COMMITTEE: Space Governance and Security
ISSUE: How can States enhance cooperation to regulate the growing number of satellites launched into orbit and prevent the overcrowding of outer space?
CHAIRS: Daphné SELINI, Kazuma MAIGA and Inès KADIRI

INTRODUCTION

Hello everyone, dear delegates!
My name is Kazuma MAIGA. I'm a junior at the Ferney-Voltaire campus and a student in the English international program. I'm fluent in French, Japanese, and English. I love playing sports, especially volleyball, skateboarding, and reading manga. I had the opportunity to discover FerMUN through my role as a delegate in the Labor and Rights Committee, an extremely versatile role that allowed me to develop highly practical and multifaceted skills in my academic life, and it is to teach these skills to you in the best possible way that I decided to run for committee president. Over the next several months, we will focus primarily on space governance and security, a vast, contemporary topic that affects everyone. For several decades, the space race has continued to gain importance in many countries. Today, space has become a strategic domain that plays a major role in the economy, communications, and scientific development, and I look forward to discovering the solutions you will propose during this conference.

KEY WORDS

Satellites: A natural or artificial object placed in orbit around a celestial body. An artificial satellite is a spacecraft designed to carry out one or more missions, including communications, observation, navigation, scientific research, or defense.

Space debris: Metal debris or abandoned structures from spacecraft sent into space, which remain in orbit traveling at 7 km per second, increasing the risk of collision.

Space activities: The use of a space object in space, including its launch, control, and potential return to Earth or abandonment.

Sustainability of space activities: Refers to the use of space in a way that preserves access to it for future generations.

Interstate Cooperation: Collaboration among states aimed at reaching an agreement to achieve a common goal through treaties, agreements, or international organizations.

Orbit: The regular, curved path that an object follows around another body, whether natural or artificial.

Graveyard orbit: An orbit located beyond an operational orbit to which certain end-of-life satellites are moved in order to reduce the risk of collision and free up the orbital slots they occupy. This applies in particular to geostationary satellites, which can be placed in an orbit above the geostationary orbit.

Point Nemo: The point in the South Pacific Ocean farthest from any landmass. Due to its isolation, this region is used as a controlled reentry zone for certain end-of-life spacecraft to minimize risks to populations.

Space Saturation: Excessive increases in orbital debris that make certain orbits and various zones too dangerous to use.

Space Traffic Management (STM): Consists of tracking and controlling existing and future satellites in space to ensure that all space activities can be carried out safely.

Satellite constellations: A coordinated group of satellites placed in one or more orbits that enable the continuous provision of services.

Space safety: Protecting satellites and other space infrastructure from collisions, particularly with space debris that could damage them.

Kessler syndrome: A scenario in which collisions between pieces of space debris create even more debris, thereby increasing the risk of further collisions. Ultimately, this could make certain areas of space very difficult, if not dangerous, to use.

OVERVIEW

1) Introduction

On October 4, 1957, the beginning of the space age was marked by the launch of the first satellite into Earth's orbit. This event marked the start of the space age and the race to develop space-related activities, including scientific, economic, and military pursuits. Today, a large part of our daily lives depends on these satellite networks. As of 2024, more than 9,100 active satellites pass overhead every day, of which more than 2,500 are inactive. This alarming ratio led France to adopt the Space Operations Act (LOS) in 2008, which requires manufacturers and operators to make their satellites as "harmless" as possible. For example, they must completely drain the energy reserves of satellites that have become inactive to limit the risk of explosion and thus the proliferation of space debris.

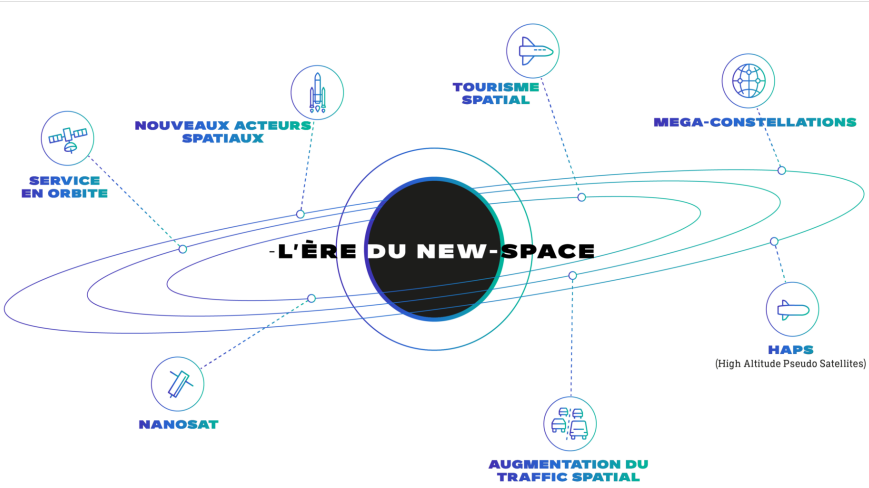
2) The Growing Importance of Space

Since the beginning of the Cold War, the importance of space has continued to evolve, shifting from scientific competition to economic, strategic, and military issues. Governments quickly recognized the potential of satellites, and within just a few years, the number of satellites in orbit multiplied. According to a CNES chart, there were no more than 2,500 satellites in orbit in 2000; today, that number is more than six times higher, with over 15,000 satellites. Today, whether for monitoring natural disasters, GPS, telecommunications, weather forecasting, and much more, all this information depends entirely on satellites. This is why space can be considered critical infrastructure, demonstrating its importance in the daily lives of billions of people.

The concept of "New Space" perfectly encapsulates this growth. For more than 50 years, space was a government affair, but since the 2000s, the space sector has undergone a major transformation with the arrival of numerous private companies, startups, and investors. This evolution, known as "New Space," marks the transition from a sector once dominated primarily by governments and their space agencies to one that is more open to private actors and competition. In particular, these companies are seeking to reduce costs through new technologies—such as reusable launch vehicles and small satellites—while developing new space services.

We can see this clearly with Elon Musk's private company, SpaceX, one of the major leaders in the space industry and a manufacturer of rockets, but above all of satellites—just like Jeff Bezos's Blue Origin. However, these are just two New Space companies among hundreds. Both

of these pioneers are preparing to deploy massive satellite constellations. In the case of Starlink, this has already begun with the world's largest constellation: more than 9,600 satellites—representing nearly 75% of the world's active satellites—are currently in orbit to provide millions of customers with extremely fast internet speeds. As for Blue Origin, a Franceinfo article reports that the company is spearheading the largest project yet—a mega-constellation of 5,408 satellites for in-orbit data centers—while relying on its own space network.



Space is gradually becoming an indispensable source of jobs, experience, and scientific achievement on an international scale, as evidenced by the more than 150 NewSpace companies in France identified by CNES in 2023. However, NewSpace is not just about mega-constellations and billionaires investing—it's about comprehensive planning for the future of the space sector. It is for these reasons that there has been a massive increase in the number of satellites launched into orbit.

Source: Illustration of NewSpace era (National Center for Space Studies)

But falling launch costs are also a major factor driving the deployment of satellites into orbit. According to research from the University of Oxford, the average cost of launching one kilogram of payload into orbit has dropped from 87,000 USD in 1960 to 3,868 USD in 2025

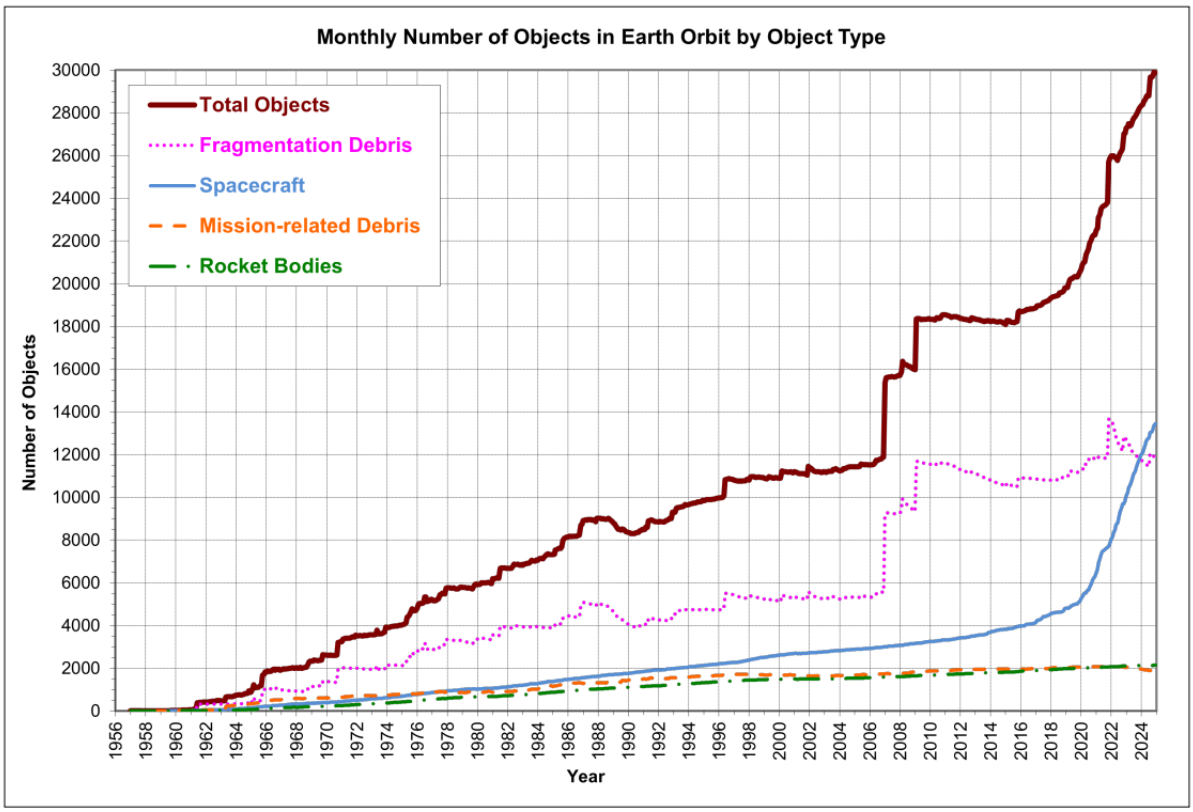
This dramatic drop could be even greater if the rockets used during launch were reusable; in this regard, Blue Origin is leading the way by conducting further experiments and moving closer to a revolutionary innovation.

Finally, in addition to the economic issues which make up a very large part of the problem, military issues could potentially become the most significant. These issues can carry a great deal of weight during negotiations, which can make cooperation between states or actors much more difficult than one might think. Whether they are reconnaissance, electronic

eavesdropping, or surveillance satellites, hundreds of military satellites orbit our planet. These assets make space an even more indispensable domain for the vast majority of world powers.

3) The Consequences and Risks of This Growth

All the major companies present the increase in the number of satellites in our skies numbering in the thousands as a marvelous achievement; however, what we all overlook is that we are also leaving a trail in space. Space debris is very real and far more dangerous than one might imagine. Serious consequences such as the saturation of orbits, particularly LEO (Low Earth Orbit); an increased risk of collisions and space debris; and difficulties in managing space traffic—are all the result of the growing number of satellites.



Source: NASA - Orbital Debris Quarterly News, July 2026

Space debris travels at speeds ranging from 25,000 to 57,000 km/h ten times the speed of a rifle bullet. At such speeds, even debris just a few millimeters in size can cause significant damage upon colliding with a satellite and generate new debris. The proliferation of these collisions could then contribute to a chain reaction known as the "Kessler syndrome," which could make certain orbits increasingly difficult to use. Two major events have significantly increased the amount of debris in orbit. First, on January 11, 2007, China conducted a military demonstration launch targeting a non-operational satellite, which created more than 3,500

pieces of debris larger than 1 cm, a one-third increase in the amount of space debris in a fraction of a second. On February 10, 2009, the first collision occurred between an American satellite and a Russian satellite; as a result of this collision, more than 2,000 pieces of debris large enough to be cataloged were generated. These two events have completely disrupted space traffic and constantly create a risk of collision with satellites. In just a few months, the number of maneuvers to avoid collisions has doubled.

Finally, the space sector is currently far too unregulated and vague; treaties and regulations are far too outdated and therefore cannot address current issues such as megaconstellations, space debris, private companies and actors, and many others.

RELEVANT UN TREATIES AND EVENTS

1967

Outer Space Treaty (UNOOSA*: United Nations Office for Outer Space Affairs): The most important treaty in space law establishes that outer space is the common heritage of mankind and must remain freely accessible and usable by all States. It prohibits any territorial appropriation as well as the deployment of nuclear weapons or weapons of mass destruction in space. Finally, it holds states accountable for their space activities, including those of private entities, and requires them to prevent contamination of the space environment.

1972

Convention 2777 on Liability (UNOOSA): This treaty is a cornerstone of space liability; states are legally liable for damage caused by their space objects. It provides for automatic liability for damage on Earth and fault-based liability for damage occurring in space.

1975

Convention 3235 on Registration (UNOOSA): States are required to register with the United Nations every space object they launch. It thus facilitates the identification and tracking of satellites, enhancing transparency, state accountability, and international cooperation.

2019

LTS Guidelines (Long-Term Sustainability of Space Activities):** Adopted by the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS), the Guidelines for the Long-Term Sustainability of Space Activities propose 21 recommendations aimed at ensuring the safe and sustainable use of space. In particular, they encourage states to strengthen cooperation, share orbital data, limit the creation of space debris, and improve the management of space activities.

*UNOOSA: United Nations Office for Outer Space Affairs

**LTS: Long-term Sustainability of Outer Space Activities

POSSIBLE SOLUTIONS

- Modernize international treaties to address current challenges in the space sector.
- Strengthen international cooperation to ensure the sustainable management of Earth orbits.
- Regulate the development of satellite constellations and private actors.
- Limit the creation of space debris and improve its management.
- Develop global governance of space traffic to prevent collisions and orbital congestion.

(Don't limit yourself to the solutions provided when arguing your ideas; there are many other ways to bring about change. Feel free to consult the sources and further explore a topic from the perspective of the government or actor you are representing.)

QUESTIONS TO CONSIDER

- How could nations better coordinate their launches to limit orbital congestion?
- Should an international authority be created to manage space traffic and prevent collisions?
- How can international treaties be strengthened to adapt to the increasing number of satellites and the entry of private companies?
- Can private companies have greater influence than nations in the space sector?
- What common rules could be established to reduce the production of space debris and ensure the deorbiting of end-of-life satellites?
- How can the sharing of orbital data among nations be improved to anticipate collision risks?
- Should large satellite constellations be subject to international authorization or assessment prior to deployment?
- What mechanisms would ensure equitable access to space while preserving orbits for future generations?
- How can the economic, scientific, and military interests of nations be reconciled with the need to protect the space environment?

BIBLIOGRAPHY

Video:

YouTube, "Alert in Orbit: The Threat of Space Debris" (FRC)
https://www.youtube.com/watch?v=u6_gCYjjVm8

YouTube, "Where Do Satellites Die?" (FRC)
https://www.youtube.com/shorts/pH2rCLQM794

Radio Sources:

Radiofrance, The Kessler Syndrome: Trapped on Earth
https://www.radiofrance.fr/franceculture/le-syndrome-de-kessler-pieges-sur-terre-2871600

Newspaper Articles:

Franceinfo, Blue Origin, Jeff Bezos's aerospace company, is preparing a giant constellation for data centers in orbit (FRC)
https://www.franceinfo.fr/internet/intelligence-artificielle/blue-origin-l-entreprise-aerospatiale-de-jeff-bezos-prepare-une-constellation-geante-pour-des-centres-de-donnees-en-orbite_7882751.html

Scientific Articles:

CNES, What Is an Orbit?
https://cnes.fr/dossiers/orbite

CNES, NewSpace: The New Players in the Space Industry
https://cnes.fr/dossiers/newspace-nouveaux-acteurs-spatial

CNES, Space Flight Safety
https://spacecare.cnes.fr/

CNES, Changes in the Orbital Population
https://spacecare.cnes.fr/evolution-de-la-population-orbitale/

CNES, Space Debris

https://cnes.fr/dossiers/debris-spatiaux

Look Up, The 15,000-satellite mark surpassed: 2 out of 3 belong to Elon Musk's Starlink constellation
https://www.lookupspace.com/fr/blog/la-barre-des-15-000-satellites-actifs-depassee-2-sur-3-appartiennent-a-la-constellation-starlink-delon-musk

Sources from industry:

Starlink, Satellite Technology
https://starlink.com/fr/technology

Blue Origin, About Blue Origin
https://www.blueorigin.com/fr-FR/about-blue

International Treaties:

Outer Space Treaty (UNOOSA 1966)
https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html

Convention on Liability (UNOOSA)
https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/liability-convention.html

Conventions on Registration (UNOOSA)
https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/registration-convention.html

LTS Guidelines (Sustainability of Space Activities)
https://www.unoosa.org/oosa/en/ourwork/topics/long-term-sustainability-of-outer-space-activities.html

European Space Traffic Management Commission
https://defence-industry-space.ec.europa.eu/eu-space/space-traffic-management_en