**Council: United Nations Office for Outer Space Affairs (UNOOSA) and International Civil Aviation Organization (ICAO) Joint Session Committee**
**Representing: Columbia**
**Delegate name: JACK INNANEN**
**From: ST. JOHN'S-KILMARNOCK**
**Topic: (1) The Environment and Space Activity**

The health of the environment is a global issue that affects and involves all nations around the world. However, this issue has progressed beyond the planet and into the realm of outer space, raising concerns as to the role that space activity plays in our environmental responsibility. Our global environmental responsibility is to ensure the health, security and longevity of the planet. Space related factors involved in our environmental responsibility range from our responsible use of technology, to space debris pollution and neglect and even to excess carbon emission causing air pollution. Although efforts such as the UNISPACE conferences, the Outer Space Treaty of 1967 and the 1987 Montreal Protocol have been held to address space economy, society, accessibility and diplomacy, the debate continues and it's relevance increases globally and within the UN.

Colombia has shown significant consideration and progress in regards to space activity involvement in the environment. The Colombian Space Commission (CSC) was founded in 2006, making it a young, yet fast progressing program, uniting 47 different ministries, government entities, universities and other entities in only a short decade. The Colombian Space Commission, was proposed as, and has succeeded as, an institution of intersectoral consultation, coordination, guidance and planning, to guide the implementation of national policy about development and application of space technologies, and coordinate the development of those plans, programs and projects. During past Space Conference of the Americas from 2002-2006, leading up to the birth of the CSC, Colombia focused on three main pillars in regards to space activity; **political and legal affairs**, **knowledge and research management**, and the **Colombian spatial data infrastructure**. Nowadays, within those three pillars, Colombia focuses on telecommunications, satellite navigation, Earth observation and astronomy and aeronautics. However, a heavy focus has been taken and enacted on the Earth observation research, generating policies regarding the Colombian National Environmental System and the National Risk Management System. Colombia has focused most space related efforts into **geospatial** research. By launching a cubesat satellite, Libertad 1, for geospatial research regarding natural disaster observations and meteorology. Extensive research was done into flood risk research, a common natural disaster in Colombia, such as the great floods 2010-2011 in the Northern regions which used satellites to track water flow, prepare evacuations and predict future events. From the CSC's conception, the UN sponsored and condoned the program as a large step forward for Colombia in terms of global involvement in the discussion and the space sector, space technologies and economic growth. The UN has set goals and made extensive efforts, such as the UNISPACE conferences, in order to achieve peaceful global cooperation of efforts to ensure that space activity is conducted peacefully and in a respective and eco-friendly manner. One such effort was the 1967 Outer Space Treaty, outlining the regulations on Outer space ownership rights and commercial procedures regarding space, in which Colombia is a proud signatory. Colombia recognizes the

importance of maintaining a healthy environment through their space activity and their citizens and government have shown considerable development and progress through the CSC.

Ethical and responsible space activity in regards to our environment is crucial to all life on this planet and our longevity as a species. Colombia would like to remind delegates of the Outer Space Treaty of 1967, in which Colombia along with 104 other parties globe wide agreed to peaceful cooperation in extraterrestrial affairs. Colombia has recognized issues regarding orbital pollution as a key issue that holds irreversible impacts. The Kessler effect is a phenomenon theorized by Donald J. Kessler, an American scientist, that describes how space debris shall cascade and act in a "domino-effect" like fashion, each piece of debris colliding with satellites and creating more debris and so on. Colombia has identified this as a problem that is not only incredibly dangerous, as there are more than 500,000 pieces of debris in Earth's orbit traveling at lucrative 8,000m/s plus velocities, but is inevitable. If, or when, such an event unfolds, the Earth will be enveloped by a swarm of debris, effectively destroying all satellites, disallowing safe insertion of other satellites, and blocking future missions out of Earth orbit. One proposal that Colombia is going to suggest is raising funding into recoverable space vehicle research, much like that of SpaceX, a privatized space technology company, has done with the Falcon 9 boosters. Space vehicles should be mandated to directly return to Earth's atmosphere after payload insertion, whether for safe recovery or atmospheric re-entry incineration, as to lower space debris pollution. Policies should also be put in place to discontinue anti-satellite technologies that involve explosives, as this only increases the amount of debris, and rather allow for natural orbital decay or better yet, propelling unused or unwanted satellites to subject for re-entry incineration. Another issue identified by Colombia is the black carbon excess emission. A proposed solution by Colombia is to raise funding for hybrid rocket research, solid fuel and liquid or gas oxidizer, to research cost effective means to lower the immense carbon emissions emitted by traditional solid rocket boosters. This proposed solution should lead to environmental benefits as it uses benign liquid oxygen or nitrous oxide opposed to dangerous and toxic chlorine found in solid rocket boosters. These proposals addresses the issue of environmental health, both on the surface of our planet and our orbit, which is becoming a more crucial part of our environment. Colombia would agree to resolutions that further regulate the addition of space debris involved in payload insertions. Colombia, at the least, would barely agree to resolutions that introduce standard protocols and regulations regarding space "junk" and debris disposal. Colombia looks forward to resolving the issue of environmental health through space activity by working collaboratively with other members of the committee.

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**Topic: (2) The Militarization of Space and International Law**

Space militarization is an international problem of increasing importance and relevance. Space militarization is the placement and development of weapons and military technology in outer space. It can range from military communication and espionage satellites to missiles in orbit, with the latter being the most discussed, concerning and relevant issue. The Cold War brought great concern for extreme space militarization as the two superpowers, the Soviet Union and the United States boasted of nuclear weaponry and orbital capabilities. The ethical and global considerations of these decisions unveiled a new concept of international space law, the formation of policies and legislations on a global scale regarding the militarization and general usage of outer space. These international laws spanned from the Outer Space Treaty of 1967 to the International Humanitarian Law involving the four Geneva Conventions and two following protocols to be added in 1977, that are widely considered internal military standards. These efforts created common protocols and policies followed internationally today and still prompt discussion of international laws regarding space militarization today within the United Nations.

Colombia is truly concerned about space militarization. In the past, Colombia recognized the importance and potential future implications of the Outer Space Treaty proposed in 1967 regarding the militarization of outer space and ownership of orbital and celestial space, and signed the treaty. Colombia has been involved in and collaborated with the Space Conference of the Americas with the aim of contributing to peaceful geospatial efforts in regards to satellites. Colombia has never participated space militarization and does not condone space weaponry or ballistic militarization of outer space and still believes fully in the militarization policies and protocols established within the Outer Space Treaty, such as Article IV which prohibits weapon testing, conducting military maneuvers or establishing military bases or fortifications. Nowadays, Australia contributes by conducting peaceful Earth observational efforts only and participates in UN and UNOOSA debates and discussions urging the importance of demilitarizing and prohibiting weapons in space. Colombia is fully involved in the global discussion and has created programs and workshops discussing the ethical considerations of space militarization in the university that are attributed to the Colombian Space Commission.

Military procedures and policies must always be considered with great ethical and moral perspectives and responsibility. Colombia believes the militarization of space and the international laws regarding this issue are crucial to the safety, security and global cooperation of the entire human race. Colombia is a signatory of the Outer Space Treaty of 1967 and agrees strongly to peaceful cooperation in extraterrestrial affairs. However, Colombia has identified an issue with this treaty - Article IV prohibits weapon testing, conducting military maneuvers or establishing military bases or

fortifications, yet does not prohibit the placement of conventional weapons in outer space. Conventional weapons are described as weapons that are not weapons of mass-destruction, such as nuclear or biochem weapons, but rather weapons such as bombs, shells and missiles. This vague description creates potential for loophole and leaves an obvious vulnerability to space militarization via explosive weaponry. Colombia proposes an amendment to the Article IV of the Outer Space Treaty of 1967 to prohibit the orbital insertion and use of conventional weaponry to de-escalate the space militarization issue, prevent sabotage of spacecrafts and peaceful spatial efforts and reduce risk of expansive space debris via accidental detonation. This proposed solution addresses the issue of space militarization via peaceful and collaborative means, by reducing risk of human and technological endangerment and military escalation. This proposal should reduce risk of a potential arms race for space related weaponry. Colombia would agree to resolutions that further regulate the arms and weaponry allowed in outer space and Earth's orbit. Colombia, at the least would barely agree to resolutions that introduce standard protocols and regulations regarding the types of weaponry allowed and prohibited in outer space. Colombia looks forward to resolving the issue of space militarization and the international laws involved by working collaboratively with other members of the committee.

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**Topic: (3) Space Commercialization**

Space commercialization is an international issue that is of increasing relevance. Space commercialization ranges in definition yet most commonly is referred to as the business related efforts involved in space exploration and technology. Space commercialization ranges from collaborative scientific efforts such as the International Space Station, space tourism efforts of organizations like Elon Musk's SpaceX or Blue Origin, a small company focusing on quick 5-minute LEO orbital insertion and return for customers, to resource collection of mineral rich asteroids. Privatized space technology and exploration efforts have become increasingly popular with the rise of companies such as SpaceX, an American company that focuses on reusable rocketry vehicles and Mars colonization, and Planetary Resources, a company that aims to mine expensive and valuable resources from asteroids. There is an obvious shift from the traditional government run organizations such as NASA and ESA which is providing healthy competition for these organizations and raising many questions and discussions regarding the ethics of space exploration, colonization and resource collection within the UN and on a global plane.

Colombia is interested and intrigued yet also concerned by space commercialization. In the past, Colombia has had little involvement in much space efforts apart from passive geospatial Earth observation for domestic meteorological tracking. Colombia holds a strong belief on the ethical principles that outer space is a commonly shared part of the Earth's and mankind's environment that should be shared and used passively for scientific research and non-intrusive humankind benefits. Colombia condones space tourism and has set aims to achieve such feats in order to further the spatial knowledge and scientific intrigue of Colombians. However, non necessitated, greed fueled, resource collection (not used to survive in in-situ applications) and space colonization are generally against the Colombian belief of passive exploration. Colombia wishes to continue efforts to use space for Earth observations to benefit the planet and humankind, but believes the use of outer space for commercial and financial efforts is unethical and non necessitated. The United Nations have proposed in Section II, Subheading D of the International Cooperation in Space Activities for Enhancing Security in the Post-Cold War Era issued by the Secretary-General that new commercial efforts are great opportunity for new innovations in space technology and allows nations like Colombia to reap benefits of lower cost technology, however, this technology is often outdated and obsolete compared to that of countries like the United States.

As mentioned, Colombia believes that space commercialization is a complexly ranged and incredibly important matter. Colombia believes that the unethical aspects of space commercialization must be addressed immediately for prevention of unnecessary expansion of greed and the unnatural

deterioration of our solar system. Colombia proposes an introduction of an international council to ensure all commercialized efforts constitute of the following; non-intrusive to other celestial bodies, no claiming of ownership of extraterrestrial land or bodies and the main motive must include scientific development or research with the exception of temporary efforts within Low-Earth Orbit (this allows for efforts such as Blue Origin to provide micro-space tourism). This proposal should ensure ethical and non-intrusive, passive space commercialization efforts and ensure for extraterrestrial resource collection efforts that effort is made to maintain a healthy environment on Earth rather than look elsewhere. Colombia would agree to resolutions that further regulate the ethical decisions involved in space commercialization. Colombia, at the least, would barely agree to resolutions that introduce standard protocols and regulations regarding mining of extraterrestrial resources. Colombia looks forward to resolving the issues and considerations involved space commercialization by working collaboratively with other members of the committee.