COMMITTEE GUIDE

UNCSTD

United Nations Commission on Science and Technology for Development

Daniel Nuñez and Lucas Hernández

2021

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1. Presidents' Letter

Dear Delegates,

It is a pleasure to welcome you to CCBMUN XIX, particularly to the United Nations on Science and Technology for Development Committee. This will be a fascinating model, and perhaps your first face-to-face model after being quarantined by the pandemic. We are Daniel Nuñez and Lucas Hernández from 11th grade at Colegio Colombo Británico. This is the first time that Daniel is president, so he is totally committed to putting in all his effort so that his first model as president is the best. On the other hand, Lucas had already been president last year, but it is the first time for him with a mixed school commission, so it will be more demanding for him. We hope that it will be an unforgettable model for us and for you delegates.

This committee debates about current issues regarding science and technology. Taking into account that these have made an enormous revolution in all aspects of the world, we should be cautious and responsible with their use. Technology is available to almost all of us, and this makes some people take advantage of that and use it for negative and/or uncontrollable actions. Delegates need to be aware that this committee includes involvement of political, economic, social and ethical characteristics that should be taken into account during the debate.

Our goal is to make sure that delegates enjoy your experience in this committee and that you will learn about the current problems that we are facing in different parts of the world. Don't be afraid of asking us any question you may have about the topics or procedures, especially the rookies. The presidents are not only the chair, they are also your friends and support, who will help you with any aspect of the model.

Yours sincerely,

Daniel and Lucas

UNCSTD presidents

2. Committee Information

I. History

The United Nations Commission on Science and Technology for Development was established in Vienna in 1979. In 1992, the General Assembly decided to transform the Committee into a functional commission of ECOSOC and to set up the CSTD. This committee was established with 3 main goals in mind: guide the future work of the United Nations; develop common policies; and agree on appropriate actions for the future. CSTD is described as the forum that helps ask and frame the critical issues influencing the fields of science and technology today. In this commission, different countries can raise critical challenges and explore opportunities presented by rapid technological development. It is also a place where developing countries are encouraged to be part of the development of new technologies.

CSTD is important because it is essential for the sustainable development goals to be completed, as technological advancement is crucial for the development of most of the objectives.

II. Structure

The United Nations Commission on Science and Technology for Development meets annually for a period of one week in Geneva, Switzerland. Its members are composed of national governments, specifically forty-three member states that are elected by the Economic and Social Council for a term of four years. It has eleven members from the African States, nine members from the Asian States, eight members from Latin American and the Caribbean States, five members from the Eastern European States, and ten members from Western European and other States, however, civil society contributes to discussions which take place. At each session, the commission elects a new bureau (a chairperson and four vice-chairpersons) for the next session, they assume responsibilities for the upcoming activities during the inter-sessional period. Strong links exist with other UN bodies (The Commission on Status of Women, Regional Commissions, ITU, UNESCO).

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1. Simulation: *The global race for Artificial Intelligence (AI) superiority*

I. History/Context:

The fundamental basis of the construction of artificial intelligence has been seen throughout history for over 100 years, but even ancient Greek literature has experimented with the concept of machines that lack consciousness roaming the earth. Today, what those fictional stories imagined as a simply fantastical reality is on the verge of becoming possible. In the 17th Century, philosophers like Thomas Hobbes believed that rational thought comes from symmetry, and could be traced back to mathematical patterns and equations. With this proposition, rationality is simply the ability to connect two different dots of information and come to a reasonable conclusion; this is what many different types of algorithms, such as facial recognition software does to complete their goals. In 1689, Leibniz took Hobbes' ideas and developed them further, as he realised that data could be greatly simplified; he developed the beginnings of what we today know as binary language.

In the 19th Century, the Industrial Revolution began, marking the moment when machinery became essential for the production of goods. The Industrial Revolution marked a new economic age for the world, as it completely changed the process of creating artifacts due to the advantages that machinery had over manual labour. Suddenly, workers became more specialized than ever, and their task was only possible to complete with the help of machines. The Industrial Revolution marked a turning point for humanity in the development of machinery, paving the way for rapid global trade. Since that time, technological advancements have increased exponentially in recent years.

Modern computing was born in the 1840s with Charles Babbage's mechanical analytical engine, a complex machine that was programmed to find logarithms and trigonometric functions. A decade later, George Boole laid the foundation for computing-based artificial intelligence. Using Aristotle's syllogistic thinking principles, a proposition that determines that all conclusions are made based on previous data, Boole developed Boolean logic. This consisted of three simple words; "Or," "And," or "Not" that, when combined, can create only 2 possible answers, whether true or false. This was the beginning of computational reasoning. Boolean logic was further combined with binary language to lead to the creation of logic

gates, operations that when combined can perform one or more binary outputs. These are simple models that are designed to create one operation at a time, but when combined can create complex systems such as the beginnings of digital computers.

In the 1950's, Alan Turing developed the philosophy of artificial intelligence, what is now known as the Turing test. The test involves getting a human and a machine to answer a series of questions; if the person asking the questions cannot tell whether the answer came from another human or from a machine, that machine is considered to be as smart as the human.

Around the same time, Cloud Shannon developed a theorem that claimed that essentially all of the information of the universe is computational. In 1950, the three laws of robotics were created, essential laws that are still used today. These laws were created as the philosophers involved with artificial intelligence realised that future generations would be capable of producing machines and algorithms so complex that they would be capable of causing serious problems for humanity. The three laws are the following:

- Robots shall not harm a human, or by inaction allow a human to come to harm.
- A robot shall obey any instruction given to it by a human
- A robot shall avoid actions or situations that could cause it to come to harm itself.

In 1951, the first AI based programme was written and in 1955 the first self-learning game was programmed. As the 20th Century advanced, AI-based technological advancements continued every year: in 1959 the first AI lab was opened; in 1961 the first robot was introduced into the GM assembly line; and in 1964 people saw the first demonstration of an AI that understood human language. These advancements continue further into the century, but a notable event can be seen in 1997 when an artificial intelligence machine won a chess match against the world champion. The argument about artificial intelligence suddenly changed; it was no longer about its possibility to surpass human intelligence but about when that would become possible. Two years later, the Massachusetts Institute of Technology (MIT) AI lab was able to replicate emotions and implement them into an artificial intelligence machine.

The 2000s marked the age of automation; the first models of fully autonomous cars were being developed by companies such as Google. This technology started becoming accessible to the public, becoming an integral part of many aspects of life. At the end of that decade, many industries were using artificial intelligence to achieve their goals.

II. Current Situation

AI has been increasing rapidly the last two decades due to the huge impact electronic devices have had on our daily lives. Governments realize that many of the issues we are currently facing could be solved with the support of artificial intelligence. According to Russia's president, Vladimir Putin, "The country with the most advanced AI will be ruler of the world". (Putin, V. 2017) For this reason, most developed countries are making big investments in this new technology. Nowadays, countries like China and the US are the frontrunners to become the global leaders in AI research. Further down the list, nations such as Japan, South Korea, Russia, Germany, and France among others are also trying to reach this goal.

Notwithstanding, AI will benefit only countries that are capable of creating and maintaining this type of technology. Many countries from South America and developing countries from the Middle East, for example, have been more cautious about AI; they are worried that it seems risky to work with this new technology, especially with the ones that lack strict human control. This has caused a tendentious issue between countries, and the UNCSTD believes that AI needs to be managed with caution since there are some ethical and moral laws which every nation needs to adhere to.

Figure 5.4
Demand for industrial robots by selected countries and regions, 2005-2017
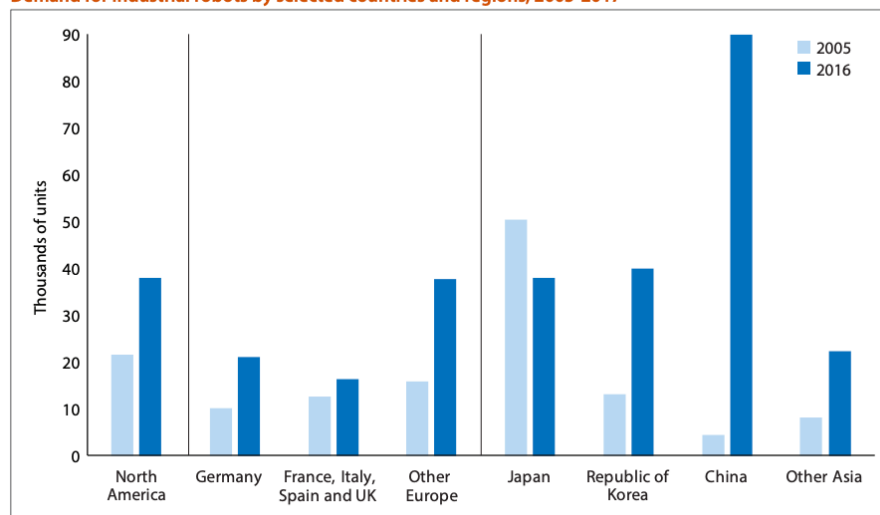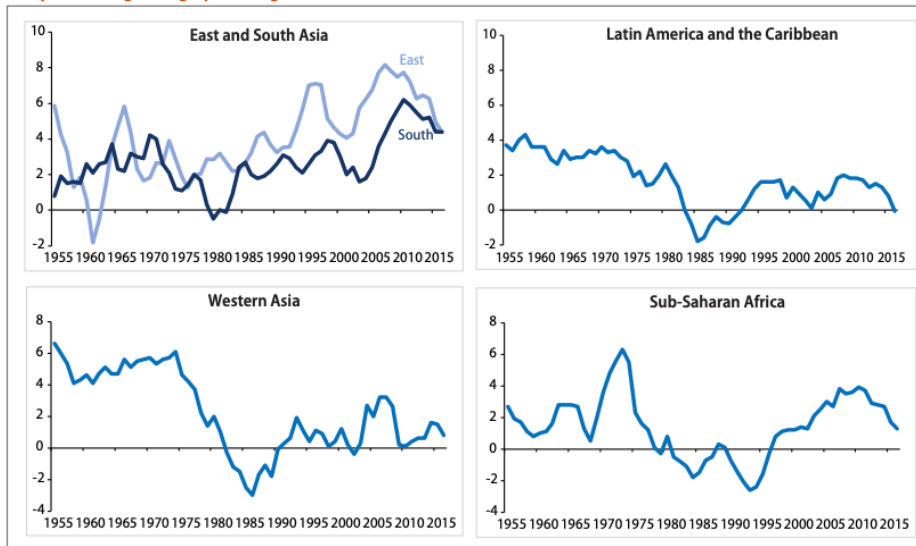
Source: UN/DESA, based on data from International Federation of Robotics.

FRONTIER ISSUES The impact of the technological revolution on labour markets and income distribution CONTENTS. (2017). https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/2017_Aug_Frontier-Issues-1.pdf

Big companies are beginning to implement AI for their product manufacturing since it's cheaper and more effective than having a large amount of personnel. Thus, it leaves many of the people of low economic status unemployed. AI contains a high level of risk for nations since it could create an economic imbalance for many people. Big companies such as Amazon are already starting to use this method; the company is starting to make their deliveries with a drone, and it is expected that for the future all of their orders will work along these lines. Despite the fact that AI is making a lot of jobs redundant, the job-destroying effects of new workplace technology are counterbalanced by job creation effects in other areas. However, these will only appear in the long term. Developing countries have shown their unconformity with AI since the biggest public fear is that robots and AI will replace human jobs on a large scale, resulting in mass unemployment and a growth in inequality.

All nations should find a way in which technology helps them to grow economically with no negative effects. Making new policies regarding labour markets, social security schemes and taxation systems is one of the actions countries should be taking.

Trends in labour productivity for selected developing and emerging regions, 1955-2016
Five-year moving average, percentage

East and South Asia

Latin America and the Caribbean

Western Asia

Sub-Saharan Africa

Trends in labour productivity for selected developed countries, 1955-2016
Five-year moving average, percentage
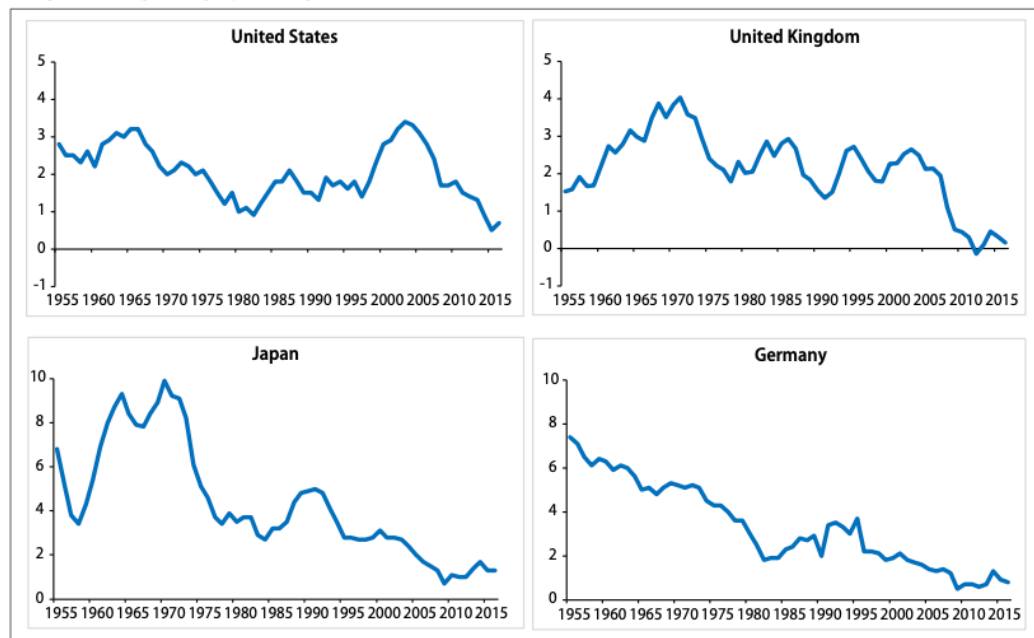
United States

United Kingdom

Japan

Germany

FRONTIER ISSUES The impact of the technological revolution on labour markets and income distribution CONTENTS. (2017).

https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/2017_Aug_Frontier-Issues-1.pdf

These graphs show the way the labour market productivity has been affected from 1955 to 2016 between developed and developing countries. We notice how the statistics show more

improvement in developing countries since the usage of technology is less than in developed countries. Countries shown in the second set of graphs are countries with a huge amount of advanced technology and their labour productivity has narrowed down in the last 5 years. This shows that there is a negative correlation between labour productivity and level of technology.

Another issue to take into consideration is that countries are taking advantage of AI to obtain private information from their citizens. This will make companies and governments have indirect control over people. In countries like China, where antitrust and privacy laws are very weak, citizens' data is easily accessed by both legal and illegal companies.

III. Key Points of the Debate:

- International AI regulations for the stability of global politics
- The role of AI in widening the gap between developed and developing nations
- Development of AI to help developing nations
- The safe development of AI
- Protecting citizens' rights and jobs with the advancement of AI

IV. Participating Organisms:

- United Nations Department of Economic and Social Affairs (UN DESA)
- United Nations Educational, Scientific and Cultural Organization (UNESCO)
- Sustainable Development Goals (SDGs)
- United Nations Development Program (UNDP)
- International Labour Organization (ILO)

V. Guiding Questions:

1. What strategies does your country have for the safe development of AI?
2. Does your country have any AI programmes? If so, what do they consist of?

3. What are your nation's policies towards AI?

4. How is AI affecting the political, economic and social system of your country?

5. What is your country doing to improve AI technology?

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2. Topic 1: The Rise of Crypto Assets and NFTs

I. History/Context

In 2009, the first ever crypto currency was introduced into circulation. More than 10 years later, Bitcoin has a market capital of 856.4 billion dollars. If Bitcoin were a country, this would put it as the 9th country in terms of GDP. Today there are thousands of cryptocurrencies, and new ones are emerging every day. Although several currencies, such as Ethereum, grew to have a market capital as big as Bitcoin's, most of these cryptocurrencies end up losing most of their value. However, the popularity of crypto currencies is still growing, and many experts believe that the future of capital will be circulated in mostly decentralized assets such as Bitcoin.

To understand the success of this new monetary mechanism, it is necessary to understand how capital works in the first place. When civilizations first emerged, trading mechanisms between different populations consisted of the exchange of goods, for instance, if one population produced bread and another fished salmon, they could arrange a mutual exchange of those two goods. This method of trade started to become a problem as sometimes the product that a community was willing to exchange was not what another group needed, or an individual might have needed a product such as bread at a certain time, but could not exchange it with anything because, although he traded apples, it was winter and he had no apples ready for trade. To solve this, the rulers of these civilizations began to use rare metals, which were difficult to replicate, as a central currency that solved the initial problem of exchange.

Using gold as a currency eventually became unreliable, as coins were really heavy, and if an individual wanted to make an expensive purchase, he had to carry thousands of coins for the exchange. Because of this, central banks developed the first bills of exchange, which were essentially pieces of paper that guaranteed the value of a certain quantity of gold. However, some central banks began producing more bills than the amount of gold they had stored; essentially this bill of exchange has no actual value, but it was because the population believed in the power of the currency and on the reliability of the central bank, that they maintained

their value. In 1971, the dollar was separated from its value in gold, as the United States did not have enough gold in its reserves to exchange for all the dollars in the world. This meant that the value of a dollar was essentially zero, its value depended entirely on people's belief in it as a unit of currency.

As current currencies are controlled by the governments, they prevent the population from using any other type of currency, and they also have the power to fabricate more coins and bills, something that could lead to inflation because there are no reserves of gold to guarantee these bills. Some people began to distrust this government system, and this led to the creation of crypto currencies.

Bitcoin is a system that is not controlled by a central group or person, but rather controlled by everyone who owns bitcoins. With Bitcoin, every user is able to see all of the different transactions made using that coin. The place where all of the transactions are stored is called the blockchain. If someone wanted to simulate a fake transaction, this would not be possible, as the only people who can alter the blockchain are the miners. The miners are the ones who allow the transactions to happen. Every time they are writing a transfer or mining for new bitcoin, they need to solve a random code for every new transaction. Solving these codes takes a lot of computer power, and the reason that the miners don't produce fake transactions is that, once the miner writes the fake transaction and deciphers the code, the blockchain keeps getting updated by the last miner who adds to the blockchain; if a miner adds a fake transaction, this will be automatically eliminated once another miner adds a new transaction to the blockchain. Because of this, Bitcoin is an unhackable system.

This system only allows for 21 million coins to be in circulation, therefore coins are not created. This is a system that automatically regulates itself, as the price is directly proportional to the offer and demand of that coin. There are around 4500 cryptocurrencies which use the main principles of Bitcoin's blockchain, but with some alterations. Some coins, such as Ethereum, allow for the blockchain not only to store the transactions in their currency that people have made, but also to store files.

This feature led to the creation of NFTs. An NFT stands for non-fungible token, meaning that it is impossible to replicate. For example, a prestigious painting such as the Mona Lisa has many

replicas, but the only one that has value is the original one. Something similar happens with NFTs. You can copy and download the art piece as much as you like, but the original one is still the one with the authentication certificate.

II. Current Situation

Cryptocurrencies have been identified by some governments as an alarming trade, since they seriously infringe on the security of people's property and disturb the normal economic and financial order. In countries such as China, cryptocurrencies are banned, and President Xi Jinping ordered Bitcoin mining operations to close down. In the same way, other countries had also expressed their rejection of cryptocurrencies, among them Bolivia, Egypt, Indonesia and Turkey. Contrarily, other countries have shown their support for cryptocurrencies since the nation's economic system had improved with the implementation of this new currency.

Cryptocurrencies have had their negative impact around the world, one of these being that they make it easier for citizens to buy and sell illegal products. The top countries where more cryptocurrencies are used for buying and selling products are Vietnam, Pakistan and India. According to BBC News, Vietnam and India lead the rank with the most imports and exports of weapons. Coincidentally, India and Pakistan are also the countries with the highest cases registered of human trafficking. The number of cases in those countries has increased since cryptocurrencies became available. This is a big issue since people have easy access to take any illegal action, and the authorities have no control on it. Most of these illegal goods are bought on the "Deep Web" and most of the payment method is with cryptocurrencies.

According to UNODC, the narcotics markets on the Deep Web emerged less than a decade ago, and are already generating annual sales of $ 315 million. The coronavirus pandemic has accelerated the digitization of the drug market, with fewer street sales and more on the web, with the purchase of narcotics on the internet and delivery by mail. The report points out that, in the future, a globalized market for illegal drugs may be created on the internet, in which it fears that access to the drugs will be facilitated, increasing consumption patterns. A good part of these transactions is carried out with cryptocurrencies.

Nations urgently need to find a solution to regulate cryptocurrencies and to fight against the buying and selling of illegal substances and gadgets using these currencies. Each country must have its own strategy for regulating its economy and security.

Notwithstanding, some countries had shown their position in favour of cryptocurrencies despite their numerous disadvantages. El Salvador is planning to adopt Bitcoin as legal tender. Following El Salvador's decision, the neighbouring countries of Panama, Paraguay, Argentina, and Brazil have voiced their endorsement of such a transition. Moreover, China has officialised its own cryptocurrency named, "CyberYuan". This has been one of the multiple solutions and new rules that governments are implementing. There have been rumours that Russia, China and Turkey are also looking to central bank digital currencies (CBDCs) to counter the US dollar's dominance.

Unfortunately, the negative aspects of cryptocurrencies continue, The NFTs (Non-fungible token) has become the perfect tool for money laundering. In order to obtain one of these, people first need to buy Ethereum (a cryptocurrency) and then decide which NFT they want to buy. NFTs don't have a determined price, their values vary as they are sold by auction. In addition to this, the richest people could use them for tax evasion, since no government is behind the business. An example of this is the sale of digital artist Mike Winkelmann's work, "Everydays: The First 5000 Days," which sold for a stunning $ 69 million. This does not

necessarily mean that the sale of this digital artwork was for money laundering, but the amount of money invested in something that all people could get a copy of could create an economic imbalance in banks and governments.

III. Key Points of the Debate

- Regulation and prohibition of cryptocurrencies
- Adaptation of cryptocurrencies by governments
- Individual freedoms of a person to own crypto assets
- Government intervention in the NFT market
- Regulation of the NFT market to prevent illicit activity

IV. Participating Organisms

- The United Nations Office on Drugs and Crime (UNODC)
- The World Bank
- United Nations Economic and Social Council (ECOSOC)
- United Nations Human Rights Council (HRC)
- International Trade Centre (ITC)

V. Guiding Questions

1. Has your government banned or supported the use of cryptocurrencies in the nation?
2. What public pronouncements has your country made, if any, about NFTs?
3. How have crypto assets affected your country's economy, if at all?
4. How is your country preparing for management of cryptocurrencies in the future?
5. What should be done to ensure that cryptocurrencies are not used for illegal purposes?

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In 1957, the first satellite was launched into space, it was created by Russia and named "Sputnik". Since then, there has been rapid development over the past years in the exploration and use of outer space. The utilization of satellites for remote sensing, global positioning and communication, for instance, has become crucial in modern life. In addition to this, satellites can help countries communicate in disaster areas, obtain weather information for use in agriculture and fisheries, and share medical information.

Satellites help most developing countries grow economically, and they contribute to around 40 percent of Sustainable Development Goal (SDG) targets. In Indonesia, for example, the U.K. space agency Inmarsat has a programme aimed at improving the management of the fishing industry, which is important to the economy of Indonesia. They are also very important for environmental sustainability; experts from Columbia University used images taken with cold war spy satellites, created by the United States, to identify the large number of glaciers that had been melting for many years in the Himalayas.

Being a very useful and beneficial tool for all countries, the destruction of these satellites would put countries at a great disadvantage. There have been cases of nations destroying their own satellites by order of the governments, including China and India, a technology that could easily be used against the satellites of other nations. There are many types of satellite: Astronomical satellites; Bio Satellites; Earth observation satellites; Communication satellites; and Killer satellites (Space Weapons).

On 28 October, 2009, the UN General Assembly adopted a resolution entitled "Prevention of an Arms Race in Outer Space". The draft resolution was adopted by a vote of 176 in favour, none against, and two abstentions (the United States and Israel). There is an annual Outer Space Security Conference Series, organized by the United Nations, where countries state their position regarding the use of weapons in space.

The fear of many people is that developed countries, with a sufficient number of monetary resources, will appropriate outer space as their own and then use it for future space wars. In

a few years' time this may become a serious problem since technology is advancing at such a rapid rate. The United Nations organization is doing everything possible so that the use of space weapons is regulated and no country exceeds the limits of their power.

II.   Current Situation

In December, 2019, the US Space Force was officially launched; this was the first time a branch of the military was assigned for combat in space. It was announced that former president, Donald Trump, already had 77 aircraft and more than six thousand personnel. Although this was an announcement that was heavily criticized, as many pointed out the lack of purpose such a military branch might have, current operations focus on the protection of military and non-military satellites that provide communication and navigation on Earth.

Satellite protection is now a very important national security priority for developed nations, especially as in 2014 mysterious Russian satellites, which seemed to have offensive purposes, were spotted by the United States, something denied by Russia. Currently non-nuclear weapons are allowed in space, and because of this it is possible that rival parties could use weapons in space for sophisticated attacks on other satellites or on the Earth itself. Satellite attacks could cripple internet connections, telecommunications and create an instant economic recession as 98% of all currency is digital. An attack on a nation's satellite access would be catastrophic.

Anti-satellite missiles are owned by China, Russia, India and the United States. All of these states have tested this type of technology, the most notable one being Russia's 2017 space-based anti-satellite weapons test, which was heavily criticised as it showed offensive behaviour and could have caused a large amount of space debris. In 2019, because of national security concerns, the North Atlantic Treaty Organization (NATO) officially recognized space as a domain for military operations. It claims that this was not made for offensive reasons, but rather to defend western satellites from international threats. Many experts consider that this is the beginning of a new arms race, this time in outer space.

The US accused Russia of having a kamikaze satellite, a satellite that, when instructed to attack, crashes into another satellite, destroying both. This was because, in 2014, the United States detected suspicious behaviour occurring in one of Russia's orbiters. This claim was denied by Moscow, but it still raised concerns for the Department of Defence. The US has begun technological developments related to this industry; these anti-satellite missiles are called direct energy weapons, designed to immediately shut down the electronics of an orbiting satellite. China and Russia are reportedly also developing these weapons.

There are bigger development plans for these technologies, such as kidnapper satellites being developed by China, an orbiter designed to capture smaller satellites with a robotic arm. Other simpler mechanisms are being used by less developed countries such Iran, using a spoofing mechanism, designed to replicate a satellite signal in order to send signals with false data to drones and other satellites.

III.   Key Points of the Debate

- Ownership of territory in outer space
- Changing satellite technology and threats to world peace
- Regulation of weapons in space
- Military to monitor and control threats from outer space by other nations

- Control of development technologies of space weapons
- Maintaining outer space as a peaceful domain

IV. Participating Organisms

- The Regional Committee of United Nations Global Geospatial Information Management for Asia and the Pacific (UN-GGIM-AP)
- NASA Space Science Data Coordinated Archive (NSSDC)
- National Aeronautics and Space Administration (NASA)
- Integrated Geospatial Information Framework (IGIF)

V. Guiding Questions

1. Does your nation believe it has power over space territories? Does it believe that a nation should be allowed to develop space weaponry technologies?
2. Does your country have a space programme? If so, describe some of its missions.
3. Does your country have any space military actions? If so, describe the programme and their goals.
4. What are some public pronouncements, if any, that your nation has made about the ongoing space militarization situation?
5. Does your country believe that weaponry in space should be banned or restricted?

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