxfordLearnersDictionaries.com*,

www.oxfordlearnersdictionaries.com/definition/english/satellite#:~:text=%2F%CB%88s%C3%A6t%C9%99la%C9%AA%2F-%2F%CB%88s%C3%A6t%C9%99la%C9%AA%2F,the%20earth%20or%20another%20planet.

,%2F%CB%88s%C3%A6t%C9%99la%C9%AA%2F,the%20earth%20or%20another%20planet.

⁸ "The Start of the Space Race (Article)." *Khan Academy*, Khan Academy,

www.khanacademy.org/humanities/us-history/postwarera/1950s-america/a/the-start-of-the-space-race.

⁹ "State Sovereignty." *Ballotpedia*,

ballotpedia.org/State_sovereignty#:~:text=State%20sovereignty%20is%20a%20term,belongs%20to%20the%20federal%20government.

while counterintelligence aims, in principle, to protect a State's intelligence actions. Strategic and tactical intelligence are often interrelated and are considered essential elements by State policymakers. Espionage, as an act of collection of confidential information can contribute to the framework of an intelligence process which entails the tasking, collection, process, evaluation, analysis, and feedback on a certain topic which is further utilized in a state's decision-making process.

State espionage occurs in both wartime and peacetime. Wartime espionage in the territory of the enemy State aiming to obtain military advantages is considered to be a part of war. This means its legality depends on the means and mode used to collect the relevant information. The quality of secrecy can convert such action to illegal espionage under the customary law of wars, while this is also relevant to the status of a captured spy and whether the latter is treated as a prisoner of war and enjoys relevant protection.

With respect to peacetime espionage, legal doctrines purport that there is no general prohibition in international law regarding espionage between States. Furthermore, the legality of espionage should be assessed in the context of sectorial rules such as human rights, humanitarian law, or diplomatic law. Juxtaposing the aforementioned, there are also legal scholars, who support that espionage activities in context will always constitute an infringement of State sovereignty and hence the principle of non-intervention mandated by the UN Charter.

As analysed above, state practice and international law are quite ambiguous with respect to the prohibition of state espionage. Provided that certain actions do not explicitly breach specific provisions of international and humanitarian law or diplomatic relations, the legality or not of state espionage is a grey area, left to be addressed by state practice rather than international treaties.

The evolution of Space technology

Although the Space Race started as a "race" between two superpowers of the time, the US and the USSR, it was followed by a rapid growth of space uses and users by both public and prominent private actors. New technologies emerged, space activities by traditional space nations and "newcomers" expanded, and young space nations gradually transitioned to emerging spacefaring nations, pursued different perspectives, and developed space technologies based on their national priorities.

Space growth is evidenced, as per OECD's report on space economy, by the growth in the number of countries with a satellite in orbit. According to the OECD "the possibility to have one's satellite in orbit, registered with one's own national administration, has

never been so affordable.”¹⁰ These satellites may, however, differ in their specifications, involving different levels of technical expertise.

More than 80 countries with a registered satellite in orbit

Number of countries with a satellite in orbit (launched via a third party or independently between 1957 and April 2018) and number of countries having launched a rocket successfully

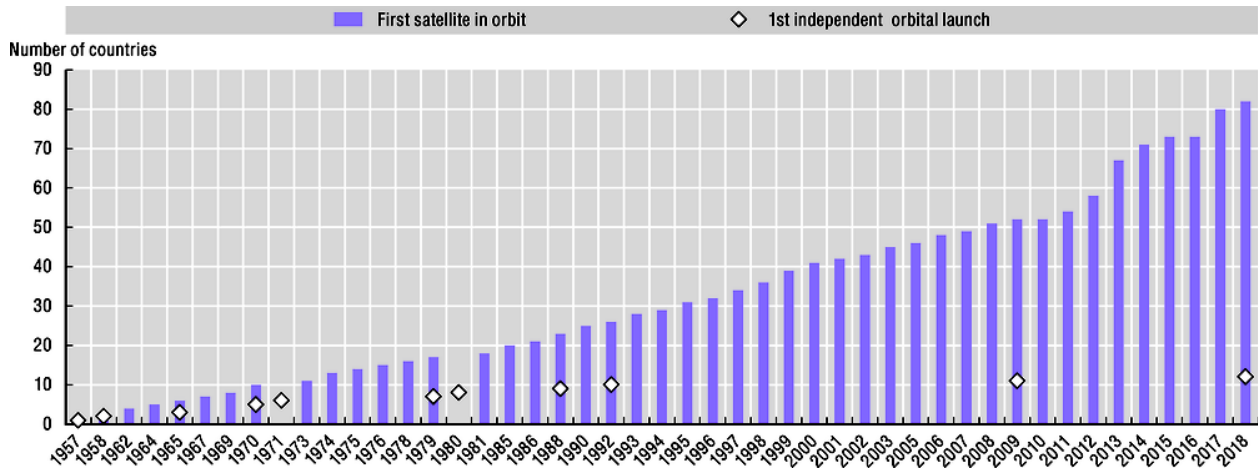


Figure 1: Date of First satellite in orbit

An increasing number of countries, Non-State actors, international organizations and commercial corporations are using satellites in many ways and for various purposes. Government organizations use satellites in the context of scientific research to monitor climate change and natural disasters, while military uses of satellite include reconnaissance and navigation. Commercial companies also use satellites and innovative space technologies to offer a wide range of services like internet, cell phone coverage, satellite television, navigation systems etc.

According to the relevant international legal framework, namely the Registration Convention, when a space object is launched into earth orbit or beyond, the launching state shall register the space object by means of an entry in an appropriate registry. As of 1962, the UN maintains a Register of Objects launched into outer space, which identifies States’ international responsibility and liability for space objects.

Regarding the enhancement of space technology, other technological advancements have changed how the world is perceived today, one of them being the Internet of Things (IoT) which describes the network of physical objects i.e., “things” with embedded sensors and other technologies with the aim of connecting and exchanging data with other devices. It is anticipated that by 2030 there will be approximately 29 billion IoT devices. Indisputably, such technological advancements can be used for

¹⁰ “Home.” *Home* | OECD ILibrary, www.oecd-ilibrary.org/sites/c5996201-en/1/2/1/index.html?itemId=%2Fcontent%2Fpublication%2Fc5996201-en&_csp_=ffe5a6bbc1382ae4f0ead9dd2da73ff4&itemIGO=oecd&itemContentType=book.

various purposes by State actors and could also create risks for societies and individuals.

Historical evolution of space technology for state espionage

Following the end of the Second World War, the USSR and the US engaged in a conflict known as the “Cold War”. Although a conventional war never broke out, the Cold War constituted nearly fifty years of conflict, from the United States intervention in Vietnam to the nuclear arms race. Another area of conflict between these two superpowers was the battle to conquer the exploration of space, known as the “Space Race.” Both countries acknowledged the opportunity of space exploration from a political perspective as a way to prove their unchallenged superiority to the entire world and engaged, thus, in a competition to prove their status as sole superpower.

The Space Race started with the USSR launching Sputnik 1 in 1957. In 1958, the US launched its own satellite, Explorer I and the same year President Eisenhower signed a public order creating the National Aeronautics and Space Administration (NASA), a federal agency dedicated to space exploration. The competition to conquer space was so intense that a new benchmark was set by one of the two superpowers almost every year throughout 1950s and 1960s while the Neil Armstrong landing on Moon is still considered as one of the breakpoints in history.

The Space Race and corresponding enhancement of space technology was further utilized in espionage between States. During the Cold War, the US initiated a program of high-flying reconnaissance aircrafts (U-2), across the USSR to track adversaries' weapons development, knowing that the USSR did not possess an anti-aircraft weapon capable of reaching the altitude of the U-2. However, upon realization that the Soviets would eventually develop such an anti-aircraft weapon, President Eisenhower initiated in 1955 a reconnaissance satellite program aimed at replacing the U-2.

It is noteworthy to state that US President Jimmy Carter was the first to publicly acknowledge the existence of American military surveillance i.e., spy satellites and their role in a state's national security strategy in 1978, when he stated that “Photographic reconnaissance satellites have become an important stabilizing factor in world affairs in the monitoring of arms control agreements. They make an immense contribution to the security of all nations.”¹¹

The Soviets were operating a similar type of satellite surveillance which became operational in 1962 with certain technical differentiation to the US system. Western

¹¹ “The Political Impact of Spy Satellites - during the Cold War - Today Pat Norris Manager Space & Defence Strategy Author of Spies in the Sky.”, careersdocbox.com/US_Military/65580662-The-political-impact-of-spy-satellites-during-the-cold-war-today-pat-norris-manager-space-defence-strategy-author-of-spies-in-the-sky.html.

Europe did not have an active role in the strategic spy satellite programs at that time. However, Western European countries gradually started to incorporate in satellite programs launched in the 1970s, technology similar to the American military surveillance satellites, while during the same period, China started deploying its space program as well.

Taking into consideration the secret nature of such programs, information on the existence on operations of such satellites became public knowledge after their declassification. Currently, the US is the nation which maintains the largest and most technologically advanced spy satellites. A quite recent example of use of such satellites is the Russian invasion to Ukraine, where countries belonging to NATO and especially the US, France, and Germany are continuously receiving large amount of data, which are used for intelligence reports for their competent domestic authorities.

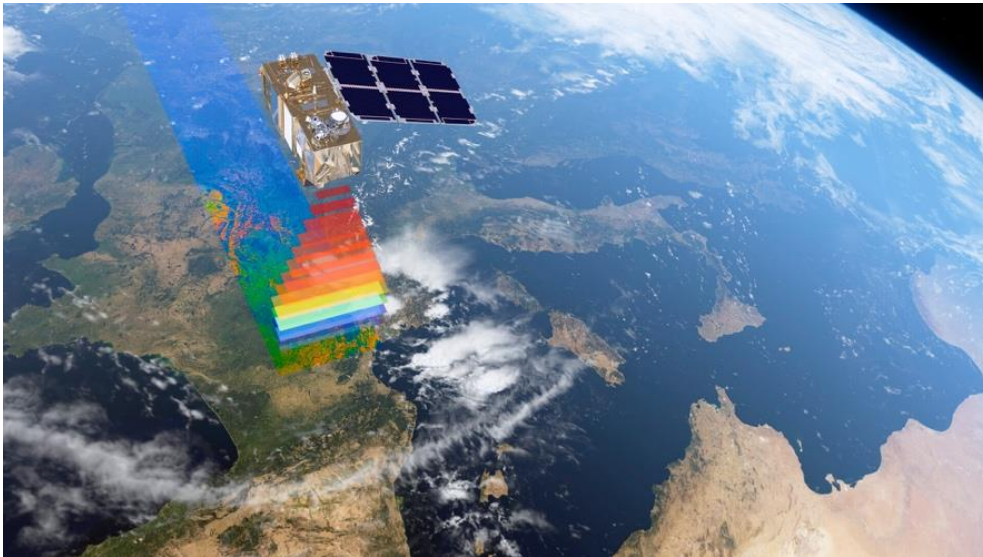


Figure 2: Earth Observation Programmes

Emerging technologies in the last decades, moved or can move State espionage to a different level. Cyber espionage, consisting in the unauthorized use of computer networks and other resources in order to access confidential information or espionage through connected devices, which could be used for identification, surveillance, monitoring, location tracking etc.

Although many countries are committing cyber espionage, the US, Russia and China are considered to be the most advanced, while recent cases include amongst others Distributed Denial of Services (DDoS) attacks which are mainly used to disrupt a state's

communication systems, and various types of malwares which aim to disrupt normal computer operations, collect data etc.¹²

Impact of space espionage

Space espionage has global significance and relevant impact on political, financial, and social fronts. In the political front it can create tensions between states and cause a two folded impact; tension or disruption of international relationships between the States and/or escalation of conflict, as the State which is the victim of an espionage act would consider that its national security has been compromised and is at risk. In addition, such considerations apart from States' conflict, could have financial impact on the affected State, should there be a requirement to adopt additional measures to address the relevant national security concerns.

Instances of cyber espionage could also endanger national banking and financial institutions' security systems and, hence, cause disruptions in a State's national and international transactions. Cyber espionage may also result in significant financial loss if the data collected through such actions is used to boost another State's economy, without excluding potential further future financial impact in the affected industries in the said state, relevant also to employment etc.

From citizens' perspective, depending on the level of intrusion in the private sphere, an act of space espionage, such as the use of satellite global positioning systems to indicate an individual's actual location, could also constitute a violation of human rights.

Last but not least, although it would seem controversial State espionage could under circumstances, prevent conflict. As stated, the "Cold War" could have turned to "Hot War" if the US and USSR did not have an overview of each other's standing at the time, while in numerous cases in nowadays such type of space intelligence may protect civilians and relevant critical infrastructure in case of an assault, since their location would be known and hence protected in case of armed conflict.

MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

USA

Space programs of the United States date back to the late 1940s and early 1950s. In 1958, the establishment of the National Aeronautics and Space Administration (NASA), which was responsible for coordinating America's activities in space enhanced the Country's activities in the context of Space War with USSR. Currently, space program solutions, depending on their scope, are coordinated from three different agencies.

¹² Rubenstein, Dana. "Nation State Cyber Espionage and Its Impacts." *Nation-State Cyber Espionage and Its Impacts*, www.cse.wustl.edu/~jain/cse571-14/ftp/cyber_espionage/.

The civilian space program is led by NASA, which is responsible for the most notable and visible US space missions from Apollo 11 moon landing to the recent Artemis project. The military space program is coordinated by the United States Space Command and the United States Space Force, while the Intelligence delivers space program solutions for specific space-based Intelligence, Surveillance, and Reconnaissance assets.

Russia

The Soviet space program was launched in the 1950s until the dissolution of the USSR in 1991 whereas it had been substituted by the Russian Space Agency in 1992 which had been subsequently restructured and merged with other relevant government agencies, leading to the establishment of Roscosmos. Roscosmos is the State Corporation which is entrusted with the implementation of the Russian space program. In the context of the Space Race with US, the Soviet Space program recorded remarkable missions such as the world's first satellite, the first human space flight and space station, while amongst its current activities, Roscosmos participates in the International Space Station.

China

China started as a spectator of the Space Race between the US and the USSR. In response, it started pursuing its space program in the late 1950s with a joint cooperation agreement with the USSR. Further to the dissolution of such agreement, in the 1960s' China continued its efforts individually towards space exploration, launching its first rockets. The space program of China was initially under the auspices of People's Liberation Army but in the context of a general reorganization of the Chinese defence industry had been further entrusted with the China National Space Administration, which during the 21st century had major achievements in its space programs.

United Kingdom

The British space programme began in 1950s focusing mainly to the development of satellite launch capability. British civil space activities were mainly coordinated by the British National Space Centre (BNSC), which was substituted in 2010 by the United Kingdom Space Agency (UKSA). The current National Space Strategy of the United Kingdom aims to the delivery of mission and capabilities utilizing space science and technology in order to address national needs and also issues of global concern enhancing space sustainable space activity.¹³

¹³ Agency, UK Space. "UK Space Programmes and Missions." *GOV.UK*, GOV.UK, 6 Oct. 2022, www.gov.uk/guidance/uk-space-programmes-and-missions.

Israel

The Space Agency of Israel started as a university-based research project in the 1960s, followed by the establishment of the National Committee for Space Research (NCSR). Although its initial objective was to enhance scientific research, the Committee developed infrastructure for space exploration, in light also of political developments (Yom Kippur war) which urged such requirement. In 1980s the Israeli government established the Israel Space Agency entrusted with the objective of coordination of the country's space program with a diverse scope of activities, varying between defence objectives and civilian applications and today Israel is the smallest country with a space program and indigenous launch capabilities.

The Democratic People's Republic of Korea (DPRK)

Information on North Korea's space program is quite limited. It is considered to have started in the mid to late 80s, along with the establishment of the Korean Committee of Space Technology, which had been subsequently substituted by the National Aerospace Development Administration (NADA) in 2013. The Country's space program is closely related to its missile program. Although the Country's regime in its public statements addresses space exploration in the context of peaceful programs, it is considered to be connected with its nuclear weapon's program which has triggered the imposition of sanctions against the Country by a number of international bodies and countries.

India

India began its space research activities during the early 1960s. During that time, as a Less Economically Developed Country (LEDC) it focused mainly on the utilization of space for social and economic development. In this respect, the Department of Atomic Energy formed the INCOSPAR (Indian National Committee for Space Research) and the Indian Space Research Organization (ISRO), which is one of the six largest space agencies in the world, with prime objective to develop space technology. Gradually the country's space program expanded with two important changes; an ambitious program for space exploration along with the increased use of space for national security purposes, in the context also of India's intensifying security concerns with respect to China.¹⁴

¹⁴ Rajagopalan, Rajeswari Pillai. "India's Space Priorities Are Shifting toward National Security." *Carnegie Endowment for International Peace*, 1 Sept. 2022, carnegieendowment.org/2022/09/01/india-s-space-priorities-are-shifting-toward-national-security-pub-87809.

Committee on the Peaceful Uses of Outer Space (COPUOS)¹⁵

The Committee on the Peaceful Uses of Outer Space (COPUOS) was established by the General Assembly in 1959 with the aim to govern the exploration and use of space for the benefit of all humanity, for peace, security, and development. In said context, COPUOS created the international legislative framework and set the principles for outer space. It serves as a forum to address the constantly evolving space agenda and along with its two subsidiary bodies, the Scientific and Technical Subcommittee and the Legal Subcommittee, reports to the Fourth Committee of the General Assembly which adopts on an annual basis a resolution regarding international cooperation in outer space.

International Telecommunications Satellite Organization (ITSO)¹⁶

The International Telecommunications Satellite Organization (ITSO) was established in 1973 as INTELSAT based on the principles of the General Assembly of the United Nations as outlined in Resolution 1721 and, hence, determined that satellite communication should be available to all nations on a global and non-discriminatory basis. In the context of its operation, it proceeded with a restructuring in 2001 and the establishment of a private body, INTELSAT S.A, while the intergovernmental organization continued the purse of its mission under the name ITSO, aiming amongst other to ensure the maintenance of a technical and regulatory environment for commercial satellite communications.

United Nations Office for Outer Space Affairs (UNOOSA)¹⁷

The United Nations Office for Outer Space Affairs (UNOOSA) was established in 1958 as a group of experts to support COPUOS and gradually evolved to its current structure. UNOOSA aims to support countries as regards various aspects related to space, leveraging the benefits of space exploration. UNOOSA publishes its Annual Reports, which depict the Office's actions and raise awareness regarding the promotion of international cooperation for the peaceful use and exploration of space and the use of relevant technology for sustainable development.¹⁸

United Nations Institute for Disarmament Research (UNIDIR)¹⁹

The United Nations Institute for Disarmament Research (UNIDIR) is an autonomous institution within the United Nations. Amongst its objectives in the context of disarmament and international security issues, UNIDIR's Space Security Programme

¹⁵ Robert.wickramatunga. "United NationsOffice for Outer Space Affairs." *COPUOS*, www.unoosa.org/oosa/en/ourwork/copuos/index.html.

¹⁶ "About Us." *ITSO*, itso.int/about-us/.

¹⁷ Sinead.harvey. "United NationsOffice for Outer Space Affairs." *History*, www.unoosa.org/oosa/en/aboutus/history/index.html.

¹⁸ Martin.stasko. "United NationsOffice for Outer Space Affairs." *Annual Reports*, www.unoosa.org/oosa/en/aboutus/annual-reports.html.

¹⁹ "The United Nations Institute for Disarmament Research." *UNIDIR*, unidir.org/.

addresses international security implications and risks relevant to space domain and space technology.

European Space Agency (ESA)²⁰

The European Space Agency was established in 1975 aiming to address space challenges, enhance the development of Europe’s space investments and capabilities to the benefit of the citizens of Europe and the World. ESA is an independent organization, consisting of 22 Member States and cooperates also with the European Union by virtue of a Framework Agreement, having jointly developed the European Strategy for Space and European Space Policy, creating thus a common political framework for space activities in Europe.

TIMELINE OF EVENTS

DATE	DESCRIPTION OF EVENT
1950s	The Cold War starts, lasting until the dissolution of the USSR (1991).
2 August, 1955	The Space Race commences between the US and the USSR, pursuing the domination of space flight technologies.
4 October, 1957	Sputnik-1 is launched, the first artificial satellite to orbit Earth orbit, by the USSR.
October 1962	The Cuban Missile Crisis breaks out between the US and the USSR regarding the installation of Soviet nuclear armed missiles in Cuba.
12 April, 1967	Cosmonaut Yury Gagarin becomes the first human in space onboard the Vostok 1 spacecraft.
10 October, 1967	The “Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies” is adopted by the UN General Assembly through Resolution 2222.
3 December, 1968	The “Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space” is adopted by the UN General Assembly by virtue through Resolution 2345.

²⁰ European Space Agency, www.esa.int/.

20-21 July, 1969	The lunar Landing of Apollo 11 by American commander Neil Armstrong and lunar module pilot Buzz Aldrin takes places and they become the first persons to walk on a celestial body.
1 September, 1972	The “Convention on International Liability for Damage Caused by Space Objects” is adopted by the UN General Assembly through Resolution 2777.
September 1976	The Convention on Registration of Objects Launched into Outer Space is adopted by the UN General Assembly through Resolution 3235.
11 July 1984	The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies is adopted by the UN General Assembly through Resolution 3235.
20 March, 2003	The Iraq War commences, based on a claim by the United States and United Kingdom that Iraqi government was developing weapons of mass destruction; the claim was later proven to be false.
21 June, 2004	SpaceShipOne makes the first privately funded human spaceflight.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

The UN Charter

Article 2 of the UN Charter stipulates that “All Member States shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the purposes of the United Nations”. Furthermore, Article 51 addresses the right to individual or collective self-defense in the case of an armed attack. Said provisions are quite ambiguous, giving room to the Security Council to determine whether a specific action and namely an act of espionage constitutes a threat to peace or an act of aggression. Furthermore, the presence in nowadays of non-state actors which engage in space exploration and/or develop space technology/utilize satellites, act autonomously or could be attributed to a Member State and, hence, the provisions of the UN charter would be applicable.

The Five UN Space Treaties²¹

The UN General Assembly has adopted five Treaties which form the foundation of global space governance system. The first and most important treaty is the Outer Space Treaty which provides the basic framework for international space law. It sets the basic principle that the exploration and use of outer space shall be conducted for peaceful purposes by all States for the benefit of mankind. Although a cornerstone of the relevant international framework, the said Treaty had gaps in governance and vague language, this resulting in the definition of terms by based on their national interests and priorities, while various definitions have been outdated in the context of technological state advancements. Four additional treaties have been adopted to supplement the gaps, namely the Rescue Agreement, the Liability Convention, the Registration Convention, and the Moon Treaty, which also states amongst others that the Moon shall be used by all states for peaceful purposes and has received the least support from Member States.

The Five Sets of UN Principles²²

To further enhance the five UN Treaties, the international space law community proceeded by virtue of voluntary consensus in the adoption of international guidelines, in the form of five sets of principles, which were adopted by the General Assembly.²³ Said principles contain more challenging objectives, nevertheless, they do not have a binding character.

Transparency and confidence-building measures (TCBMs) in outer space activities

In 2011, the United Nations Secretary General convened a Group of Governmental Experts on Transparency and Confidence-building Measures in Outer Space Activities with the objective to address means of improvement of cooperation in space and also mitigating the risks of misunderstanding, mistrust and miscalculations. The Final Report had been endorsed by the UN General Assembly inviting the Member States to review and adopt through national measures the proposed recommendations.

²¹ “The Global Legal Landscape of Space: Who Writes the Rules on the Final Frontier?” *Wilson Center*, www.wilsoncenter.org/article/global-legal-landscape-space-who-writes-rules-final-frontier.

²² The Global Legal Landscape of Space: Who Writes the Rules on the Final Frontier?” *Wilson Center*, www.wilsoncenter.org/article/global-legal-landscape-space-who-writes-rules-final-frontier

²³ “Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space”, the “Broadcasting Principles”, “the “Remote Sensing Principles”, the “Nuclear Power Sources” and 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”

[Resolution A/RES/75/36 on reducing space threats through norms, rules, and principles of responsible behaviors.](#)

This resolution adopts a behavior-based structure instead of technological hardware and capabilities being the basis for international norm setting and has three objectives.

The first objective is the assessment of existing treaties and agreements which relate to the mode of interaction in space, aiming to highlight gaps. The second objective is the initiation of an open dialogue as regards current and future threats and security risks, addressing in parallel state actions relevant to dual use technologies. The third objective is the assessment of norms which could provide solutions to the said threats and risks.

The same approach had been followed in the Resolution on “Reducing space threats through norms, rules and principles of responsible behaviors”, adopted by the Disarmament and International Security Committee in November 2021 which stipulated “the need for all states to work together to reduce threats to space systems through the further development and implementation of norms, rules and principles of responsible behaviors [...] which might [...] contribute to further consideration of legally binding instruments.”²⁴

As a result, an Open-Ended Working Group had been established, in order to address the existing international legal framework as regards threats from States behaviors which could be considered to be irresponsible and hence to make recommendations on responsible behaviors.

[International Telecommunication Union Radio Regulations](#)

The International Telecommunication Union (ITU) is responsible for information and communication technologies including outer space, and its regulations aim to ensure an interference-controlled environment for satellite operations. Potential risks which could emerge in this sector, could be instances of harmful interference or jamming of satellites, relevant also to acts of espionage, attributed to poor security in commercial space systems rendering thus possible the threat of attack. In the context of international legal framework, it is questionable whether existing regulations and international norms can adequately address such considerations for the global space security.

²⁴ The UN GA First Committee adopted the following resolutions related to outer space: “Prevention of an arms race in outer space (PAROS)”, “No first Placement of weapons in outer space”, “Reducing space threats through norms, rules and principles of responsible behaviors”, “Further practical measures for the prevention of an arms race in outer space (PAROS)” and “Transparency and confidence-building measures (TCBMs) in outer space activities”.

The Tallinn Manual 2.0

In 2009, the Tallinn based NATO Cooperative, Cyber Defence Centre of Excellence invited an international group of legal scholars aiming to draft a manual for the interpretation of international law in framework of cyber operations and warfare. The Tallinn Manual is an academic nonbinding study outlining state conduct in the cyber domain, stressing situations that violate international law and also depicting relevant grey areas. As regards espionage, the authors conclude that such action is not per se unlawful, its legality/permisibility though could depend by its modus operandi.

POSSIBLE SOLUTIONS

Enhancement of global space governance

The space establishment has significantly changed since the Cold War. Although all stakeholders have addressed the economic and geostrategic significance of space, the most foundational area, the regulatory aspects have not been properly addressed.

The relevant UN Treaties stated above do not fully regulate all relevant aspects, intentionally to a certain extent in order to “attract” signatories. The current global space governance framework in light of the advancement of space technology and introduction of new non state actors excludes a number of space activities and allows their operation under sometimes conflicting interpretations of the treaties. Although there had been efforts to improve the said treaties, no new multilateral agreements have been adopted since 1970s.

Regarding the topic of state espionage, states could be reluctant to explicitly regulate it since such action would be considered punishable if conducted in their territory by a foreign country and permissible if contacted by them in the form of intelligence. To this end a way forward in order to establish at least a minimum set of guidelines, would be through norms, i.e., voluntary non legal measures aiming to achieve a level of understanding rather than formal agreements. Norms require looser agreements, increasing thus the speed of application than a formal treaty and also are more flexible to change. They could also develop as of practice and could improve state coordination on the said topic in the lack of formal treaties which presumably would be not realistic to attain in such a sensitive for States’ national security aspect.

Enhancement of national space policies

In times where space technology and space exploration are evolving, more and more states enter the “space arena”, as evidenced by OECD Handbook on Measuring Space Economy. The establishment of relevant space agencies and introduction of relevant policies are the first steps in the said effort, nevertheless the issue of state espionage is not tackled in the context of the issue of permisibility or prohibition as analysed

above. To this end, states should be invited to attain under the aforementioned considerations, the issue by regulating to the extent possible certain means and objectives relevant to permissible intelligence by revising existing national policies and enacting new relevant regulations.

Enhancement of the regulatory framework with regards to satellite activities

Responsible space governance would also require the proper registration and monitoring of satellite activities. In the said context states and organizations who agreed to abide by the Registration Convention, are required to establish their own national registries and provide information on their space objects to the Secretary-General in order to be included in the United Nations Register. Currently, over 85% of all satellites and flight elements launched into Earth's orbit and beyond have been registered. The said process establishes on the one hand the awareness of the international community as regard objects in orbits, information which could be also utilized for the assessment of potential security consideration and, on the other hand, ascertains the "ownership"/ "origin" of the object in orbit in the context of the Liability Convention.

Enhancement of the regulatory framework with regards to dual use goods

Taking into consideration that civilian material could also be used for further purposes, national export control regulations should aim at addressing national security interests against espionage in a pragmatic way, without creating hindrances in international commercial transactions between states. National export regulations control the export of goods, software and technology in order to ensure that the exported object will not be used for potentially harmful purposes. This could be relevant to space systems which have a dual use nature as they could be used for civilian purposes and for military purposes: the same technology which could, on the one hand, assist to prevent or address a natural disaster and along with location determination assist civilians, on the other hand, could be used as a tactical advantage in a military operation and provide battlefield data based on high-quality imagery. The effectiveness, though, of such controls might be limited, taking into consideration that states would likely stress the civilian purposes of such technologies and the objectives they may serve to the benefit of humanity.

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