Forum: United Nations Commission on Science and Technology for Development
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Introduction

During the cold war, on October 4th 1957, when the Union of Soviet Socialist launched "Sputnik" the first artificial satellite to orbit Earth, launching this satellite led towards the start of the Space Race between the USSR and the United States. For several years, the 2 powerhouses were competing to expand their supply of intercontinental ballistic missiles (IBCM). Meanwhile, the United States was also researching and testing long range ballistic missiles. There was a huge conflict of opinion during the time, linking to the research and testing of ballistic missiles along with development in changes of responses in atomic capabilities. By 1953, hydrogen bombs were already designed in place to be small and lightweight which meant that IBCM bombs were kept smaller and lighter. These "H" bombs were done through "Bravo" texting conducted in South Pacific regions and consumed feasible by 1954 and were already in place by the end of 1954 by the strategic missiles evaluation committee. The strategic missiles evaluation committee who were worried about the fact that the Soviet Union would be ahead of the United States in terms of technology development. This led the United States strategic missiles evaluation committee to prioritize the research and development in long-range ballistic missiles especially for the United States Air Force.

This led to a huge development in technology and space research. It created a dominance in space and national security for the symbolism of ideological superiority. This created a huge leap in technology in terms of connections between nations and many inventions to come such as weather forecasting and GPS tracking creating a huge never seen before area to humankind. It allowed us to understand the effects of living on other

planets and opened our eyes to the different possibilities of new inventions such as freeze dried foods, memory foam, cordless household products such as vacuums and modern portable laptops. It allowed us to understand the different advancements in fields of medicine, industrial productivity, information technology and creating employment for thousands of people who were either involved in the process directly or have managed to secure jobs after understanding the impact of this revolutionary moment in history.

However there have been some major negative effects that were caused due to space weaponization. Space exploration has led to the increase of carbon emissions in the atmosphere. This leads to an increase of greenhouse gasses in the atmosphere. This can cause an increase in global warming which can lead to a rise in global temperatures and cause major issues in the long run.

Definition of Key Terms

Anti-satellite (ASAT) weapons

Weapons designed to destroy or disable satellites. Can be ground based, air based, or space based.

Space based weapons

Weapon systems deployed in space. Includes anti-satellite weapons, directed energy weapons and other offensive capabilities.

Ballistic missile defense (BDM)

BDM systems are designed to intercept and destroy incoming ballistic missiles. These systems can be operated on ground or in space. These systems are an important component of nations defense strategies and specific towards defending against potential missile threats.

Treaty on the prevention of the placement of weapons in outer space (PPWT)

An international treaty proposed to prevent the placement of weapons in outer space. This hasn't been globally adopted yet however.

Outer space treaty

A foundational treaty that governs activities in outer space. It includes prohibitions of nuclear weapons in space but doesn't mention conventional weapons in space.

Space security

The overall concept of ensuring the safety and security of space assets.

Space control

The ability to maintain dominance or control over assets and activities in space.

Space Situational Awareness (SSA)

The ability to characterize,detect and track different objects and activities in space. This can be used to identify potential threats.

Space deterrence

The usage of military capabilities to deter potential adversaries from hostile actions in space.

Space traffic management

Coordination of activities to prevent collisions and ensure safety of assets in space.

Space Policy Directive 4 (SPD-4)

A U.S policy that highlights establishing a framework for the creation of space forces as a separate branch of the US military.

Space law

An international and national law stream that regulates the different activities in outer space. This is including but not limited to the use of military actions in space.

Key Issues

Misconceptions between weaponization of space and militarization of space

Militarization refers to the use of communication to command and control various different assets in space as well as implicates the use of surveillance and reconnaissance of activities within outer space borders. Militarization assists armies with creating the “Fourth frontier of war”. This leads outer space to emerge as a conventional battlefield.

Weaponization of space refers to the placement of different orbital or suborbital satellites. These satellites will have every intention of attacking enemy satellites through the use of jamming signals sent from enemy satellites and the usage of ground based direct ascent missiles to attack these satellites. This can create disputes within different regions especially taking into consideration lower economically developed regions that aren't able to efficiently fund attacks and defense mechanisms in outer space territories. This can also lead to territorial disputes between different regions when taking into consideration factors such as connection, trackers, GPS services and various other factors. This can lead countries to lose cellular and wifi connection, distancing them from the rest of the world.

The weaponization of space is derived from the desire to establish military supremacy on all fronts of welfare of the country. Countries that are able to establish this factor assert dominance in technological advancements of a country, allowing for countries to have competition on the topic of weaponization and causing connection issues within other regions. Another huge factor is the lack of faith in current missile services. Missile technology has remained the same for decades on end, over the period

of time; the technology has begun to fade leading to an urge for development of new technology. This has caused countries to try to understand new ways or techniques to use instead of Ballistic Missile Defense (BDM). This has led the drive to create a new product or technique to be used instead of Ballistic Missiles which will end up having a longer lasting impact on the receiving end. Another important factor is the fact that countries want to preserve assets from incoming satellite weapons (ASAT). Counterspace capabilities of ASAT have been majorly criticized for emphasizing different regional insecurities instead of diminishing the threats faced by different countries all over the globe. This has led to countries starting to demonstrate the capabilities of ASAT weapons and the hostile techniques that these weapons can implement in space. This has jumpstarted various international security practices of implementing these weapons when taking into consideration dangers, consequences and uncertainties of using ASAT weapons and implementing them in space. Another element of this dilemma is to understand space supremacy in other areas of welfare such as sea, air and land. This complaints the fact that there is a monopoly of orbits. This means that there are only a limited number of slots that can hold satellites creating countries who were unable to send satellites at an unfair advantage.

Major Parties Involved and Their Views

United States of America

At the moment, the United States is considered the world preeminent space power. The United States has already branched out and created the US Space force which was established on December 20th, 2019. When it comes to the topic of space, the United States has always been afraid to be left behind and have developed various different policies that keep them up to date on the latest technologies when in relation to space exploration and weaponization. The United States initial motives were to maintain space as a peaceful and safe zone. However as space technologies have increased, this has increased the United States paranoia about the topic of space and currently has one of the prevalent weapons in the anti-satellite (ASAT) missiles which is designed to destroy

satellites for strategic missile purposes. Since early 2008, the United States has begun testing for ASAT weapons. The United States is also under suspicious developments of X-37B and other outer space vehicles that can be classified and used as “space bombers: however this information has not been publicly confirmed yet. In 2019, Donald Trump implemented Space Policy Derivatives-4 (SPD-4). This directed the Department of Defense to establish the United States Space Force, which is a separate branch from the U.S military. This department has released a Defense Space Strategy which emphasized the importance of space as a critical domain for national defenses.

Russia

Russia believes that all space territory is seen as fair game. They have been testing and demonstrating an anti-satellite weapon (ASAT) by destroying one of its inactive satellites at an altitude of 300 miles. This was done even though it was against the United Nations Policy. Other countries have made harsh allegations against Russia for improper usage of ASAT weapons which is irresponsible and endangers active satellites. However, Russia had to take this risk especially since the growing trends of weaponization in both the United States and China in future warfare technology. Russia has opened the trends of weaponization of space to stringent space regulations which limits overall development of technology due to both national regulations and international regulations which have been created and put in place for national; security reasons as well as political reasons. In Russia's eyes, mastering military space technology has become of key interests for emerging powers and medium sized powers and as more countries are taking steps towards weaponization of space which has led to new development in technologies globally. Russia being a spacer bearing nation has implemented explicit policies for weaponization of space. Russia operates a plethora of military and dual satellites. Which are integral to national defense and security. The Russian space agency, Roscosmos is responsible for overseeing the country's space endeavors.

India

India's stance is against the motion of weaponization of space but is open to having done under peaceful guides is open to help research and obtain a better understanding on this topic. Considering India was the 4th country to successfully be able to have an ASAT test. However it was deemed as a terrible terrible thing by the United Nations due to the simple fact that it created over 400 pieces of orbital debris during the ASAT being in motion. It was viewed as a dangerous precedent for global security where the escalation of military in conflict free space is likely to disturb the fragile strategic equation in South Asia. India has also operationalized a Defense Space Agency (DSA) as an extension from their military in November of 2019. India's Defense space research organization (DSRO) is assisting in the development of arms that will deny, weaken, impende,disturb and destroy space potential of rival countries through Military means India is therefore seen as in the process of operationalization of space warfare.

China

China is deeply embedded into its national objecting. The Chinese national objective of “war fighting and winning” has always been a main objective. Space increasingly has started to play a huge role in its national security strategy. The overwhelming space capabilities of the United States give it a disadvantage which isn't going to discourage their motivations. Being the third country successfully to have met space explorations after Russia and the UNited States gives it a huge leverage when compared to most countries around the world. Their objective is to finish and perfect their technologies of weaponization in space by the year 2049 and are dedicated towards this goal. Established in 2015 the (PLASSF) of the strategic support force is an independent branch of the PLA given to space warfare to fight what China calls informatize wars of the future. China believes it is inevitable for the weaponization of space and has begun preparing for it and will be ready by the time other countries try to catch up.

Development of Issue/Timeline

Date	Event	Outcome
1957	Space age begins	The Soviet Union launched Sputnik 1 as the world's first artificial satellite, marking the beginning of the space age. This event triggers the space race between the United States and Soviet Union during the Cold war
1967	Outer Space Treaty	The United Nations adopts the Outer Space Treaty. This treaty establishes that space shall only be used for peaceful purposes and prohibits the usage and placement of nuclear weapons in orbit around Earth.
1970	Start of Anti-Satellite (ASAT) tests	Both the United States and the Soviet Union began to conduct anti-satellites (ASAT) tests to develop and demonstrate the ability to destroy or disable satellites in an orbit.
1980	Strategic Defense Initiative (SDI)	The Strategic Defense initiative also known as “Star

		Wars" is a program aimed at developing missile defense systems that could potentially be used for defense against Intercontinental ballistic Missiles (ICBMs).
2000	Growing dependence on space	Due to the creation, innovation and development of satellites, communication, navigation and surveillance leads to more concerns about the vulnerability of potential attacks due to the value of space assets.
2007	Chinese ASAT Test	China starts to conduct successful ASAT tests by destroying one of its own vanquished satellites. This action generates international criticism and debris in lower Earth Orbit.
2008	U.S. National Space Policy	The United States releases a National Space policy that emphasizes the need to protect the United States space assets

		and interests in the event of any unforeseen circumstances.
2019	India's ASAT Tests	India becomes the 4th country to have demonstrated ASAT capability. Which later hit a target satellite at an altitude of 300 kilometers.
2019	Establishment of the United Nations States Space Force	The United States establishes the United States Space Force as the 6th branch of the military with a mission to protect the US interests and conduct space operations.
2020	Increased concerns	Concerns started to increase as the development of ASAT weapons began to be used for surveillance and potential space based missile defense systems.
2023	Space Policy Review	Due to the increase in concerns of protection of satellites and since the strategies to address the challenges are directly related to shaping a nation's space security.

Previous Attempts to Solve the Issue

The Outer Space Treaty

The Outer Space Treaty, signed in 1967, forbids nations from deploying nuclear weapons in space and from using the moon and other celestial bodies for military reasons. The treaty was created to allow freedom of exploration and non interference of other countries to ensure that there is a peaceful use of Outer Space, as well as ensuring that countries can be held responsible for any damages caused. Another major factor of the treaty is to ensure that other celestial bodies, such as the moon, are not subject to national appropriation, ensuring no one nation can claim any part of space.

The Anti-Ballistic Missile Treaty

The Anti-Ballistic Missile (ABM) Treaty, signed in 1972 by the US and the USSR, restricted the employment of missiles to fend off assaults from space. The treaty aimed to limit the amount of anti-ballistic missiles that are permitted to be deployed. The treaty was seen as an incentive to reduce the tension between the two superpowers to engage in arms race. The key provisions of the treaty include constraints and limitations on deployment, testing and research development and protection of testing sites of Anti-Ballistic Missile systems.

SALT and New START

SALT (Strategic Arms Limitation Talks) and New START (Strengthening of Arms Reduction Treaty) are agreements aiming to cut back on the amount of potent weapons, especially those employed in space. It specifies a reduction of utilizing nuclear weapons between the United States and USSR (later Russia). This was to reduce the risk of having a nuclear war between these 2 nations.

Space Debris Guidelines

The space debris guidelines act as rules to stop the creation of junk in space, which could be used as weapons or harm satellites. This guideline includes sharing data of space

debris tracking and collisions among spacefaring nations and relevant organizations to help reduce collisions. It also includes raising awareness about the aerospace industry, and on space debris with satellite operators.

Code of Conduct for Outer Space Activities

The Code of Conduct for Outer Space Activities is a set of rules from the European Union to encourage safe and peaceful use of space. This policy includes countries having transparency about space activities which includes but it isn't limited to information about space systems and their purposes .

Despite these initiatives, there are still reservations about utilizing weapons in space, particularly with regard to emerging weapons and technology that potentially damage satellites. Stopping the militarization of space is a challenge that calls for international cooperation and diplomatic dialogue.

Possible Solutions

Strengthen International Agreements

Reinforcing and strengthening international agreements can help address the global challenges and foster cooperation between nations. The policies need to include the comprehensive ban of Anti-satellite (ASAT) systems, along with the verification and monitoring of mechanisms to ensure compliance with the agreement of space situational awareness (SSA). Finally, create a new treaty called the New Strategic Arms Reduction Treaty (START) which is similar to (SALT) Strategic Arms Limitation Talk.

Space Traffic Management

Space Traffic Management is a critical effort to prevent the weaponization of space. It is not a standalone solution but is part of a broader effort to prevent the weaponization in space. It encourages safe behavior and allows countries to maintain peaceful and secure use of outer space. The possible solutions that will be implemented

with these communication channels between nations that can help countries have direct communication incase of concerns or misunderstandings. Another implementation of it includes establishing and enforcing “Rules of the Road” which can specify and outline how space objects should behave and interact.

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