



Forum: SECURITY COUNCIL

Issue: Establishing boundaries and international law on the issue of militarisation of space, by private and public entities alike, in order to prevent an arms race in outer space

Chair: Lena Rothstein

Contact: munnysc2017@gmail.com

1. Brief description of issues

In general, it is important to note that space has enormous potential for the development of science and technology as well as economic growth. Therefore, globalised societies increasingly rely on the space system. A lot of people do not realise how many of their daily interactions are supported by satellite-powered services. Communication services are increasing rapidly and have become essential to the world and economic sectors. Satellites can enable two-way and one-way communication on the ground. Furthermore, positioning, navigation, and timing (PNT) and Global Navigation Satellite System (GNSS) are both a form of navigational satellite. They provide precise time and location information to us on Earth, therefore, needed for the most crucial services in society. Satellite signals are used daily for complex transport logistics systems, but also by individuals searching the nearest train station or supermarket. Banks use navigational satellites to synchronise transactions, energy networks need them to organise power grids, many phone applications use location information to improve their services and the weather forecast on television is provided via satellites observing Earth. However, satellites are also fundamental for military organisations and defence offering real-time guidance for weapon systems and aircrafts. Thus, space systems impact people's lives, their safety, and the way our infrastructure runs on a daily basis. And the more important space becomes as a form of resource, the more necessary it is to increase the resilience of space systems. Even though outer space promises to become a new source of human prosperity, it simultaneously becomes a less stable environment. In outer space almost anything can be used as a weapon, as it only takes a tiny piece of space debris to destroy important satellites or other devices. The United States for example argue that the incapability to define space weapons mainly hinders the implementation of a treaty to prevent them. It is, however, certain that the weaponization of space will destroy strategic balance and stability, as well as weakening international and national security. On top of that it will destabilize existing arms control instruments, like those related to nuclear weapons and missiles, hence, leading to a new arms race, which would of course unsettle the arms control and disarmament process, as it would disrupt the global balance of power. This race for strategic dominance could well lead to weapon testings and further escalations. While the

possibility for space-based threats grows, more world leaders will try to protect their own space-based assets against their potential destruction by deploying the necessary technology. Therefore, the overwhelming majority of the United Nations member states insist on a multilateral treaty, not only to prevent an arms race, but also to avoid limitations of access to space.

The first efforts in the United Nations to maintain outer space for peaceful purposes were made in 1957, a few months prior to the launch of the first artificial satellite Sputnik 1. This conquest of space opened up the opportunity for a new area of strategic competition alongside land, sea, and air for the world's major powers. A general agreement on the prevention of an arms race in outer space can be found throughout UN member states, however, no comprehensive international legal regime to prevent the deployment of weapons in outer space has been negotiated so far. The international community mostly agrees that now is the time for taking proper measures on prohibiting the weaponization of space, as an arms race has not quite started yet.

The rise of globalisation and the inter-connectivity of global players has led to a reliance on space-based technology. The Global Positioning System, short GPS, for example is needed for everything from simple navigation to the coordination of military operations. Thus, the destruction of satellites has become a priority for military planners in case of conflict. So, as the technological advances drive the increased utilisation of outer space, UN member states have to act now.

2. Key terms

Weaponization of outer space: the placement of space-based weapons with destructive capacity, such as nuclear weapons or weapons of mass destruction, in outer space. Even though ground-based systems designed to attack space-based assets are not technically part of the “weaponization of outer space” since they are not placed in orbit, one might argue that they belong into this category anyways. The same goes for weapons that travel through space in order to reach their targets. Examples are:

- a. orbital or suborbital satellites intending to attack enemy satellites,
- b. ground-based missiles to attack space assets,
- c. jamming signals sent from enemy satellites,
- d. lasers to put enemy satellites out of action,
- e. orbital ballistic missiles,
- f. and satellite attacks on targets on Earth.

Militarisation of outer space: The militarisation of space began in the second half of the 20th century when the earliest communication satellites were launched. Nowadays, militaries all around the world rely on space-based assets, such as satellites, for C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance).

Therefore, the military use is part of the “peaceful uses” of outer space but runs the risk of contributing to the opposite. The militarisation of space assists armies on the conventional battlefield (land, sea, and air), whereas in the weaponization space itself emerges as the battleground.

Anti-satellite technology: a system of anti-satellite weapons designed to destroy or incapacitate enemy satellites for strategic purposes.

Missiles: rocket-propelled weapons that are designed to deliver an explosive warhead with great accuracy at high speed¹. There are many different types of missiles, e.g.:

- a. ballistic missiles: the trajectory of such objects follow are ballistic, meaning that they are launched but with no active propulsion during its actual flight (catapults are an example of ballistic movement)
- b. cruise missiles: guided missiles where the target is set in advance. They are capable of travelling at supersonic speeds and are self-navigating. They do not fly on ballistically, but at an extremely low-altitude trajectory².

Space debris: any human-made object in the Earth’s orbit that no longer serves a useful function, including non-functional spacecrafts, abandoned launch vehicle stages, mission-related debris, and fragmentation debris³.

Celestial Body: an aggregation of matter visible in the universe that can be considered as a single unit, such as a planet, star, or nebula⁴.

Weapons of mass destruction: a nuclear, radiological, chemical, biological, or any other weapon able to kill and bring significant harm to numerous humans or cause great damage to not only human-made, but also natural structures), or the biosphere⁵.

3. Background information

In 1967 the “Outer Space Treaty”, the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, entered into force. The treaty concluded by the Committee on the Peaceful Uses of Outer Space and the General Assembly provides the basic framework for international space law. By prohibiting the placement of nuclear weapons or any other kind of weapon of mass destruction in outer space as well as the stationing of such on celestial bodies, the basic principles relate to the peaceful use of outer space. Furthermore, all countries should benefit

¹ <https://www.britannica.com/technology/missile>

²

<https://www.jagranjosh.com/general-knowledge/difference-between-ballistic-missile-and-cruise-missile-1624884436-1>

³ https://www.nasa.gov/mission_pages/station/news/orbital_debris.html

⁴ <https://www.merriam-webster.com/dictionary/celestial%20body>

⁵ [https://en.wikipedia.org/wiki/Weapon_of_mass_destruction#:~:text=A%20weapon%20of%20mass%20destruction.mountains\)%2C%20or%20the%20biosphere.](https://en.wikipedia.org/wiki/Weapon_of_mass_destruction#:~:text=A%20weapon%20of%20mass%20destruction.mountains)%2C%20or%20the%20biosphere.)

from the exploration and use of outer space. Neither the moon nor other celestial bodies can become a subject of national appropriation or claims of sovereignty. The “Prevention of an Arms Race in Outer Space”, short PAROS, of 1981 endorses the fundamental principles of the “Outer Space Treaty” as outlined above. It promotes for a ban on the weaponization of space. PAROS is a critical issue on the UN disarmament and arms control agenda and has been reintroduced in recent years. Since then, it is voted upon annually in the First Committee of the United Nations (Disarmament and International Security) and again in the General Assembly as a whole. The proposal is adopted by an overwhelming majority of the UN member states with only the United States of America and Israel abstaining. Many states argue that the current treaties are insufficient to ensure peace and safety both in outer space and of outer space, because while they ban the placement of weapons of mass destruction, they do not prevent entities from placing any other type of weapon in outer space. On this note, the UN General Assembly’s Special Session on Disarmament mandated negotiations to take place in the Conference on Disarmament (CD). Under the agenda item, “prevention of an arms race in outer space”, the CD has regarded further proposals since the early 1980s. A draft text of a treaty preventing the placement of weapons in outer space and banning the use of anti-satellite weapons has been proposed by China and Russia in 2008 and again in 2014 after revisions. Two resolutions that prevent an arms race in outer space have passed in the General Assembly on December 4, 2014.

- a. The first resolution (*Prevention of an Arms Race in Outer Space*) "call[s] on all States, in particular those with major space capabilities, to contribute actively to the peaceful use of outer space, prevent an arms race there, and refrain from actions contrary to that objective." There were 178 countries that voted in favour to none against, with two abstentions by Israel and the United States of America.⁶
- b. The second resolution (*No first placement of weapons in outer space*) emphasises the prevention of an arms race in space and states that "other measures could contribute to ensuring that weapons were not placed in outer space." 126 countries voted in favour to 4 against by Georgia, Israel, Ukraine, and the United States. 46 member states abstained including EU member States.⁷

The next step made by the UN General Assembly in order to ensure peace and security in outer space was part of the resolution A/RES/72/250 in 2017 in which they agreed to establish a group of Governmental Experts. This group is responsible for making recommendations on considerable elements part of an international legally binding instrument. However, they were unable to negotiate a consensus on a report about the prevention of an arms race as well as the placement of weapons in outer space. The latest

⁶ https://en.wikipedia.org/wiki/Prevention_of_an_Arms_Race_in_Outer_Space via <https://web.archive.org/web/20170704040738/http://www.un.org/press/en/2014/ga11593.doc.htm>

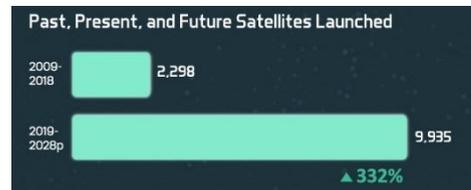
⁷ https://en.wikipedia.org/wiki/Prevention_of_an_Arms_Race_in_Outer_Space via <https://web.archive.org/web/20170704040738/http://www.un.org/press/en/2014/ga11593.doc.htm>

resolution on the issue at hand was adopted in 2020 called “Reducing space threats through norms, rules and principles of responsible behaviours” ([A/RES/75/36](#)).

It is necessary to establish further boundaries and determine an international legalisation concerning the matter, as the consequences of an arms in outer space as part of the militarisation of space are bound to have a huge impact on everyone apart from just the entities partaking over the span of the next generations. Due to the possible destruction of space assets, militarisation of space increases vulnerability of societies on Earth, from militaries to ordinary citizens. Currently, there are major ramifications of a potential arms race in space:

(1) The destruction of satellites

The number of satellites is increasing rapidly, especially since technological and financial barriers have been reduced for state as well as non-state actors in space, hence, there is an abundance of satellites in space owned by multiple states and corporations. By 2028 there could be 15,000 satellites in orbit, if the number of 990 satellites launched every year estimated by



<https://www.visualcapitalist.com/visualizing-all-of-earths-satellites/>

weather reports, or on-ground communication or navigation. 54% out of all operating satellites are used for commercial purposes: 61% of communications include everything from satellite television to the internet. The satellites responsible for Earth Observation include purposes such as environmental monitoring or border security. It is important to note that commercial satellites can serve multiple purposes and might change their functional task within weeks. The largest commercial operator of satellites on Earth is the company SpaceX, founded by Elon Musk. They have been operating about 22% of the world’s operational satellites as of April 2020 and in just the span of one month, they placed an additional 175 satellites in orbit between August and September 2020⁹. Four US based companies, Space X, Planet Lab Inc., Spire Global Inc., and Iridium Communications Inc. are leading in the number of commercial satellites operated in outer space.

⁸ <https://www.visualcapitalist.com/visualizing-all-of-earths-satellites/>

⁹ <https://www.visualcapitalist.com/visualizing-all-of-earths-satellites/>

So, an arms race in outer space would of course mean the testing of weapons in space which might destroy other satellites in the process and moreover, be responsible for more space debris. Ultimately, debris clouding the orbit would disrupt our current way of life. What is more pressing than the disturbance of our daily life, is that if a state's satellites are successfully destroyed through anti-satellite technology by an enemy, the attacked country would be vulnerable and unable to coordinate its military forces on the ground properly. Because satellites of government and civil purposes combined come in at 21% of all of Earth's operational satellites, and satellites for military purposes make up 13%¹⁰.

(2) The reduction of the use of near space in the future

Additionally, too much space debris, caused by weapon testing or actual aggression, could also pose a challenge for every country wanting to launch new satellites in the future as it would reduce their capabilities. Currently about 6,000 satellites are orbiting our planet, however, only 40% are operational. Roughly 60% are



defunctional, so basically "space junk"¹¹. There are millions of pieces of space trash smaller than a centimeter, half a million bits of debris between 1cm and 10cm, and over 21,000 pieces of space junk larger than that orbiting Earth and with the increase of activity in outer space the numbers are only predicted to rise further¹². The pieces of space debris travel at such high speed that they cannot only create new bits of potentially threatening space junk, but also have such an impact they can critically damage space based assets, like satellites and pressurised items. Furthermore, it becomes more difficult to launch satellites as well as rockets. This hinders and endangers scientific research, space exploration, and commercial operations. If the pollution continues to increase, space itself could become unusable, which would result in the collapse of the global economic system, various communications, as well as nautic and air transportation.

(3) The imbalance of power on Earth

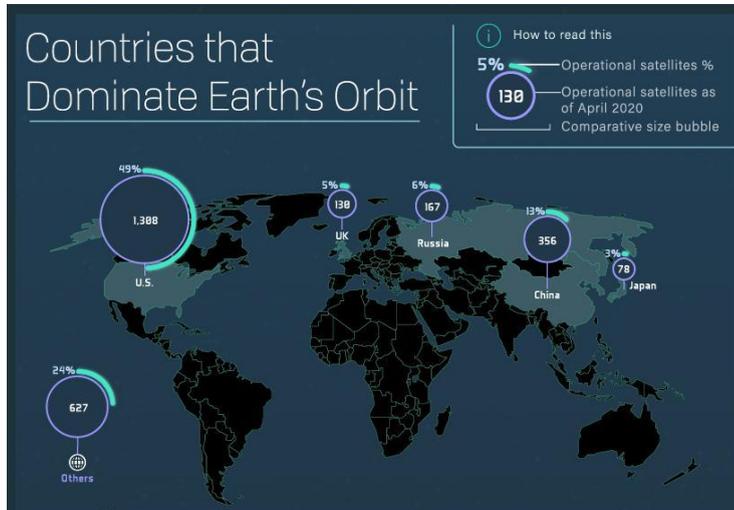
Currently only so many nations have access to outer space, thus, other states would have to manage on their own if space were to be militarised by a few. This would create a huge imbalance of power between the countries capable to keep up and those not capable. Such a clear power imbalance would only lead to distrust among nations. The more insecure the relationship between the countries of the world, the higher the risk for war. Moreover, the

¹⁰ <https://www.visualcapitalist.com/visualizing-all-of-earths-satellites/>

¹¹ <https://www.visualcapitalist.com/visualizing-all-of-earths-satellites/>

¹² <https://www.space.com/16518-space-junk.html>

states with access to space might take measures as part of their deterrence strategy in



competition to other rival nations.

Advancement in weaponry is inevitable to avoid in any arms race. Therefore, it would not only create a risk in space, but also on Earth in case a terrestrial war should break out. It should be easy for those nations having access to space to dominate any possible war as the states without a space industry would not have equally advanced arms.

4. Major actors (countries and NGOs)

As illustrated on the map on the left-hand side, five countries dominate the Earth's orbit. The United States of America contribute 49% of the operational satellites as of April 2020. As of January 2021, China has 412 satellites in outer space and Russia follows suit with 176 operational satellites¹³. These three nations are accounted as designated parties turning space into an area of great power competition through the weaponization of outer space. Especially Russia and China are criticised for trying to prevent other states from using space freely by prioritising their own usage of outer space. Recently, an increasing number of countries have been pursuing military use of space. India for instance conducted an anti-satellite weapons test in March 2019, while Iran launched its first military satellite in April. Even though the European Union should have the technical and economic resources, they do not compete with other nations like the United States, China, or Russia. They have withdrawn from the race of

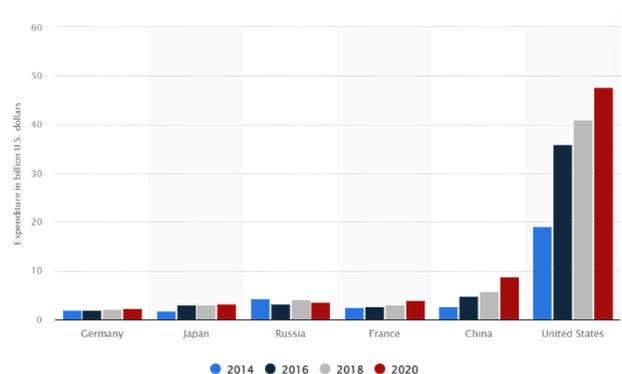
the utilisation of space due to their refusal to speak as one

voice on the international stage. China, on the other hand, has entered with full force. The nation is likely to build more warheads in order to maintain its nuclear deterrent. This might encourage India and Pakistan to follow suit. The situation between Russia and the United States continues to remain tense since the United States' withdrawal from the Anti-Ballistic

<https://www.visualcapitalist.com/visualizing-all-of-earths-satellites/>

¹³ <https://www.statista.com/statistics/264472/number-of-satellites-in-orbit-by-operating-country/>

Missile Treaty in 2001. In response to each other, both countries are likely to reject the development of new treaties regulating nuclear weapons.



5. How to prepare as a delegate

Dear Delegates,

bear in mind that preparation is key in order to hold a successful debate and therefore, we urge you to research the subjects carefully and in detail. Start by collecting basic information about your country in the following categories as this will give you a good overview on your country's positions in general: politics, economy, geography, history, and society. Find out about your country's alliances with others and then start your research on how your country specifically is involved in the topic of establishing boundaries and international law on the militarisation of space in order to prevent an arms race in outer space. Mention to what extent your country is, directly or indirectly, affected by the topic. Has it taken any measures? Try to come up with possible future measures to combat the issue at hand. How could your country contribute to plans on an international level? What is the current situation and what is your country willing to change internationally?

For your research, use valid and reliable sources. Ideas for sources are:

- your forum's official website
- NGOs websites
- [UN.org](https://www.un.org) (often here you can find articles written especially on your issue)
- <https://scholar.google.com>

The position papers must be sent in before the start of the conference. If you are a first-timer and are a bit overwhelmed, feel free to reach out.

6. Further reading

- <https://www.un.org/disarmament/institutions/security-council/> (summary of UN efforts)
- <https://ndupress.ndu.edu/Publications/Article/577537/defining-and-regulating-the-weaponization-of-space/> (general overview and possible solution)
- <https://www.visualcapitalist.com/visualizing-all-of-earths-satellites/> (most of the statistics can be found here, additional information on private entities as well)

→ <https://www.space.com/spacex-starlink-russia-anti-satellite-test-legal> (recent article on anti-satellite testing from Russia)

7. Sources

- <https://www.reachingcriticalwill.org/resources/fact-sheets/critical-issues/5448-outer-space> (02.12.2021, 16:00Uhr)
- <https://www.un.org/disarmament/institutions/security-council/> (02.12.2021, 16:30Uhr)
- <https://www.un.org/disarmament/topics/outerspace/> (03.12.2021, 16:30Uhr)
- <https://www.nti.org/education-center/treaties-and-regimes/proposed-prevention-arms-race-space-paros-treaty/> (02.12.2021, 17:00Uhr)
- https://www.spf.org/iina/en/articles/nagashima_02.html (02.12.2021, 17:30Uhr)
- <https://globalsecurityreview.com/consequences-militarization-space/> (03.12.2021, 19:15Uhr)
- <https://ndupress.ndu.edu/Publications/Article/577537/defining-and-regulating-the-weaponization-of-space/> (03.12.2021, 17:00Uhr)
- <https://www.calendarstudy.com/blogs?topic=weaponization-and-militarization-of-space> (03.12.2021, 18:00Uhr)
- <https://www.space.com/16518-space-junk.html> (03.12.2021, 19:00Uhr)
- <https://www.statista.com/statistics/745717/global-governmental-spending-on-space-programs-leading-countries/> (04.12.2021, 18:40Uhr)