



Republic of Indonesia

United Nations Office for Outer Space Affairs

Topic A: Preventing Kessler Syndrome: Establishing Mandatory Debris Removal and
Satellite Deorbiting Requirements

Topic B: Protecting Against Space Resource Monopolization

Quinn Tran-Reisman and Victor Kisselev

Kessler's prediction is the closest it has ever been to reality, and the space industry landscape is dominated by monopolies. The Delegation of Indonesia proposes solutions.

Topic A: Preventing Kessler Syndrome: Establishing Mandatory Debris Removal and Satellite Deorbiting Requirements

There is too much debris orbiting Earth. NASA defines space debris as “human-generated objects, such as pieces of spacecraft, tiny flecks of paint from a spacecraft, parts of rockets, satellites that are no longer working, or explosions of objects in orbit flying around in space at high speeds.” In 1978, NASA Scientist Donald J Kessler proposed a theory stating that if too many satellites were flying in low Earth orbit, they would eventually collide and form more space debris. The effects would disable all major satellite networks, leaving Earth in chaos.

In 1978, this theory would've been seen as extreme, maybe even dystopian. But this threat is becoming a reality. Data from the European Space Agency shows that in the last five years, there has been a 50% increase in space debris in Low Earth Orbit, and that percentage will keep increasing until there is no way of going back. Kessler believed that an event like this would send us back generations, and a catastrophic event would be an end to global communication for years to come.

The Indonesian Space Program is ready to advance new technologies in space exploration. Our president has confirmed that “Space is a priority,” and we are ready to launch new satellites that will deepen our understanding of agriculture and toxic emissions. Though Indonesia is constantly advancing its space satellite program, it recognizes that the Kessler Syndrome is something that needs to be addressed and neutralized.

To prevent the Kessler Syndrome from becoming a reality, the Delegation of Indonesia proposes multiple solutions. First, the Delegation of Indonesia proposes that UNOOSA establish a task force within the committee focused on reducing space debris in low Earth orbit by working with the International Space Station and Space programs across the globe. Next, the Delegation of Indonesia suggests that the UNOOSA should enforce international law requiring that nations and private companies be responsible for the satellites they launch and must be ready to deorbit them, with consequences if they do not comply. Indonesia proposes that the UNOOSA create a registry to keep track of satellites, ensuring they do not collide with each other. All satellites launched should include mandatory on-board deorbiting systems, preparing to deorbit after 5-25 years.

Topic B: Protecting Against Space Resource Monopolization

The ability to launch satellites into outer space, the materials consumed in doing so, and space in Low Earth Orbit (LEO) is becoming increasingly monopolized. Developing space programs have little chance to compete with behemoth corporations monopolizing the industry. Escaping collisions is difficult in Low Earth Orbit, full of satellites operated by large companies, leaving sparse space for new competitors.

This issue has affected Indonesia directly. Our progress towards launching satellites directly from our own territory has been significantly hindered by the barrier to entry of launching spacecraft and the difficulty of avoiding collisions in LEO because of monopolies' tight grip on the satellite industry. Indonesia plans to reduce its reliance on foreign launch sites and companies.

The Indonesian delegation to the UNOOSA recommends providing aid to developing space programs and enacting legislation to require large aerospace companies not to participate in monopolistic practices. These companies should be required to share their orbital traffic data and cooperate with other companies to coordinate launch times. The UNOOSA should create a registry to keep track of “slots” in LEO to help small space programs launch satellites safely and easily, and limit the number of satellites a single company can own.

The Republic of Indonesia strongly believes that international cooperation is necessary to prevent the Kessler Syndrome and ensure equitable access to space. The UNOOSA must be more involved with tracking and regulating satellites.

Works Cited

- Akhyari Hananto. "Why Indonesia Could Be the Perfect Place to Launch Spacecraft?" *Seasia.co*, 25 Apr. 2025, seasia.co/2025/04/25/why-indonesia-could-be-the-perfect-place-to-launch-spacecraft. Accessed 6 Mar. 2026.
- Curran, Andrew. "Indonesia's President Prabowo Makes Space a Priority." *Spaceanddefense.io*, SPACE & DEFENSE, 23 Oct. 2024, spaceanddefense.io/indonesias-president-prabowo-makes-space-a-priority/.
- European Space Agency. "ESA, Industry and Intellectual Property." *Esa.int*, 2026, www.esa.int/About_Us/Business_with_ESA/How_to_do/ESA_Industry_and_Intellectual_Property. Accessed 6 Mar. 2026.
- . "The Kessler Effect and How to Stop It." *Www.esa.int*, 1 Mar. 2026, www.esa.int/Enabling_Support/Space_Engineering_Technology/The_Kessler_Effect_and_how_to_stop_it. Accessed 1 Mar. 2026.
- Faridz, Devianti. "Indonesia Aims to Build Cutting-Edge Spaceport but Faces Obstacles." *Space Daily*, 2024, www.spacedaily.com/m/reports/Indonesia_aims_to_build_cutting_edge_spaceport_but_faces_obstacles_999.html. Accessed 7 Mar. 2026.
- Georgiou, Aristos. "Kessler Syndrome: How Our Own Satellites Could Trap Humans on Earth." *Newsweek*, 28 Dec. 2024,

www.newsweek.com/kessler-syndrome-space-elon-musk-spacex-satellites-warning-2006
863.

Grego, Laura. "Security in Space: What Is at Stake and How Do We Move Forward?" *Asian Perspective*, vol. 35, no. 4, Lynne Rienner Publishers, 2011, pp. 503–20,
www.jstor.org/stable/42704769. JSTOR. Accessed 6 Mar. 2026.

Kelvey, Jon. "Understanding the Misunderstood Kessler Syndrome." *Aerospace America*, 1 Mar. 2024,
aerospaceamerica.aiaa.org/features/understanding-the-misunderstood-kessler-syndrome/.

Kuthunur, Sharmila. "Chinese Private Rocket Launches 1st Satellite for International Customer." *Space*, 12 Nov. 2024,
www.space.com/space-exploration/launches-spacecraft/chinese-private-rocket-launches-1st-satellite-for-international-customer.

Maidenberg, Micah, et al. "SpaceX, XAI Tie Up, Forming \$1.25 Trillion Company." *The Wall Street Journal*, 2 Feb. 2026,
www.wsj.com/tech/elon-musk-says-spacex-has-acquired-xai-038a4072. Accessed 6 Mar. 2026.

Permatasari, Yunita. "Utilization of Space Resources: Indonesia's Perspective." *SpaceTech Asia*, 21 Dec. 2020,
www.spacetechasia.com/utilization-of-space-resources-indonesias-perspective/. Accessed 1 Mar. 2026.

Swyngedouw, Erik A. "Territorial Organization and the Space/Technology Nexus." *Transactions of the Institute of British Geographers*, vol. 17, no. 4, [Royal Geographical Society (with

the Institute of British Geographers), Wiley], 1992, pp. 417–33,

<https://doi.org/10.2307/622708>. JSTOR. Accessed 6 Mar. 2026.

The Regulatory Review, and Cross Conrad. “Orbital Debris Mitigation Guidelines | the Regulatory Review.” *The Regulatory Review*, 7 Oct. 2025,

www.theregreview.org/2025/10/07/conrad-orbital-debris-mitigation-guidelines/.

Wall, Mike. “Earth-Observing Company Planet Signs \$230 Million Deal for Fleet of New Pelican Satellites.” *Space*, 29 Jan. 2025,

www.space.com/space-exploration/satellites/earth-observing-company-planet-signs-usd230-million-deal-for-fleet-of-new-pelican-satellites.

---. “Kessler Syndrome and the Space Debris Problem.” *Space.com*, 15 July 2022,

www.space.com/kessler-syndrome-space-debris.

Weinzierl, Matthew. “Space, the Final Economic Frontier.” *The Journal of Economic*

Perspectives, vol. 32, no. 2, American Economic Association, 2018, pp. 173–92,

www.jstor.org/stable/26409430. JSTOR. Accessed 6 Mar. 2026.