



Florida High Schools Model United Nations

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**UNITED NATIONS COMMITTEE ON THE PEACEFUL  
USES OF OUTER SPACE (UNCOPUOS)**

**ADDRESSING THE ORBITAL DEBRIS SITUATION  
THROUGH SHARING INTERNATIONAL RESEARCH**

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## COMMITTEE BRIEF

### **Introduction**

It was a mere 67 years ago when Sputnik I streaked the skies of what is now known as Kazakhstan. The flight time to space was only a few minutes, but those few bright minutes in the Soviet sky were all it took to change the world and completely reshape society and technology. Since those few minutes, the use of space has been growing exponentially, 67 years later, all of modern society relies on a still-growing space infrastructure. However, out of the 11,000 satellites launched into orbit to support that infrastructure, only about 3,000 satellites are still active. Though many of those satellites have deorbited, many are still in orbit, along with other debris like rocket upper stages. But with the void of space, debris like that can travel up to seven times faster than a bullet, and with nonfunctioning satellites larger than a school bus, this orbital junk can prove to be a significant threat to the space infrastructure the world spent 67 years building. The very same satellites that have benefited nations all the time before now may become a detriment. With constant missions and research conducted in space, it is imperative to control the clutter to maintain continued safe and sustainable research and exploration for the future. In order to accomplish the most ambitious goals in space, nations must start with this first step: addressing the excess of space debris.

### **A Background on Orbits**

*The following section discusses the different types of orbits: LEO, MEO, and GEO. By understanding an overview of these orbits, such as their construct, behavior, and location, and how factors from orbits could possibly impact space debris.*

Orbits are the connections between satellites, spacecraft, and other celestial objects that follow an entity, such as a planet or star, due to gravitational forces. In the context of space operations, understanding the variety and impact of these orbits is crucial to maintaining global communication, navigation systems, environmental monitoring, and other advanced technological figures. The United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) has continuously emphasized the significance of international collaboration in managing the growing usage of orbital space and combating serious issues such as space debris<sup>1</sup>.

Three primary types of orbits are used for satellite operations. Low Earth Orbit (LEO) lies between 180 and 2,000 kilometers above the Earth's surface<sup>2</sup>. LEO is heavily utilized for Earth's observation, scientific prowess, and communication satellites, such as Starlink<sup>3</sup>. However, its proximity to Earth and high satellite density make it more susceptible to space debris, one of the major pressing issues for COPUOS<sup>4</sup>.

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<sup>1</sup> United Nations Office for Outer Space Affairs. (n.d.). *The Committee on the Peaceful Uses of Outer Space (COPUOS)*. Retrieved from <https://www.unoosa.org>

<sup>2</sup> National Aeronautics and Space Administration (NASA). (n.d.). *Low Earth Orbit*. Retrieved from <https://www.nasa.gov>

<sup>3</sup> Musk, E. (2021). Starlink: Connecting the World. *SpaceX News*. Retrieved from <https://www.spacex.com>

<sup>4</sup> European Space Agency (ESA). (2022). *Space Debris by the Numbers*. Retrieved from <https://www.esa.int>

Medium Earth Orbit (MEO), located between 2,000 and 35,786 kilometers, is usually less crowded and typically used for navigation systems like GPS<sup>5</sup>. Meanwhile, Geostationary Orbit (GEO), at 35,786 kilometers above the equator, is critical for weather and communication satellites due to its fixed position relative to the Earth<sup>6</sup>. While GEO is less congested, deorbiting satellites in this orbit presents challenges difficult to overcome<sup>7</sup>.

Space debris is an issue that has escalated due to the scientific and technological advancements made on a global scale, causing risk to orbital regions. The presence of space debris poses threats to established satellites<sup>8</sup>.

### **Kessler Syndrome: Catastrophic Outcome**

Like all environments, outer space is naturally volatile, commonly accepted as the most devoid of life out of any environment known to humanity. However, its volatility only increases with man-made objects in orbit. The reason is a hypothetical yet highly plausible phenomenon known as “Kessler Syndrome.” Kessler Syndrome was coined after a paper published by NASA scientist Donald Kessler in 1978, which was known as *Collision frequency of artificial satellites: The creation of a debris belt*.<sup>9</sup> In this Kessler Syndrome scenario, the increasing number of debris in orbit will reach a point where it will start to create its space debris, which in turn will create even more debris. This scenario results in a wave of continuously multiplying debris that will begin to impact and destroy viable and essential spacecraft and satellites in orbit, creating even more debris. The end game in this scenario is an inevitable “ring” of space debris around the planet that will be so dense that any attempt to access outer space will be too dangerous to follow through, cutting off the world from the stars. In this situation, the world would be continuously pelted by debris from decaying orbits, posing a threat to life, limb, and property on the ground.

However, in the meantime, this is all hypothetical... or is it? Among the astrophysical scientific community, many have begun to pose the question, “Has Kessler Syndrome already begun?”<sup>10</sup> Several experts are starting to pose this question based on the increasing amount of collisions in orbit and the growing presence of debris in orbit.<sup>11</sup> Although popular media like the 2013 film *Gravity* portray Kessler Syndrome as a rapid event that could take place over the course of a few hours, experts like Donald Kessler himself have stated that “It was never intended to mean that the cascading would occur over a period of time as short as days or

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<sup>5</sup> U.S. Space Force. (2021). *Understanding Medium Earth Orbits*. Retrieved from <https://www.spaceforce.mil>

<sup>6</sup> National Oceanic and Atmospheric Administration (NOAA). (2022). *Geostationary Satellite Systems*. Retrieved from <https://www.noaa.gov>

<sup>7</sup> Clark, S. (2020). Challenges in Deorbiting Geostationary Satellites. *Journal of Orbital Mechanics*, 57(3), 45-53. <https://doi.org/10.1016/j.jom.2020.03.004>

<sup>8</sup> Kessler, D. & Cour-Palais, B. (1978). Collision Frequency of Artificial Satellites: The Creation of a Debris Belt. *Journal of Geophysical Research*, 83(A6), 2637-2646. <https://doi.org/10.1029/JA083iA06p02637>

<sup>9</sup> Kelvey, Jon. 2024. “Understanding the Misunderstood Kessler Syndrome.” Aerospace America. March 1, 2024.

[https://aerospaceamerica.aiaa.org/features/understanding-the-misunderstood-kessler-syndrome/?utm\\_medium=email&utm\\_source=rasa\\_io&utm\\_campaign=newsletter](https://aerospaceamerica.aiaa.org/features/understanding-the-misunderstood-kessler-syndrome/?utm_medium=email&utm_source=rasa_io&utm_campaign=newsletter)

<sup>10</sup> Wall, Mike. 2022. “Kessler Syndrome and the Space Debris Problem.” Space.com. July 14, 2022.

<https://www.space.com/kessler-syndrome-space-debris>

<sup>11</sup> Michelle, Jahaura. 2024. “What Is Kessler Syndrome and Is It Already in Motion? Experts Raise Alarm over Space Debris Crisis - Blavity.” Blavity News & Entertainment. 2024. <https://blavity.com/what-is-kessler-syndrome>

months.”<sup>12</sup> As a result, Kessler Syndrome is now understood to be a slow, long-term process that could unfold over decades, even centuries. The gradual accumulation of space debris might not be immediately noticeable, but its effects would compound over time, making space operations increasingly hazardous.<sup>13</sup> As more satellites are launched into orbit and more collisions occur, the probability of dangerous debris interactions rises steadily. The frequency of these collisions could eventually reach a tipping point where debris generation accelerates faster than efforts to mitigate or remove it.

In recent years, several key organizations have addressed the growing issue of space debris, highlighting technological solutions and the need for greater international coordination. SpaceX, for example, has made significant strides in deploying thousands of satellites for its Starlink broadband network. Still, these efforts have also raised concerns about the potential for exacerbating space debris in LEO. According to filings with the Federal Communications Commission (FCC), the company is aware of the issue and is working on strategies to minimize debris, including plans for deorbiting satellites at the end of their operational life.<sup>14</sup> The Japan Aerospace Exploration Agency (JAXA), Japan’s space program, has been vocal about its concern over space debris and has been a leader in space debris mitigation, developing advanced technologies such as Active Debris Removal (ADR) systems. In 2021, JAXA successfully tested a robotic arm as part of its ADR mission, marking a significant step toward cleaning up low-Earth orbit.<sup>15</sup> Additionally, the National Space Council has emphasized the importance of sustainability in space activities. Its 2021 report called for comprehensive international cooperation to establish regulatory frameworks that address space debris management, urging space-faring nations to work together on debris mitigation technologies and to adopt practices that reduce the generation of new debris.<sup>16</sup> These efforts reflect a growing global recognition of the need for proactive measures to ensure the long-term viability of space operations.

### *Case Study: 2009 Iridium 33-Cosmos 2251 Orbital Collision*

On February 10, 2009, a significant collision occurred in LEO between Iridium 33, a communication satellite operated by Iridium Communications, and Cosmos 2251, an inactive Russian military satellite. The collision, which took place at an altitude of approximately 790 kilometers (490 miles), resulted in the creation of over 2,000 pieces of trackable debris and many smaller fragments that are difficult to detect.<sup>17</sup> The relative speed at which the satellites collided was 11.7 kilometers per second (26,000 mph), and the impact was powerful enough to cause both satellites to disintegrate. The debris from the collision posed a serious risk to other operational satellites in orbit and the International Space Station (ISS). This event highlighted the

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<sup>12</sup> Kessler, Donald. 2009. Review of *The Kessler Syndrome as Discussed by Donald J. Kessler*. Webpages.charter.net. March 8, 2009. <http://webpages.charter.net/dkessler/files/KesSym.html>.

<sup>13</sup> NASA Orbital Debris Program Office (ODPO). "Orbital Debris: A Growing Threat." NASA, 2008.

<sup>14</sup> SpaceX. (2021). Starlink satellite filings. Federal Communications Commission. Retrieved from <https://www.fcc.gov>

<sup>15</sup> Japan Aerospace Exploration Agency (JAXA). "Space Debris Mitigation Technologies." JAXA, 2021. Retrieved from <https://www.jaxa.jp>.

<sup>16</sup> National Space Council. "Report on Space Sustainability." NASA, 2021. Retrieved from <https://www.nasa.gov>.

<sup>17</sup> NASA Orbital Debris Program Office (ODPO). "The Iridium-Cosmos Collision: Space Debris and its Impact on Future Satellite Operations." NASA, 2010.

dangers of space debris accumulation, the fragility of space infrastructure, and the rapidly increasing threat of collisions in LEO, where most satellites are located.

The Iridium 33-Cosmos 2251 collision underscored the growing concern regarding space debris, which was already a topic of increasing attention. Following the collision, space agencies and satellite operators became more aware of the need for proactive debris mitigation strategies and greater space situational awareness (SSA). The event also led to heightened calls for international cooperation to address the issue of space debris and to implement more stringent guidelines for satellite deorbiting and collision avoidance. The U.S. Space Surveillance Network (SSN) and NASA's Orbital Debris Program tracked the debris generated by the collision, and its implications have been widely discussed in both scientific communities and policy circles. The incident made it clear that the accumulation of debris in LEO could potentially lead to a dangerous escalation of collisions, fueling concerns about the possibility of Kessler Syndrome.<sup>18</sup>

## **Jurisdiction**

As with all things that concern outer space, legal jurisdiction and authority over space objects get complicated. As established in documents such as the Outer Space Treaty (OST), outer space is considered international territory, much like how a vast majority of the ocean is considered international waters. As a result, challenges arise when determining who is responsible for objects in space and the debris they generate. Space debris, including defunct satellites, fragments from collisions, and discarded rocket stages, presents a particular challenge. These objects do not belong to any one nation but rather exist in a domain where no one country has complete sovereignty or jurisdiction. As a result, international treaties are essential to ensuring that states maintain responsibility for the objects they launch into space, mainly when those objects create debris that can potentially damage other space assets. One of the key legal frameworks addressing this issue is Article VII of the OST, which asserts that nations are liable for activities carried out in space, including damage caused by space objects, regardless of whether those objects are launched by government or private entities.

This article of the OST establishes the fundamental legal principle that nations are responsible for any harm caused by space objects, including debris, to other countries' space activities. The Treaty holds countries accountable for their space activities, whether governmental or non-governmental entities conduct them. This responsibility extends to objects launched into orbit and any resulting debris. However, the situation becomes more complex regarding the practical implications of this liability. Determining which country is responsible for debris that causes damage is a significant challenge, as the space environment is a shared and global commons, with objects often being launched from different countries and interacting in space. The Liability Convention (Resolution 2777), an extension of the OST, was adopted in 1972 to address this. The convention expands on Article VII by establishing a more detailed framework for liability, specifying that a state is liable for damage caused by its space objects on

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<sup>18</sup> Crawford, Ian A. "Space Debris and the Kessler Syndrome: The Iridium-Cosmos Collision." *Journal of Space Safety Engineering* 2, no. 3 (2010): 159-164.

the surface of the Earth or in outer space. The Liability Convention is vital for determining which country is financially responsible for damage caused by debris, offering a legal path for claims and disputes.

Despite these treaties, the issue of jurisdiction over space debris and the damage it causes remains difficult to enforce. One key challenge lies in tracking space debris scattered across vast regions of LEO and GEO, making it difficult to determine when, where, and how damage occurred. The Liability Convention does not fully address the complexities of space debris collision scenarios, as the treaties were crafted before the scale of the debris problem was fully realized.<sup>19</sup> Furthermore, the increasing number of private companies engaging in space activities adds another layer of complexity. With thousands of satellites planned for deployment by companies like SpaceX through its Starlink project, issues of accountability for potential collisions involving private-sector objects are now part of the legal conversation. The international community calls for updated regulatory frameworks that address the growing threat of space debris, emphasizing the need for preventive measures (such as debris mitigation strategies) and clear liability rules when damage occurs. Organizations like the United Nations Office for Outer Space Affairs (UNOOSA) and various national space agencies have been pushing for stronger guidelines and better space traffic management to ensure that liability is clearer and enforcement is feasible in the face of expanding space operations.<sup>20</sup>

### **International Collaboration**

While many policies have been implemented nationally, there are fewer international collaborations. Global cooperation is important to ensure ubiquitous sustainability efforts against orbital debris, especially in response to unforeseen space activity resulting in debris. The 1986 explosion of Ariane 1 created a debris cloud of 492 pieces in the low Earth Orbit, raising serious questions about the dangers of orbital debris to humans. The event and other instances in the 80s prompted the formation of the Inter-Agency Space Debris Coordination Committee (IADC) in 1993, which “is an international governmental forum for the worldwide coordination of activities related to the issues of man-made and natural debris in space.”<sup>21</sup> Composed of 13 member agencies, including founding agencies of NASA, ESA, ROSCOSMOS, JAXA, ISRO, and subsequent members, IADC became an international forum for space agencies to share research and technologies paramount for debris mitigation in space. Additionally, they sought to create guidelines and frameworks for nations to implement in efforts of safe space traveling and minimization of orbital debris.<sup>22</sup> The committee founded the IADC Space Debris Mitigation Guidelines in 2002, which addressed plans for LEO disposal and post-mission debris mitigation efforts.

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<sup>19</sup> United States National Aeronautics and Space Administration (NASA). "Liability and Space Debris: A Growing Concern." NASA, 2020.

<sup>20</sup> McDowell, Jonathan. "Space Debris and the Future of Space Operations." *Harvard-Smithsonian Center for Astrophysics*, 2019.

<sup>21</sup> Inter-Agency Space Debris Coordination Committee (IADC). IADC Space Debris Mitigation Guidelines, Revision 1. 2002. United Nations Office for Outer Space Affairs.

[https://www.unoosa.org/documents/pdf/spacelaw/sd/IADC-2002-01-IADC-Space\\_Debris-Guidelines-Revision1.pdf](https://www.unoosa.org/documents/pdf/spacelaw/sd/IADC-2002-01-IADC-Space_Debris-Guidelines-Revision1.pdf).

<sup>22</sup> Hitchens, Theresa. "Debris, Traffic Management, and Weaponization: Opportunities for and Challenges to Cooperation in Space." *The Brown Journal of World Affairs* 14, no. 1 (2007): 173–86. <http://www.jstor.org/stable/24590699>.

IADC's guideline became the foundation for the United Nations Space Debris Mitigation Guidelines, which was endorsed by UNCOPUOS in 2007 and then the General Assembly in 2008.<sup>23</sup> The guidelines featured mitigation efforts such as the policy of post-mission disposal within 25 years, which ensured the deorbiting of satellites and space objects from the operational orbit after its term. 21 of the guidelines were approved by 92 member states of UNCOPUOS in June 2019.<sup>24</sup>

Since 1947, the International Organization for Standardization (ISO) has been the foundation for a set standardized procedure regarding safety procedures in space. 163 member states have looked towards the ISO as they implement their regulations nationally, incorporating much of the same, if not similar, procedures according to the ISO. They established Working Group 7 (WG7) in 2003, aimed to specifically address orbital debris in their framework, which compiles the best practices into "a comprehensive set of international standards on space debris mitigation."<sup>25</sup> Known as the ISO 24113, the framework assesses discoveries and practices and standardizes each proven method. Many countries and agencies base their national policies on ISO's standardization of the framework in incorporating direct clauses or following the main ideas.<sup>26</sup> In the most recent 4th edition update made in May of 2023, modifications to past requirements regarding space debris and disposal of spacecraft are stated for improved procedures.<sup>27</sup>

As with any UN policy or guidelines from non-governmental organizations, these frameworks only serve as recommendations. They have no legally binding power to hold governments accountable for whatever actions they may take. The effort against orbital debris is only as reasonable as the diligence and implementation of individual nations.

## Research and Technology

In efforts to mitigate space debris, many agencies and member states have developed Active Debris Removal (ADR) technologies. ADR encompasses using certain tools and spacecraft to capture EOL space debris, including defunct satellites and objects found in space. The technologies created consist of the collaboration between governmental agencies and private companies. NASA's Active Debris Removal Vehicle (ADVR) specifically targets LEOs using a lightweight spacecraft to capture and remove sizable debris. Similarly, ESA's focus is mission ClearSpace-1: mission to refine ADR technology to reach Zero Debris by 2030.<sup>28</sup> United by the 2030 goal, ESA heads the program with the collaboration of other international space agencies such as NASA and JAXA while partnering with private companies like Swiss-based ClearSpace

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<sup>23</sup> NASA. *Process for Limiting Orbital Debris*. January 2018.

[https://www.nasa.gov/wp-content/uploads/2018/01/process\\_for\\_limiting\\_orbital\\_debris.pdf](https://www.nasa.gov/wp-content/uploads/2018/01/process_for_limiting_orbital_debris.pdf).

<sup>24</sup> Johnson, Kaitlyn. "Space Sustainability and Debris Mitigation." *Key Governance Issues in Space*. Center for Strategic and International Studies (CSIS), 2020. <http://www.jstor.org/stable/resrep26047.6>.

<sup>25</sup> "Evolution of ISO's Space Debris Mitigation Standards." *Proceedings of the 2019 Orbital Debris Conference*, 2019.

<https://www.hou.usra.edu/meetings/orbitaldebris2019/orbital2019paper/pdf/6053.pdf>.

<sup>26</sup> Inter-Agency Space Debris Coordination Committee (IADC). *IADC Statement on Large Constellations of Satellites in Low Earth Orbit*, IADC-15-03, September 2017

<sup>27</sup> ISO. *ISO 24113:2023 - Space Systems – Space Debris Mitigation Requirements*. 2023.

<https://cdn.standards.iteh.ai/samples/83494/dcb00a9e0adf4e9399dae46af3aac277/ISO-24113-2023.pdf>.

<sup>28</sup> European Space Agency (ESA). *Zero Debris Charter*. European Space Agency, 2020.

[https://esoc.esa.int/sites/default/files/Zero\\_Debris\\_Charter\\_EN.pdf](https://esoc.esa.int/sites/default/files/Zero_Debris_Charter_EN.pdf).

SA, which specializes in its robotic capture system to “safely bring down a derelict object for a safe atmospheric reentry.”<sup>29</sup> Japanese private company Astroscale’s End-of-Life Services by Astroscale-demonstrator (ELSA-D) completed its final phase of the mission of deorbit operations at the beginning of 2024. Using rendezvous operations and repeated magnetic capture, ELSA-d provided significant steps toward ADR technology.<sup>30</sup> Outside of autonomous rendezvous capture technology, research in laser-based debris removal and electrodynamic tethers remain other compelling facets of ADR.<sup>31</sup>

Increased surveillance research and tracking systems created more accessible tracking for space debris removal. The US Space Surveillance Network (SSN) collaborated with Lockheed Martin’s Space Fence radar to accurately detect LEO ranging from marble size to much greater. With the S-band radar system that creates high-resolution tracking and the electronically controlled beams of Active Electronically Scanned Array (AESA), improved technology in tracking systems can prevent potential collisions through identification and early action to avoid such results.<sup>32</sup> From data collected in surveillance systems, space agencies can create predictive models with risk assessments and efficiently conduct debris mitigation maneuvers.

With detailed data collection from these technologies, researchers can conduct studies to find patterns to categorize events algorithmically. In artificial intelligence (AI) development, data gathered can be used for AI analysis models to predict collisions and pragmatic debris classification. As AI continues its growth, its role in helping the issue of space debris is limitless. There are all kinds of possibilities for further research with AI.<sup>33</sup>

## Conclusion

In a world where space exploration is ever expanding into much more extraordinary and brighter ventures, nations must remember that although space is vast, it can not be a graveyard of space debris. Just as nations are in charge of their explorations and missions in space, nations must also be responsible for retrieving objects left behind from them. Although there are suggestions for procedures for removing this debris, nations are left to their own devices to implement these policies. With all the collaboration thus far, members must work together to ensure that each responsible party takes care of past and future orbital debris efficiently and effectively. In finding agreement in standardized procedures, nations should incorporate and collaborate in research, utilizing new technologies and innovating effective techniques to mitigate space debris. With the cooperation of member states in COPUOS in addressing the issue of space debris, nations partake in more ambitious space ventures while preserving space.

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<sup>29</sup> European Space Agency (ESA). "ESA Advances ClearSpace-1 Development." European Space Agency, October 28, 2020. [https://www.esa.int/Space\\_Safety/ClearSpace-1/ESA\\_advances\\_Clearspace-1\\_development#:~:text=Clearspace%2D1%20is%20ESA's%20first,Active%20Debris%20Removal%20\(ADR\)](https://www.esa.int/Space_Safety/ClearSpace-1/ESA_advances_Clearspace-1_development#:~:text=Clearspace%2D1%20is%20ESA's%20first,Active%20Debris%20Removal%20(ADR)).

<sup>30</sup> Astroscale. "Astroscale’s ELSA-d Finalizes De-orbit Operations, Marking Successful Mission Conclusion." Astroscale, December 6, 2021. <https://astroscale.com/astrocales-elsa-d-finalizes-de-orbit-operations-marking-successful-mission-conclusion/>.

<sup>31</sup> Peter, Nicolas. "The Space Debris Challenge to the Sustainability of the Space Economy." *European Review of International Studies* 10, no. 3 (2023): 303–24. <https://www.jstor.org/stable/27297345>.

<sup>32</sup> Lockheed Martin. "Space Fence." Lockheed Martin, n.d. <https://www.lockheedmartin.com/en-us/products/space-fence.html>.

<sup>33</sup> Roberts, Thomas G. "Using AI for Better Space Governance." Centre for International Governance Innovation, 2024. <http://www.jstor.org/stable/resrep65248>.



Sixty-seven years ago, the many Soviet onlookers of those bright minutes in the skies of Kazakhstan couldn't even imagine the situation the world finds itself in. But it is up to the many members of COPUOS to navigate the world to a safer path so that we can still utilize the gifts that we have because of those fateful minutes in Kazakhstan.

### **Guiding Questions for Debate**

1. How can international space agencies collaborate to develop and share technology for the removal and prevention of space debris, while balancing the need for security and national interests?
2. What regulatory frameworks should be established to hold both state and private actors accountable for the creation and mitigation of space debris?
3. How can the concept of space sustainability be expanded to include not only debris removal but also the long-term preservation of space for future generations of space activities?
4. What are the key challenges and opportunities in implementing Active Debris Removal (ADR) technologies, and how can international cooperation help overcome these barriers?

### **Guiding Questions for position papers**

1. What is your country's current policy on space debris, and how does it align with or differ from the existing international frameworks (e.g., the Outer Space Treaty, IADC guidelines)?
2. How does your country view the balance between advancing space exploration and technology (e.g., satellite networks like Starlink) and mitigating the risks posed by orbital debris?
3. What role does your country see for private companies in space exploration, and how can private sector involvement be managed to reduce the creation of space debris?
4. In the case of a Kessler Syndrome scenario, what sort of actions is your country willing to take to prevent the worst-case scenario and ensure the continued safety of space operations?
5. How can your country contribute to the international efforts in terms of research, technology sharing, and financing for space debris removal and mitigation technologies?

## **A Message From The Authors**

First of all, thanks to you, the delegates, for taking the time to read this Background Guide. We understand that topics concerning anything outer space related are complicated and dense, so thank you. COPUOS was established by the UN only a mere 2 years after the Sputnik I launch with the goal to navigate a brand new and increasingly complicated environment. As delegates, you are tasked to navigate this environment, with a complex task: to find a path that may solve an unprecedented threat. A task that has become increasingly difficult to achieve. This guide was written to help give you the tools to be able to take on that task in committee, with each section selected to not only inform you, but give you the stepping stones towards a solution. Remember, it will be near impossible to clear all of the debris in space, so your goal should be to help foster a sustainable outer space environment while still keeping your delegation's interests at heart. However, like with all things space-related, you may need to work outside of your geopolitical blocs to be able to figure this out, like how the US collaborates with Russia to operate the ISS. We do not expect delegates to have a complete understanding of the subject matter, so you will have access to a Director and Assistant Director with first hand experience in the space industry. They can assist you in navigating the more complex topics of outer space, especially the more scientific or technical concepts. Thank you all again, we can't wait to see you in committee! Ad Astra per Aspera!

## **RESOURCE REVIEW**

### **United Nations Documents**

#### **UN General Assembly Resolution 2222 (XXI)**

UN General Assembly Resolution 2222, also known as the Outer Space Treaty, adopted in 1966, represents the foundation of international space law. It establishes outer space as a province of all mankind, prohibits claims of sovereignty over celestial bodies, and holds nations responsible for their space activities. The resolution also requires states to avoid harmful contamination of the space environment. Delegates can use Resolution 2222 as a starting point to understand globally agreed principles governing space activities. However, they may propose amendments or additional protocols to address emerging challenges like space debris, asteroid mining, equitable access to space, and national security concerns. When considering changes, delegates must balance inclusive participation by many nations with establishing a clear regulatory framework acceptable to most UN member states. Amendments that serve a nation's interests but lack broad international support may fail. Resolution 2222 provides a useful framework but may require targeted updates to remain relevant in a changing technological and strategic landscape.

#### **UN General Assembly Resolution 1962 (XVIII)**

Adopted in 1963, UNGA Resolution 1962 established key legal principles for states' activities in space, including freedom of exploration and use, prohibition of appropriation of celestial bodies, and holding states responsible for their space activities. Delegates can cite 1962 to affirm principles aligning with their nation's interests while arguing to reinterpret or expand principles needing modernization. For example, delegates could contend the appropriation ban should be revisited given the potential commercial space resource extraction. The strategic use of 1962 allows for justifying policies while respecting the resolution's aim to prevent unilateralist claims on space.

#### **UN General Assembly Resolution 68/74**

Adopted in 2013, UNGA Resolution 68/74 encourages countries to establish national space legislation supporting international space principles. It recommends national laws promote international cooperation, transparency, sharing of space benefits, and sustainable space utilization. Delegates can cite 68/74 when affirming the need for national space policies upholding norms like sustainability, transparency, and cooperation. However, they may argue parts of 68/74 are too broad or omit key issues. For example, delegates focused on space security could contend that 68/74 lack recommendations to counter potential threats in space. When citing 68/74, delegates should reaffirm aspects benefiting their national space interests while arguing to expand principles not fully addressing current issues. This allows using 68/74 to justify progressive space policies while respecting its intent to align domestic laws with international space commitments.