To establish a demonstration program for the active remediation of orbital debris and to require the development of uniform orbital debris standard practices in order to support a safe and sustainable orbital environment, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the “Orbital Sustainability Act of 2022” or “ORBITS Act”.
SEC. 2. FINDINGS; SENSE OF CONGRESS.

(a) FINDINGS.—Congress makes the following findings:

(1) The safety and sustainability of operations in low-Earth orbit and nearby orbits in outer space have become increasingly endangered by a growing amount of orbital debris.

(2) Exploration and scientific research missions and commercial space services of critical importance to the United States rely on continued and secure access to outer space.

(3) Efforts by nongovernmental space entities to apply lessons learned through standards and best practices will benefit from government support for implementation both domestically and internationally.

(b) SENSE OF CONGRESS.—It is the sense of Congress that to preserve the sustainability of operations in space, the United States Government should—

(1) to the extent practicable, develop and carry out programs, establish or update regulations, and commence initiatives to minimize orbital debris, including initiatives to demonstrate active debris remediation of orbital debris generated by the United States Government;
(2) lead international efforts to encourage other spacefaring countries to mitigate and remediate orbital debris under their jurisdiction and control; and

(3) encourage space system operators to continue implementing best practices for space safety when deploying satellites and constellations of satellites, such as transparent data sharing and designing for system reliability, so as to limit the generation of future orbital debris.

SEC. 3. DEFINITIONS.

In this Act:

(1) ACTIVE DEBRIS REMEDIATION.—The term “active debris remediation”—

(A) means the deliberate process of facilitating the de-orbit, repurposing, or other disposal of orbital debris using an object or technique that is external or internal to the orbital debris; and

(B) does not include de-orbit, repurposing, or other disposal of orbital debris by passive means.

(2) ADMINISTRATOR.—The term “Administrator” means the Administrator of the National Aeronautics and Space Administration.
(3) Appropriate committees of Congress.—The term “appropriate committees of Congress” means—

(A) the Committee on Appropriations and the Committee on Commerce, Science, and Transportation of the Senate; and

(B) the Committee on Appropriations and the Committee on Science, Space, and Technology of the House of Representatives.

(4) Demonstration program.—The term “demonstration program” means the active orbital debris remediation demonstration program carried out under section 4(b).

(5) Eligible entity.—The term “eligible entity” means—

(A) a United States-based—

(i) non-Federal, commercial entity;

(ii) institution of higher education (as defined in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a))); or

(iii) nonprofit organization;

(B) any other United States-based entity the Administrator considers appropriate; and
(C) a partnership of entities described in subparagraphs (A) and (B).

(6) ORBITAL DEBRIS.—The term “orbital debris” means any human-made space object orbiting Earth that—

(A) no longer serves any useful purpose; and

(B)(i) has reached the end of its mission; or

(ii) is incapable of maneuver or operation.

(7) SECRETARY.—The term “Secretary” means the Secretary of Commerce.

(8) SPACE TRAFFIC COORDINATION.—The term “space traffic coordination” means the planning, coordination, and on-orbit synchronization of activities to enhance the safety and sustainability of operations in the space environment.

SEC. 4. ACTIVE DEBRIS REMEDIATION.

(a) PRIORITIZATION OF ORBITAL DEBRIS.—

(1) LIST.—Not later than 90 days after the date of the enactment of this Act, the Administrator, in consultation with the Secretary, the Secretary of Defense, the National Space Council, and representatives of the commercial space industry, academia, and nonprofit organizations, shall publish a list of
identified orbital debris that pose the greatest immediate risk to the safety and sustainability of orbiting satellites and on-orbit activities.

(2) CONTENTS.—The list required under paragraph (1)—

(A) shall be developed using appropriate sources of data and information derived from governmental and nongovernmental sources, including space situational awareness data obtained by the Office of Space Commerce, to the extent practicable;

(B) shall include, to the extent practicable—

(i) a description of the approximate age, location in orbit, size, tumbling state, post-mission passivation actions taken, and national jurisdiction of each orbital debris identified; and

(ii) a ranking of each orbital debris identified in terms of potential risk and feasibility for safe remediation; and

(C) may include orbital debris that poses a significant risk to terrestrial people and assets, including risk resulting from potential environ-
mental impacts from the uncontrolled reentry of
the orbital debris identified.

(3) FORM; PUBLIC AVAILABILITY.—The list re-
quired under paragraph (1) shall be—

(A) published in unclassified form;

(B) made available to the public on the
internet website of the National Aeronautics
and Space Administration; and

(C) updated periodically.

(4) RESEARCH AND DEVELOPMENT.—With re-
spect to orbital debris identified under paragraph
(1) that is determined by the Administrator, in con-
sultation with the National Space Council and the
National Science and Technology Council, to be in-
eligible for remediation due to characteristics, size,
or location in orbit that makes safe remediation in-
feasible, the Administrator shall, to the extent prac-
ticable, carry out the additional research and devel-
opment activities necessary, in consultation with the
commercial space industry, to mature technologies
and enable potential future remediation missions for
such orbital debris.

(b) ACTIVE ORBITAL DEBRIS REMEDIATION DEM-
ONSTRATION PROGRAM.—
(1) Establishment.—Subject to the availability of appropriations, not later than 180 days after the date of the enactment of this Act, the Administrator, in consultation with the head of each relevant Federal department or agency, shall establish a demonstration program to make competitive awards for the remediation of orbital debris identified under subsection (a)(1).

(2) Purpose.—The purpose of the demonstration program shall be to enable eligible entities to pursue the phased development and demonstration of technologies and processes required for active debris remediation.

(3) Procedures and Criteria.—In establishing the demonstration program, the Administrator shall—

(A) establish—

(i) eligibility criteria for participation;

(ii) a process for soliciting proposals from eligible entities;

(iii) criteria for the contents of such proposals;

(iv) program compliance and evaluation metrics; and

(v) program phases and milestones;
(B) identify government-furnished data or equipment; and

(C) develop a plan for National Aeronautics and Space Administration participation in technology development, as appropriate, and intellectual property rights.

(4) PROPOSAL EVALUATION.—In evaluating proposals for the demonstration program, the Administrator shall—

(A) consider the safety, feasibility, cost, benefit, and maturity of the proposed technology;

(B) consider the potential for the proposed demonstration to successfully remediate orbital debris and to advance the commercial state of the art with respect to active debris remediation;

(C) carry out a risk analysis of the proposed technology that takes into consideration the potential casualty risk to humans in space or on the Earth’s surface;

(D) in an appropriate setting, conduct thorough testing and evaluation of the proposed technology and each component of such technology or system of technologies; and
(E) consider the technical and financial feasibility of using the proposed technology to conduct multiple remediation missions.

(5) DEMONSTRATION MISSION.—

(A) IN GENERAL.—The Administrator shall consult with the head of each relevant Federal department or agency in advance of each demonstration mission.

(B) ACTIVE DEBRIS REMEDIATION DEMONSTRATION MISSION.—It is the sense of Congress that the Administrator should consider not proceeding with an active debris remediation demonstration mission until multiple award recipients have demonstrated readiness to proceed.

(C) SPECTRUM CONSIDERATIONS.—The Administrator shall convey any potential spectrum allocations and licensing needs for active debris remediation demonstration missions to the Federal Communications Commission through the National Telecommunications and Information Administration.

(6) REPORTS.—

(A) RECOMMENDATIONS.—Not later than 1 year after the date of the enactment of this
Act, the Administrator, in consultation with the head of each relevant Federal department or agency, shall submit to Congress a report that provides legislative, regulatory, and policy recommendations to improve the demonstration program and active debris remediation missions, as applicable.

(B) TECHNICAL ANALYSIS.—

(i) IN GENERAL.—To inform decisions regarding the acquisition of active debris remediation services by the Federal Government, not later than 180 days after the completion of the demonstration program, the Administrator shall submit to Congress a report that—

(I) summarizes a technical analysis of technologies developed under the demonstration program;

(II) identifies any technology gaps addressed by the demonstration program and any remaining technology gaps; and

(III) provides, as applicable, any further legislative, regulatory, and
policy recommendations to enable active debris remediation missions.

(ii) AVAILABILITY.—The Administration shall make the report submitted under clause (i) available to the Secretary, the Secretary of Defense, and other relevant Federal departments and agencies, as determined by the Administrator.

(7) INTERNATIONAL COOPERATION.—

(A) IN GENERAL.—In carrying out the demonstration program, the Administrator, in consultation with the National Space Council and in collaboration with the Secretary of State, may pursue a cooperative relationship with one or more partner countries to enable the remediation of orbital debris identified under subsection (a)(1) that is under the jurisdiction of such partner countries.

(B) ARRANGEMENT OR AGREEMENT WITH PARTNER COUNTRY.—Any arrangement or agreement entered into with a partner country under subparagraph (A) shall be—

(i) concluded—

(I) in the interests of the United States Government; and
(II) without prejudice to any contractual arrangement among commercial parties that may be required to complete the active debris remediation mission concerned; and

(ii) consistent with the international obligations of the United States under the international legal framework governing outer space activities.

(c) Authorization of Appropriations.—There is authorized to be appropriated to the Administrator to carry out this section $150,000,000 for fiscal years 2023 through 2027.

SEC. 5. ACTIVE DEBRIS REMEDIATION SERVICES.

(a) In General.—To foster the competitive development, operation, improvement, and commercial availability of active debris remediation services, and in consideration of the economic analysis required by subsection (b) and the reports under section 4(b)(6), the Administrator and the head of each relevant Federal department or agency may acquire services for the remediation of orbital debris, whenever practicable, through fair and open competition for contracts that are well-defined, milestone-based, and in accordance with the Federal Acquisition Regulation.
(b) **Economic Analysis.**—Based on the results of the demonstration program, the Secretary, acting through the Office of Space Commerce, shall publish an assessment of the estimated Federal Government and private sector demand for orbital debris remediation services for the 10-year period beginning in 2024.

**SEC. 6. UNIFORM ORBITAL DEBRIS STANDARD PRACTICES FOR UNITED STATES SPACE ACTIVITIES.**

(a) **In General.**—Not later than 90 days after the date of the enactment of this Act, the National Space Council, in coordination with the Secretary, the Administrator of the Federal Aviation Administration, the Secretary of Defense, the Federal Communications Commission, and the Administrator, shall initiate an update to the Orbital Debris Mitigation Standard Practices that—

(1) considers planned space systems, including satellite constellations; and

(2) addresses—

(A) collision risk;

(B) casualty probability;

(C) post-mission disposal of space systems;

(D) time to disposal or de-orbit;

(E) spacecraft collision avoidance and automated identification capability; and
(F) the ability to track orbital debris of decreasing size.

(b) CONSULTATION.—In developing the update under subsection (a), the National Space Council shall seek advice and input on commercial standards and best practices from representatives of the commercial space industry, academia, and nonprofit organizations.

(c) PUBLICATION.—Not later than 1 year after the date of the enactment of this Act, such update shall be published in the Federal Register and posted to the relevant Federal Government websites.

(d) REGULATIONS.—To promote uniformity and avoid duplication in the regulation of space activity, including licensing by the Federal Aviation Administration, the National Oceanic and Atmospheric Administration, and the Federal Communications Commission, such update, after publication, shall be used to inform the further development and promulgation of Federal regulations relating to orbital debris.

(e) INTERNATIONAL PROMOTION.—To encourage effective and nondiscriminatory standards, best practices, rules, and regulations implemented by other countries, such update shall inform bilateral and multilateral discussions focused on the authorization and continuing supervision of nongovernmental space activities.
(f) Review.—Not later than 5 years after the completion of such update, and every 5 years thereafter, the Secretary, in consultation with representatives of the commercial space industry, academia, and nonprofit organizations, shall—

1. conduct a review of the Orbital Debris Mitigation Standard Practices applicable to space systems; and
2. submit to the National Space Council recommendations for modifications to such standard practices.

SEC. 7. STANDARD PRACTICES FOR SPACE TRAFFIC COORDINATION.

(a) In General.—The Secretary, in coordination with members of the National Space Council and the Federal Communications Commission, shall facilitate the development of standard practices for on-orbit space traffic coordination based on guidelines and best practices used by Government and commercial space industry operators.

(b) Consultation.—In facilitating the development of standard practices under subsection (a), the Secretary, through the Office of Space Commerce, shall engage in frequent and routine consultation with representatives of the commercial space industry, academia, and nonprofit organizations.
(c) Promotion of Standard Practices.—On completion of such standard practices, the Secretary, the Secretary of State, the Secretary of Transportation, the Administrator, and the Secretary of Defense shall promote the adoption and use of the standard practices for domestic and international space missions.