

Committee: Disarmament and International Security Committee (GA1)

Issue: Addressing the rise of anti-satellite weapons (ASAT) in strategic and tactical scenarios

Student Officer: Petros Salonikidis

Position: Co-Chair

PERSONAL INTRODUCTION

Dear Delegates,

My name is Petros Salonikidis, I am an 11th grade student at the German School of Thessaloniki, and I will be serving as one of the Co-Chairs in the Disarmament and International Security Committee (GA1). First of all, I would like to welcome you all to the 6th ACGMUN conference and congratulate you on your selection of this wonderful committee. Having participated in various MUN conferences as a member of the organizing team, a delegate, as well as a student officer, I assure you that during this two-day simulation, we will all gain an unforgettable experience while also having fun debating upon real world issues.

To me, MUN is more than just an extracurricular activity, it has the power to influence your whole character. It has also taught me that even the smallest contribution can have a great impact towards an issue our world faces today. Since you will be participating as delegates, your duty is to conduct the necessary research at home which will eventually help you understand several real-world problems better, and then come to the conference and debate upon them. Thus, you are also subconsciously becoming active citizens that can critically deal with a number of issues our world encounters nowadays.

During this session, we will be debating upon a rather challenging issue which needs special attention as it can easily cause confusion: “Addressing the rise of anti-satellite weapons (ASAT) in strategic and tactical scenarios”. The purpose of this study guide is to provide you with the most necessary and essential information on the topic while helping you be active delegates and create draft resolutions. However, apart from this study guide, delegates are also strongly encouraged to conduct their own research on the topic as well.

Should you have any questions as far as the topic is concerned, please do not hesitate to contact me via email: petros.salonikidis@gmail.com.

I am looking forward to meeting you all,

Petros Salonikidis

TOPIC INTRODUCTION

Even though there is no scientific proof that human nature is belligerent, it has been scientifically proven that humans are willing to be more dominant than others. This is not only proven by history through the large number of wars that have been fought, but we can also observe such phenomena in our everyday life. Even though only two million years have passed since the appearance of humans, people still tend to express their dominance over others. Countries, in particular, are no longer only conquering territorial and maritime possessions anymore, but during the last 70 years, they have even transferred that conquest to outer space.

Satellites, spaceships, rovers, and many more space systems have been developed by various countries and organizations. However, this issue presents both arguments in favor and against. Even though they have helped explore space and therefore contribute to our understanding of our universe, as well as eased telecommunications and internet access, the stakeholders only view the benefits of them. Thus, there are many times that they take advantage of them. This also leads to the creation of anti-satellite weapons (ASATs). However, it is crucial to mention here that they have not been used for warfare yet; they have only been used by countries to destroy their own satellites. This indicates the tendency, which was previously mentioned, that countries want to showcase their force and consequently express their dominance.

Apart from the obvious danger of a potential conflict between states, there is an even bigger issue which is currently plaguing our planet and pressuring scientists. Many successful operations by countries to destroy their own satellites have led to a rise in space junk. But why is space debris hazardous for humans? Due to the high orbital speed of the Earth, space debris reaches a high velocity¹ and can therefore crash into other satellites or space systems. Thus, a domino effect of collisions is created, namely Kessler Syndrome (defined below). It is reported that the International Space Station (ISS) has had to deviate from its orbit more than 30 times during the 20 years that it has operated in order to avoid space junk. Taking everything into account, it is important to address the issue of anti-satellite weapons, to eradicate all these rising problems.

¹ Approximately 107.208km/h.

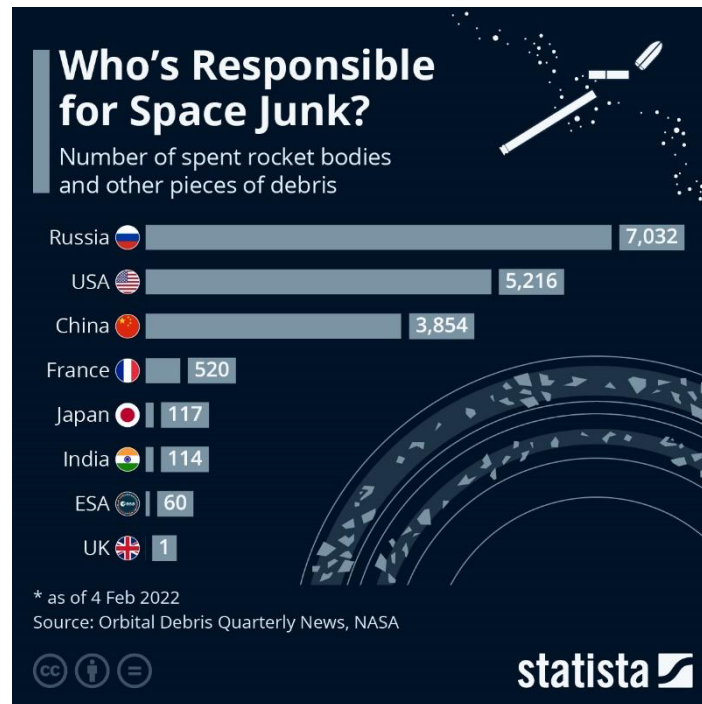


Figure 1: Graph depicting the responsibility of states for space debris²

DEFINITION OF KEY TERMS

Anti-satellite weapons

“Anti-Satellite (ASAT) weapons are weapons that are designed to deceive, disrupt, deny, degrade, or destroy space systems”.³

Kessler Syndrome

“A chain reaction (called the Kessler syndrome after American scientist Donald Kessler) in which the resulting space debris would destroy other satellites and so on, with low Earth orbit eventually becoming unusable”.⁴

² Fleck, Anna, and Felix Richter. “Infographic: Who's Responsible for Space Junk?” *Statista Infographics*, 22 Sept. 2022, <https://www.statista.com/chart/28309/countries-creating-the-most-space-debris/>.

³ “Anti-Satellite Weapons: Threatening the Future of Space Activities.” *Visual Capitalist*, 14 June 2022, <https://www.visualcapitalist.com/sp/anti-satellite-weapons/>.

⁴ “Kessler Syndrome.” *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., <https://www.britannica.com/topic/Kessler-syndrome>.

Military Strategy

“Military strategy is the practice of reducing an adversary’s physical capacity and willingness to fight, and continuing to do so until one’s aim is achieved. It takes place in wartime and peacetime and may involve using force, directly or indirectly, as a threat”.⁵

Military Tactics

“Military tactics encompasses the art of organizing and employing fighting forces on or near the battlefield”.⁶

Space Debris

“Space debris, also called space junk, is an artificial material that is orbiting Earth but is no longer functional. This material can be as large as a discarded rocket stage or as small as a microscopic chip of paint”.⁷

BACKGROUND INFORMATION

Historical Background

ASATs were initially designed for the debilitation of satellites in strategic and tactical scenarios, as mentioned in the issue of this study guide. The Strategic Defense Initiative, also known as the “Star Wars Program,” influenced the development of ASATs. Thus, ASATs were also used as antiballistic missiles in the 1980s both by the USA and the Soviet Union. The USA designed a defensive system known as the Brilliant Pebbles, which would consist of 4.600 small scaled ASATs and would have been completed by 2000. However, the huge costs of implementing such a system, which were estimated at about 125 billion US dollars (USD), and the energy requirements for such a mission prevented the US from applying it. The Soviet Union was also planning such a system as a counterattack to the one of the US, however, due to the dissolution of the USSR it was never made possible. Hence, the importance of ASATs for strategic purposes was more than well demonstrated during the end of the Cold War.

The huge competition between the Eastern and the Western Bloc during the Cold War was spread across many fields, such as science and arms, as both blocs wanted to have global influence. The competition also existed in the exploration of

⁵ Echevarria, Antulio J. “What Is Military Strategy?” *OUP Academic*, Oxford University Press, 23 Feb. 2017, <https://academic.oup.com/book/584/chapter-abstract/135310390?redirectedFrom=fulltext>.

⁶ “Military Tactics.” *Wikipedia*, Wikimedia Foundation, 19 Oct. 2022, https://en.wikipedia.org/wiki/Military_tactics.

⁷ “Space Debris.” *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., <https://www.britannica.com/technology/space-debris>.

Outer Space. Ever since the development and the launch of the first satellite, namely Sputnik 1 by the Soviet Union in 1957, the US thought that the Soviets' goal was to develop a network of nuclear-armed satellites. Therefore, they constructed the first anti-satellite weapon, Bold Orion, in order to gain leverage over the Soviets. However, they went on to develop their own ASAT which essentially orbited the Earth alongside Bold Orion so that it could rival the USA's.



Figure 2: Image depicting Bold Orion, the first ever ASAT⁸

The US Air force conducted several tests, which included the Hardtack Teak test in 1958 and the Starfish Prime test in 1962, regarding the use of high-altitude nuclear explosions, which was considered the most typical way to destroy satellites in the 1960s. The latter test destroyed three satellites and interrupted telecommunications across the Pacific Ocean, thus proving the destructive effects of ASATs. Except for high-altitude nuclear explosions, scientists came up with directed-energy weapons that could destroy the target using a nuclear explosion with an X-ray laser. However, this initiative was not pursued actively since the X-ray laser project was cancelled in 1977. ASAT development came to a halt for five years until 1982, when top-secret information about a successful space mission of the Soviet Union was revealed. Thus, the US developed a new ASAT that could compete and surpass the capabilities of its predecessor models with a modified fighting jet F-15 Eagle. In January 1984, the F-15 took off. The satellite was successfully destroyed; however, space debris still fell to the Earth until 2004.

Different types of ASATs

Kinetic-Energy ASATs

Kinetic-Energy ASATs are machines from satellites to drones and rockets that physically crash towards the targeted satellite. These produce a

⁸ "Bold Orion." Wikipedia, Wikimedia Foundation, 8 June 2022, https://www.en.wikipedia.org/wiki/Bold_Orion.

lot of space debris which poses a great threat to humanity as well as to other satellites. However, a huge danger arises regarding international security, namely the fact that there is an enormous risk of an international conflict. Should a state crash its own ASAT on a satellite of another country, either purposely or accidentally, the country which caused this will be accused and will face the according consequences. The worst-case scenario is a war between two or more states which will obviously interfere in international security and disarmament. Consequently, it is vital for the countries that operate ASATs to be careful with the Attitude and Orbit Control System (AOCS), so that no ASATs can destroy another state's satellite, and thus, a domino effect of event begins, which lead to an international conflict.

Non-kinetic energy ASATs

Non-kinetic energy ASATs include cyber-attacks, jamming, or the use of lasers to blind satellites. The most recent and striking example was the launch of an attack on a US satellite powered by ViaSat⁹ by Russian hackers, moments before the invasion of Ukraine, which led to the interference of telecommunication over Ukraine. Furthermore, another reported cyber-attack, by the Chinese, dates back to 2014 and forced the National Oceanic and Atmospheric Administration (NOAA) of the USA to stop transmitting the received from their weather satellite to the National Weather Service. The worst-case scenario known as of today is a cyber-attack on AOCS. This can lead to the collision of two or more satellites or the collision of a satellite(s) with the International Space Station by malicious hackers.

Effects of ASATs

Clean Space Initiative

The European Space Agency (ESA), alarmed by the rise of space junk caused by ASATs, has developed a new initiative with the aim of eradicating the carbon footprint of space missions as well as the debris produced by the collision of an ASAT with a satellite as well as the removal of outdated satellites. The initiative has been in effect since 2013 and ever since, ESA has tried to act correspondingly to achieve its goals by bearing in mind three branches, namely eco-design, management of end of life, and in-orbit servicing. The first one calls for sustainability in the design process of a space mission, the second one is responsible for the prevention of the creation of space debris in space, and the third one assists the EU's attempts to eradicate space debris by removing dysfunctional satellites from orbit.

⁹ ViaSat is an American communications company.

Fear of Kessler Syndrome

A terrifying aspect of the impact of ASATs on humanity is Kessler Syndrome. As ASATs crash into satellites, they produce space junk which orbits the Earth without a set trajectory and remains in orbit for many years before falling to Earth. This issue poses a risk to other satellites as well as the International Space Station, which as mentioned above has had to maneuver its position 30 times thus far to avoid space junk. However, the problem is not only the risk of one collision but the risk of multiple collisions in a row. This would essentially make low orbit unfeasible for humans, and it could also block GPS navigation as well as satellite streaming. Anyone can build a satellite and place it in orbit, which is dangerous because it can only accelerate the occurrence of Kessler Syndrome. Scientists have calculated that Kessler Syndrome might occur around 2048, if the rate of satellite launches remains at approximately the same value. If it heightens, then humanity might experience such an event by 2035. Thus, the urgency of combatting such a phenomenon has never been greater than before.

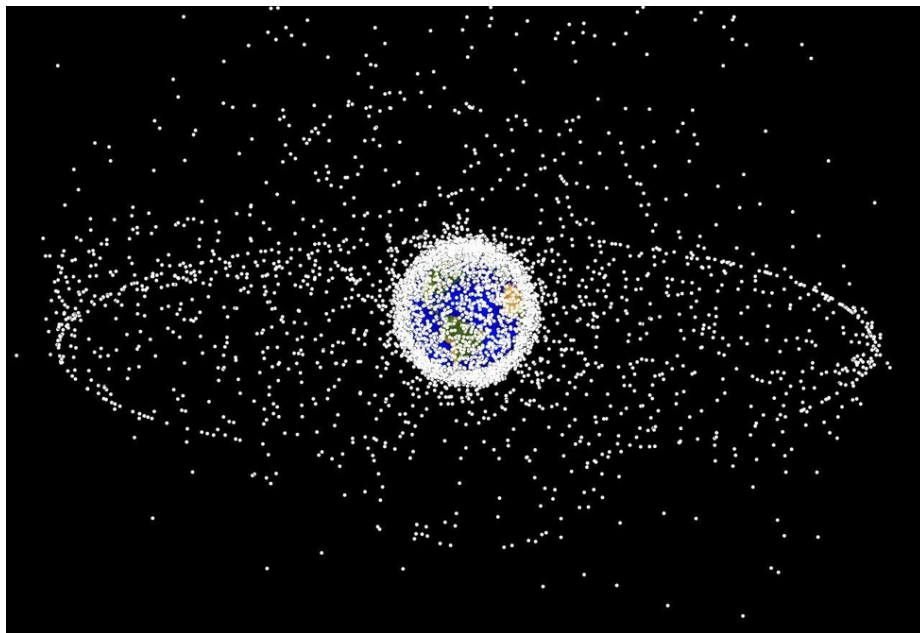


Figure 3: Computer-generated image depicting space debris (dots) which orbit the Earth¹⁰

Hopes for ASATs

With the development of ASATs, humanity wishes to develop more in the technological field. Perhaps the development of an ASAT might either accidentally or purposely lead to space exploration, if a new and efficient technology is founded.

¹⁰ Skyatnightmag. "What Is Space Junk and Why Is It a Big Problem?" *BBC Sky at Night Magazine*, BBC, 19 Apr. 2022, www.skyatnightmagazine.com/space-missions/space-junk/.

Moreover, people need to feel safe in a world where many conflicts take place daily, thus ASATs must provide them with the necessary feeling of safety. If ASAT use is restricted and internationally mandated, then satellites are safe from attacks and destruction by non-state actors, meaning actors apart from the state who launched the satellite. Furthermore, ASATs tend to reveal the power of a state and consequently, states promote that feeling of power over other countries, which perpetuates a sense of hegemony. ASATs should be intended for peaceful and environmental purposes, as seen with the destruction of a US satellite (see Major Countries and Organizations Involved), in order to protect international security and disarmament.

Conclusion

Taking everything into account, it is only expected that ASATs will be further developed by countries due to high competition over the control of space. Therefore, it is vital that this situation is rectified diplomatically, bearing the effects of ASATs in mind. Since the complete disarmament of space remains a utopian scenario, it is necessary to find solutions to at least combat their rise, if not their increase. ASATs were essentially built to keep people safe, however, due to competition in space expansion, they have strayed away from their initial purpose. States nowadays develop ASATs in order to destroy dysfunctional satellites and make space for new ones. However, it is yet unclear whether there will be a return to a similar scenario, specifically 80 years ago, when ASATs were constructed only for strategic and tactical scenarios.

MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

The United States of America (USA)

As previously mentioned, the United States of America has always been actively involved in the development of ASATs. The irony, however, is that the US is the country that introduced the concept of ASATs and simultaneously is the first country to ban these weapons, a decision which was carried out in April 2022. The most successful US mission was on February 20, 2008, when the US decided to tear down one of its satellites because it contained a large amount of toxic hydrazine. It was deemed dangerous to leave in space, since if it dropped to the Earth, a huge amount of the toxic chemical would have been released during its re-entry into the atmosphere. Nevertheless, the US is considered to be a runner-up in Figure 1 (see Topic Introduction), which depicts the number of space debris countries are responsible for.

China

China has been designing its ASAT program since the 1960s, with its most successful and at the same time, most destructive test being held on January 11, 2007, when a Chinese ASAT destroyed a defunct weather station. The collision created 3000 pieces of debris, and in 2016, reports stated that more than 80% of the produced debris can be still found in orbit.¹¹ In May 2013, China announced the launch of a rocket in order to investigate and study the ionosphere. However, the USA thought that it was an attempt of testing a new ASAT that would endanger its satellites. Afterwards, an analysis was carried out and the conclusion stated that it might have indeed been an attempt to test a new ASAT system.

India

India has entered the world of ASATs quite late in comparison to other countries. In April 2012, India announced that it had the appropriate technology to develop an ASAT. 7 years later, on March 27, 2019, India launched its first and successful ASAT at a low altitude so that most of the space debris could fall to Earth and therefore be burnt when re-entering the atmosphere. India thought that constructing an ASAT would give it a position in the conquest over control in space. After the test, Russia invited India to contribute to a proposal between Russia and China against the militarization of space.

Russia

The Russian Federation, but mostly the Soviet Union, has been involved in the development of ASATs, mostly due to the arms race of the Cold War. However, Russia decided to destroy Kosmos-1408 in November of 2021, which was inactive for more than 30 years. It consequently created space debris that affected the ISS. However, it created only half of the total debris that the respective Chinese ASAT test had. Russia holds the first place in the creation of space junk (see Figure 1), which is proven by the many tests that it has conducted, destroying defunct satellites that age back to the Soviet Union. Furthermore, Russia was accused, by the US, of endangering spacecrafts and satellites in low orbit during a carried-out ASAT test on April 15, 2020. Thus, Russia has a clear, contradictory position on this matter.

¹¹ Cordesman, Anthony H., and Joseph Kendall. "CHINESE SPACE STRATEGY AND DEVELOPMENTS." *Chinese Strategy and Military Modernization in 2016: A Comparative Analysis*, Center for Strategic and International Studies (CSIS), 2016, pp. 427–53. *JSTOR*, <http://www.jstor.org/stable/resrep23376.15>.

Israel

Israel currently has an anti-ballistic missile, “Arrow 3”, in orbit, which is responsible for Israel’s defense system. It is also believed by experts that it will be used as an ASAT in the near future. Furthermore, Israel wanted to reinforce its defense system by introducing an ASAT program back in 2004, and it seems like it has not achieved this goal yet. Experts have suggested that it will be vital for Israel to deploy its first ASAT due to the high amount of imaging satellites as well as communications satellites it possesses, specialized in military operations.

Iran

Iran has taken an entirely different approach to the issue of space. It does not want to control space but obstructs access to it to other countries. For instance, in 2011, Iran hacked the GPS System of a US satellite and changed its functions with a different GPS signal. It has been proven that Iran uses more non-kinetic ASATs than kinetic ones, since it has conducted the necessary research on the launch of satellites, and it has been shown that all their past launches were unreliable. Thus, since there is a fundamental problem with its satellites’ launching system, Iran cannot proceed with constructing ASATs, as all of them will not be able to launch properly and perhaps be destroyed beforehand. This might sound quite controversial since it has a strong ballistic missile program, however, it has had no success regarding this system.

European Space Agency (ESA)

The European Space Agency does not have control over the launches of ASATs into space. It focuses more on space debris management and the development of space systems to combat the rising impact of ASATs. Apart from this, it is also concerned about the sustainability of space missions carried out in space, which is why they have implemented the Clean Space Initiative, which includes both the removal of excess parts in space caused by collisions as well as the sustainability of such missions in order to reduce their carbon footprint.

National Aeronautics and Space Administration (NASA)

NASA is the US government’s space agency. Its responsibilities include the research of space as well as providing civilians with a proper space program. Thus, NASA delivers its space missions in the name of the USA, which is proven through its catalytic role during the Cold War. Since its establishment in 1958, it has been a global leader in space exploration and has carried out all US missions regarding the development and launch of ASATs. NASA also gave a press release after the demolition of Kosmos-1408, in which it blamed Russia for its irresponsibility and ensures the constant monitoring of space debris so that the debris does not cause further issues apart from the employment of emergency procedures for astronauts in the ISS.

United Nations Office for Outer Space Affairs (UNOOSA)

UNOOSA is responsible for encouraging worldwide collaboration in space exploration and the use of space science and technology for sustainable economic and social development. The protocol supports that space organizations as well as agencies and other actors in space must notify them before the launch of an ASAT so that they can check whether the atmosphere can handle the takeoff (e.g., if space objects re-enter the atmosphere, the ASAT might be endangered, and therefore an explosion might occur mid-air). Moreover, it strongly encourages negotiations upon a possible ASAT treaty, so that countries can finally put an end to this issue.

TIMELINE OF EVENTS

Date	Description of event
4 October 1957	Launch of the first satellite by the Soviet Union: "Sputnik 1".
13 October 1959	Launch of the first ASAT by the US: "Bold Orion".
1 August 1958	Hardtack Teak test is carried out by the US.
27 January 1967	Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space passes.
9 December 1981	Resolution regarding the prevention of an arms race in outer space passes.
1984	Strategic Defense Initiative is founded by Ronald Reagan.
January 1984	F-15 Eagle launch with an ASAT.
26 December 1996	Dissolution of the Soviet Union.
11 January 2007	Destruction of a Chinese weather satellite.
2013	Clean Space Initiative by the ESA.
12 November 2014	Chinese cyber-attack forces the US National Oceanic and Atmospheric Administration (NOAA) to stop transmitting weather information.
27 March 2019	Destruction of an Indian test satellite on low orbit.

November 2021	Destruction of Cosmos 1408 affects the ISS.
February 2022	Russian cyber-attack leads to the intervention of telecommunications over Ukraine.
April 2022	The USA bans the test of ballistic missiles against satellites.
15 December 2022	Resolution on banning destructive anti-satellite missile tests passes.

RELEVANT UN RESOLUTIONS, TREATIES AND EVENTS

Destructive direct-ascent anti-satellite missile testing (A/C.1/77/L.62)¹²

This resolution is one of the most recent ones that the UN voted upon in relation to ASATs. It was released on December 15, 2022. In only 3 clauses, it states that countries are discouraged to conduct ASAT tests, underlining the urgency of the issue and considering both the environmental impact of the destruction of satellites in outer space as well as the prevention of an arms race. Last but not least, it encourages transparent discussion and dialogue between countries so that they establish similar policies and prevent an arms race in outer space. Because this resolution is recent, negative effects have yet to be seen. The positive effects will hopefully be the implementation of this resolution in these countries, seen as the USA, which has already implemented such a measure in April 2022 (see Previous Attempts to Solve the Issue).

Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (A/RES/2222(XXI))¹³

This resolution requests countries to use outer space peacefully. More specifically, it mentions continuing working on an agreement which will clarify the responsibility of a state whenever damage is caused (e.g., destruction of satellites, the collision of spacecraft with a satellite) and will underline the importance of assistance to astronauts and space vehicles when returning to Earth. Furthermore, it encourages further research regarding outer space as well as its utilization by different actors and of course the constant reports according to the progress of it. This is considered as the very first attempt of humans to prevent a space conflict. As it is proven by the topic of

¹² "Destructive Direct-Ascent Anti-Satellite Missile Testing." *United Nations*, United Nations, <https://www.digitallibrary.un.org/record/3991887?ln=en>

¹³ "Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies." *United Nations*, United Nations, <https://www.digitallibrary.un.org/record/203169?ln=en>

this study guide itself, the weaponization of space, however, was one consequence which contradicts the purpose of this treaty. Even though there has not been a space conflict yet, there were many times where states were close to reaching the point of a conflict. Thus, this treaty has not been fully implemented by various actors yet.

Prevention of an arms race in outer space (A/RES/39/59)¹⁴

The resolution at hand requests the complete disarmament of space so that it can be reserved exclusively for peaceful use and shall not cause an arms race. It calls for countries with the most space control to contribute in maintaining peace in space and simultaneously preventing an arms race in outer space. It further encouraged cooperation between the Soviet Union and the US regarding the maintenance of peace in outer space and reporting constantly to the Disarmament Conference regarding the progress they would make. Both the treaty as well as this resolution did not really achieve their goal since the disarmament of space remains a rather utopic scenario, since countries, organizations and many actors have much to lose by such an initiative. However, peace was maintained, and both the USA and the Soviet Union were not led to a space war, even though there were many times that they were close to it. Therefore, this resolution achieved one goal that it had set.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

Ban on anti-satellite weapons in the USA

The USA banned the use of ASAT tests after the destruction of the Cosmos 1408 satellite by Russia, which created thousands of small-sized debris that orbit the Earth. Having observed the devastating effects, which include the creation of a lot of space debris, it proceeded with such a decision. The vice president of the USA, Kamala Harris, announced that it is going to ban ASAT tests in April 2022, as they criticized the past actions of the US during the Cold War. They have also encouraged other states to establish a similar policy so that the banning of ASAT tests becomes a new international standard for every nation. Due to the fact that the decision is quite recent, there no negative implications have been noticed. The only positive aspect that can be anticipated is that other countries will proceed with similar policies.

International Code of Conduct for Outer Space Activity – European Union (EU)

The International Code of Conduct for Outer Space Activity is a document which was written by the European Union in 2008 with the aim of strengthening safety, security, and sustainability for every space activity. No country is obliged to

¹⁴ "Prevention of an Arms Race in Outer Space." *United Nations*, United Nations, <https://www.digitallibrary.un.org/record/73752?ln=en>

participate in this code; it can sign it voluntarily and it will not interfere with the national law of a state. Furthermore, this code creates transparency and confidence-building measures with the ultimate goal of improving mutual understanding and trust, while preventing conflicts and fostering security, as well as stability at a national, regional, and global level. Since the European Space Agency operates in Europe, this code is an initiative of the EU to support the space programs in Europe while also eradicating the weaponization of space and preventing an arms race. Thus, it clearly has had a positive impact when trying to combat the rise of ASATs.

POSSIBLE SOLUTIONS

Space Debris Management Organization

The creation of a new organization named “Space Debris Management Organization” has never been more vital than ever. The main goal of this organization will be to control and monitor space debris in orbit through a tracking system which will be achieved through image capturing of individual satellites as well as through sensors that are placed in satellites. Its responsibilities will be to find solutions to tackle space debris by collaborating with NASA and ESA, as well as with other organizations in order to develop new space technologies for the problem at hand. In addition, it will also have the right to authorize large scaled ASATs before they are used, because the larger the size of the ASAT, the greater the danger and the risk of a collision. Therefore, this organization will also monitor the movement of the satellites in lower orbit in order to determine the most convenient time to launch said large-scaled ASAT without causing any collisions. It will be overseen by the UNOOSA and not by any other organization such as NASA or ESA because it might offer different benefits for states if this is the case. This means that should it be overseen by the UNOOSA, it will operate transparently and efficiently, without influence from member-states of the organization.

Development of different ASATs

Another way to combat the rise of space debris is by using ASATs to destroy satellites. For instance, should an ASAT be less powerful, then it will be used only for destroying satellites and not for other malicious purposes undisclosed by each respective state with satellites. Thus, all ASATs will have the same power. In addition, setting a maximum weight for ASATs will further prevent countries from using nuclear weapons or any other kinds of arms in space and will therefore force them to use UN-approved ASATs satisfying the weight limit. Another proposal might be the construction of ASATs with a net attached, such as the Clean Space Initiative program, where states will contribute to collecting their own space junk. This might be achieved

through collaboration and exchange of ideas between the ESA as well as the country constructing the ASAT.

Demand data of all space launches

Every state or organization will be obliged to send all data of its space missions involving satellites and ASATs to the UNOOSA so that it can examine whether these missions are not disruptive to international security and disarmament and relations between states. As far as data, they will contain the route of the ASAT, the orbit in which it will be set in, the materials of which it was constructed, etc. Therefore, the UNOOSA might suspend a flight if it has feasible reasons to do so which will be demonstrated by the arms that an ASAT carries on. If it contains nuclear weapons, then UNOOSA will have the authority to suspend the flight so that no international conflict occurs. However, it is possible that a treaty might need to be established for the carrying out of this data use and collection.

Collaboration with Non-Governmental Organizations (NGOs)

NGOs have always proven to be an asset in providing different perspectives on international issues. NGOs need to raise awareness of the environmental impact regarding the launch of ASATs, as well as of the space debris created by them so that people know the devastating effects of them. NGOs are also encouraged to advise countries to eradicate or even eliminate ASATs, to avoid the further spreading of space debris and potential conflicts between countries. This will be achieved through the demonstration of the importance of satellites in our everyday life such as GPS navigation, internet, and imaging. Consequently, all these actions might progressively lead to the disarmament of countries; however, it still remains an idealistic scenario.

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