''(III) providing adequate and effective protection for the intellectual property rights of companies described in subparagraph (A).''

Subtitle II—General Program and Policy Provisions

CHAPTER 201—NATIONAL AERONAUTICS AND SPACE PROGRAM

SUBCHAPTER I—SHORT TITLE, DECLARATION OF POLICY, AND DEFINITIONS

SUBCHAPTER II—COORDINATION OF AERONAUTICAL AND SPACE ACTIVITIES

SUBCHAPTER III—GENERAL ADMINISTRATIVE PROVISIONS

SUBCHAPTER IV—UPPER ATMOSPHERE RESEARCH

Editorial Notes

AMENDMENTS

2017—Pub. L. 115–10, title III, §305(b), title IV, §443(b), Mar. 21, 2017, 131 Stat. 32, 47, added items 20148 and 20149.

SUBCHAPTER I—SHORT TITLE, DECLARATION OF POLICY, AND DEFINITIONS

§ 20101. Short title

This chapter may be cited as the ''National Aeronautics and Space Act''.

(Pub. L. 111–314, §3, Dec. 18, 2010, 124 Stat. 3330.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20101	(no source)	

Chapter 201 of title 51 restates the National Aeronautics and Space Act of 1958. Although short titles are generally eliminated as unnecessary in positive law titles of the United States Code, in this case it was suggested that the short title ''National Aeronautics and Space Act'' be provided for convenience.

§ 20102. Congressional declaration of policy and purpose

(a) DEVOTION OF SPACE ACTIVITIES TO PEACEFUL PURPOSES FOR BENEFIT OF ALL HUMANKIND.—Congress declares that it is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all humankind.

(b) AERONAUTICAL AND SPACE ACTIVITIES FOR WELFARE AND SECURITY OF UNITED STATES.—Congress declares that the general welfare and security of the United States require that adequate provision be made for aeronautical and space activities. Congress further declares that such activities shall be the responsibility of, and shall be directed by, a civilian agency exercising control over aeronautical and space activities sponsored by the United States, except that activities peculiar to or primarily associated with the development of weapons systems, military operations, or the defense of the United States (including the research and development necessary to make effective provision for the defense of the United States) shall be the responsibility of, and shall be directed by, the Department of Defense; and that determination as to which agency has responsibility for and direction of any such activity shall be made by the President.

(c) COMMERCIAL USE OF SPACE.—Congress declares that the general welfare of the United States requires that the Administration seek and encourage, to the maximum extent possible, the fullest commercial use of space.

(d) OBJECTIVES OF AERONAUTICAL AND SPACE ACTIVITIES.—The aeronautical and space activities of the United States shall be conducted so as to contribute materially to one or more of the following objectives:

(1) The expansion of human knowledge of the Earth and of phenomena in the atmosphere and space.

(2) The improvement of the usefulness, performance, speed, safety, and efficiency of aeronautical and space vehicles.

(3) The development and operation of vehicles capable of carrying instruments, equipment, supplies, and living organisms through space.

(4) The establishment of long-range studies of the potential benefits to be gained from, the opportunities for, and the problems involved in the utilization of aeronautical and space activities for peaceful and scientific purposes.

(5) The preservation of the role of the United States as a leader in aeronautical and space science and technology and in the application

thereof to the conduct of peaceful activities within and outside the atmosphere.

(6) The making available to agencies directly concerned with national defense of discoveries that have military value or significance, and the furnishing by such agencies, to the civilian agency established to direct and control nonmilitary aeronautical and space activities, of information as to discoveries which have value or significance to that agency.

(7) Cooperation by the United States with other nations and groups of nations in work done pursuant to this chapter and in the peaceful application of the results thereof.

(8) The most effective utilization of the scientific and engineering resources of the United States, with close cooperation among all interested agencies of the United States in order to avoid unnecessary duplication of effort, facilities, and equipment.

(9) The preservation of the United States preeminent position in aeronautics and space through research and technology development related to associated manufacturing processes.

(10) The search for life's origin, evolution, distribution, and future in the universe.

(e) GROUND PROPULSION SYSTEMS RESEARCH AND DEVELOPMENT.—Congress declares that the general welfare of the United States requires that the unique competence in scientific and engineering systems of the Administration also be directed toward ground propulsion systems research and development. Such development shall be conducted so as to contribute to the objectives of developing energy and petroleum-conserving ground propulsion systems, and of minimizing the environmental degradation caused by such systems.

(f) BIOENGINEERING RESEARCH, DEVELOPMENT, AND DEMONSTRATION PROGRAMS.—Congress declares that the general welfare of the United States requires that the unique competence of the Administration in science and engineering systems be directed to assisting in bioengineering research, development, and demonstration programs designed to alleviate and minimize the effects of disability.

(g) WARNING AND MITIGATION OF POTENTIAL HAZARDS OF NEAR-EARTH OBJECTS.—Congress declares that the general welfare and security of the United States require that the unique competence of the Administration be directed to detecting, tracking, cataloguing, and characterizing near-Earth asteroids and comets in order to provide warning and mitigation of the potential hazard of such near-Earth objects to the Earth.

(h) PURPOSE OF CHAPTER.—It is the purpose of this chapter to carry out and effectuate the policies declared in subsections (a) to (g).

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3330; Pub. L. 115–10, title V, § 507, Mar. 21, 2017, 131 Stat. 50.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20102	42 U.S.C. 2451.	Pub. L. 85–568, title I, § 102, July 29, 1958, 72 Stat. 426; Pub. L. 94–413, § 15(a), (b), Sept. 17, 1976, 90 Stat. 1270; Pub. L. 95–238, title III, § 311, Feb. 25, 1978, 92 Stat. 83; Pub. L. 95–401, § 7, Sept. 30, 1978, 92 Stat. 860; Pub. L. 98–361, title I, § 110, July 16, 1984, 98 Stat. 426; Pub. L. 100–685, title II, § 214, Nov. 17, 1988, 102 Stat. 4093; Pub. L. 106–391, title III, § 302(a), Oct. 30, 2000, 114 Stat. 1591; Pub. L. 109–155, title III, § 321(d)(2), Dec. 30, 2005, 119 Stat. 2923.

In subsection (b), the words ''in conformity with section 201(e)'', which appeared at the end of the subsection, are omitted as obsolete. Section 201 of Public Law 85–568, which was classified to former section 2471 of title 42 (last appearing in the 1970 edition of the United States Code), established the National Aeronautics and Space Council, with the functions of the Council specified in section 201(e). Those functions included advising the President ''as he may request'' with respect to promoting cooperation and resolving differences among agencies of the United States engaged in aeronautical and space activities. The words are obsolete because section 3(a)(4) of Reorganization Plan No. 1 of 1973 (5 App. U.S.C.), abolished the National Aeronautics and Space Council, including the office of Executive Secretary of the Council, together with its functions.

In subsection (c), the words ''(as established by title II of this Act)'', which appeared after ''Administration'', are omitted as unnecessary.

In subsection (d), the word ''and'', appearing at the end of paragraph (8), is omitted as unnecessary because of the introductory words ''one or more of the following''.

Editorial Notes

AMENDMENTS

2017—Subsec. (d)(10). Pub. L. 115–10 added par. (10).

Statutory Notes and Related Subsidiaries

SCIENCE PRIORITIES

Pub. L. 117–167, div. B, title VII, § 10821, Aug. 9, 2022, 136 Stat. 1740, provided that:

''(a) SENSE OF CONGRESS ON SCIENCE PORTFOLIO.—It is the sense of Congress that—

''(1) a balanced and adequately funded set of activities, consisting of research and analysis grant programs, technology development, suborbital research activities, and small, medium, and large space missions, contributes to a robust and productive science program and serves as a catalyst for innovation and discovery; and

''(2) the Research and Analysis programs funded by the Science Mission Directorate are critically important for—

''(A) preparing the next generation of space and Earth scientists;

''(B) pursuing peer-reviewed cutting-edge research;

''(C) maximizing scientific return from the [National Aeronautics and Space] Administration's space and Earth science missions; and

''(D) developing innovative techniques and future mission concepts.

''(b) GOAL.—The Administrator [of the National Aeronautics and Space Administration] shall pursue the goal of establishing annual funding for Research and Analysis in the Science Mission Directorate that

reaches a level of not less than 10 percent of the total annual funding of relevant divisions of the Science Mission Directorate by fiscal year 2025.''

CONGRESSIONAL FINDINGS AND POLICY

Pub. L. 110–422, § 2, Oct. 15, 2008, 122 Stat. 4781, provided that: ''The Congress finds, on this, the 50th anniversary of the establishment of the National Aeronautics and Space Administration, the following:

''(1) NASA [National Aeronautics and Space Administration] is and should remain a multimission agency with a balanced and robust set of core missions in science, aeronautics, and human space flight and exploration.

''(2) Investment in NASA's programs will promote innovation through research and development, and will improve the competitiveness of the United States.

''(3) Investment in NASA's programs, like investments in other Federal science and technology activities, is an investment in our future.

''(4) Properly structured, NASA's activities can contribute to an improved quality of life, economic vitality, United States leadership in peaceful cooperation with other nations on challenging undertakings in science and technology, national security, and the advancement of knowledge.

''(5) NASA should assume a leadership role in a cooperative international Earth observations and research effort to address key research issues associated with climate change and its impacts on the Earth system.

''(6) NASA should undertake a program of aeronautical research, development, and where appropriate demonstration activities with the overarching goals of—

''(A) ensuring that the Nation's future air transportation system can handle up to 3 times the current travel demand and incorporate new vehicle types with no degradation in safety or adverse environmental impact on local communities;

''(B) protecting the environment;

''(C) promoting the security of the Nation; and

''(D) retaining the leadership of the United States in global aviation.

''(7) Human and robotic exploration of the solar system will be a significant long-term undertaking of humanity in the 21st century and beyond, and it is in the national interest that the United States should assume a leadership role in a cooperative international exploration initiative.

''(8) Developing United States human space flight capabilities to allow independent American access to the International Space Station, and to explore beyond low Earth orbit, is a strategically important national imperative, and all prudent steps should thus be taken to bring the Orion Crew Exploration Vehicle and Ares I Crew Launch Vehicle to full operational capability as soon as possible and to ensure the effective development of a United States heavy lift launch capability for missions beyond low Earth orbit.

''(9) NASA's scientific research activities have contributed much to the advancement of knowledge, provided societal benefits, and helped train the next generation of scientists and engineers, and those activities should continue to be an important priority.

''(10) NASA should make a sustained commitment to a robust long-term technology development activity. Such investments represent the critically important 'seed corn' on which NASA's ability to carry out challenging and productive missions in the future will depend.

''(11) NASA, through its pursuit of challenging and relevant activities, can provide an important stimulus to the next generation to pursue careers in science, technology, engineering, and mathematics.

''(12) Commercial activities have substantially contributed to the strength of both the United States space program and the national economy, and the development of a healthy and robust United States commercial space sector should continue to be encouraged.

''(13) It is in the national interest for the United States to have an export control policy that protects the national security while also enabling the United States aerospace industry to compete effectively in the global market place and the United States to undertake cooperative programs in science and human space flight in an effective and efficient manner.''

Pub. L. 102–195, §§ 2, 3, Dec. 9, 1991, 105 Stat. 1605, 1606, provided that:

''SEC. 2. FINDINGS.

''Congress finds that—

''(1) the report of the Advisory Committee on the Future of the United States Space Program has provided a framework within which a consensus on the goals of the space program can be developed;

''(2) a balanced civil space science program should be funded at a level of at least 20 percent of the aggregate amount in the budget of the National Aeronautics and Space Administration for 'Research and development' and 'Space flight, control, and data communications';

''(3) development of an adequate data base for life sciences in space will be greatly enhanced through closer scientific cooperation with the Soviet Union, including active use of manned Soviet space stations;

''(4) the space program can make substantial contributions to health-related research and should be an integral part of the Nation's health research and development program;

''(5) Landsat data and the continuation of the Landsat system beyond Landsat 6 are essential to the Mission to Planet Earth and other long-term environmental research programs;

''(6) increased use of defense-related remote sensing data and data technology by civilian agencies and the scientific community can benefit national environmental study and monitoring programs;

''(7) the generation of trained scientists and engineers through educational initiatives and academic research programs outside of the National Aeronautics and Space Administration is essential to the future of the United States civil space program;

''(8) the strengthening and expansion of the Nation's space transportation infrastructure, including the enhancement of launch sites and launch site support facilities, are essential to support the full range of the Nation's space-related activities;

''(9) the aeronautical program contributes to the Nation's technological competitive advantage, and it has been a key factor in maintaining preeminence in aviation over many decades; and

''(10) the National Aero Space Plane program can have benefits to the military and civilian aviation programs from the new and innovative technologies developed in propulsion systems, aerodynamics, and control systems that could be enormous, especially for high-speed aeronautical and space flight.

''SEC. 3. POLICY.

''It is the policy of the United States that—

''(1) the Administrator of the National Aeronautics and Space Administration (hereinafter referred to as the 'Administrator'), in planning for national programs in environmental study and human space flight and exploration, should ensure the resiliency of the space infrastructure;

''(2) a stable and balanced program of civil space science should be planned to minimize future year funding requirements in order to accommodate a steady stream of new initiatives;

''(3) any new launch system undertaken or jointly undertaken by the National Aeronautics and Space Administration should be based on defined mission and program requirements or national policies established by Congress;

''(4) in fulfilling the mission of the National Aeronautics and Space Administration to improve the usefulness, performance, speed, safety, and efficiency

of space vehicles, the Administrator should establish a program of research and development to enhance the competitiveness and cost effectiveness of commercial expendable launch vehicles; and

''(5) the National Aeronautics and Space Administration should promote and support efforts to advance scientific understanding by conducting or otherwise providing for research on environmental problems, including global change, ozone depletion, acid precipitation, deforestation, and smog.''

Pub. L. 101–611, title I, §§101, 102, Nov. 16, 1990, 104 Stat. 3188, 3189, provided that:

''SEC. 101. FINDINGS.

''The Congress finds that—

''(1) over the next decade, the United States aeronautics and space program will be directed toward major national priorities of understanding, preserving, and enhancing our global environment, hypersonic transportation, human exploration, and emerging technology commercialization;

''(2) the United States aeronautics and space program is supported by an overwhelming majority of the American people;

''(3) the United States aeronautics and space program genuinely reflects our Nation's pioneer heritage and demonstrates our quest for leadership, economic growth, and human understanding;

''(4) the United States space program is based on a solid record of achievement and continues to promote the objective of international cooperation in the exploration of the planets and the universe;

''(5) the United States aeronautics and space program generates critical technology breakthroughs that benefit our economy through new products and processes that significantly improve our standard of living;

''(6) the United States aeronautics and space program excites the imagination of every generation and can stimulate the youth of our Nation toward the pursuit of excellence in the fields of science, engineering, and mathematics;

''(7) the United States aeronautics and space program contributes to the Nation's technological competitive advantage;

''(8) the United States aeronautics and space program requires a sustained commitment of financial and human resources as a share of the Nation's Gross National Product;

''(9) the United States space transportation system will depend upon a robust fleet of space shuttle orbiters and expendable and reusable launch vehicles and services;

''(10) the United States space program will be advanced with an assured funding stream for the development of a permanently manned space station with research, experimentation, observation, servicing, manufacturing, and staging capabilities for lunar and Mars missions;

''(11) the United States aeronautics program has been a key factor in maintaining preeminence in aviation over many decades;

''(12) the United States needs to maintain a strong program with respect to transatmospheric research and technology by developing and demonstrating National Aero-Space Plane technology by a mid-decade date certain;

''(13) the National Aeronautics and Space Administration is primarily responsible for formulating and implementing policy that supports and encourages civil aeronautics and space activities in the United States; and

''(14) commercial activities of the private sector will substantially and increasingly contribute to the strength of both the United States space program and the national economy.

''SEC. 102. POLICY.

''It is declared to be national policy that the United States should—

''(1) rededicate itself to the goal of leadership in critical areas of space science, space exploration, and space commercialization;

''(2) increase its commitment of budgetary resources for the space program to reverse the dramatic decline in real spending for such program since the achievements of the Apollo moon program;

''(3) ensure that the long-range environmental impact of all activities carried out under this title [see Tables for classification] are fully understood and considered;

''(4) promote and support efforts to advance scientific understanding by conducting or otherwise providing for research on environmental problems, including global change, ozone depletion, acid precipitation, deforestation, and smog;

''(5) forge a robust national space program that maintains a healthy balance between manned and unmanned space activities and recognizes the mutually reinforcing benefits of both;

''(6) maintain an active fleet of space shuttle orbiters, including an adequate provision of structural spare parts, and evolve the orbiter design to improve safety and performance, and reduce operational costs;

''(7) sustain a mixed fleet by utilizing commercial expendable launch vehicle services to the fullest extent practicable;

''(8) support an aggressive program of research and development designed to enhance the United States preeminence in launch vehicles;

''(9) continue and complete on schedule the development and deployment of a permanently manned, fully capable, space station;

''(10) develop an advanced, high pressure space suit to support extravehicular activity that will be required for Space Station Freedom when Assembly Complete is reached;

''(11) establish a dual capability for logistics and resupply of the space station utilizing the space shuttle and expendable launch vehicles, including commercial services if available;

''(12) continue to seek opportunities for international cooperation in space and fully support international cooperative agreements;

''(13) maintain an aggressive program of aeronautical research and technology development designed to enhance the United States preeminence in civil and military aviation and improve the safety and efficiency of the United States air transportation system;

''(14) conduct a program of technology maturation, including flight demonstration in 1997, to prove the feasibility of an air-breathing, hypersonic aerospace plane capable of single-stage-to-orbit operation and hypersonic cruise in the atmosphere;

''(15) seek innovative technologies that will make possible advanced human exploration initiatives, such as the establishment of a lunar base and the succeeding mission to Mars, and provide high yield technology advancements for the national economy; and

''(16) enhance the human resources of the Nation and the quality of education.''

National Aeronautics and Space Capital Development Program

Pub. L. 100–685, title I, §101, Nov. 17, 1988, 102 Stat 4083, provided that: ''Congress finds that—

''(1) in accordance with section 106 of the National Aeronautics and Space Administration Authorization Act of 1988 (Public Law 100–147) [set out as a note under section 70901 of this title], a space station, hereafter referred to as the United States International Space Station, shall be constructed in order to establish a permanent presence for man in space for the following purposes—

''(A) the conduct of scientific experiments, applications experiments, and engineering experiments;

''(B) the servicing, rehabilitation, and construction of satellites and space vehicles;

''(C) the development and demonstration of commercial products and processes; and

''(D) the establishment of a space base for other civilian and commercial space activities including

an outpost for further exploration of the solar system;

''(2) expendable launch vehicles should be used to launch those payloads that do not require the presence of man;

''(3) the space shuttle launches should be used to fulfill the Nation's needs for manned access to space;

''(4) preeminence in space and aeronautics is key to the national security and economic well being of the United States;

''(5) United States space policy needs long-range goals and direction in order to provide understanding for near-term space projects and programs;

''(6) over the next five years the National Aeronautics and Space Administration, hereafter referred to as the 'Administration', should pursue leadership in science through an aggressive set of major and moderate missions while maintaining a robust series of cost effective missions that can provide frequent flight opportunities to the scientific community[;]

''(7) over the next five years the Administration should prepare for the transition to the United States International Space Station of those science and technology programs that can be most efficiently and effectively conducted on that facility;

''(8) the Administration should encourage the United States private sector investment in space and, to the maximum extent practicable provide frequent flight opportunities for the development of technologies, processes and products that benefit from the space environment;

''(9) the Administration should enhance the existing space transportation capability through a robust mixed fleet of manned and unmanned vehicles in order to increase the reliability, productivity, and efficiency and reduce the cost of the Nation's access to space;

''(10) the United States faces an increasingly successful foreign challenge to its traditional preeminent position in aeronautics which is rapidly reducing its lead in both civil and military aircraft;

''(11) NASA's personnel are an integral component and resource for the Nation's space program, and an innovative personnel system should be developed;

''(12) the establishment of a permanent presence in space leading ultimately to space settlements is fully consistent with the goals of the National Aeronautics and Space Act of 1958 [see 51 U.S.C. 20101 et seq.];

''(13) the United States civil space activities should contribute significantly to enhancing the Nation's scientific and technological leadership, economy, pride, and sense of well-being, as well as United States world prestige and leadership;

''(14) civil sector activities should be comprised of a balanced strategy of research, development, operations, and technology for science, exploration, and appropriate applications;

''(15) assured access to space, sufficient to achieve all United States space goals, is an essential element of United States space policy, and the United States space transportation systems must provide a balanced, robust, and flexible capability with sufficient resiliency to allow continued operation despite failures in any single system;

''(16) the goals of the United States space transportation system are—

''(A) to achieve and maintain safe and reliable access to, transportation in, and return from, space;

''(B) to exploit the unique attributes of manned and unmanned launch and recovery systems;

''(C) to encourage, to the maximum extent feasible, the development and use of United States private sector space transportation capabilities; and

''(D) to reduce the costs of space transportation and related services;

''(17) recognizing that communications advancements are critical to all United States space activities, the Administration should continue research and development efforts for future advances in space communications technologies;

''(18) the goal of aeronautical research and technology development and validation activities should be to contribute to a national technology base that will enhance United States preeminence in civil and military aviation and improve the safety and efficiency of the United States air transportation system; and

''(19) aeronautical research and technology development and validation activities should—

''(A) emphasize emerging technologies with potential for breakthrough advances;

''(B) consist of—

''(i) fundamental research in all aeronautical disciplines, aimed at greater understanding of aeronautical phenomena and development of new aeronautical concepts; and

''(ii) technology development and validation activities aimed at laboratory-scale development and proof-of-concept demonstration of selected concepts with high payoff potential;

''(C) assure maintenance of robust aeronautical laboratories, including a first-rate technical staff and modern national facilities for the conduct of research and testing activities;

''(D) be conducted with the close, active participation of the United States aircraft industry so as to accelerate the transfer of research results to aviation products;

''(E) include providing technical assistance and facility support to other government agencies and United States industry;

''(F) include conducting joint projects with other government agencies where such projects contribute materially to the goals set forth in this section;

''(G) assure strong participation of United States universities both in carrying out aeronautical research and training future aeronautical research personnel; and

''(H) be conducted, where practical, so that United States industry receives research results before foreign competitors.''

Executive Documents

SPACE POLICY DIRECTIVE–5. CYBERSECURITY PRINCIPLES FOR SPACE SYSTEMS

Space Policy Directive–5, Sept. 4, 2020, 85 F.R. 56155, provided:

Memorandum for the Vice President[,] the Secretary of State[,] the Secretary of Defense[,] the Attorney General[,] the Secretary of Commerce[,] the Secretary of Transportation[,] the Secretary of Homeland Security[,] the Director of the Office of Management and Budget[,] the Assistant to the President for National Security Affairs[,] the Director of National Intelligence[,] the Director of the Central Intelligence Agency[,] the Director of the National Security Agency[,] the Director of the National Reconnaissance Office[,] the Administrator of the National Aeronautics and Space Administration[,] the Director of the Office of Science and Technology Policy[,] the Chairman of the Joint Chiefs of Staff[, and] the Chairman of the Federal Communications Commission

SECTION 1. *Background*. The United States considers unfettered freedom to operate in space vital to advancing the security, economic prosperity, and scientific knowledge of the Nation. Space systems enable key functions such as global communications; positioning, navigation, and timing; scientific observation; exploration; weather monitoring; and multiple vital national security applications. Therefore, it is essential to protect space systems from cyber incidents in order to prevent disruptions to their ability to provide reliable and efficient contributions to the operations of the Nation's critical infrastructure.

Space systems are reliant on information systems and networks from design conceptualization through launch and flight operations. Further, the transmission

of command and control and mission information between space vehicles and ground networks relies on the use of radio-frequency-dependent wireless communication channels. These systems, networks, and channels can be vulnerable to malicious activities that can deny, degrade, or disrupt space operations, or even destroy satellites.

Examples of malicious cyber activities harmful to space operations include spoofing sensor data; corrupting sensor systems; jamming or sending unauthorized commands for guidance and control; injecting malicious code; and conducting denial-of-service attacks. Consequences of such activities could include loss of mission data; decreased lifespan or capability of space systems or constellations; or the loss of positive control of space vehicles, potentially resulting in collisions that can impair systems or generate harmful orbital debris.

The National Security Strategy of December 2017 states that ''[t]he United States must maintain our leadership and freedom of action in space.'' As the space domain is contested, it is necessary for developers, manufacturers, owners, and operators of space systems to design, build, operate, and manage them so that they are resilient to cyber incidents and radio-frequency spectrum interference.

Space Policy Directive–3 (SPD–3) of June 18, 2018 (National Space Traffic Management Policy) [51 U.S.C. 71302 note], states that ''[s]atellite and constellation owners should participate in a pre-launch certification process'' that should consider a number of factors, including encryption of satellite command and control links and data protection measures for ground site operations.

The National Cyber Strategy of September 2018 states that my Administration will enhance efforts to protect our space assets and supporting infrastructure from evolving cyber threats, and will work with industry and international partners to strengthen the cyber resilience of existing and future space systems.

SEC. 2. *Definitions*. For the purposes of this memorandum, the following definitions shall apply:

(a) ''Space System'' means a combination of systems, to include ground systems, sensor networks, and one or more space vehicles, that provides a space-based service. A space system typically has three segments: a ground control network, a space vehicle, and a user or mission network. These systems include Government national security space systems, Government civil space systems, and private space systems.

(b) ''Space Vehicle'' means the portion of a space system that operates in space. Examples include satellites, space stations, launch vehicles, launch vehicle upper stage components, and spacecraft.

(c) ''Positive Control'' means the assurance that a space vehicle will only execute commands transmitted by an authorized source and that those commands are executed in the proper order and at the intended time.

(d) ''Critical space vehicle functions (critical functions)'' means the functions of the vehicle that the operator must maintain to ensure intended operations, positive control, and retention of custody. The failure or compromise of critical space vehicle functions could result in the space vehicle not responding to authorized commands, loss of critical capability, or responding to unauthorized commands.

SEC. 3. *Policy*. Cybersecurity principles and practices that apply to terrestrial systems also apply to space systems. Certain principles and practices, however, are particularly important to space systems. For example, it is critical that cybersecurity measures, including the ability to perform updates and respond to incidents remotely, are integrated into the design of the space vehicle before launch, as most space vehicles in orbit cannot currently be physically accessed. For this reason, integrating cybersecurity into all phases of development and ensuring full life-cycle cybersecurity are critical for space systems. Effective cybersecurity practices arise out of cultures of prevention, active defense, risk management, and sharing best practices.

The United States must manage risks to the growth and prosperity of our commercial space economy. To do so and to strengthen national resilience, it is the policy of the United States that executive departments and agencies (agencies) will foster practices within Government space operations and across the commercial space industry that protect space assets and their supporting infrastructure from cyber threats and ensure continuity of operations.

The cybersecurity principles for space systems set forth in section 4 of this memorandum are established to guide and serve as the foundation for the United States Government approach to the cyber protection of space systems. Agencies are directed to work with the commercial space industry and other non-government space operators, consistent with these principles and with applicable law, to further define best practices, establish cybersecurity-informed norms, and promote improved cybersecurity behaviors throughout the Nation's industrial base for space systems.

SEC. 4. *Principles*. (a) Space systems and their supporting infrastructure, including software, should be developed and operated using risk-based, cybersecurity-informed engineering. Space systems should be developed to continuously monitor, anticipate, and adapt to mitigate evolving malicious cyber activities that could manipulate, deny, degrade, disrupt, destroy, surveil, or eavesdrop on space system operations. Space system configurations should be resourced and actively managed to achieve and maintain an effective and resilient cyber survivability posture throughout the space system lifecycle.

(b) Space system owners and operators should develop and implement cybersecurity plans for their space systems that incorporate capabilities to ensure operators or automated control center systems can retain or recover positive control of space vehicles. These plans should also ensure the ability to verify the integrity, confidentiality, and availability of critical functions and the missions, services, and data they enable and provide. At a minimum, space system owners and operators should consider, based on risk assessment and tolerance, incorporating in their plans:

(i) Protection against unauthorized access to critical space vehicle functions. This should include safeguarding command, control, and telemetry links using effective and validated authentication or encryption measures designed to remain secure against existing and anticipated threats during the entire mission lifetime;

(ii) Physical protection measures designed to reduce the vulnerabilities of a space vehicle's command, control, and telemetry receiver systems;

(iii) Protection against communications jamming and spoofing, such as signal strength monitoring programs, secured transmitters and receivers, authentication, or effective, validated, and tested encryption measures designed to provide security against existing and anticipated threats during the entire mission lifetime;

(iv) Protection of ground systems, operational technology, and information processing systems through the adoption of deliberate cybersecurity best practices. This adoption should include practices aligned with the National Institute of Standards and Technology's Cybersecurity Framework to reduce the risk of malware infection and malicious access to systems, including from insider threats. Such practices include logical or physical segregation; regular patching; physical security; restrictions on the utilization of portable media; the use of antivirus software; and promoting staff awareness and training inclusive of insider threat mitigation precautions;

(v) Adoption of appropriate cybersecurity hygiene practices, physical security for automated information systems, and intrusion detection methodologies for system elements such as information systems, antennas, terminals, receivers, routers, associated local and wide area networks, and power supplies; and

(vi) Management of supply chain risks that affect cybersecurity of space systems through tracking manu-

factured products; requiring sourcing from trusted suppliers; identifying counterfeit, fraudulent, and malicious equipment; and assessing other available risk mitigation measures.

(c) Implementation of these principles, through rules, regulations, and guidance, should enhance space system cybersecurity, including through the consideration and adoption, where appropriate, of cybersecurity best practices and norms of behavior.

(d) Space system owners and operators should collaborate to promote the development of best practices, to the extent permitted by applicable law. They should also share threat, warning, and incident information within the space industry, using venues such as Information Sharing and Analysis Centers to the greatest extent possible, consistent with applicable law.

(e) Security measures should be designed to be effective while permitting space system owners and operators to manage appropriate risk tolerances and minimize undue burden, consistent with specific mission requirements, United States national security and national critical functions, space vehicle size, mission duration, maneuverability, and any applicable orbital regimes.

SEC. 5. *General Provisions*. (a) Nothing in this memorandum shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This memorandum shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This memorandum is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

(d) The Secretary of Commerce is authorized and directed to publish this memorandum in the Federal Register.

DONALD J. TRUMP.

THE NATIONAL SPACE POLICY

Memorandum of President of the United States, Dec. 9, 2020, 85 F.R. 81755, provided:

Memorandum for the Vice President[,] the Secretary of State[,] the Secretary of Defense[,] the Attorney General[,] the Secretary of the Interior[,] the Secretary of Commerce[,] the Secretary of Transportation[,] the Secretary of Energy[,] the Secretary of Homeland Security[,] the Director of the Office of Management and Budget[,] the Director of National Intelligence[,] the Assistant to the President for National Security Affairs[,] the Administrator of the National Aeronautics and Space Administration[,] the Director of the Office of Science and Technology Policy[, and] the Chairman of the Joint Chiefs of Staff

SECTION 1. *References*. This directive supersedes Presidential Policy Directive–4 (June 29, 2010) and references, promotes, and reemphasizes the following policy directives and memoranda:

a) Presidential Policy Directive 26—National Space Transportation Policy (November 21, 2013)

b) Executive Order 13803—Reviving the National Space Council (June 30, 2017) [51 U.S.C. 20111 note]

c) Space Policy Directive 1—Reinvigorating America's Human Space Exploration Program (December 11, 2017) [82 F.R. 59501]

d) The National Space Strategy (March 23, 2018)

e) Space Policy Directive 2—Streamlining Regulations on Commercial Use of Space (May 24, 2018) [51 U.S.C. 50101 note]

f) Space Policy Directive 3—National Space Traffic Management Policy (June 18, 2018) [51 U.S.C. 71302 note]

g) Space Policy Directive 4—Establishment of the United States Space Force (February 19, 2019) [10 U.S.C. 9081 note]

h) National Security Presidential Memorandum 20—Launch of Spacecraft Containing Space Nuclear Systems (August 20, 2019)

i) Executive Order 13906—Amending Executive Order 13803—Reviving the National Space Council (February 13, 2020)

j) Executive Order 13905—Strengthening National Resilience Through Responsible Use of Positioning, Navigation, and Timing Services (February 12, 2020) [6 U.S.C. 651 note]

k) Executive Order 13914—Encouraging International Support for the Recovery and Use of Space Resources (April 6, 2020) [51 U.S.C. 51302 note]

l) Space Policy Directive 5—Cybersecurity Principles for Space Systems (September 4, 2020) [set out above]

SEC. 2. *Principles*. It is the policy of the United States to ensure that space operations are consistent with the following principles.

1. It is the shared interest of all nations to act responsibly in space to ensure the safety, stability, security, and long-term sustainability of space activities. Responsible space actors operate with openness, transparency, and predictability to maintain the benefits of space for all humanity.

2. A robust, innovative, and competitive commercial space sector is the source of continued progress and sustained United States leadership in space. The United States remains committed to encouraging and facilitating the continued growth of a domestic commercial space sector that is globally competitive, supports national interests, and advances United States leadership in the generation of new markets and innovation-driven entrepreneurship.

3. In this resurgent era of space exploration, the United States will expand its leadership alongside nations that share its democratic values, respect for human rights, and economic freedom. Those values will extend with us to all space destinations as the United States once again steps beyond Earth, starting with the Moon and continuing to Mars.

4. As established in international law, outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means. The United States will pursue the extraction and utilization of space resources in compliance with applicable law, recognizing those resources as critical for sustainable exploration, scientific discovery, and commercial operations.

5. All nations have the right to explore and to use space for peaceful purposes and for the benefit of all humanity, in accordance with applicable law. Consistent with that principle, the United States will continue to use space for national security activities, including for the exercise of the inherent right of self-defense. Unfettered access and freedom to operate in space is a vital national interest.

6. The United States considers the space systems of all nations to have the right to pass through and conduct operations in space without interference. Purposeful interference with space systems, including supporting infrastructure, will be considered an infringement of a nation's rights. Consistent with the defense of those rights, the United States will seek to deter, counter, and defeat threats in the space domain that are hostile to the national interests of the United States and its allies. Any purposeful interference with or an attack upon the space systems of the United States or its allies that directly affects national rights will be met with a deliberate response at a time, place, manner, and domain of our choosing.

SEC. 3. *Goals*. The United States shall:

1. **Promote and incentivize private industry** to facilitate the creation of new global and domestic markets for United States space goods and services, and strengthen and preserve the position of the United States as the global partner of choice for international space commerce.

2. **Encourage and uphold the rights of nations to use space responsibly and peacefully** by developing and im-

plementing diplomatic, economic, and security capabilities and strategies to identify and respond to behaviors that threaten those rights.

3. **Lead, encourage, and expand international cooperation** on mutually beneficial space activities that broaden and extend the benefits of space for all humanity; further the exploration and use of space for peaceful purposes; protect the interests of the United States, its allies, and partners; advance United States interests and values; and enhance access to space-derived information and services.

4. **Create a safe, stable, secure, and sustainable environment for space activities**, in collaboration with industry and international partners, through the development and promotion of responsible behaviors; improved practices for the collection and sharing of information on space objects; protection of critical space systems and supporting infrastructures, with special attention to cybersecurity and supply chains; and measures to mitigate orbital debris.

5. **Increase the assurance of national critical functions** enabled by commercial, civil, scientific, and national security spacecraft and supporting infrastructure against disruption, degradation, and destruction through the development and fielding of materiel and non-materiel capabilities and rehearsal of continuity of operations practices.

6. **Extend human economic activity into deep space** by establishing a permanent human presence on the Moon, and, in cooperation with private industry and international partners, develop infrastructure and services that will enable science-driven exploration, space resource utilization, and human missions to Mars.

7. **Increase the quality of life for all humanity** through the cultivation, maturation, and development of space-enabled scientific and economic capabilities, including space and Earth resource discovery, management, and utilization; space and Earth weather and environmental monitoring and prediction; disaster monitoring, prediction, response, and recovery; and planetary defense.

8. **Preserve and expand United States leadership** in the development of innovative space technologies, services, and operations. Work with likeminded international and private partners, to prevent the transfer of sensitive space capabilities to those who threaten the interests of the United States, its allies, and its supporting industrial base.

SEC. 4. *Cross-sector Space Policy Guidelines*. The heads of all executive departments and agencies (agencies), consistent with their respective missions and authorities, shall execute the guidance provided in this section consistent with applicable law.

Heads of agencies with representation on the National Space Council shall designate a senior official with responsibility for overseeing their respective agency's implementation of the National Space Policy. This official shall periodically report to the National Space Council on the progress of implementation of this policy within respective agencies.

1. *Foundational Activities and Capabilities*. Foundational activities and capabilities enable the United States to fulfill the principles and goals directed in this policy.

(a) **Strengthen United States Leadership in Space-related Science and Technology**. Heads of agencies shall:

i. Reinforce United States technological leadership by promoting technology development; improved industrial capacity; a robust supplier base; and science, technology, engineering, and mathematics (STEM) education opportunities necessary to support United States leadership in space innovation;

ii. Conduct basic and applied research that increases space capabilities and decreases costs, if such research is best supported by the Government; and

iii. Encourage commercial space innovation and entrepreneurship through targeted investment in promising technologies that improve the Nation's leadership in space operations.

(b) **Strengthen and Secure the United States Space Industrial Base**. To further foster the security and resilience of the domestic space industrial base, heads of agencies, to the maximum extent practicable and consistent with applicable law, shall:

i. Promote the availability of space-related industrial capabilities in support of national critical functions;

ii. Identify suppliers and manufacturers key to the United States space-related science, technology, and industrial bases and incentivizing them to remain in, or return to, the United States;

iii. Support innovative entrepreneurial space companies through appropriate deregulatory actions;

iv. Strengthen the security, integrity, and reliability of the supply chains of United States space-related science, technology, and industrial bases by identifying and eliminating dependence on suppliers owned by, controlled by, or subject to the jurisdiction or direction of foreign adversaries, and engaging with United States and international industrial partners to improve processes and effectively manage and secure supply chains; and

v. Incorporate cybersecurity principles across all phases of space systems design, development, acquisition, and deployment.

(c) **Enhance Capabilities for Assured Access to Space**. United States access to space depends in the first instance on assured launch capabilities. To the extent consistent with applicable law, United States Government payloads shall be launched on vehicles manufactured in the United States, unless approved for foreign launch in support of:

i. No-exchange-of-funds agreements involving international scientific programs, launches of scientific instruments on international spacecraft, or other cooperative government-to-government agreements;

ii. Launches of secondary-technology demonstrators or scientific payloads for which no United States launch service is available;

iii. Hosted payload arrangements on spacecraft not owned by the United States Government; or

iv. Other circumstances on a case-by-case exemption as coordinated by the Assistant to the President for National Security Affairs and the Director of the Office of Science and Technology Policy, consistent with established interagency standards and coordination guidelines.

v. To the maximum extent practicable and consistent with their responsibilities and applicable law, the heads of agencies shall:

1. Work collaboratively to acquire space launch services and hosted Government payload arrangements that are secure, reliable, cost-effective, and responsive to United States Government needs;

2. Enhance operational efficiency, increase capacity, and reduce launch costs by investing in the modernization of space launch infrastructure;

3. Permit the launch of United States Government spacecraft manufactured in the United States from territories of allied and likeminded nations when launched on vehicles manufactured in the United States; and

4. When sufficient United States commercial capabilities and services do not exist, support industry-led efforts to rapidly develop new and modernized launch systems and technologies necessary to assure and to sustain future reliable, resilient, and efficient access to space.

(d) **Safeguard Space Components of Critical Infrastructure**. The space domain is important to the function of critical infrastructure vital to the security, economy, resilience, public health, and safety of the United States. Multiple infrastructure sectors depend on reliable access to space-based systems to perform their functions.

i. The United States will develop strategies, capabilities, and options to respond to any purposeful interference with or attack on the space systems of the United States or its allies that directly affects national rights, especially those necessary for the operation of the Nation's critical infrastructure. Such

strategies, capabilities, and options will allow for a deliberate response at a time, place, manner, and domain of its choosing.

ii. The Secretary of Defense, the Secretary of Homeland Security, and the Director of National Intelligence, in consultation with other heads of agencies, as appropriate, shall develop and maintain focused threat and risk assessments on the effect of deleterious actions in the space domain to the Nation's critical infrastructure.

(e) MAINTAIN AND ENHANCE SPACE-BASED POSITIONING, NAVIGATION, AND TIMING (PNT) SYSTEMS. The United States must maintain its leadership in the service, provision, and responsible use of global navigation satellite systems (GNSS). To that end, the United States shall:

i. Provide continuous worldwide access, for peaceful civil uses, to the Global Positioning System (GPS) and its Government-provided augmentations, free of direct user fees;

ii. Engage with international GNSS providers to ensure compatibility, encourage interoperability with likeminded nations, promote transparency in civil service provision, and enable market access for United States industry;

iii. Operate and maintain the GPS constellation to satisfy civil and national security needs, consistent with published performance standards and interface specifications;

iv. Improve the cybersecurity of GPS, its augmentations, and federally owned GPS-enabled devices, and foster commercial space sector adoption of cyber-secure GPS enabled systems consistent with cybersecurity principles for space systems;

v. Allow for the continued use of allied and other trusted international PNT services in conjunction with GPS in a manner that ensures the resilience of PNT services and is consistent with applicable law;

vi. Invest in domestic capabilities and support international activities to detect, analyze, mitigate, and increase resilience to harmful interference to GNSS;

vii. Identify and promote, as appropriate, multiple and diverse complementary PNT systems or approaches for critical infrastructure and mission-essential functions; and

viii. Promote the responsible use of United States space-based PNT services and capabilities in civil and commercial sectors at the Federal, State, and local levels, including the utilization of multiple and diverse complementary PNT systems or approaches for national critical functions.

(f) **Develop and Retain Space Professionals**. The primary goals of space professional development are to achieve mission success in space operations and acquisition; stimulate innovation to improve commercial, civil, and national security space capabilities; and advance science, exploration, and discovery. Toward these ends, the heads of agencies, in cooperation with industry and academia, as appropriate, shall:

i. Establish standards for accession and career progression;

ii. Seek to create educational and professional development opportunities for the current space workforce, including internships and fellowships, and to implement measures to recruit, develop, maintain, and retain skilled space professionals, including engineering and scientific personnel and experienced space system developers and operators, across Government and commercial sectors;

iii. Promote and expand public-private partnerships within space and technology industries to foster transdisciplinary educational achievement in STEM programs, supported by targeted investments in such initiatives;

iv. Promote the exchange of scientists, engineers, and technologists among Federal laboratories, universities, and the commercial space sector to facilitate the exchange of diverse ideas and to build capacity in space technical knowledge and skills;

v. Develop the means to recruit and to employ qualified and skilled space professionals from likeminded nations to increase United States leadership in space commerce, science, exploration, and security; and

vi. Support training and education in key enabling scientific and engineering disciplines, including: artificial intelligence and machine learning, autonomy, orbital mechanics, collision avoidance methods, robotics, computer science and engineering, digital design and engineering, electromagnetics, materials science, hypersonics, geoscience, quantum-related technologies and applications, and cybersecurity.

(g) **Improve Space System Development and Procurement**. The heads of agencies shall:

i. Improve timely acquisition and deployment of space systems through enhancements in estimating costs, assessing technological risk and maturity, and leveraging and understanding emerging industrial base capabilities and capacity;

ii. Reduce programmatic risk through improved management of program requirements, reduce the use of cost-plus contracts, where appropriate, and take advantage of cost-effective opportunities to test high-risk components, payloads, and technologies in digital, space, or other relevant environments;

iii. Create opportunities to strengthen and to develop pertinent expertise in the Government workforce through internships and fellowships with the commercial space sector;

iv. Pursue and endorse cooperative research and development agreements;

v. Incorporate rapid prototyping, experimentation, and other efforts to accelerate development cycles to improve performance and to reduce costs;

vi. Embrace innovation to cultivate and to sustain an entrepreneurial United States research and development environment;

vii. Engage with the industrial base to improve processes and effectively manage and secure supply chains; and

viii. Promote, where consistent with applicable rules and regulations concerning Government contracting, procurement of critical materials and subtier components, such as solar cells and microelectronics, from domestic and other trusted sources of supply.

(h) **Strengthen Interagency and Commercial Partnerships**. As facilitated by the Executive Secretary of the National Space Council, the heads of agencies shall, consistent with applicable law:

i. Strengthen existing partnerships and pursue new partnerships among interagency members, the United States commercial space and related sectors, and United States academic institutions through cooperation, collaboration, information sharing, innovative procurements, and alignment of common pursuits to achieve United States goals;

ii. Encourage the sharing of capabilities and the exchange of expertise among agencies and, to the maximum extent practicable, with the United States commercial sectors to strengthen the Nation's ability to pursue its strategic goals;

iii. Develop implementation and response strategies and leverage United States capabilities to increase technology innovation and achieve desired outcomes involving space operations relating to science, public safety, national security, and economic growth.

2. *International Cooperation*.

(a) **Strengthen United States Leadership in Space**. The heads of agencies, in collaboration with the Secretary of State, shall:

i. Demonstrate United States leadership in space-related fora and activities to strengthen deterrence and assure allies and partners of its commitment to preserving the safety, stability, security, and long-term sustainability of space activities;

ii. Identify areas of mutual interest and benefit, such as collective self-defense and the promotion of secure and resilient space-related infrastructure;

iii. Lead the enhancement of safety, stability, security, and long-term sustainability in space by promoting a framework for responsible behavior in outer space, including the pursuit and effective implementation of best practices, standards, and norms of behavior;

iv. Encourage other nations to adopt United States space regulatory approaches and commercial space sector practices;

v. Encourage interoperability among United States, allied, and partner space systems, services, and data;

vi. Facilitate new market opportunities for United States commercial space capabilities and services, including commercial applications that rely on United States Government-provided space systems;

vii. Promote the adoption of policies and practices internationally that facilitate full, open, and timely access to Government space-derived environmental data on a reciprocal basis;

viii. Promote appropriate burden-, cost-, and risk-sharing among international partners; and

ix. Augment United States capabilities by leveraging existing and planned space capabilities of allies and partners.

(b) **Identify and Expand Areas for International Cooperation**. The heads of agencies shall identify potential areas for international cooperation across the spectrum of commercial, civil, and national security space activities that increase the understanding of Earth and space sciences, expand the detection of hazardous near-Earth objects, ensure the freedom of operation in and through space, increase the quality and safety of life on Earth, extend human presence and economic activity beyond low Earth orbit, and reduce the cost of achieving the Nation's goals.

i. The Secretary of State, in coordination with the heads of agencies, shall:

1. Carry out diplomatic and public diplomacy efforts to strengthen the understanding of, and support for, United States national space policies and programs and to promote the international use of United States space capabilities, systems, and services;

2. Encourage international support for the recovery and use of outer space resources;

3. Lead the consideration of proposals and concepts for arms control measures if they are equitable, effectively verifiable, and enhance the national security of the United States and its allies;

4. Pursue bilateral and multilateral transparency and confidence-building measures to encourage responsible actions in, and the peaceful use of, outer space to strengthen the safety, stability, security, and long-term sustainability of space activities, to increase predictability and reduce the risk of misunderstanding and inadvertent conflict escalation; and

5. Cooperate with likeminded international partners to establish standards of safe and responsible behavior, including openness, transparency, and predictability, to facilitate the detection, identification, and attribution of actions in space that are inconsistent with the safety, stability, security, and long-term sustainability of space activities.

ii. The Director of the Office of Science and Technology Policy, in coordination with the Administrator of the National Aeronautics and Space Administration (NASA), the Secretary of Commerce, and the heads of other agencies as appropriate, shall lead the development of national and international planetary protection guidelines, working with scientific, commercial, and international partners, for the appropriate protection of planetary bodies and Earth from harmful biological contamination.

3. *Preserving the Space Environment to Enhance the Long-term Sustainability of Space Activities.*

(a) **Preserve the Space Environment**. To preserve the space environment for responsible, peaceful, and safe use, and with a focus on minimizing space debris the United States shall:

i. Continue leading the development and adoption of international and industry standards and policies, such as the Guidelines for the Long-term Sustainability of Outer Space Activities and the Space Debris Mitigation Guidelines of the United Nations Committee on the Peaceful Uses of Outer Space;

ii. Continue to make available basic space situational awareness (SSA) data, and provide for basic space traffic coordination (including conjunction and reentry notifications), free of direct user fees while supporting new opportunities for United States commercial and non-profit products and services;

iii. Develop, maintain, and use SSA information from commercial, civil, and national security sources in an open architecture data repository to detect, identify, and attribute actions in space that are inconsistent with the safety, stability, security, and the long-term sustainability of space activities;

iv. Develop and maintain space flight safety standards and best practices to coordinate space traffic;

v. Ensure that, consistent with international obligations, timely and accurate information concerning United States space objects launched into Earth orbit or beyond is entered into the United States domestic space object registry maintained by the Secretary of State and internationally registered with the United Nations as soon as practicable;

vi. Limit the creation of new debris, consistent with mission requirements and cost effectiveness, during the procurement and operation of spacecraft, launch services, and conduct of tests and experiments in space by following and periodically updating the United States Government Orbital Debris Mitigation Standard Practices;

vii. Regularly assess existing guidelines for non-government activities in or beyond Earth orbit, and maintain a timely and responsive regulatory environment for licensing those activities, consistent with United States law and international obligations;

viii. Pursue research and development of technologies and techniques to characterize and to mitigate risks from orbital debris, reduce hazards, and increase understanding of the current and future debris environment;

ix. Evaluate and pursue, in coordination with allies and partners, active debris removal as a potential long-term approach to ensure the safety of flight in key orbital regimes;

x. Require approval of exceptions to the United States Government Orbital Debris Mitigation Standard Practices from the head of the sponsoring agency and notification to the Secretary of State; and

xi. Continue to foster the development of best practices to prevent on-orbit collisions by collaborating with the commercial space sector and likeminded nations to: maintain and improve space object databases; pursue common international data standards and integrity measures; provide services and disseminate orbital tracking information, including predictions of space-object conjunctions, to commercial and international entities; and expand SSA to deep space.

(b) **Effective Export Policies.**

i. The United States will work to stem the flow of advanced space technology to unauthorized parties while ensuring the competitiveness of the United States space industrial base. The heads of agencies are responsible for protecting against adverse technology transfer in the conduct of their programs.

ii. The United States Government shall:

1. Consider letters of request and the issuance of licenses for space-related exports on a case-by-case basis, pursuant to, and in accordance with, the International Traffic in Arms Regulations (ITAR), the Conventional Arms Transfer Policy, the Export Administration Regulations, and other applicable laws and commitments;

2. Encourage the export of space-related items when doing so would not threaten the national interest;

3. Make eligible for streamlined authorization the export of space-related items that are generally available in the global marketplace, do not provide critical military functions, and are destined for certain allied or partner countries.

iii. Consistent with the foregoing, and consistent with existing law and regulation, license applications for exports of space-related items will be subject to a presumption of denial when destined for arms-embargoed destinations or other embargoed destinations.

iv. Sensitive or advanced spacecraft-related exports may require government-to-government transfers through the Foreign Military Sales process. The Secretary of State shall determine whether current arms transfer and nonproliferation policy directives provide sufficient guidance for the transfer of emerging technologies and space capabilities.

(c) **Space Nuclear Power and Propulsion.**

i. The United States will develop and use space nuclear power and propulsion (SNPP) systems where such systems enable achievement of United States scientific, national security, and commercial objectives. The United States will adhere to principles of safety, stability, security, and long-term sustainability in its development and utilization of space nuclear systems. In accordance with the National Security Policy Memorandum–20 Presidential Memorandum on Launch of Spacecraft Containing Space Nuclear Systems (August 20, 2019), authorization for launches of spacecraft containing space nuclear systems shall follow a tiered process based on the characteristics of the system, level of potential hazard, and national security considerations.

ii. The Administrator of NASA and the Secretary of Defense shall conduct and support design, development, and utilization of space nuclear systems, as appropriate, to enable and achieve their respective mission objectives.

iii. The Secretary of Energy shall support the design, development, and utilization of SNPP systems to enable and achieve the scientific, exploration, and national security objectives of the United States, in coordination with sponsoring agencies and other entities, as appropriate. The Secretary of Energy shall maintain, on a full cost recovery basis, the capability and infrastructure to develop, furnish, and conduct safety analyses for space nuclear systems for use in United States Government space systems.

iv. The Secretary of Energy, in cooperation with the Secretary of Homeland Security and the heads of appropriate agencies, shall provide technical and operational support to the launch of SNPP systems to prepare for and respond to any potential radiological impacts of a launch to ensure the protection of public health and safety.

v. The Secretary of Commerce, in coordination with other appropriate agencies, shall promote responsible United States commercial space nuclear system investment, innovation, and operations.

vi. The Secretary of Transportation shall, in consultation with other applicable agencies, serve as the licensing authority for commercial launches of space nuclear systems.

(d) **Protection of Electromagnetic Spectrum**. In matters pertaining to the electromagnetic spectrum the United States shall:

i. Seek to protect access to, and operation in, the electromagnetic spectrum and related orbital assignments required to support the use of space by the United States Government, its allies, and partners, and United States commercial users;

ii. Preserve and protect the electromagnetic spectrum required to sustain existing and emergent space-based capabilities, including communications, navigation, and Earth observation;

iii. Explicitly address requirements for electromagnetic spectrum and orbital assignments prior to approving acquisition of space capabilities;

iv. Coordinate stable and predictable national and international regulatory frameworks to enable and support the competitiveness of space services and systems licensed by the United States;

v. Seek to remove or to streamline regulatory impediments that may discourage commercial space communications providers from obtaining licenses from the United States;

vi. Conduct and publish thorough operational, technical, and policy impact assessments, in coordination with Government space system operators, prior to reallocating spectrum for commercial, Government, or shared use;

vii. Enhance capabilities and techniques, in cooperation with commercial, civil, and international partners, to detect, identify, locate, and attribute sources of radio frequency interference, and to take necessary measures to sustain the electromagnetic environment in which critical United States space systems operate;

viii. Seek appropriate regulatory approval under United States domestic regulations for United States Government Earth stations operating with commercially owned satellites, consistent with the regulatory approvals granted to analogous commercial Earth stations; and

ix. Prioritize research and development of advanced technologies, innovative spectrum-utilization methods, and spectrum-sharing tools and techniques that increase spectrum access, efficiency, and effectiveness.

(e) **Cybersecurity for United States Space Systems**. In matters relating to cybersecurity for space systems the United States Government shall:

i. Seek to ensure space systems and their supporting infrastructure, including software, are designed, developed, and operated using risk-based, cybersecurity-informed engineering;

ii. Collaborate with industry and encourage development and integration of cybersecurity plans for space systems that mitigate unauthorized access to critical space system functions, reduce vulnerabilities, protect ground systems, promote cybersecurity hygiene practices, and manage supply chain risks;

iii. Collaborate with interagency, allied, partner, and commercial space system operators to promote the development and adoption of best practices and mitigations;

iv. Leverage widely adopted best practices and standards in the creation of rules and regulations, as appropriate; and

v. Determine appropriate cybersecurity measures for Government space systems through a mission risk assessment specific to a space system's design and operations.

(f) **Assurance of National Critical Functions**. The United States Government, in cooperation with private and public sectors, shall:

i. Assure space-enabled national critical functions by developing the techniques, measures, relationships, and capabilities necessary to maintain continuity of services;

ii. Pursue efforts to enhance the protection, cybersecurity, and resilience of selected spacecraft and supporting infrastructure;

iii. Periodically conduct operationally-focused exercises to test the continuity of national critical functions and Federal mission assurance in a degraded or denied space environment due to natural or manmade disruptions;

iv. Incorporate the simulated disruption of space systems into interagency and national exercises; and

v. Address mission assurance and architectural resilience through the design, acquisition, command and control, exercise, and operation of materiel and non-materiel space and non-space capabilities.

SEC. 5. SECTOR GUIDELINES. The United States conducts space activities in three distinct but interdependent sectors: commercial, civil, and national security. Consistent with all applicable legal obligations agencies shall comply with the following guidance.

1. *Commercial Space Guidelines*.

The term ''commercial,'' for the purposes of this policy, refers to goods, services, or activities provided by private sector enterprises that bear a reasonable portion of the investment risk and responsibility for the activity, operate in accordance with typical market-based incentives for controlling cost and optimizing return on investment, and have the legal capacity to offer those goods or services to existing or potential non-governmental customers.

A United States commercial space sector that leads in the global space marketplace is foundational to national strategic objectives that include increased and sustained prosperity, free market principles, enhanced international partnerships and collaboration, technological innovation, and scientific discovery, and is vital to United States and allied security.

(a) **Promoting a Robust Commercial Space Industry**. To promote a robust domestic commercial space industry and strengthen United States leadership as the country of choice for conducting commercial space activities, the heads of agencies shall:

i. Purchase and use United States commercial space capabilities and services, to the maximum practical extent under existing law, when such capabilities and services meet United States Government requirements;

ii. Prioritize partnerships with commercial industry to meet Government requirements through the modification of existing commercial space capabilities and services when potential system modifications represent a cost-effective and timely acquisition approach for the Government and are consistent with system and mission-security practices and principles;

iii. Consider inventive, nontraditional arrangements for acquiring commercial space goods and services to meet United States Government requirements, including measures such as hosting Government capabilities on commercial spacecraft, purchasing scientific or operational data from commercial satellite operators in support of Government missions, leveraging satellite servicing or on-orbit manufacturing, and public-private partnerships;

iv. Develop Government space systems only when in the national interest and no suitable or cost-effective United States commercial or, as appropriate, international commercial capability or service is available or could be available in time to meet Government requirements;

v. Refrain from conducting United States Government space activities that preclude, discourage, or compete with United States commercial space activities, unless required by national security or public safety;

vi. Pursue opportunities for transferring routine operational space functions to the commercial space sector where beneficial and cost-effective and consistent with legal, security, or safety needs;

vii. Cultivate increased technological innovation and entrepreneurship and provide alternatives to predatory foreign investment in the commercial space sector through the use of incentives such as prizes, competitions, and competitive grants;

viii. Ensure that United States Government space technology and infrastructure are made available for commercial use on a reimbursable, non-interference and equitable basis to the maximum practical extent, consistent with applicable laws and national security interests;

ix. Promote continued commercial United States leadership in space by making available, consistent with applicable laws and national security, commercially relevant technologies developed by Federal research and development programs to United States industry;

x. Create transparent regulatory processes that minimize, consistent with national security and public safety, the regulatory burden and uncertainty for commercial space activities and that are flexible so as to accommodate and to adapt to technical development, business innovation, and market demands;

xi. Encourage State and local governments to support the commercial space sector for the purposes of cultivating a technically skilled work force, diversifying innovation potential, and stimulating economic growth;

xii. Foster fair and open global trade and commerce through the promotion of standards and regulations that have been developed with input from United States industry;

xiii. Encourage the purchase and use of United States commercial space services and capabilities in international cooperative arrangements;

xiv. Encourage the growth of United States commercial human space exploration, including logistical provisioning, delivery, and the continued commercialization of operations in and beyond low Earth orbit, and the use of microgravity as a domain for research and development; and

xv. Promote the export of United States commercial space goods and services, including those developed by small and medium-sized enterprises, for use in international markets, consistent with United States export controls and national security objectives.

(b) **International Trade Agreements**. The United States Trade Representative (USTR) has the primary responsibility for international trade agreements to which the United States is a party. USTR, in consultation with other relevant heads of agencies, will lead any effort relating to the negotiation and implementation of trade disciplines governing trade in goods and services related to space.

(c) **Mission Authorization of Novel Activities**. The Secretary of Commerce, in coordination with the National Space Council, shall:

i. Identify whether any planned space activities fall beyond the scope of existing authorization and supervision processes necessary to meet international obligations; and

ii. Lead, if necessary, the development of minimally burdensome, responsive, transparent, and adaptive review, authorization, and supervision processes for such activities, consistent with national security and public safety interests, with a presumption of approval and prompt appeals process.

(d) **Foster the Development of Space Collision Warning Measures**. The Secretary of Commerce, in consultation with the Secretaries of State, Defense, and Transportation, the Administrator of NASA, and the heads of other agencies, shall collaborate, consistent with applicable law, with industry and foreign nations to:

i. Maintain and improve space object identification databases;

ii. Pursue common international data standards and data integrity measures;

iii. Disseminate orbital tracking information to commercial and international entities, including predictions of space object conjunctions;

iv. Enhance the common understanding of resident space objects;

v. Develop and implement standard practices for conjunction assessment operations to ensure the safety of flight of all space operations, across all orbital regimes; and

vi. Develop common commercial operating guidelines and propose licensing requirements, consistent with respective agency mission and authorities, for large constellations, rendezvous and proximity operations, satellite servicing, small satellites, end-of-mission planning, and other classes of space operations.

2. *Civil Space Guidelines*.

(a) **Space Science, Exploration, and Discovery**. The United States shall lead an innovative and sustain-

able program of scientific discovery, technology development, and space exploration with commercial and international partners to enable human expansion across the solar system and to bring back to Earth new knowledge and opportunities. Beginning with missions beyond low Earth orbit, the United States will lead the return of humans to the Moon for long-term exploration and utilization, followed by human missions to Mars and other destinations.

(b) The Administrator of NASA, in collaboration with other appropriate agencies, Federal laboratories, and commercial partners, shall, consistent with applicable law:

i. Lead a program to land the next American man and the first American woman on the Moon by 2024, followed by a sustained presence on the Moon by 2028, and the subsequent landing of the first human on Mars;

ii. Continue the operation of the International Space Station (ISS) in cooperation with international partners for scientific, technological, commercial, diplomatic, and educational purposes while developing separate commercial platforms to sustain continuous United States presence in and utilization of low Earth orbit and to transition beyond ISS operations;

iii. Develop partnerships to foster new economic activities in and beyond low Earth orbit that enable NASA and other customers to purchase services and capabilities at lower cost;

iv. In consultation with international and commercial partners as appropriate, support activities that include the presence of humans in space; maintain continuous human presence in Earth orbit by transitioning from ISS to commercial platforms and services; and continue to support future objectives in human space exploration;

v. Continue as the launch agent for the civil space sector while utilizing commercial space capabilities and services to the maximum practical extent;

vi. Continue to grow partnerships with the commercial space sector to enable safe, reliable, and cost-effective transport of crew and cargo to destinations in low Earth and cislunar orbits, and to the lunar surface;

vii. Lead space exploration technology development efforts in collaboration with industry, academia, and international partners to increase capabilities for future human and robotic space exploration missions while decreasing mission costs;

viii. Maintain a sustained robotic presence in the solar system with international and commercial partners to: prepare for future human missions; conduct scientific investigations; map and characterize water, mineral, and elemental resources; and demonstrate new technologies;

ix. Conduct space science for observations, research, and analysis of the Sun, space weather, the solar system, and the universe to enhance knowledge of the cosmos, advance scientific understanding, understand the conditions that may support the development of life, and search for planetary bodies and Earth-like planets in orbit around other stars;

x. Pursue capabilities, in cooperation with other agencies, commercial, and international partners, to detect, track, catalog, and characterize near Earth objects to warn of any predicted Earth impact and to identify potentially resource-rich planetary objects; and

xi. Develop options, in collaboration with other agencies, and international partners, for planetary defense actions both on Earth and in space to mitigate the potential effects of a predicted near Earth object impact or trajectory.

(c) **Observation of the Earth's Surface, Environment, and Weather**. To continue and to enhance a broad array of programs of space-based observation, research, and analysis of the Earth's surface, oceans, and atmosphere and their interactions, and to improve life on Earth:

i. The Administrator of NASA, in coordination with the heads of other appropriate agencies, shall conduct a program of research to understand Earth's interconnected systems, including the development of new Earth observing satellites for other agencies to use for operational purposes.

ii. The Secretary of Commerce, through the Administrator of the National Oceanic and Atmospheric Administration (NOAA), shall be responsible for the requirements, funding, and operation of civil environmental satellites and data-gathering in support of atmospheric and space weather forecasting. NOAA may utilize NASA as the acquisition agent for operational environmental satellites for those activities and programs.

iii. The Secretary of Commerce, through the Administrator of NOAA, and the Secretary of Defense, through the Secretary of the Air Force, in coordination with the Administrator of NASA and the heads of other appropriate agencies, shall:

1. Continue existing coverage responsibilities;

2. Develop a plan to provide Earth environmental satellite observation capabilities, including ground systems for operations, that meet current and future civil and national security requirements; and

3. Ensure the continued sharing of data from all systems.

iv. In support of operational requirements the Secretary of Commerce, in coordination with the Secretary of Defense, the Administrator of NASA, and the heads of other appropriate agencies, shall:

1. Collaborate with academia, the commercial sector, and international partners to ensure uninterrupted operational environmental satellite observations using cost-effective, resilient methods to acquire global meteorological satellite data;

2. Coordinate, as practicable, on future satellite and ground system architectures to reduce duplication of space acquisition processes and capabilities;

3. Utilize international partnerships to sustain and enhance a robust Earth observations program that meets civil and national security requirements, including weather, climate, ocean, and coastal observations; and

4. Purchase commercial environmental data for use in meteorological and space weather models when appropriate.

v. The Director of the Office of Science and Technology Policy, in consultation with the Assistant to the President for National Security Affairs, shall coordinate the implementation of the National Space Weather Strategy and Action Plan. The goals of this strategy are to: enhance the protection of Government and commercial systems against the effects of space weather; disseminate accurate and timely space weather characterization and forecasts; and establish plans and procedures for responding to and recovering from space weather events. Agencies contributing to the United States Government Earth science enterprise shall pursue innovative partnerships with the commercial sector to make their agency's Earth observation data more easily discoverable, accessible, and usable to the public.

(d) **Land Remote Sensing.**

i. The Secretary of the Interior, through the Director of the United States Geological Survey (USGS), shall:

1. Conduct integrated predictive science, which includes research, monitoring, assessments, and modeling, on natural and human-induced changes to Earth's land, land cover, and inland surface waters, and manage a national global land surface data archive and its distribution;

2. Determine the operational requirements for collecting, processing, archiving, and distributing land surface data to the United States Government and other users;

3. Use international and commercial partnerships to help sustain and enhance land surface observations from space; and

4. Utilize, consistent with national security classification guidelines and sharing agreements and in coordination with the Secretary of Defense and the Director of National Intelligence, remote sensing information related to the environment and to disasters that is acquired from national security space systems.

ii. The Secretary of the Interior, through the Director of the USGS, and the Administrator of NASA shall work together to maintain a sustainable land-imaging program for operational land remote sensing observations that meets the needs of core United States users and leverages government, commercial, and international capabilities.

iii. The Administrators of NASA and NOAA, and the Director of the USGS shall:

1. Collaborate, as practicable, on future satellite and ground system architectures to ensure that civil space acquisition processes and capabilities are not unnecessarily duplicated; and

2. Continue to develop civil applications and information tools based on data collected by Earth observation satellites. They shall, to the maximum extent practicable, develop those applications and tools using known standards and open protocols and make data and applications from United States Government satellites openly available to the public.

i[v]. The Secretary of Commerce shall license and regulate private remote sensing systems consistent with the recognition that long-term United States national security and foreign policy interests are best served by ensuring that United States industry continues to lead the rapidly maturing and highly competitive commercial space-based remote sensing market. The Secretary of Commerce shall consult with the Secretary of State and Secretary of Defense in these matters in accordance with applicable law.

3. *National Security Space Guidelines.*

(a) The United States seeks a secure, stable, and accessible space domain, which has become a warfighting domain as a result of competitors seeking to challenge United States and allied interests in space.

(b) Strength and security in space contribute to United States and international security and stability. It is imperative that the United States adapt its national security organizations, policies, strategies, doctrine, security classification frameworks, and capabilities to deter hostilities, demonstrate responsible behaviors, and, if necessary, defeat aggression and protect United States interests in space through:

i. Robust space domain awareness of all activities in space with the ability to characterize and attribute potentially threatening behavior;

ii. Communicating to competitors which space activities the United States considers undesirable or irresponsible, while promoting, demonstrating, and communicating responsible norms of behavior;

iii. Assured, credible, and demonstrable responses to defend vital national interests in space;

iv. Resilient space-enabled missions that reduce the impact or deny the effectiveness of adversaries' actions; and

v. Synchronized diplomatic, information, military, and economic strategies that:

1. Deter adversaries and other actors from conducting activities that may threaten the peaceful use of space by the United States, its allies, and partners; and

2. Compel and impose costs on adversaries to cease behaviors that threaten the peaceful use of space by the United States, its allies, and partners.

(c) The United States Space Force will pursue these objectives as the primary branch of the United States Armed Forces responsible for organizing, training, and equipping forces capable of projecting power in, from, and to space to defend United States national interests; protecting the freedom of operation in, from, and to the space domain; and enhancing the lethality and effectiveness of the Joint Force. The United States Space Force, and other branches of the Armed Forces as appropriate, will also present forces to the United States Space Command, and to the other Combatant Commands as appropriate, to deliver combat and combat support capabilities necessary to enable prompt and sustained offensive and defensive space operations, and to provide space support to joint operations in all domains.

(d) **Synchronized National Security Space.**

i. The space domain is a priority intelligence and military operational domain for the United States. The United States Intelligence Community and Department of Defense use space capabilities to provide strategic, operational, and tactical intelligence and decisive military advantages to the Nation.

ii. The Secretary of Defense and the Director of National Intelligence, in consultation with the heads of other appropriate agencies, Federal laboratories, and, as appropriate, in partnership with United States industry, shall:

1. Develop, acquire, and operate space systems and supporting information systems and networks to aid United States national security interests and to enable defense and intelligence operations;

2. Procure resilient space capabilities and services to provide defense and intelligence operations during times of competition and armed conflict;

3. Develop and apply advanced technologies, capabilities, and concepts that anticipate and rapidly respond to changes in the threat environment and improve the timeliness and quality of intelligence and data to support operations;

4. Identify and characterize current and future threats to United States space missions for the purposes of enabling effective deterrence and defense;

5. Develop resilient, cost-effective architectures and accelerate acquisition and fielding of space capabilities with sufficient capacity to increase the resilience of space-enabled missions and to expand the ability to field or to rapidly reconstitute space capabilities based on the strategic environment;

6. Develop, implement, and exercise plans, procedures, techniques, and capabilities necessary to assure critical national security space-enabled missions;

7. Protect and defend United States national security space assets through integration and synchronization of operational command and control capabilities and activities that foster seamless execution between the Intelligence Community and Department of Defense;

8. Promote, in collaboration with the Secretary of State, norms of behavior for responsible national security space activities that protect United States, allied, and partner interests in space;

9. Ensure cost-effective resilience of space capabilities and assurance of space-enabled missions, including supporting information systems and networks, commensurate with their planned use and taking into account the value these systems provide in countering or mitigating threats, the consequences of their loss or degradation, and the availability of other means to perform the mission;

10. Expand and increase emphasis on disruptive and emerging commercial space capabilities and provide assessments to United States and allied leadership on the effects of these capabilities on national security;

11. Integrate cybersecurity into space operations and capabilities to retain positive control of space systems and verify the integrity of critical functions, missions, and services they provide;

12. Improve, develop, integrate, demonstrate, and proliferate in cooperation with relevant interagency, international, intergovernmental, and commercial entities, space domain awareness capabilities to predict, detect, warn, characterize, and attribute human-caused and naturally occurring activities that pose threats to space systems of United States interest;

13. Provide to the Department of Commerce and other agencies, as necessary, SSA information that supports national security, civil, and human space flight activities, planetary defense from hazardous near-Earth objects, and commercial and allied space operations;

14. Collaborate with allies and partners actively engaging in space security and intelligence operations to incentivize and institute mechanisms for the exchange of relevant space, and space-related information; and

15. Collaborate with the Secretaries of Commerce and Energy, the Administrator of NASA, and the heads of other relevant agencies to periodically review the health and competitiveness of the United States space industrial base to determine whether the domestic space industry can meet the technical requirements, production, and service of national security space programs.

(e) **Department of Defense.**

i. The Secretary of Defense shall:

1. Defend the use of space for United States national security purposes, the United States economy, allies, and partners;

2. Protect freedom of navigation and preserve lines of communication that are open, safe, and secure in the space domain;

3. Ensure that space capabilities are of sufficient capability and capacity to enable decisive offensive and defensive space operations vital to defending United States, allied, and partner interests in space while continuing to sustain support to joint operations;

4. Conduct operations in, from, and through space to deter conflict, and if deterrence fails, to defeat aggression while protecting and defending United States vital interests with allies and partners;

5. Provide, as launch agent for the Department of Defense and the Intelligence Community, affordable and timely space access for national security purposes while using commercial space capabilities and services to the maximum practical extent;

6. Develop, as launch agent for the Department of Defense and the Intelligence Community, rapid launch options to reinforce or to reconstitute priority national security space capabilities in times of crisis and conflict and that, when practicable and appropriate, leverage commercial capabilities;

7. Detect, characterize, warn, attribute, and respond to, in coordination with the Secretary of State and other relevant agencies, space-related behaviors and activities that threaten the space interests of the United States, its allies, or partners, international peace and security, or the long-term sustainability of the space environment;

8. Periodically conduct policy-driven, threat-informed, strategically-focused space posture reviews and assessments that encompass military, diplomatic, informational, and economic aspects of posture, including evaluation of the suitability of U.S. Government, commercial industry, and international space architectures to deliver effective and integrated deterrence and compellence solutions; and

9. Develop, acquire, and operate space intelligence capabilities to support joint operations.

(f) **Intelligence Community.**

i. The Director of National Intelligence shall:

1. Enhance foundational scientific and technical intelligence collection and single and all-source intelligence analysis;

2. Coordinate with the Secretary of Defense to ensure necessary and sufficient intelligence support for acquisition, operations, and defense of space capabilities;

3. Develop, obtain, and operate space intelligence capabilities to support strategic goals, intelligence priorities, and assigned tasks;

4. Provide robust, timely, and effective collection, processing, analysis, and dissemination of information on foreign space capabilities and threats and supporting information system activities;

5. Integrate all-source intelligence of foreign space capabilities and intentions to produce enhanced intelligence products that support space domain awareness;

6. Support monitoring, compliance, and verification for transparency and confidence-building measures and, if applicable, arms control agreements;

7. Ensure Intelligence Community equities are represented and reviewed in United States Government radio frequency deliberations; and

8. Promote counterintelligence and security partnerships and practices within the commercial, civil, and national security space communities.

SEC. 6. *General Provisions*. (a) Nothing in this memorandum shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This memorandum shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This memorandum is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

(d) The Secretary of Commerce is authorized and directed to publish this memorandum in the Federal Register.

DONALD J. TRUMP.

§ 20103. Definitions

In this chapter:

(1) AERONAUTICAL AND SPACE ACTIVITIES.—The term ''aeronautical and space activities'' means—

(A) research into, and the solution of, problems of flight within and outside the Earth's atmosphere;

(B) the development, construction, testing, and operation for research purposes of aeronautical and space vehicles;

(C) the operation of a space transportation system including the space shuttle, upper stages, space platforms, and related equipment; and

(D) such other activities as may be required for the exploration of space.

(2) AERONAUTICAL AND SPACE VEHICLES.—The term ''aeronautical and space vehicles'' means aircraft, missiles, satellites, and other space

vehicles, manned and unmanned, together with related equipment, devices, components, and parts.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3332.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20103	42 U.S.C. 2452.	Pub. L. 85–568, title I, § 103, July 29, 1958, 72 Stat. 427; Pub. L. 98–52, title I, § 108, July 15, 1983, 97 Stat. 285.

In paragraph (1)(A), the word ''Earth's'' is capitalized for consistency in title 51.

SUBCHAPTER II—COORDINATION OF AERONAUTICAL AND SPACE ACTIVITIES

§ 20111. National Aeronautics and Space Administration

(a) ESTABLISHMENT AND APPOINTMENT OF ADMINISTRATOR.—There is established the National Aeronautics and Space Administration. The Administration shall be headed by an Administrator, who shall be appointed from civilian life by the President by and with the advice and consent of the Senate. Under the supervision and direction of the President, the Administrator shall be responsible for the exercise of all powers and the discharge of all duties of the Administration and shall have authority and control over all personnel and activities thereof.

(b) DEPUTY ADMINISTRATOR.—There shall be in the Administration a Deputy Administrator, who shall be appointed from civilian life by the President by and with the advice and consent of the Senate. The Deputy Administrator shall perform such duties and exercise such powers as the Administrator may prescribe. The Deputy Administrator shall act for, and exercise the powers of, the Administrator during the Administrator's absence or disability.

(c) RESTRICTION ON OTHER BUSINESS OR EMPLOYMENT.—The Administrator and the Deputy Administrator shall not engage in any other business, vocation, or employment while serving as such.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3332.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20111	42 U.S.C. 2472.	Pub. L. 85–568, title II, § 202, July 29, 1958, 72 Stat. 429; Pub. L. 88–426, title III, § 305(12), Aug. 14, 1964, 78 Stat. 423.

Statutory Notes and Related Subsidiaries

AGENCY INFORMATION TECHNOLOGY AND CYBERSECURITY

Pub. L. 115–10, title VIII, §§ 811–813, Mar. 21, 2017, 131 Stat. 58–60, provided that:

''SEC. 811. INFORMATION TECHNOLOGY GOVERNANCE.

''(a) IN GENERAL.—The Administrator [of the National Aeronautics and Space Administration] shall, in a manner that reflects the unique nature of NASA [National Aeronautics and Space Administration]'s mission and expertise—

''(1) ensure the NASA Chief Information Officer, Mission Directorates, and Centers have appropriate roles in the management, governance, and oversight processes related to information technology operations and investments and information security programs for the protection of NASA systems;

''(2) ensure the NASA Chief Information Officer has the appropriate resources and insight to oversee NASA information technology and information security operations and investments;

''(3) provide an information technology program management framework to increase the efficiency and effectiveness of information technology investments, including relying on metrics for identifying and reducing potential duplication, waste, and cost;

''(4) improve the operational linkage between the NASA Chief Information Officer and each NASA mission directorate, center, and mission support office to ensure both agency and mission needs are considered in agency-wide information technology and information security management and oversight;

''(5) review the portfolio of information technology investments and spending, including information technology-related investments included as part of activities within NASA mission directorates that may not be considered information technology, to ensure investments are recognized and reported appropriately based on guidance from the Office of Management and Budget;

''(6) consider appropriate revisions to the charters of information technology boards and councils that inform information technology investment and operation decisions; and

''(7) consider whether the NASA Chief Information Officer should have a seat on any boards or councils described in paragraph (6).

''(b) GAO STUDY.—

''(1) STUDY.—The Comptroller General of the United States shall conduct a study of the effectiveness of the Administration's Information Technology Governance in ensuring information technology resources are aligned with agency missions and are cost effective and secure.

''(2) CONTENTS.—The study shall include an assessment of—

''(A) the resources available for overseeing Administration-wide information technology operations, investments, and security measures and the NASA Chief Information Officer's visibility and involvement into information technology oversight and access to those resources;

''(B) the effectiveness and challenges of the Administration's information technology structure, decision making processes and authorities, including impacts on its ability to implement information security; and

''(C) the impact of NASA Chief Information Officer approval authority over information technology investments that exceed a defined monetary threshold, including any potential impacts of such authority on the Administration's missions, flights programs and projects, research activities, and Center operations.

''(3) REPORT.—Not later than 1 year after the date of enactment of this Act [Mar. 21, 2017], the Comptroller General shall submit to the appropriate committees of Congress [Committee on Science, Space, and Technology of the House of Representatives and Committee on Commerce, Science, and Transportation of the Senate] a report detailing the results of the study under paragraph (1), including any recommendations.

''SEC. 812. INFORMATION TECHNOLOGY STRATEGIC PLAN.

''(a) IN GENERAL.—Subject to subsection (b), the Administrator [of the National Aeronautics and Space Administration] shall develop an information technology strategic plan to guide NASA [National Aeronautics and Space Administration] information technology management and strategic objectives.

''(b) REQUIREMENTS.—In developing the strategic plan, the Administrator shall ensure that the strategic plan addresses—

''(1) the deadline under section 306(a) of title 5, United States Code; and

''(2) the requirements under section 3506 of title 44, United States Code.

''(c) CONTENTS.—The strategic plan shall address, in a manner that reflects the unique nature of NASA's mission and expertise—

''(1) near and long-term goals and objectives for leveraging information technology;

''(2) a plan for how NASA will submit to Congress of [sic] a list of information technology projects, including completion dates and risk level in accordance with guidance from the Office of Management and Budget;

''(3) an implementation overview for an agency-wide approach to information technology investments and operations, including reducing barriers to cross-center collaboration;

''(4) coordination by the NASA Chief Information Officer with centers and mission directorates to ensure that information technology policies are effectively and efficiently implemented across the agency;

''(5) a plan to increase the efficiency and effectiveness of information technology investments, including a description of how unnecessarily duplicative, wasteful, legacy, or outdated information technology across NASA will be identified and eliminated, and a schedule for the identification and elimination of such information technology;

''(6) a plan for improving the information security of agency information and agency information systems, including improving security control assessments and role-based security training of employees; and

''(7) submission by NASA to Congress of information regarding high risk projects and cybersecurity risks.

''(d) CONGRESSIONAL OVERSIGHT.—The Administrator shall submit to the appropriate committees of Congress [Committee on Science, Space, and Technology of the House of Representatives and Committee on Commerce, Science, and Transportation of the Senate] the strategic plan under subsection (a) and any updates thereto.

''SEC. 813. CYBERSECURITY.

''(a) FINDING.—Congress finds that the security of NASA [National Aeronautics and Space Administration] information and information systems is vital to the success of the mission of the agency.

''(b) INFORMATION SECURITY PLAN.—

''(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act [Mar. 21, 2017], the Administrator [of the National Aeronautics and Space Administration] shall implement the information security plan developed under paragraph (2) and take such further actions as the Administrator considers necessary to improve the information security system in accordance with this section.

''(2) INFORMATION SECURITY PLAN.—Subject to paragraphs (3) and (4), the Administrator shall develop an agency-wide information security plan to enhance information security for NASA information and information infrastructure.

''(3) REQUIREMENTS.—In developing the plan under paragraph (2), the Administrator shall ensure that the plan—

''(A) reflects the unique nature of NASA's mission and expertise;

''(B) is informed by policies, standards, guidelines, and directives on information security required for Federal agencies;

''(C) is consistent with the standards and guidelines under section 11331 of title 40, United States Code; and

''(D) meets applicable National Institute of Standards and Technology information security standards and guidelines.

''(4) CONTENTS.—The plan shall address—

''(A) an overview of the requirements of the information security system;

''(B) an agency-wide risk management framework for information security;

''(C) a description of the information security system management controls and common controls that are necessary to ensure compliance with information security-related requirements;

''(D) an identification and assignment of roles, responsibilities, and management commitment for information security at the agency;

''(E) coordination among organizational entities, including between each center, facility, mission directorate, and mission support office, and among agency entities responsible for different aspects of information security;

''(F) the need to protect the information security of mission-critical systems and activities and high-impact and moderate-impact information systems; and

''(G) a schedule of frequent reviews and updates, as necessary, of the plan.''

COLLABORATION AMONG MISSION DIRECTORATES

Pub. L. 115–10, title VIII, §821, Mar. 21, 2017, 131 Stat. 61, provided that: ''The Administrator [of the National Aeronautics and Space Administration] shall encourage an interdisciplinary approach among all NASA [National Aeronautics and Space Administration] mission directorates and divisions, whenever appropriate, for projects or missions—

''(1) to improve coordination, and encourage collaboration and early planning on scope;

''(2) to determine areas of overlap or alignment;

''(3) to find ways to leverage across divisional perspectives to maximize outcomes; and

''(4) to be more efficient with resources and funds.''

USERS' ADVISORY GROUP

Pub. L. 101–611, title I, §121, Nov. 16, 1990, 104 Stat. 3204, as amended by Pub. L. 117–286, §4(a)(324), Dec. 27, 2022, 136 Stat. 4341, provided that:

''(a) ESTABLISHMENT.—(1) The National Space Council shall establish a Users' Advisory Group composed of non-Federal representatives of industries and other persons involved in aeronautical and space activities.

''(2) The Vice President shall name a chairman of the Users' Advisory Group.

''(3) The National Space Council shall from time to time, but not less than once a year, meet with the Users' Advisory Group.

''(4) The function of the Users' Advisory Group shall be to ensure that the interests of industries and other non-Federal entities involved in space activities, including in particular commercial entities, are adequately represented in the National Space Council.

''(5) The Users' Advisory Group may be assisted by personnel detailed to the National Space Council.

''(b) EXEMPTION.—The Users' Advisory Group shall not be subject to section 1013(a) of title 5, United States Code.''

NATIONAL SPACE COUNCIL

Pub. L. 101–328, §3(a), July 8, 1990, 104 Stat. 308, provided that: ''Not more than six individuals may be employed by the National Space Council without regard to any provision of law regulating the employment or compensation of persons in the Government service, at rates not to exceed the rate of pay for level VI of the Senior Executive Schedule as provided pursuant to section 5382 of title 5, United States Code.''

Pub. L. 101–328, §4, July 8, 1990, 104 Stat. 308, provided that: ''The National Space Council may, for purposes of carrying out its functions, employ experts and consultants in accordance with section 3109 of title 5, United States Code, and may compensate individuals so employed for each day they are involved in a business of the National Space Council (including traveltime) at rates not in excess of the daily equivalent of the maximum rate of pay for grade GS–18 as provided pursuant to section 5332 of title 5, United States Code.''

[References in laws to the rates of pay for GS–16, 17, or 18, or to maximum rates of pay under the General Schedule, to be considered references to rates payable under specified sections of Title 5, Government Organization and Employees, see section 529 [title I, § 101(c)(1)] of Pub. L. 101–509, set out in a note under section 5376 of Title 5.]

Pub. L. 100–685, title V, § 501, Nov. 17, 1988, 102 Stat. 4102, provided that:

''(a) Effective February 1, 1989, there is established in the Executive Office of the President the National Space Council, which shall be chaired by the Vice President.

''(b) By March 1, 1989, the President shall submit to the Congress a report that outlines the composition and functions of the National Space Council.

''(c) The Council may employ a staff of not more than seven persons, which is to be headed by a civilian executive secretary, who shall be appointed by the President.''

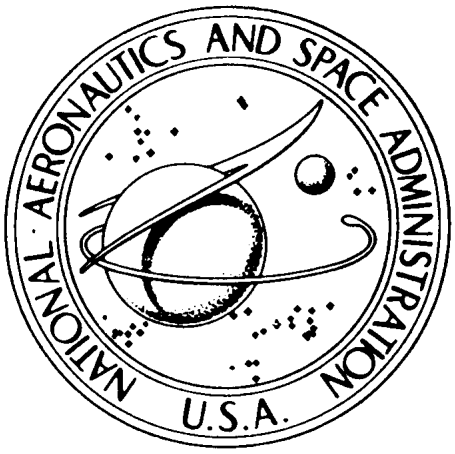
Executive Documents

EX. ORD. NO. 10849. ESTABLISHMENT OF SEAL FOR NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Ex. Ord. No. 10849, Nov. 27, 1959, 24 F.R. 9559, as amended by Ex. Ord. No. 10942, May 19, 1961, 26 F.R. 4419, provided:

WHEREAS the Administrator of the National Aeronautics and Space Administration has caused to be made, and has recommended that I approve, a seal for the National Aeronautics and Space Administration, the design of which accompanies and is hereby made a part of this order, and which is described as follows:

On a disc of the blue sky strewn with white stars, to dexter a larger yellow sphere bearing a red flight symbol apex in upper sinister and wings enveloping and casting a brown shadow upon the sphere, all partially encircled with a horizontal white orbit, in sinister a small light-blue sphere; circumscribing the disc a white band edged gold inscribed ''National Aeronautics and Space Administration U.S.A.'' in red letters.



AND WHEREAS it appears that such seal is of suitable design and appropriate for establishment as the official seal of the National Aeronautics and Space Administration:

NOW, THEREFORE, by virtue of the authority vested in me as President of the United States, I hereby approve such seal as the official seal of the National Aeronautics and Space Administration.

EX. ORD. NO. 12675

Ex. Ord. No. 12675, Apr. 20, 1989, 54 F.R. 17691, as amended by Ex. Ord. No. 12712, Apr. 26, 1990, 55 F.R. 18095; Ex. Ord. No. 12869, § 4(f), Sept. 30, 1993, 58 F.R. 51752, which established the National Space Council, was superseded by Ex. Ord. No. 13803, § 9(a), June 30, 2017, 82 F.R. 31431, formerly set out below.

EXECUTIVE ORDER NO. 13803

Ex. Ord. No. 13803, June 30, 2017, 82 F.R. 31429, as amended by Ex. Ord. No. 13906, Feb. 13, 2020, 85 F.R. 10031, which reestablished the National Space Council and ordered the Council to convene the Users' Advisory Group, was revoked by Ex. Ord. No. 14056, § 7(d), Dec. 1, 2021, 86 F.R. 68873, set out below.

EX. ORD. NO. 14056. THE NATIONAL SPACE COUNCIL

Ex. Ord. No. 14056, Dec. 1, 2021, 86 F.R. 68871, provided:

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

SECTION 1. *Purpose.* The National Space Council (Council), as authorized under Title V of Public Law 100–685 [§ 501, set out above], advises and assists the President regarding national space policy and strategy. This order sets forth the Council's membership, duties, and responsibilities.

SEC. 2. *Membership of the National Space Council.* The Council shall be composed of:

(a) the Vice President, who shall be Chair of the Council;

(b) the Secretary of State;

(c) the Secretary of Defense;

(d) the Secretary of the Interior;

(e) the Secretary of Agriculture;

(f) the Secretary of Commerce;

(g) the Secretary of Labor;

(h) the Secretary of Transportation;

(i) the Secretary of Energy;

(j) the Secretary of Education;

(k) the Secretary of Homeland Security;

(l) the Director of the Office of Management and Budget;

(m) the Director of National Intelligence;

(n) the Director of the Office of Science and Technology Policy;

(o) the Assistant to the President for National Security Affairs;

(p) the Assistant to the President for Economic Policy;

(q) the Assistant to the President for Domestic Policy;

(r) the Assistant to the President and National Climate Advisor;

(s) the Chairman of the Joint Chiefs of Staff;

(t) the Administrator of the National Aeronautics and Space Administration; and

(u) the heads of other executive departments and agencies (agencies) and other senior officials within the Executive Office of the President, as determined by the Chair.

SEC. 3. *Functions and Operations of the Council.* (a) The Council shall advise and assist the President on space policy and strategy. In particular, it shall:

(i) review, develop, and provide recommendations to the President on space policy and strategy;

(ii) coordinate implementation of space policy and strategy;

(iii) synchronize the Nation's civil, commercial, and national security space activities in furtherance of the objectives of the President's national space policy and strategy;

(iv) facilitate resolution of differences among agencies on space-related policy and strategy matters;

(v) enable interagency cooperation, coordination, and information exchange on space activities; and

(vi) perform such other duties as the President may, from time to time, prescribe.

(b) The operation of the Council shall not interfere with the existing lines of authority in or responsibilities of any agency.

(c) The Council shall have a staff, headed by a civilian Executive Secretary appointed by the President.

(d) The Council shall meet at least annually.

(e) The Council shall consider and provide recommendations to the President on any space-related issue as determined by the Chair.

SEC. 4. *Responsibilities of the Chair*. (a) The Chair shall serve as the President's principal advisor on national space policy and strategy.

(b) The Chair shall establish procedures and set the agenda for Council sessions to address Presidential priorities.

(c) The Chair may recommend to the President candidates for the position of Executive Secretary.

(d) The Chair may invite the heads of other agencies, other senior officials in the Executive Office of the President, and other Federal employees to participate in Council meetings.

(e) The Chair or, upon the Chair's direction, the Executive Secretary, may develop budget recommendations for submission to the Director of the Office of Management and Budget that reflect the President's space policy and strategy, as well as provide advice concerning budget submissions by agencies related to the President's space policies and strategies.

SEC. 5. *National Space Policy Planning Process*. (a) The Council shall establish a process for developing and coordinating the implementation of national space policy and strategy.

(b) The head of each agency that conducts space-related activities shall, to the extent permitted by law, conform such activities to the President's national space policy and strategy.

(c) On space matters relating primarily to national security, the Council shall coordinate with the National Security Council (NSC) to develop space policy and strategy consistent with NSC priorities and practices.

SEC. 6. *Users' Advisory Group*. (a) The Council shall convene a Users' Advisory Group (Group) pursuant to section 121 of Public Law 101–611 [set out above], composed of non-Federal representatives of industries and other persons involved in aeronautical and space activities.

(b) Members of the Group shall serve without compensation for their work for the Group. Members of the Group, while engaged in the work of the Group, may be allowed travel expenses, including per diem in lieu of subsistence, to the extent permitted by law for persons serving intermittently in Government service (5 U.S.C. 5701–5707), consistent with the availability of funds.

(c) The Group shall report directly to the Council and shall provide advice or work product solely to the Council.

(d) The Group shall provide advice and recommendations to the Council on matters related to space policy and strategy, including Government policies, laws, regulations, treaties, international instruments, programs, and practices across the civil, commercial, and national security space sectors.

SEC. 7. *Administrative Provisions*. (a) To aid in the performance of the functions of the Council:

(i) the Office of Administration in the Executive Office of the President shall provide administrative support to the Council, to the extent permitted by law and within existing appropriations; and

(ii) legal advice to the Council with respect to its work and functions shall be provided exclusively by the Office of the Counsel to the President and the Counsel to the Vice President.

(b) To the extent practicable and permitted by law, including the Economy Act (31 U.S.C. 1535), and within existing appropriations, agencies serving on the Council, components of the Executive Office of the President, and interagency councils and committees that affect space policy or strategy shall make resources, including personnel, office support, and printing, available to the Council as reasonably requested by the Chair or, upon the Chair's direction, the Executive Secretary.

(c) Agencies shall cooperate with the Council through the Chair, or upon the Chair's request, the Executive Secretary, and provide such information and advice to the Council as it may reasonably request, to the extent permitted by law, including information regarding agencies' current and planned space activities.

(d) This order supersedes Executive Order 13803 of June 30, 2017 (Reviving the National Space Council) [formerly set out above], and Executive Order 13906 of February 13, 2020 (Amending Executive Order 13803—Reviving the National Space Council), and those orders are revoked. To the extent this order is inconsistent with any provision of any previous Executive Order or Presidential Memorandum, this order shall control.

(e) If any provision of this order or the application of such provision is held to be invalid, the remainder of this order and other dissimilar applications of such provision shall not be affected.

SEC. 8. *General Provisions*. (a) Nothing in this order shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

J.R. BIDEN, JR.

§ 20112. Functions of the Administration

(a) PLANNING, DIRECTING, AND CONDUCTING AERONAUTICAL AND SPACE ACTIVITIES.—The Administration, in order to carry out the purpose of this chapter, shall—

(1) plan, direct, and conduct aeronautical and space activities;

(2) arrange for participation by the scientific community in planning scientific measurements and observations to be made through use of aeronautical and space vehicles, and conduct or arrange for the conduct of such measurements and observations;

(3) provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof;

(4) seek and encourage, to the maximum extent possible, the fullest commercial use of space; and

(5) encourage and provide for Federal Government use of commercially provided space services and hardware, consistent with the requirements of the Federal Government.

(b) RESEARCH AND DEVELOPMENT IN CERTAIN TECHNOLOGIES.—

(1) GROUND PROPULSION TECHNOLOGIES.—The Administration shall, to the extent of appropriated funds, initiate, support, and carry out such research, development, demonstration, and other related activities in ground propulsion technologies as are provided for in sections 4 to 10 of the Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976 (15 U.S.C. 2503 to 2509).

(2) SOLAR HEATING AND COOLING TECHNOLOGIES.—The Administration shall initiate, support, and carry out such research, development, demonstrations, and other related activities in solar heating and cooling technologies (to the extent that funds are appropriated therefor) as are provided for in sec-

tions 5, 6, and 9 of the Solar Heating and Cooling Demonstration Act of 1974 (42 U.S.C. 5503, 5504, 5507).

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3333.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20112	42 U.S.C. 2473(a), (b).	Pub. L. 85–568, title II, § 203(a), (b), July 29, 1958, 72 Stat. 429; Pub. L. 93–409, § 4, Sept. 3, 1974, 88 Stat. 1070; Pub. L. 94–413, § 15(c), Sept. 17, 1976, 90 Stat. 1270; Pub. L. 95–401, § 6, Sept. 30, 1978, 92 Stat. 860; Pub. L. 101–611, title I, § 107, Nov. 16, 1990, 104 Stat. 3197.

§ 20113. Powers of the Administration in performance of functions

(a) RULES AND REGULATIONS.—In the performance of its functions, the Administration is authorized to make, promulgate, issue, rescind, and amend rules and regulations governing the manner of its operations and the exercise of the powers vested in it by law.

(b) OFFICERS AND EMPLOYEES.—In the performance of its functions, the Administration is authorized to appoint and fix the compensation of officers and employees as may be necessary to carry out such functions. The officers and employees shall be appointed in accordance with the civil service laws and their compensation fixed in accordance with chapter 51 and subchapter III of chapter 53 of title 5, except that—

(1) to the extent the Administrator deems such action necessary to the discharge of the Administrator's responsibilities, the Administrator may appoint not more than 425 of the scientific, engineering, and administrative personnel of the Administration without regard to such laws, and may fix the compensation of such personnel not in excess of the rate of basic pay payable for level III of the Executive Schedule; and

(2) to the extent the Administrator deems such action necessary to recruit specially qualified scientific and engineering talent, the Administrator may establish the entrance grade for scientific and engineering personnel without previous service in the Federal Government at a level up to 2 grades higher than the grade provided for such personnel under the General Schedule, and fix their compensation accordingly.

(c) PROPERTY.—In the performance of its functions, the Administration is authorized—

(1) to acquire (by purchase, lease, condemnation, or otherwise), construct, improve, repair, operate, and maintain laboratories, research and testing sites and facilities, aeronautical and space vehicles, quarters and related accommodations for employees and dependents of employees of the Administration, and such other real and personal property (including patents), or any interest therein, as the Administration deems necessary within and outside the continental United States;

(2) to acquire by lease or otherwise, through the Administrator of General Services, buildings or parts of buildings in the District of Columbia for the use of the Administration for a period not to exceed 10 years without regard to section 8141 of title 40;

(3) to lease to others such real and personal property;

(4) to sell and otherwise dispose of real and personal property (including patents and rights thereunder) in accordance with the provisions of chapters 1 to 11 of title 40 and in accordance with title III of the Federal Property and Administrative Services Act of 1949 (41 U.S.C. 251 et seq.);[1] and

(5) to provide by contract or otherwise for cafeterias and other necessary facilities for the welfare of employees of the Administration at its installations and purchase and maintain equipment therefor.

(d) GIFTS.—In the performance of its functions, the Administration is authorized to accept unconditional gifts or donations of services, money, or property, real, personal, or mixed, tangible or intangible.

(e) CONTRACTS, LEASES, AND AGREEMENTS.—In the performance of its functions, the Administration is authorized, without regard to subsections (a) and (b) of section 3324 of title 31, to enter into and perform such contracts, leases, cooperative agreements, or other transactions as may be necessary in the conduct of its work and on such terms as it may deem appropriate, with any agency or instrumentality of the United States, or with any State, territory, or possession, or with any political subdivision thereof, or with any person, firm, association, corporation, or educational institution. To the maximum extent practicable and consistent with the accomplishment of the purpose of this chapter, such contracts, leases, agreements, and other transactions shall be allocated by the Administrator in a manner which will enable small-business concerns to participate equitably and proportionately in the conduct of the work of the Administration.

(f) COOPERATION WITH FEDERAL AGENCIES AND OTHERS.—In the performance of its functions, the Administration is authorized to use, with their consent, the services, equipment, personnel, and facilities of Federal and other agencies with or without reimbursement, and on a similar basis to cooperate with other public and private agencies and instrumentalities in the use of services, equipment, and facilities. Each department and agency of the Federal Government shall cooperate fully with the Administration in making its services, equipment, personnel, and facilities available to the Administration, and any such department or agency is authorized, notwithstanding any other provision of law, to transfer to or to receive from the Administration, without reimbursement, aeronautical and space vehicles, and supplies and equipment other than administrative supplies or equipment.

(g) ADVISORY COMMITTEES.—In the performance of its functions, the Administration is authorized to appoint such advisory committees as may be appropriate for purposes of consultation and advice to the Administration.

[1] See References in Text note below.

(h) OFFICES AND PROCEDURES.—In the performance of its functions, the Administration is authorized to establish within the Administration such offices and procedures as may be appropriate to provide for the greatest possible coordination of its activities under this chapter with related scientific and other activities being carried on by other public and private agencies and organizations.

(i) TEMPORARY OR INTERMITTENT SERVICES OF EXPERTS OR CONSULTANTS.—In the performance of its functions, the Administration is authorized to obtain services as provided by section 3109 of title 5, but at rates for individuals not to exceed the per diem rate equivalent to the maximum rate payable under section 5376 of title 5.

(j) ALIENS.—In the performance of its functions, the Administration is authorized, when determined by the Administrator to be necessary, and subject to such security investigations as the Administrator may determine to be appropriate, to employ aliens without regard to statutory provisions prohibiting payment of compensation to aliens.

(k) CONCESSIONS FOR VISITORS' FACILITIES.—

(1) IN GENERAL.—In the performance of its functions, the Administration is authorized to provide by concession, without regard to section 1302 of title 40, on such terms as the Administrator may deem to be appropriate and necessary to protect the concessioner against loss of the concessioner's investment in property (but not anticipated profits) resulting from the Administration's discretionary acts and decisions, for the construction, maintenance, and operation of all manner of facilities and equipment for visitors to the several installations of the Administration and, in connection therewith, to provide services incident to the dissemination of information concerning its activities to such visitors, without charge or with a reasonable charge therefor (with this authority being in addition to any other authority that the Administration may have to provide facilities, equipment, and services for visitors to its installations).

(2) PUBLIC NOTICE AND DUE CONSIDERATION OF PROPOSALS.—A concession agreement under this subsection may be negotiated with any qualified proposer following due consideration of all proposals received after reasonable public notice of the intention to contract.

(3) REASONABLE OPPORTUNITY FOR PROFIT.—The concessioner shall be afforded a reasonable opportunity to make a profit commensurate with the capital invested and the obligations assumed. The consideration paid by the concessioner for the concession shall be based on the probable value of the opportunity and not on maximizing revenue to the United States.

(4) RECORDS AND ACCESS TO RECORDS.—Each concession agreement shall specify the manner in which the concessioner's records are to be maintained, and shall provide for access to the records by the Administration and the Comptroller General of the United States for a period of 5 years after the close of the business year to which the records relate.

(5) POSSESSORY INTERESTS.—A concessioner may be accorded a possessory interest, consisting of all incidents of ownership except legal title (which shall vest in the United States), in any structure, fixture, or improvement the concessioner constructs or locates upon land owned by the United States. With the approval of the Administration, such possessory interest may be assigned, transferred, encumbered, or relinquished by the concessioner, and, unless otherwise provided by contract, shall not be extinguished by the expiration or other termination of the concession and may not be taken for public use without just compensation.

(*l*) DETAILING MEMBERS OF ARMED FORCES.—In the performance of its functions, the Administration is authorized, with the approval of the President, to enter into cooperative agreements under which members of the Army, Navy, Air Force, Marine Corps, and Space Force may be detailed by the appropriate Secretary for services in the performance of functions under this chapter to the same extent as that to which they might be lawfully assigned in the Department of Defense.

(m) CLAIMS AGAINST THE UNITED STATES.—In the performance of its functions, the Administration is authorized—

(1) to consider, ascertain, adjust, determine, settle, and pay, on behalf of the United States, in full satisfaction thereof, any claim for $25,000 or less against the United States for bodily injury, death, or damage to or loss of real or personal property resulting from the conduct of the Administration's functions as specified in section 20112(a) of this title, where such claim is presented to the Administration in writing within 2 years after the accident or incident out of which the claim arises; and

(2) if the Administration considers that a claim in excess of $25,000 is meritorious and would otherwise be covered by this subsection, to report the facts and circumstances to Congress for its consideration.

(n) IDENTIFICATION OF GOVERNMENT ASTRONAUTS.—For purposes of a license issued or transferred by the Secretary of Transportation under chapter 509 to launch a launch vehicle or to reenter a reentry vehicle carrying a government astronaut (as defined in section 50902), the Administration shall designate a government astronaut in accordance with requirements prescribed by the Administration.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3333; Pub. L. 114–90, title I, § 112(d), Nov. 25, 2015, 129 Stat. 712; Pub. L. 115–10, title VIII, § 835(d), Mar. 21, 2017, 131 Stat. 69; Pub. L. 116–283, div. A, title IX, § 927(f), Jan. 1, 2021, 134 Stat. 3832.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20113	42 U.S.C. 2473(c).	Pub. L. 85–568, title II, §203(c), formerly §203(b), July 29, 1958, 72 Stat. 429; Pub. L. 86–20, May 13, 1959, 73 Stat. 21; Pub. L. 86–481, §5, June 1, 1960, 74 Stat. 153; Pub. L. 87–367, title II, §206(a), Oct. 4, 1961, 75 Stat. 791; Pub. L. 87–584, §6, Aug. 14, 1962, 76 Stat. 384; Pub. L. 87–793, §1001(f), Oct. 11, 1962, 76 Stat. 864; Pub. L. 88–426, title III, §306(d), Aug. 14, 1964, 78 Stat. 429; Pub. L. 88–448, title IV, §402(a)(34), Aug. 10, 1964, 78 Stat. 495; Pub. L. 91–646, title II, §220(a)(2), Jan. 2, 1971, 84 Stat. 1903; Pub. L. 93–74, §6, July 23, 1973, 87 Stat. 174; Pub. L. 93–316, §6, June 22, 1974, 88 Stat. 243; renumbered §203(c), Pub. L. 93–409, §4, Sept. 3, 1974, 88 Stat. 1070; Pub. L. 96–48, §6(a), Aug. 8, 1979, 93 Stat. 348; Pub. L. 108–201, §2(a), Feb. 24, 2004, 118 Stat. 461.

In subsection (b), in the matter before paragraph (1), the words ''chapter 51 and subchapter III of chapter 53 of title 5'' are substituted for ''the Classification Act of 1949, as amended'' on authority of section 7(b) of Public Law 89–554 (80 Stat. 631), the first section of which enacted Title 5, Government Organization and Employees.

In subsection (c)(2), the words ''section 8141 of title 40'' are substituted for ''the Act of March 3, 1877 (40 U.S.C. 34)'' on authority of section 5(c) of Public Law 107–217 (116 Stat. 1303), the first section of which enacted Title 40, Public Buildings, Property, and Works.

In subsection (c)(4), the words ''in accordance with the provisions of chapters 1 to 11 of title 40 and in accordance with title III of the Federal Property and Administrative Services Act of 1949 (41 U.S.C. 251 et seq.)'' are substituted for ''in accordance with the provisions of the Federal Property and Administrative Services Act of 1949, as amended (40 U.S.C. 471 et seq.)'' on authority of section 5(c) of Public Law 107–217 (116 Stat. 1303), the first section of which enacted Title 40, Public Buildings, Property, and Works.

In subsection (e), the words ''subsections (a) and (b) of section 3324 of title 31'' are substituted for ''section 3648 of the Revised Statutes, as amended (31 U.S.C. 529)'' on authority of section 4(b) of Public Law 97–258 (96 Stat. 1067), the first section of which enacted Title 31, Money and Finance.

In subsection (i), the words ''maximum rate payable under section 5376 of title 5'' are substituted for ''rate for GS–18'' because of section 101(c) of the Federal Employees Pay Comparability Act of 1990 (enacted by §529 of Public Law 101–509, 5 U.S.C. 5376 note).

In subsection (k)(1), the words ''section 1302 of title 40'' are substituted for ''section 321 of the Act of June 30, 1932 (47 Stat. 412; 40 U.S.C. 303b)'' on authority of section 5(c) of Public Law 107–217 (116 Stat. 1303), the first section of which enacted Title 40, Public Buildings, Property, and Works.

Editorial Notes

REFERENCES IN TEXT

Level III of the Executive Schedule, referred to in subsec. (b)(1), is set out in section 5314 of Title 5, Government Organization and Employees.

The Federal Property and Administrative Services Act of 1949, referred to in subsec. (c)(4), is act June 30, 1949, ch. 288, 63 Stat. 377. Title III of the Act was classified generally to subchapter IV (§251 et seq.) of chapter 4 of former Title 41, Public Contracts, and was substantially repealed and restated in division C (§3101 et seq.) of subtitle I of Title 41, Public Contracts, by Pub. L. 111–350, §§3, 7(b), Jan. 4, 2011, 124 Stat. 3677, 3855. For complete classification of this Act to the Code, see Short Title of 1949 Act note set out under section 101 of Title 41 and Tables. For disposition of sections of former Title 41, see Disposition Table preceding section 101 of Title 41.

AMENDMENTS

2021—Subsec. (*l*). Pub. L. 116–283 substituted ''Forces'' for ''Services'' in heading and ''Marine Corps, and Space Force'' for ''and Marine Corps'' in text.

2017—Subsec. (g). Pub. L. 115–10, §835(d)(2), struck out ''and Congress'' after ''advice to the Administration''.

Pub. L. 115–10, §835(d)(1), inserted ''and Congress'' after ''advice to the Administration''.

2015—Subsec. (n). Pub. L. 114–90 added subsec. (n).

Statutory Notes and Related Subsidiaries

EFFECTIVE DATE OF 2017 AMENDMENT

Pub. L. 115–10, title VIII, §835(d)(2), Mar. 21, 2017, 131 Stat. 69, provided that the amendment by section 835(d)(2) is effective Sept. 30, 2017.

OFFICE OF STEM ENGAGEMENT

Pub. L. 117–167, div. B, title VII, §10851(a)–(d), Aug. 9, 2022, 136 Stat. 1753, 1754, provided that:

''(a) SENSE OF CONGRESS.—It is the sense of Congress that NASA [National Aeronautics and Space Administration]'s inspiring mission, specialized facilities, skilled engineering and scientific workforce, and research activities present unique opportunities for inspiring public engagement in STEM and increasing the number of students pursuing STEM degrees and careers.

''(b) ESTABLISHMENT.—The Administrator [of the National Aeronautics and Space Administration] shall establish an Office of STEM Engagement (referred to in this section as the 'Office') for the purpose of advancing progress toward the STEM education goals of the United States by enhancing STEM literacy, increasing diversity, equity, and inclusion in STEM, and preparing the STEM workforce for the future.

''(c) RESPONSIBILITIES.—The Office established shall be responsible for coordinating efforts and activities among organizations across the [National Aeronautics and Space] Administration, including NASA headquarters, mission directorates, and NASA centers, designed—

''(1) to create unique opportunities for students and the public to learn from and contribute to the work of NASA in exploration and discovery;

''(2) to contribute to the growth of a diverse STEM workforce; and

''(3) to strengthen public understanding of science by enabling connections to the mission and work of NASA.

''(d) PORTFOLIO.—The Office shall coordinate and administer—

''(1) the National Space Grant College and Fellowship Program under chapter 403 of title 51 United States Code;

''(2) the Established Program to Stimulate Competitive Research under section 40903 of title 51 United States Code;

''(3) the Minority University Research and Education Project;

''(4) the NextGen STEM Project; and

''(5) any other program or activity the Administrator considers appropriate.''

[For definition of ''STEM'' as used in section 10851(a)–(d) of Pub. L. 117–167, set out above, see section 18901 of Title 42, The Public Health and Welfare.]

PROGRAM, WORKFORCE, AND INDUSTRIAL BASE REVIEWS

Pub. L. 117–167, div. B, title VII, §10861, Aug. 9, 2022, 136 Stat. 1754, provided that:

''(a) REPORT ON INDUSTRIAL BASE FOR CIVIL SPACE MISSIONS AND OPERATIONS.—

''(1) IN GENERAL.—Not later than 1 year after the date of the enactment of this Act [Aug. 9, 2022], and from time to time thereafter, the Administrator [of the National Aeronautics and Space Administration] shall submit to the appropriate committees of Congress [Committee on Commerce, Science, and Transportation of the Senate and Committee on Science, Space, and Technology of the House of Representatives] a report on the United States industrial base for NASA [National Aeronautics and Space Administration] civil space missions and operations.

''(2) ELEMENTS.—The report required by paragraph (1) shall include the following:

''(A) A comprehensive description of the current status of the United States industrial base for NASA civil space missions and operations.

''(B) A description and assessment of the weaknesses in the supply chain, skills, manufacturing capacity, raw materials, key components, and other areas of the United States industrial base for NASA civil space missions and operations that could adversely impact such missions and operations if unavailable.

''(C) A description and assessment of various mechanisms to address and mitigate the weaknesses described pursuant to subparagraph (B).

''(D) A comprehensive list of the collaborative efforts, including future and proposed collaborative efforts, between NASA and the Manufacturing USA institutes of the Department of Commerce.

''(E) An assessment of—

''(i) the defense and aerospace manufacturing supply chains relevant to NASA in each region of the United States; and

''(ii) the feasibility and benefits of establishing a supply chain center of excellence in a State in which NASA does not, as of the date of the enactment of this Act, have a research center or test facility.

''(F) Such other matters relating to the United States industrial base for NASA civil space missions and operations as the Administrator considers appropriate.

''(b) WORKFORCE AND MODELING AND TEST FACILITIES.—

''(1) REVIEW.—

''(A) IN GENERAL.—The Administrator shall enter into an arrangement with the National Academies of Sciences, Engineering, and Medicine to carry out a comprehensive review of the workforce, skills-base, and modeling and test facilities of the [National Aeronautics and Space] Administration.

''(B) ELEMENTS.—The review conducted under subparagraph (A) shall include the following:

''(i) A consideration of the use of emerging technologies in relevant engineering and science disciplines and the skills needed to apply such capabilities to Administration missions across all mission directorates.

''(ii) Prioritized recommendations on actions needed to align the Administration's workforce with research objectives and strategic goals and on the improvements and additions to modeling capabilities and test facilities needed to meet the Administration's strategic goals and objectives.

''(C) REPORT.—Not later than 18 months after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress report on the results of the review conducted under subparagraph (A).

''(2) IMPLEMENTATION PLAN.—Not later than 120 days after the date on which the review under paragraph (1) is completed, the Administrator shall submit to the appropriate committees of Congress a plan for implementing the recommendations contained the review.

''(3) REPORT ON NASA INFRASTRUCTURE, WORKFORCE SKILLS AND CAPABILITIES.—

''(A) POLICY AND PROCEDURE.—

''(i) IN GENERAL.—The Administrator shall develop an Administration policy and procedure for assessment, not less frequently than every 5 years, of the strategic capabilities of the Administration, including infrastructure and facilities, and workforce skills and capabilities.

''(ii) ELEMENTS.—The policy and procedure developed under clause (i) shall include acquiring data and support for Administration decisions and recommendations on strategic capabilities, including on infrastructure and facilities, and workforce skills and capabilities needed to support the goals and objectives of the Administration through 2040.

''(B) REPORT.—Not later than 1 year after the date of the enactment of this Act, the Administrator shall submit the policy and procedure developed under subparagraph (A) to the appropriate committees of Congress.

''(4) INDEPENDENT PROGRAM ANALYSIS AND EVALUATION OFFICE.—

''(A) ESTABLISHMENT.—The Administrator shall establish within NASA an Independent Program Analysis and Evaluation Office (referred to in this paragraph as the 'Office') for purposes of independently assessing program performance, making programmatic, technical risk mitigation and institutional recommendations, performing cost estimates and analyses, and conducting strategic planning activities, among other functions.

''(B) INDEPENDENCE.—The Office shall remain independent of any program, and shall have no programmatic responsibilities, so as to maintain its independent assessment integrity.

''(C) ACTIVITIES AUTHORIZED.—In conducting the functions of the Office, the Administrator may carry out—

''(i) research on program assessment;

''(ii) cost, schedule, and technical estimation; and

''(iii) other relevant activities for the purposes of obtaining the highest level of expertise and the most effective decision-making tools with which to inform the Administrator.

''(D) MOON TO MARS ACTIVITIES.—The Office shall maintain an ongoing, focused effort to assess the goals, objectives, requirements, architectural approach, cost and schedule, and progress of the Administration's Moon to Mars activities.

''(5) INTERNATIONAL SPACE STATION.—Not later than 1 year after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress the results of an independent estimate by the Office of the cost of continuing International Space Station operations through September 30, 2030, including—

''(A) crew and cargo transportation, research to be undertaken reflecting the priorities described in section 10816 [51 U.S.C. 70901 note], and maintenance costs; and

''(B) opportunities for operational efficiencies that could result in cost savings and increased research productivity and the amount of those potential savings and productivity increases.''

[For definition of ''Manufacturing USA institute'' as used in section 10861 of Pub. L. 117–167, set out above, see section 18901 of Title 42, The Public Health and Welfare.]

COLLABORATION

Pub. L. 115–10, title V, § 517, Mar. 21, 2017, 131 Stat. 54, provided that: ''The Administration [National Aeronautics and Space Administration] shall continue to develop first-of-a-kind instruments that, once proved, can be transitioned to other agencies for operations. Whenever responsibilities for the development of sensors or for measurements are transferred to the Administration from another agency, the Administration shall seek, to the extent possible, to be reimbursed for the assumption of such responsibilities.''

SPACE ACT AGREEMENTS

Pub. L. 115–10, title VIII, § 841, Mar. 21, 2017, 131 Stat. 72, provided that:

''(a) SENSE OF CONGRESS.—It is the sense of Congress that, when used appropriately, Space Act Agreements can provide significant value in furtherance of NASA [National Aeronautics and Space Administration]'s mission.

''(b) FUNDED SPACE ACT AGREEMENTS.—To the extent appropriate, the Administrator [of the National Aeronautics and Space Administration] shall seek to maximize the value of contributions provided by other parties under a funded Space Act Agreement in order to advance NASA's mission.

''(c) NON-EXCLUSIVITY.—

''(1) IN GENERAL.—The Administrator shall, to the greatest extent practicable, issue each Space Act Agreement—

''(A) except as provided in paragraph (2), on a nonexclusive basis;

''(B) in a manner that ensures all non-government parties have equal access to NASA resources; and

''(C) exercising reasonable care not to reveal unique or proprietary information.

''(2) EXCLUSIVITY.—If the Administrator determines an exclusive arrangement is necessary, the Administrator shall, to the greatest extent practicable, issue the Space Act Agreement—

''(A) utilizing a competitive selection process when exclusive arrangements are necessary; and

''(B) pursuant to public announcements when exclusive arrangements are necessary.

''(d) TRANSPARENCY.—The Administrator shall publicly disclose on the Administration's website and make available in a searchable format each Space Act Agreement, including an estimate of committed NASA resources and the expected benefits to agency objectives for each agreement, with appropriate redactions for proprietary, sensitive, or classified information, not later than 60 days after such agreement is signed by the parties.

''(e) ANNUAL REPORTS.—

''(1) REQUIREMENT.—Not later than 90 days after the end of each fiscal year, the Administrator shall submit to the appropriate committees of Congress [Committee on Science, Space, and Technology of the House of Representatives and Committee on Commerce, Science, and Transportation of the Senate] a report on the use of Space Act Agreement authority by the Administration during the previous fiscal year.

''(2) CONTENTS.—The report shall include for each Space Act Agreement in effect at the time of the report—

''(A) an indication of whether the agreement is a reimbursable, non-reimbursable, or funded Space Act Agreement;

''(B) a description of—

''(i) the subject and terms;

''(ii) the parties;

''(iii) the responsible—

''(I) Mission Directorate;

''(II) Center; or

''(III) headquarters element;

''(iv) the value;

''(v) the extent of the cost sharing among Federal Government and non-Federal sources;

''(vi) the time period or schedule; and

''(vii) all milestones; and

''(C) an indication of whether the agreement was renewed during the previous fiscal year.

''(3) ANTICIPATED AGREEMENTS.—The report shall include a list of all anticipated reimbursable, non-reimbursable, and funded Space Act Agreements for the upcoming fiscal year.

''(4) CUMULATIVE PROGRAM BENEFITS.—The report shall include, with respect to each Space Act Agreement covered by the report, a summary of—

''(A) the technology areas in which research projects were conducted under that agreement;

''(B) the extent to which the use of that agreement—

''(i) has contributed to a broadening of the technology and industrial base available for meeting Administration needs; and

''(ii) has fostered within the technology and industrial base new relationships and practices that support the United States; and

''(C) the total amount of value received by the Federal Government during the fiscal year under that agreement.''

SENSE OF CONGRESS

Pub. L. 114–90, title I, § 112(b), Nov. 25, 2015, 129 Stat. 711, provided that: ''The National Aeronautics and Space Administration has a need to fly government astronauts (as defined in section 50902 of title 51, United States Code, as amended) within commercial launch vehicles and reentry vehicles under chapter 509 of that title. This need was identified by the Secretary of Transportation and the Administrator of the National Aeronautics and Space Administration due to the intended use of commercial launch vehicles and reentry vehicles developed under the Commercial Crew Development Program, authorized in section 402 of the National Aeronautics and Space Administration Authorization Act of 2010 (124 Stat. 2820; Public Law 111–267). It is the sense of Congress that the authority delegated to the Administration by the amendment made by subsection (d) of this section [amending this section] should be used for that purpose.''

PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS

Pub. L. 106–391, title III, § 319, Oct. 30, 2000, 114 Stat. 1597, provided that:

''(a) PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS.—In the case of any equipment or products that may be authorized to be purchased with financial assistance provided under this Act [see Tables for classification], it is the sense of the Congress that entities receiving such assistance should, in expending the assistance, purchase only American-made equipment and products.

''(b) NOTICE TO RECIPIENTS OF ASSISTANCE.—In providing financial assistance under this Act, the Administrator [of the National Aeronautics and Space Administration] shall provide to each recipient of the assistance a notice describing the statement made in subsection (a) by the Congress.''

ENHANCEMENT OF SCIENCE AND MATHEMATICS PROGRAMS

Pub. L. 106–391, title III, § 321, Oct. 30, 2000, 114 Stat. 1597, provided that:

''(a) DEFINITIONS.—In this section:

''(1) EDUCATIONALLY USEFUL FEDERAL EQUIPMENT.—The term 'educationally useful Federal equipment' means computers and related peripheral tools and research equipment that is appropriate for use in schools.

''(2) SCHOOL.—The term 'school' means a public or private educational institution that serves any of the grades of kindergarten through grade 12.

''(b) SENSE OF THE CONGRESS.—

''(1) IN GENERAL.—It is the sense of the Congress that the Administrator [of the National Aeronautics and Space Administration] should, to the greatest extent practicable and in a manner consistent with applicable Federal law (including Executive Order No. 12999 [40 U.S.C. 549 note]), donate educationally useful Federal equipment to schools in order to enhance the science and mathematics programs of those schools.

''(2) REPORTS.—Not later than 1 year after the date of the enactment of this Act [Oct. 30, 2000], and annually thereafter, the Administrator shall prepare and submit to Congress a report describing any donations of educationally useful Federal equipment to schools made during the period covered by the report.''

§ 20114. Administration and Department of Defense coordination

(a) ADVISE AND CONSULT.—The Administration and the Department of Defense, through the

President, shall advise and consult with each other on all matters within their respective jurisdictions related to aeronautical and space activities and shall keep each other fully and currently informed with respect to such activities.

(b) REFERRAL TO THE PRESIDENT.—If the Secretary of Defense concludes that any request, action, proposed action, or failure to act on the part of the Administrator is adverse to the responsibilities of the Department of Defense, or the Administrator concludes that any request, action, proposed action, or failure to act on the part of the Department of Defense is adverse to the responsibilities of the Administration, and the Administrator and the Secretary of Defense are unable to reach an agreement with respect to the matter, either the Administrator or the Secretary of Defense may refer the matter to the President for a decision (which shall be final).

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3336.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20114(a)	42 U.S.C. 2474(b).	Pub. L. 85–568, title II, § 204(b), (c), July 29, 1958, 72 Stat. 431.
20114(b)	42 U.S.C. 2474(c).	

In subsection (a), the words ''through the President'' are substituted for ''through the Liaison Committee'' because the Civilian-Military Liaison Committee, which was established by section 204(a) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2474(a)), was abolished and its functions, together with the functions of its chairman and other officers, were transferred to the President by sections 1(e) and 3(a) of Reorganization Plan No. 4 of 1965 (5 App. U.S.C.).

In subsection (b), the words ''as provided in section 201 (e)'', which appeared at the end of the subsection, are omitted as obsolete. Section 201 of Public Law 85–568, which was classified to former section 2471 of title 42 (last appearing in the 1970 edition of the United States Code), established the National Aeronautics and Space Council, with the functions of the Council specified in section 201(e). Those functions included advising the President ''as he may request'' with respect to promoting cooperation and resolving differences among agencies of the United States engaged in aeronautical and space activities. The words are obsolete because section 3(a)(4) of Reorganization Plan No. 1 of 1973 (5 App. U.S.C.), abolished the National Aeronautics and Space Council, including the office of Executive Secretary of the Council, together with its functions.

§ 20115. International cooperation

The Administration, under the foreign policy guidance of the President, may engage in a program of international cooperation in work done pursuant to this chapter, and in the peaceful application of the results thereof, pursuant to agreements made by the President with the advice and consent of the Senate.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3337.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20115	42 U.S.C. 2475.	Pub. L. 85–568, title II, § 205, July 29, 1958, 72 Stat. 432.

Executive Documents

DELEGATION OF AUTHORITY

Memorandum of President of the United States, Oct. 10, 1995, 60 F.R. 53251, provided:

Memorandum for the Administrator of the National and Aeronautics and Space Administration

By the authority vested in me as President by the Constitution and the laws of the United States of America, and in order to facilitate the efficient operations of the aeronautical and space programs of the National Aeronautics and Space Administration (NASA), it is hereby ordered as follows:

The authority conferred upon the President by the Constitution and the laws of the United States of America to executive mutual waivers of claims of liability on behalf of the United States for damages arising out of cooperative activities is hereby delegated to the Administrator of NASA for agreements with foreign governments and their agents regarding aeronautical, science, and space activities that are executed pursuant to the authority granted NASA by the National Aeronautics and Space Act of 1958, Public Law 85–568, as amended [see 51 U.S.C. 20101 et seq.]. All such agreements shall be subject to coordination with and the concurrence of the Department of State to the extent provided by applicable law, regulations, and procedures. All such waivers of liability entered into prior to the date of this memorandum are hereby ratified.

You are authorized and directed to publish this memorandum in the Federal Register.

WILLIAM J. CLINTON.

§ 20116. Reports to Congress

(a) PRESIDENTIAL REPORT.—The President shall transmit to Congress in May of each year a report, which shall include—

(1) a comprehensive description of the programmed activities and the accomplishments of all agencies of the United States in the field of aeronautics and space activities during the preceding fiscal year; and

(2) an evaluation of such activities and accomplishments in terms of the attainment of, or the failure to attain, the objectives described in section 20102(d) of this title.

(b) RECOMMENDATIONS FOR ADDITIONAL LEGISLATION.—Any report made under this section shall contain such recommendations for additional legislation as the Administrator or the President may consider necessary or desirable for the attainment of the objectives described in section 20102(d) of this title.

(c) CLASSIFIED INFORMATION.—No information that has been classified for reasons of national security shall be included in any report made under this section, unless the information has been declassified by, or pursuant to authorization given by, the President.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3337.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20116	42 U.S.C. 2476.	Pub. L. 85–568, title II, § 206, July 29, 1958, 72 Stat. 432; Pub. L. 92–68, § 7, Aug. 6, 1971, 85 Stat. 177; Pub. L. 106–391, title III, § 302(b), Oct. 30, 2000, 114 Stat. 1591.

In subsections (a)(2) and (b), the words ''section 102(c) of this Act'', which appear in section 206 of Public Law 85–568 (72 Stat. 432), are treated as referring to section 102(d), rather than section 102(c), of Public Law 85–568

because of the redesignation done by section 110(a)(2) of the National Aeronautics and Space Administration Authorization Act, 1985 (Public Law 98–361, 98 Stat. 426). Section 102(d) of Public Law 85–568 is restated as section 20102(d) of title 51.

Executive Documents

DELEGATION OF CERTAIN REPORTING AUTHORITY

Memorandum of President of the United States, Mar. 5, 2004, 69 F.R. 11489, provided:

Memorandum for the Administrator of the National Aeronautics and Space Administration

By the authority vested in me as President by the Constitution and the laws of the United States, including section 301 of title 3, United States Code, I hereby delegate to you the functions conferred upon the President by section 206 of the National Aeronautics and Space Act of 1958, as amended ([former] 42 U.S.C. 2476) [now 51 U.S.C. 20116], to provide the specified report to the Congress. Nothing in this delegation shall be construed to impair or otherwise affect the authority of the Director of the Office of Management and Budget with respect to budget, administrative, and legislative proposals.

You are authorized and directed to publish this memorandum in the Federal Register.

GEORGE W. BUSH.

§ 20117. Disposal of excess land

Notwithstanding the provisions of this or any other law, the Administration may not report to a disposal agency as excess to the needs of the Administration any land having an estimated value in excess of $50,000 that is owned by the United States and under the jurisdiction and control of the Administration, unless—

(1) a period of 30 days has passed after the receipt by the Speaker and the Committee on Science and Technology of the House of Representatives and the President and the Committee on Commerce, Science, and Transportation of the Senate of a report by the Administrator or the Administrator's designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such action; or

(2) each such committee before the expiration of that period has transmitted to the Administrator written notice to the effect that the committee has no objection to the proposed action.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3337.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20117	42 U.S.C. 2476a.	Pub. L. 85–568, title II, § 207, as added Pub. L. 93–74, § 7, July 23, 1973, 87 Stat. 175; amended Pub. L. 103–437, § 15(j), Nov. 2, 1994, 108 Stat. 4593.

In paragraph (1), the words ''Committee on Science and Technology'' are substituted for ''Committee on Science, Space, and Technology'' on authority of section 1(a)(10) of Public Law 104–14 (2 U.S.C. note prec. 21), Rule X(1)(n) of the Rules of the House of Representatives, adopted by House Resolution No. 5 (106th Congress, January 6, 1999), and Rule X(1)(*o*) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

Statutory Notes and Related Subsidiaries

CHANGE OF NAME

Committee on Science and Technology of House of Representatives changed to Committee on Science, Space, and Technology of House of Representatives by House Resolution No. 5, One Hundred Twelfth Congress, Jan. 5, 2011.

SUBCHAPTER III—GENERAL ADMINISTRATIVE PROVISIONS

§ 20131. Public access to information

(a) PUBLIC INSPECTION.—Information obtained or developed by the Administrator in the performance of the Administrator's functions under this chapter shall be made available for public inspection, except information—

(1) authorized or required by Federal statute to be withheld;

(2) classified to protect the national security; or

(3) described in subsection (b).

(b) SPECIAL HANDLING OF TRADE SECRET OR CONFIDENTIAL INFORMATION.—

(1) IN GENERAL.—The Administrator, for a period of up to 5 years after the development of information described in paragraph (2), may provide appropriate protections against the dissemination of such information, including exemption from subchapter II of chapter 5 of title 5.

(2) INFORMATION DESCRIBED.—Information referred to in paragraph (1) is information that results from activities conducted under an agreement entered into under subsections (e) and (f) of section 20113 of this title, and that would be a trade secret or commercial or financial information that is privileged or confidential under the meaning of section 552(b)(4) of title 5 if the information had been obtained from a non-Federal party participating in such an agreement.

(c) COMMITTEES OF CONGRESS.—Nothing in this chapter authorizes the withholding of information by the Administrator from the duly authorized committees of Congress.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3338.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20131(a)	42 U.S.C. 2454(a) (words before proviso).	Pub. L. 85–568, title III, § 303, July 29, 1958, 72 Stat. 433; Pub. L. 102–588, title V, § 509, Nov. 4, 1992, 106 Stat. 5129.
20131(b)	42 U.S.C. 2454(b).	
20131(c)	42 U.S.C. 2454(a) (proviso).	

§ 20132. Security requirements

The Administrator shall establish such security requirements, restrictions, and safeguards as the Administrator deems necessary in the interest of the national security. The Administrator may arrange with the Director of the Office of Personnel Management for the conduct of such security or other personnel investigations of the Administration's officers, employees, and consultants, and its contractors and subcontractors and their officers and employees, actual or

prospective, as the Administrator deems appropriate. If any such investigation develops any data reflecting that the individual who is the subject of the investigation is of questionable loyalty, the matter shall be referred to the Federal Bureau of Investigation for the conduct of a full field investigation, the results of which shall be furnished to the Administrator.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3338.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20132	42 U.S.C. 2455(a).	Pub. L. 85–568, title III, § 304(a), July 29, 1958, 72 Stat. 433; 1978 Reorg. Plan No. 2, § 102, eff. Jan. 1, 1979, 43 F.R. 36037, 92 Stat. 3783.

The words ''Director of the Office of Personnel Management'' are substituted for ''Civil Service Commission'' because of section 102 of Reorganization Plan No. 2 of 1978 (5 App U.S.C.).

Statutory Notes and Related Subsidiaries

ACCESS TO RESTRICTED DATA

Pub. L. 85–568, title III, § 304(b), July 29, 1958, 72 Stat. 434, provided that: ''The Atomic Energy Commission may authorize any of its employees, or employees of any contractor, prospective contractor, licensee, or prospective licensee of the Atomic Energy Commission or any other person authorized to have access to Restricted Data by the Atomic Energy Commission under subsection 145 b. of the Atomic Energy Act of 1954 (42 U.S.C. 2165(b)), to permit any member, officer, or employee of the Council [National Aeronautics and Space Council], or the Administrator [of the National Aeronautics and Space Administration], or any officer, employee, member of an advisory committee, contractor, subcontractor, or officer or employee of a contractor or subcontractor of the Administration [National Aeronautics and Space Administration], to have access to Restricted Data relating to aeronautical and space activities which is required in the performance of his duties and so certified by the Council or the Administrator, as the case may be, but only if (1) the Council or Administrator or designee thereof has determined, in accordance with the established personnel security procedures and standards of the Council or Administration, that permitting such individual to have access to such Restricted Data will not endanger the common defense and security, and (2) the Council or Administrator or designee thereof finds that the established personnel and other security procedures and standards of the Council or Administration are adequate and in reasonable conformity to the standards established by the Atomic Energy Commission under section 145 of the Atomic Energy Act of 1954 (42 U.S.C. 2165). Any individual granted access to such Restricted Data pursuant to this subsection may exchange such Data with any individual who (A) is an officer or employee of the Department of Defense, or any department or agency thereof, or a member of the armed forces, or a contractor or subcontractor of any such department, agency, or armed force, or an officer or employee of any such contractor or subcontractor, and (B) has been authorized to have access to Restricted Data under the provisions of section 143 of the Atomic Energy Act of 1954 (42 U.S.C. 2163).''

[Atomic Energy Commission abolished and functions transferred by sections 5814 and 5841 of Title 42, The Public Health and Welfare. See also Transfer of Functions notes set out under those sections.]

[National Aeronautics and Space Council, together with functions of Council, abolished by section 3(a)(4) of Reorg. Plan No. 1 of 1973, effective July 1, 1973, set out in the Appendix to Title 5, Government Organization and Employees.]

§ 20133. Permission to carry firearms

As the Administrator deems necessary in the public interest, the Administrator may—

(1) direct officers and employees of the Administration to carry firearms while in the conduct of their official duties; and

(2) authorize employees of contractors and subcontractors of the Administration who are engaged in the protection of property owned by the United States, and located at facilities owned by or contracted to the United States, to carry firearms while in the conduct of their official duties.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3338.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20133	42 U.S.C. 2456.	Pub. L. 85–568, title III, § 304(e), July 29, 1958, 72 Stat. 435.

§ 20134. Arrest authority

Under regulations prescribed by the Administrator and approved by the Attorney General, employees of the Administration and of its contractors and subcontractors authorized to carry firearms under section 20133 of this title may arrest without warrant for any offense against the United States committed in their presence, or for any felony cognizable under the laws of the United States if they have reasonable grounds to believe that the person to be arrested has committed or is committing such felony. Persons granted authority to make arrests by this section may exercise that authority only while guarding and protecting property owned or leased by, or under the control of, the United States under the administration and control of the Administration or one of its contractors or subcontractors, at facilities owned by or contracted to the Administration.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3339.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20134	42 U.S.C. 2456a.	Pub. L. 85–568, title III, § 304(f), as added Pub. L. 100–685, title II, § 206, Nov. 17, 1988, 102 Stat. 4090.

§ 20135. Property rights in inventions

(a) DEFINITIONS.—In this section:

(1) CONTRACT.—The term ''contract'' means any actual or proposed contract, agreement, understanding, or other arrangement, and includes any assignment, substitution of parties, or subcontract executed or entered into thereunder.

(2) MADE.—The term ''made'', when used in relation to any invention, means the conception or first actual reduction to practice of such invention.

(3) PERSON.—The term ''person'' means any individual, partnership, corporation, association, institution, or other entity.

(b) EXCLUSIVE PROPERTY OF UNITED STATES.—

(1) IN GENERAL.—An invention shall be the exclusive property of the United States if it is made in the performance of any work under any contract of the Administration, and the Administrator determines that—

(A) the person who made the invention was employed or assigned to perform research, development, or exploration work and the invention is related to the work the person was employed or assigned to perform, or was within the scope of the person's employment duties, whether or not it was made during working hours, or with a contribution by the Government of the use of Government facilities, equipment, materials, allocated funds, information proprietary to the Government, or services of Government employees during working hours; or

(B) the person who made the invention was not employed or assigned to perform research, development, or exploration work, but the invention is nevertheless related to the contract, or to the work or duties the person was employed or assigned to perform, and was made during working hours, or with a contribution from the Government of the sort referred to in subparagraph (A).

(2) PATENT TO UNITED STATES.—If an invention is the exclusive property of the United States under paragraph (1), and if such invention is patentable, a patent therefor shall be issued to the United States upon application made by the Administrator, unless the Administrator waives all or any part of the rights of the United States to such invention in conformity with the provisions of subsection (g).

(c) CONTRACT PROVISIONS FOR FURNISHING REPORTS OF INVENTIONS, DISCOVERIES, IMPROVEMENTS, OR INNOVATIONS.—Each contract entered into by the Administrator with any party for the performance of any work shall contain effective provisions under which the party shall furnish promptly to the Administrator a written report containing full and complete technical information concerning any invention, discovery, improvement, or innovation which may be made in the performance of any such work.

(d) PATENT APPLICATION.—No patent may be issued to any applicant other than the Administrator for any invention which appears to the Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office (hereafter in this section referred to as the ''Director'') to have significant utility in the conduct of aeronautical and space activities unless the applicant files with the Director, with the application or within 30 days after request therefor by the Director, a written statement executed under oath setting forth the full facts concerning the circumstances under which the invention was made and stating the relationship (if any) of the invention to the performance of any work under any contract of the Administration. Copies of each such statement and the application to which it relates shall be transmitted forthwith by the Director to the Administrator.

(e) ISSUANCE OF PATENT TO APPLICANT.—Upon any application as to which any such statement has been transmitted to the Administrator, the Director may, if the invention is patentable, issue a patent to the applicant unless the Administrator, within 90 days after receipt of the application and statement, requests that the patent be issued to the Administrator on behalf of the United States. If, within such time, the Administrator files such a request with the Director, the Director shall transmit notice thereof to the applicant, and shall issue such patent to the Administrator unless the applicant within 30 days after receipt of the notice requests a hearing before the Patent Trial and Appeal Board on the question whether the Administrator is entitled under this section to receive the patent. The Board may hear and determine, in accordance with rules and procedures established for interference and derivation cases, the question so presented, and its determination shall be subject to appeal by the applicant or by the Administrator to the United States Court of Appeals for the Federal Circuit in accordance with procedures governing appeals from decisions of the Patent Trial and Appeal Board in other proceedings.

(f) SUBSEQUENT TRANSFER OF PATENT IN CASE OF FALSE REPRESENTATIONS.—Whenever a patent has been issued to an applicant in conformity with subsection (e), and the Administrator thereafter has reason to believe that the statement filed by the applicant in connection with the patent contained a false representation of a material fact, the Administrator, within 5 years after the date of issuance of the patent, may file with the Director a request for the transfer to the Administrator of title to the patent on the records of the Director. Notice of any such request shall be transmitted by the Director to the owner of record of the patent, and title to the patent shall be so transferred to the Administrator unless, within 30 days after receipt of notice, the owner of record requests a hearing before the Patent Trial and Appeal Board on the question whether any such false representation was contained in the statement filed in connection with the patent. The question shall be heard and determined, and the determination shall be subject to review, in the manner prescribed by subsection (e) for questions arising thereunder. A request made by the Administrator under this subsection for the transfer of title to a patent, and prosecution for the violation of any criminal statute, shall not be barred by the failure of the Administrator to make a request under subsection (e) for the issuance of the patent to the Administrator, or by any notice previously given by the Administrator stating that the Administrator had no objection to the issuance of the patent to the applicant.

(g) WAIVER OF RIGHTS TO INVENTIONS.—Under such regulations in conformity with this subsection as the Administrator shall prescribe, the Administrator may waive all or any part of the rights of the United States under this section with respect to any invention or class of inventions made or which may be made by any person or class of persons in the performance of any work required by any contract of the Administration if the Administrator determines that the interests of the United States will be served thereby. Any such waiver may be made upon

such terms and under such conditions as the Administrator shall determine to be required for the protection of the interests of the United States. Each such waiver made with respect to any invention shall be subject to the reservation by the Administrator of an irrevocable, nonexclusive, nontransferable, royalty-free license for the practice of such invention throughout the world by or on behalf of the United States or any foreign government pursuant to any treaty or agreement with the United States. Each proposal for any waiver under this subsection shall be referred to an Inventions and Contributions Board which shall be established by the Administrator within the Administration. Such Board shall accord to each interested party an opportunity for hearing, and shall transmit to the Administrator its findings of fact with respect to such proposal and its recommendations for action to be taken with respect thereto.

(h) PROTECTION OF TITLE.—The Administrator is authorized to take all suitable and necessary steps to protect any invention or discovery to which the Administrator has title, and to require contractors or persons who retain title to inventions or discoveries under this section to protect the inventions or discoveries to which the Administration has or may acquire a license of use.

(i) ADMINISTRATION AS DEFENSE AGENCY.—The Administration shall be considered a defense agency of the United States for the purpose of chapter 17 of title 35.

(j) OBJECTS INTENDED FOR LAUNCH, LAUNCHED, OR ASSEMBLED IN OUTER SPACE.—Any object intended for launch, launched, or assembled in outer space shall be considered a vehicle for the purpose of section 272 of title 35.

(k) USE OR MANUFACTURE OF PATENTED INVENTIONS INCORPORATED IN SPACE VEHICLES LAUNCHED FOR PERSONS OTHER THAN UNITED STATES.—The use or manufacture of any patented invention incorporated in a space vehicle launched by the United States Government for a person other than the United States shall not be considered to be a use or manufacture by or for the United States within the meaning of section 1498(a) of title 28, unless the Administration gives an express authorization or consent for such use or manufacture.

(Pub. L. 111–314, §3, Dec. 18, 2010, 124 Stat. 3339; Pub. L. 112–29, §7(d)(2), Sept. 16, 2011, 125 Stat. 315.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20135	42 U.S.C. 2457.	Pub. L. 85–568, title III, §305, July 29, 1958, 72 Stat. 435; Pub. L. 96–517, §7(b), Dec. 12, 1980, 94 Stat. 3027; Pub. L. 97–96, §7, Dec. 21, 1981, 95 Stat. 1210; Pub. L. 97–164, title I, §162(3), Apr. 2, 1982, 96 Stat. 49; Pub. L. 98–622, title II, §205(c), Nov. 8, 1984, 98 Stat. 3388; Pub. L. 106–113, div. B, §1000(a)(9) [title IV, §4732(b)(20)], Nov. 29, 1999, 113 Stat. 1536, 1501A–585.

Editorial Notes

AMENDMENTS

2011—Subsec. (e). Pub. L. 112–29 substituted ''Patent Trial and Appeal Board'' for ''Board of Patent Appeals and Interferences'' in two places and inserted ''and derivation'' after ''established for interference''.

Subsec. (f). Pub. L. 112–29, §7(d)(2)(A), substituted ''Patent Trial and Appeal Board'' for ''Board of Patent Appeals and Interferences''.

Statutory Notes and Related Subsidiaries

EFFECTIVE DATE OF 2011 AMENDMENT

Amendment by Pub. L. 112–29 effective upon the expiration of the 1-year period beginning on Sept. 16, 2011, and applicable to proceedings commenced on or after that effective date, with certain exceptions, see section 7(e) of Pub. L. 112–29, set out as a note under section 6 of Title 35, Patents.

§ 20136. Contributions awards

(a) APPLICATIONS.—Subject to the provisions of this section, the Administrator is authorized, on the Administrator's own initiative or on application of any person, to make a monetary award, in an amount and on terms the Administrator determines to be warranted, to any person (as defined by section 20135(a) of this title) for any scientific or technical contribution to the Administration which is determined by the Administrator to have significant value in the conduct of aeronautical and space activities. Each application made for such an award shall be referred to the Inventions and Contributions Board established under section 20135 of this title. Such Board shall accord to each applicant an opportunity for hearing on the application, and shall transmit to the Administrator its recommendation as to the terms of the award, if any, to be made to the applicant for the contribution. In determining the terms and conditions of an award the Administrator shall take into account—

(1) the value of the contribution to the United States;

(2) the aggregate amount of any sums which have been expended by the applicant for the development of the contribution;

(3) the amount of any compensation (other than salary received for services rendered as an officer or employee of the Government) previously received by the applicant for or on account of the use of the contribution by the United States; and

(4) any other factors the Administrator determines to be material.

(b) APPORTIONMENT OF AWARDS.—If more than one applicant under subsection (a) claims an interest in the same contribution, the Administrator shall ascertain and determine the respective interests of the applicants, and shall apportion any award to be made among the applicants in amounts the Administrator determines to be equitable.

(c) SURRENDER OF OTHER CLAIMS.—No award may be made under subsection (a) unless the applicant surrenders, by means the Administrator determines to be effective, all claims that the applicant may have to receive any compensation (other than the award made under this section) for the use of the contribution or any element

thereof at any time by or on behalf of the United States, or by or on behalf of any foreign government pursuant to a treaty or agreement with the United States, within the United States or at any other place.

(d) REPORT AND WAITING PERIOD.—No award may be made under subsection (a) in an amount exceeding $100,000 unless the Administrator transmits to the appropriate committees of Congress a full and complete report concerning the amount and terms of, and the basis for, the proposed award, and a period of 30 calendar days of regular session of Congress expires after receipt of the report by the committees.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3342.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20136(a)	42 U.S.C. 2458(a).	Pub. L. 85–568, title III, § 306, July 29, 1958, 72 Stat. 437.
20136(b)	42 U.S.C. 2458(b) (1st sentence).	
20136(c)	42 U.S.C. 2458(b) (par. (1) of last sentence).	
20136(d)	42 U.S.C. 2458(b) (par. (2) of last sentence).	

In subsections (c) and (d), the words ''No award may be made under subsection (a)'' are substituted for ''No award may be made under subsection (a) with respect to any contribution'' for clarity and to eliminate unnecessary words.

§ 20137. Malpractice and negligence suits against United States

(a) EXCLUSIVE REMEDY.—The remedy against the United States provided by sections 1346(b) and 2672 of title 28, for damages for personal injury, including death, caused by the negligent or wrongful act or omission of any physician, dentist, nurse, pharmacist, or paramedical or other supporting personnel (including medical and dental technicians, nursing assistants, and therapists) of the Administration in the performance of medical, dental, or related health care functions (including clinical studies and investigations) while acting within the scope of such person's duties or employment therein or therefor shall be exclusive of any other civil action or proceeding by reason of the same subject matter against such person (or the estate of such person) whose act or omission gave rise to the action or proceeding.

(b) ATTORNEY GENERAL TO DEFEND ANY CIVIL ACTION OR PROCEEDING FOR MALPRACTICE OR NEGLIGENCE.—The Attorney General shall defend any civil action or proceeding brought in any court against any person referred to in subsection (a) (or the estate of such person) for any such injury. Any such person against whom such civil action or proceeding is brought shall deliver within such time after date of service or knowledge of service as determined by the Attorney General, all process served upon such person or an attested true copy thereof to such person's immediate superior or to whomever was designated by the Administrator to receive such papers. Such person shall promptly furnish copies of the pleading and process therein to the United States Attorney for the district embracing the place wherein the proceeding is brought, to the Attorney General, and to the Administrator.

(c) REMOVAL OF ACTIONS.—Upon a certification by the Attorney General that any person described in subsection (a) was acting in the scope of such person's duties or employment at the time of the incident out of which the suit arose, any such civil action or proceeding commenced in a State court shall be removed without bond at any time before trial by the Attorney General to the district court of the United States of the district and division embracing the place wherein it is pending and the proceeding deemed a tort action brought against the United States under the provisions of title 28, and all references thereto. Should a district court of the United States determine, on a hearing on a motion to remand held before a trial on the merits, that the case so removed is one in which a remedy by suit within the meaning of subsection (a) is not available against the United States, the case shall be remanded to the State court.

(d) COMPROMISE OR SETTLEMENT OF CLAIMS.—The Attorney General may compromise or settle any claim asserted in such civil action or proceeding in the manner provided in section 2677 of title 28, and with the same effect.

(e) APPLICABILITY OF OTHER PROVISIONS OF LAW.—For purposes of this section, the provisions of section 2680(h) of title 28 shall not apply to any cause of action arising out of a negligent or wrongful act or omission in the performance of medical, dental, or related health care functions (including clinical studies and investigations).

(f) LIABILITY INSURANCE FOR PERSONS ASSIGNED TO FOREIGN COUNTRIES OR NON-FEDERAL AGENCIES.—The Administrator or the Administrator's designee may, to the extent that the Administrator or the designee deems appropriate, hold harmless or provide liability insurance for any person described in subsection (a) for damages for personal injury, including death, caused by such person's negligent or wrongful act or omission in the performance of medical, dental, or related health care functions (including clinical studies and investigations) while acting within the scope of such person's duties if such person is assigned to a foreign country or detailed for service with other than a Federal department, agency, or instrumentality or if the circumstances are such as are likely to preclude the remedies of third persons against the United States described in section 2679(b) of title 28, for such damage or injury.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3343.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20137	42 U.S.C. 2458a.	Pub. L. 85–568, title III, § 307, as added Pub. L. 94–464, § 3, Oct. 8, 1976, 90 Stat. 1988.

In subsection (a), the word ''hereafter'' is omitted as unnecessary.

In subsection (b), in the last sentence, commas are added after ''brought'' and ''Attorney General'' for clarity.

In subsection (e), the words ''wrongful act or omission'' are substituted for ''wrongful act of omission'' to correct an error in the law.

§ 20138. Insurance and indemnification

(a) DEFINITIONS.—In this section:

(1) SPACE VEHICLE.—The term ''space vehicle'' means an object intended for launch, launched, or assembled in outer space, including the space shuttle and other components of a space transportation system, together with related equipment, devices, components, and parts.

(2) THIRD PARTY.—The term ''third party'' means any person who may institute a claim against a user for death, bodily injury, or loss of or damage to property.

(3) USER.—The term ''user'' includes anyone who enters into an agreement with the Administration for use of all or a portion of a space vehicle, who owns or provides property to be flown on a space vehicle, or who employs a person to be flown on a space vehicle.

(b) AUTHORIZATION.—The Administration is authorized on such terms and to the extent it may deem appropriate to provide liability insurance for any user of a space vehicle to compensate all or a portion of claims by third parties for death, bodily injury, or loss of or damage to property resulting from activities carried on in connection with the launch, operations, or recovery of the space vehicle. Appropriations available to the Administration may be used to acquire such insurance, but such appropriations shall be reimbursed to the maximum extent practicable by the users under reimbursement policies established pursuant to section 20113 of this title.

(c) INDEMNIFICATION.—Under such regulations in conformity with this section as the Administrator shall prescribe taking into account the availability, cost, and terms of liability insurance, any agreement between the Administration and a user of a space vehicle may provide that the United States will indemnify the user against claims (including reasonable expenses of litigation or settlement) by third parties for death, bodily injury, or loss of or damage to property resulting from activities carried on in connection with the launch, operations, or recovery of the space vehicle, but only to the extent that such claims are not compensated by liability insurance of the user. Such indemnification may be limited to claims resulting from other than the actual negligence or willful misconduct of the user.

(d) TERMS OF INDEMNIFICATION AGREEMENT.—An agreement made under subsection (c) that provides indemnification must also provide for—

(1) notice to the United States of any claim or suit against the user for the death, bodily injury, or loss of or damage to the property; and

(2) control of or assistance in the defense by the United States, at its election, of that suit or claim.

(e) CERTIFICATION OF JUST AND REASONABLE AMOUNT.—No payment may be made under subsection (c) unless the Administrator or the Administrator's designee certifies that the amount is just and reasonable.

(f) PAYMENTS.—Upon the approval by the Administrator, payments under subsection (c) may be made, at the Administrator's election, either from funds available for research and development not otherwise obligated or from funds appropriated for such payments.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3344.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20138	42 U.S.C. 2458b.	Pub. L. 85–568, title III, § 308, as added Pub. L. 96–48, § 6(b)(2), Aug. 8, 1979, 93 Stat. 348.

§ 20139. Insurance for experimental aerospace vehicles

(a) DEFINITIONS.—In this section:

(1) COOPERATING PARTY.—The term ''cooperating party'' means any person who enters into an agreement with the Administration for the performance of cooperative scientific, aeronautical, or space activities to carry out the purposes of this chapter.

(2) DEVELOPER.—The term ''developer'' means a United States person (other than a natural person) who—

(A) is a party to an agreement with the Administration for the purpose of developing new technology for an experimental aerospace vehicle;

(B) owns or provides property to be flown or situated on that vehicle; or

(C) employs a natural person to be flown on that vehicle.

(3) EXPERIMENTAL AEROSPACE VEHICLE.—The term ''experimental aerospace vehicle'' means an object intended to be flown in, or launched into, orbital or suborbital flight for the purpose of demonstrating technologies necessary for a reusable launch vehicle, developed under an agreement between the Administration and a developer.

(4) RELATED ENTITY.—The term ''related entity'' includes a contractor or subcontractor at any tier, a supplier, a grantee, and an investigator or detailee.

(b) IN GENERAL.—The Administrator may provide liability insurance for, or indemnification to, the developer of an experimental aerospace vehicle developed or used in execution of an agreement between the Administration and the developer.

(c) TERMS AND CONDITIONS.—

(1) IN GENERAL.—Except as otherwise provided in this section, the insurance and indemnification provided by the Administration under subsection (b) to a developer shall be provided on the same terms and conditions as insurance and indemnification is provided by the Administration under section 20138 of this title to the user of a space vehicle.

(2) INSURANCE.—

(A) IN GENERAL.—A developer shall obtain liability insurance or demonstrate financial responsibility in amounts to compensate for the maximum probable loss from claims by—

(i) a third party for death, bodily injury, or property damage, or loss resulting from an activity carried out in connection with the development or use of an experimental aerospace vehicle; and

(ii) the United States Government for damage or loss to Government property resulting from such an activity.

(B) MAXIMUM REQUIRED.—The Administrator shall determine the amount of insurance required, but, except as provided in subparagraph (C), that amount shall not be greater than the amount required under section 50914(a)(3) of this title for a launch. The Administrator shall publish notice of the Administrator's determination and the applicable amount or amounts in the Federal Register within 10 days after making the determination.

(C) INCREASE IN DOLLAR AMOUNTS.—The Administrator may increase the dollar amounts set forth in section 50914(a)(3)(A) of this title for the purpose of applying that section under this section to a developer after consultation with the Comptroller General and such experts and consultants as may be appropriate, and after publishing notice of the increase in the Federal Register not less than 180 days before the increase goes into effect. The Administrator shall make available for public inspection, not later than the date of publication of such notice, a complete record of any correspondence received by the Administration, and a transcript of any meetings in which the Administration participated, regarding the proposed increase.

(D) SAFETY REVIEW REQUIRED BEFORE ADMINISTRATOR PROVIDES INSURANCE.—The Administrator may not provide liability insurance or indemnification under subsection (b) unless the developer establishes to the satisfaction of the Administrator that appropriate safety procedures and practices are being followed in the development of the experimental aerospace vehicle.

(3) NO INDEMNIFICATION WITHOUT CROSS-WAIVER.—Notwithstanding subsection (b), the Administrator may not indemnify a developer of an experimental aerospace vehicle under this section unless there is an agreement between the Administration and the developer described in subsection (d).

(4) APPLICATION OF CERTAIN PROCEDURES.—If the Administrator requests additional appropriations to make payments under this section, like the payments that may be made under section 20138(c) of this title, then the request for those appropriations shall be made in accordance with the procedures established by subsections (d) and (e) of section 50915 of this title.

(d) CROSS-WAIVERS.—

(1) ADMINISTRATOR AUTHORIZED TO WAIVE.—The Administrator, on behalf of the United States, and its departments, agencies, and instrumentalities, may reciprocally waive claims with a developer or cooperating party and with the related entities of that developer or cooperating party under which each party to the waiver agrees to be responsible, and agrees to ensure that its own related entities are responsible, for damage or loss to its property for which it is responsible, or for losses resulting from any injury or death sustained by its own employees or agents, as a result of activities connected to the agreement or use of the experimental aerospace vehicle.

(2) LIMITATIONS.—

(A) CLAIMS.—A reciprocal waiver under paragraph (1) may not preclude a claim by any natural person (including, but not limited to, a natural person who is an employee of the United States, the developer, the cooperating party, or their respective subcontractors) or that natural person's estate, survivors, or subrogees for injury or death, except with respect to a subrogee that is a party to the waiver or has otherwise agreed to be bound by the terms of the waiver.

(B) LIABILITY FOR NEGLIGENCE.—A reciprocal waiver under paragraph (1) may not absolve any party of liability to any natural person (including, but not limited to, a natural person who is an employee of the United States, the developer, the cooperating party, or their respective subcontractors) or such a natural person's estate, survivors, or subrogees for negligence, except with respect to a subrogee that is a party to the waiver or has otherwise agreed to be bound by the terms of the waiver.

(C) INDEMNIFICATION FOR DAMAGES.—A reciprocal waiver under paragraph (1) may not be used as the basis of a claim by the Administration, or the developer or cooperating party, for indemnification against the other for damages paid to a natural person, or that natural person's estate, survivors, or subrogees, for injury or death sustained by that natural person as a result of activities connected to the agreement or use of the experimental aerospace vehicle.

(D) WILLFUL MISCONDUCT.—A reciprocal waiver under paragraph (1) may not relieve the United States, the developer, the cooperating party, or the related entities of the developer or cooperating party, of liability for damage or loss resulting from willful misconduct.

(3) EFFECT ON PREVIOUS WAIVERS.—This subsection applies to any waiver of claims entered into by the Administration without regard to the date on which the Administration entered into the waiver.

(e) RELATIONSHIP TO OTHER LAWS.—

(1) SECTION 20138.—This section does not apply to any object, transaction, or operation to which section 20138 of this title applies.

(2) SECTION 50919(g)(1).—The Administrator may not provide indemnification to a developer under this section for launches subject to license under section 50919(g)(1) of this title.

(f) TERMINATION.—

(1) IN GENERAL.—The provisions of this section shall terminate on December 31, 2010.

(2) EFFECT OF TERMINATION ON AGREEMENT.—The termination of this section shall not terminate or otherwise affect any cross-waiver agreement, insurance agreement, indemnification agreement, or other agreement entered into under this section, except as may be provided in that agreement.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3345.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20139	42 U.S.C. 2458c.	Pub. L. 85–568, title III, § 309, formerly title III, as added Pub. L. 106–74, title IV, § 435(a), Oct. 20, 1999, 113 Stat. 1097; designated § 309 and amended Pub. L. 106–391, title III, § 324(a)(2), (b), Oct. 30, 2000, 114 Stat. 1599, 1600; Pub. L. 109–155, title VII, § 702, Dec. 30, 2005, 119 Stat. 2936.

In subsection (d)(3), the words ''without regard to the date on which the Administration entered into the waiver'' are substituted for ''without regard to whether it was entered into before, on, or after the date of enactment of this Act'' to avoid an ambiguity in the law. Literally, the words ''the date of enactment of this Act'' mean July 29, 1958, the date of enactment of Public Law 85–568. However, the intended meaning of the words ''the date of enactment of this Act'' is probably October 20, 1999, the date of enactment of Public Law 106–74. The question as to which date is actually intended is rendered inconsequential by the words ''before, on, or after''.

§ 20140. Appropriations

(a) AUTHORIZATION.—

(1) IN GENERAL.—There are authorized to be appropriated such sums as may be necessary to carry out this chapter, except that nothing in this chapter shall authorize the appropriation of any amount for—

(A) the acquisition or condemnation of any real property; or

(B) any other item of a capital nature (such as plant or facility acquisition, construction, or expansion) which exceeds $250,000.

(2) AVAILABILITY.—Sums appropriated pursuant to this subsection for the construction of facilities, or for research and development activities, shall remain available until expended.

(b) USE OF FUNDS FOR EMERGENCY REPAIRS OF EXISTING FACILITIES.—Any funds appropriated for the construction of facilities may be used for emergency repairs of existing facilities when such existing facilities are made inoperative by major breakdown, accident, or other circumstances and such repairs are deemed by the Administrator to be of greater urgency than the construction of new facilities.

(c) TERMINATION.—Notwithstanding any other provision of law, the authorization of any appropriation to the Administration shall expire (unless an earlier expiration is specifically provided) at the close of the third fiscal year following the fiscal year in which the authorization was enacted, to the extent that such appropriation has not theretofore actually been made.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3347.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20140	42 U.S.C. 2459.	Pub. L. 85–568, title III, § 310, formerly § 307, July 29, 1958, 72 Stat. 438; Pub. L. 88–113, § 6, Sept. 6, 1963, 77 Stat. 144; renumbered § 308, Pub. L. 94–464, § 3, Oct. 8, 1976, 90 Stat. 1988; renumbered § 309, Pub. L. 96–48, § 6(b)(1), Aug. 8, 1979, 93 Stat. 348; renumbered § 310, Pub. L. 106–391, title III, § 324(a)(1), Oct. 30, 2000, 114 Stat. 1599.

§ 20141. Misuse of agency name and initials

(a) IN GENERAL.—No person (as defined by section 20135(a) of this title) may knowingly use the words ''National Aeronautics and Space Administration'' or the letters ''NASA'', or any combination, variation, or colorable imitation of those words or letters either alone or in combination with other words or letters—

(1) as a firm or business name in a manner reasonably calculated to convey the impression that the firm or business has some connection with, endorsement of, or authorization from, the Administration which does not, in fact, exist; or

(2) in connection with any product or service being offered or made available to the public in a manner reasonably calculated to convey the impression that the product or service has the authorization, support, sponsorship, or endorsement of, or the development, use, or manufacture by or on behalf of the Administration which does not, in fact, exist.

(b) CIVIL PROCEEDING TO ENJOIN.—Whenever it appears to the Attorney General that any person is engaged in an act or practice which constitutes or will constitute conduct prohibited by subsection (a), the Attorney General may initiate a civil proceeding in a district court of the United States to enjoin such act or practice.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3348.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20141	42 U.S.C. 2459b.	Pub. L. 85–568, title III, § 311, formerly § 310, as added Pub. L. 98–52, title I, § 107, July 15, 1983, 97 Stat. 284; renumbered § 311, Pub. L. 106–391, title III, § 324(a)(1), Oct. 30, 2000, 114 Stat. 1599.

§ 20142. Contracts regarding expendable launch vehicles

(a) COMMITMENTS BEYOND AVAILABLE APPROPRIATIONS.—The Administrator may enter into contracts for expendable launch vehicle services that are for periods in excess of the period for which funds are otherwise available for obligation, provide for the payment for contingent liability which may accrue in excess of available appropriations in the event the Federal Government for its convenience terminates such contracts, and provide for advance payments reasonably related to launch vehicle and related

equipment, fabrication, and acquisition costs, if any such contract limits the amount of the payments that the Government is allowed to make under such contract to amounts provided in advance in appropriation Acts. Such contracts may be limited to sources within the United States when the Administrator determines that such limitation is in the public interest.

(b) TERMINATION IF FUNDS NOT AVAILABLE.—If funds are not available to continue any such contract, the contract shall be terminated for the convenience of the Government, and the costs of such contract shall be paid from appropriations originally available for performance of the contract, from other unobligated appropriations currently available for the procurement of launch services, or from funds appropriated for such payments.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3348.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20142	42 U.S.C. 2459c.	Pub. L. 85–568, title III, § 312, formerly § 311, as added Pub. L. 100–147, title I, § 117, Oct. 30, 1987, 101 Stat. 867; renumbered § 312, Pub. L. 106–391, title III, § 324(a)(1), Oct. 30, 2000, 114 Stat. 1599.

In subsection (a), the word ''expendable'' is substituted for ''expendabe'' to correct an error in the law.

§ 20143. Full cost appropriations account structure

(a) ACCOUNTS FOR APPROPRIATIONS.—

(1) DESIGNATION OF 3 ACCOUNTS.—Appropriations for the Administration shall be made in 3 accounts, ''Science, Aeronautics, and Education'', ''Exploration Systems and Space Operations'', and an account for amounts appropriated for the necessary expenses of the Office of the Inspector General.

(2) REPROGRAMMING.—Within the Exploration Systems and Space Operations account, no more than 10 percent of the funds for a fiscal year for Exploration Systems may be reprogrammed for Space Operations, and no more than 10 percent of the funds for a fiscal year for Space Operations may be reprogrammed for Exploration Systems. This paragraph shall not apply to reprogramming for the purposes described in subsection (b)(2).

(3) AVAILABILITY.—Appropriations shall remain available for 2 fiscal years, unless otherwise specified in law. Each account shall include the planned full costs of Administration activities.

(b) TRANSFERS AMONG ACCOUNTS.—

(1) IN GENERAL.—To ensure the safe, timely, and successful accomplishment of Administration missions, the Administration may transfer among accounts as necessary, amounts for—

(A) Federal salaries and benefits;
(B) training, travel, and awards;
(C) facility and related costs;
(D) information technology services;
(E) publishing services;
(F) science, engineering, fabricating, and testing services; and
(G) other administrative services.

(2) DISASTER, ACT OF TERRORISM, EMERGENCY RESCUE.—The Administration may also transfer amounts among accounts for the immediate costs of recovering from damage caused by a major disaster (as defined in section 102 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5122)) or by an act of terrorism, or for the immediate costs associated with an emergency rescue of astronauts.

(c) TRANSFER OF UNEXPIRED BALANCES.—The unexpired balances of prior appropriations to the Administration for activities authorized under this chapter may be transferred to the new account established for such activity in subsection (a). Balances so transferred may be merged with funds in the newly established account and thereafter may be accounted for as one fund under the same terms and conditions.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3349.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20143	42 U.S.C. 2459f.	Pub. L. 85–568, title III, § 313, formerly § 312, as added Pub. L. 106–377, § 1(a)(1) [title IV, § 431], Oct. 27, 2000, 114 Stat. 1441, 1441A–56; renumbered § 313 and amended, Pub. L. 108–199, div. G, title IV, § 417, Jan. 23, 2004, 118 Stat. 415; Pub. L. 108–447, div. I, title IV, § 417, Dec. 8, 2004, 118 Stat. 3339; Pub. L. 109–155, title II, § 201, Dec. 30, 2005, 119 Stat. 2915.

In subsection (a)(1), the words ''for fiscal year 2007 and thereafter'' are omitted as unnecessary.

Statutory Notes and Related Subsidiaries

NOTICE OF REPROGRAMMING OR REORGANIZATION

Pub. L. 106–391, title III, § 311, Oct. 30, 2000, 114 Stat. 1594, provided that:

''(a) NOTICE OF REPROGRAMMING.—If any funds authorized by this Act [see Tables for classification] are subject to a reprogramming action that requires notice to be provided to the Appropriations Committees of the House of Representatives and the Senate, notice of such action shall concurrently be provided to the Committee on Science [now Committee on Science, Space, and Technology] of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

''(b) NOTICE OF REORGANIZATION.—The Administrator [of the National Aeronautics and Space Administration] shall provide notice to the Committees on Science [now Science, Space, and Technology] and Appropriations of the House of Representatives, and the Committees on Commerce, Science, and Transportation and Appropriations of the Senate, not later than 30 days before any major reorganization of any program, project, or activity of the National Aeronautics and Space Administration.''

§ 20144. Prize authority

(a) IN GENERAL.—The Administration may carry out a program to competitively award cash prizes to stimulate innovation in basic and applied research, technology development, and prototype demonstration that have the potential for application to the performance of the

space and aeronautical activities of the Administration. The Administration may carry out a program to award prizes only in conformity with this section.

(b) TOPICS.—In selecting topics for prize competitions, the Administrator shall consult widely both within and outside the Federal Government, and may empanel advisory committees. The Administrator shall give consideration to prize goals such as the demonstration of the ability to provide energy to the lunar surface from space-based solar power systems, demonstration of innovative near-Earth object survey and deflection strategies, and innovative approaches to improving the safety and efficiency of aviation systems.

(c) ADVERTISING.—The Administrator shall widely advertise prize competitions to encourage participation.

(d) REQUIREMENTS AND REGISTRATION.—For each prize competition, the Administrator shall publish a notice in the Federal Register announcing the subject of the competition, the rules for being eligible to participate in the competition, the amount of the prize, and the basis on which a winner will be selected.

(e) ELIGIBILITY.—To be eligible to win a prize under this section, an individual or entity—

(1) shall have registered to participate in the competition pursuant to any rules promulgated by the Administrator under subsection (d);

(2) shall have complied with all the requirements under this section;

(3) in the case of a private entity, shall be incorporated in and maintain a primary place of business in the United States, and in the case of an individual, whether participating singly or in a group, shall be a citizen or permanent resident of the United States; and

(4) shall not be a Federal entity or Federal employee acting within the scope of their employment.

(f) LIABILITY.—

(1) ASSUMPTION OF RISK.—Registered participants must agree to assume any and all risks and waive claims against the Federal Government and its related entities, except in the case of willful misconduct, for any injury, death, damage, or loss of property, revenue, or profits, whether direct, indirect, or consequential, arising from their participation in a competition, whether such injury, death, damage, or loss arises through negligence or otherwise. For the purposes of this paragraph, the term ''related entity'' means a contractor or subcontractor at any tier, and a supplier, user, customer, cooperating party, grantee, investigator, or detailee.

(2) LIABILITY INSURANCE.—Participants must obtain liability insurance or demonstrate financial responsibility, in amounts determined by the Administrator, for claims by—

(A) a third party for death, bodily injury, or property damage, or loss resulting from an activity carried out in connection with participation in a competition, with the Federal Government named as an additional insured under the registered participant's insurance policy and registered participants agreeing to indemnify the Federal Government against third party claims for damages arising from or related to competition activities; and

(B) the Federal Government for damage or loss to Government property resulting from such an activity.

(g) JUDGES.—For each competition, the Administration, either directly or through an agreement under subsection (h), shall assemble a panel of qualified judges to select the winner or winners of the prize competition on the basis described pursuant to subsection (d). Judges for each competition shall include individuals from outside the Administration, including from the private sector. A judge may not—

(1) have personal or financial interests in, or be an employee, officer, director, or agent of any entity that is a registered participant in a competition; or

(2) have a familial or financial relationship with an individual who is a registered participant.

(h) ADMINISTERING THE COMPETITION.—The Administrator may enter into an agreement with a private, nonprofit entity to administer the prize competition, subject to the provisions of this section.

(i) FUNDING.—

(1) SOURCES.—Prizes under this section may consist of Federal appropriated funds and funds provided by the private sector for such cash prizes. The Administrator may accept funds from other Federal agencies for such cash prizes. The Administrator may not give any special consideration to any private sector entity in return for a donation.

(2) AVAILABILITY.—

(A) DEFINITION OF PROVISIONS KNOWN AS THE ANTI-DEFICIENCY ACT.—In this paragraph, the term ''provisions known as the Anti-Deficiency Act'' means sections 1341, 1342, 1349(a), 1350, 1351, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, and 1519 of title 31.

(B) IN GENERAL.—Notwithstanding any other provision of law, funds appropriated for prize awards under this section shall remain available until expended, and may be transferred, reprogrammed, or expended for other purposes only after the expiration of 10 fiscal years after the fiscal year for which the funds were originally appropriated. No provision in this section permits obligation or payment of funds in violation of the provisions known as the Anti-Deficiency Act.

(3) APPROPRIATION OR COMMITMENT OF FUNDS REQUIRED BEFORE ANNOUNCEMENT OF PRIZE OR INCREASE.—

(A) IN GENERAL.—No prize may be announced under subsection (d) until all the funds needed to pay out the announced amount of the prize have been appropriated or committed in writing by a private source.

(B) INCREASE.—The Administrator may increase the amount of a prize after an initial announcement is made under subsection (d) if—

(i) notice of the increase is provided in the same manner as the initial notice of the prize; and

(ii) the funds needed to pay out the announced amount of the increase have been

appropriated or committed in writing by a private source.

(4) NOTICE TO COMMITTEES FOR PRIZE GREATER THAN $50,000,000.—No prize competition under this section may offer a prize in an amount greater than $50,000,000 unless 30 days have elapsed after written notice has been transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(5) APPROVAL OF ADMINISTRATOR FOR PRIZE GREATER THAN $1,000,000.—No prize competition under this section may result in the award of more than $1,000,000 in cash prizes without the approval of the Administrator.

(j) USE OF ADMINISTRATION NAME OR INSIGNIA.—A registered participant in a competition under this section may use the Administration's name, initials, or insignia only after prior review and written approval by the Administration.

(k) COMPLIANCE WITH EXISTING LAW.—The Federal Government shall not, by virtue of offering or providing a prize under this section, be responsible for compliance by registered participants in a prize competition with Federal law, including licensing, export control, and non-proliferation laws, and related regulations.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3350; Pub. L. 111–358, title I, § 105(b), Jan. 4, 2011, 124 Stat. 3993.)

AMENDMENT NOT SHOWN IN TEXT

This section was derived from section 2459f–1 of Title 42, The Public Health and Welfare, which was amended by Pub. L. 111–358, title I, § 105(b), Jan. 4, 2011, 124 Stat. 3993. For applicability of this amendment to this section, see section 5(b) of Pub. L. 111–314, set out as a Transitional and Savings Provisions note preceding section 10101 of this title. Former section 2459f–1 of Title 42 was amended by striking out ''The Administration may carry out a program to award prizes only in conformity with this section.''

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20144	42 U.S.C. 2459f–1.	Pub. L. 85–568, title III, § 314, as added Pub. L. 109–155, title I, § 104, Dec. 30, 2005, 119 Stat. 2910; Pub. L. 110–422, title XI, § 1105(b), Oct. 15, 2008, 122 Stat. 4809.

In subsection (i)(2), subparagraph (A) is added, and the words ''provisions known as the Anti-Deficiency Act'' are substituted for ''the Anti-Deficiency Act (31 U.S.C. 1341)'', for clarity.

In subsection (i)(4), the words ''Committee on Science and Technology'' are substituted for ''Committee on Science'' on authority of Rule X(1)(*o*) of the Rules of the House of Representatives, adopted by House Resolution No. 6 (110th Congress, January 5, 2007).

Statutory Notes and Related Subsidiaries

CHANGE OF NAME

Committee on Science and Technology of House of Representatives changed to Committee on Science, Space, and Technology of House of Representatives by House Resolution No. 5, One Hundred Twelfth Congress, Jan. 5, 2011.

AVAILABILITY OF FUNDS

Pub. L. 117–328, div. B, title III, Dec. 29, 2022, 136 Stat. 4548, provided that: ''Funds for any announced prize otherwise authorized shall remain available, without fiscal year limitation, until a prize is claimed or the offer is withdrawn.''

Similar provisions were contained in the following prior appropriation acts:

Pub. L. 117–103, div. B, title III, Mar. 15, 2022, 136 Stat. 138.

Pub. L. 116–260, div. B, title III, Dec. 27, 2020, 134 Stat. 1270.

Pub. L. 116–93, div. B, title III, Dec. 20, 2019, 133 Stat. 2419.

Pub. L. 116–6, div. C, title III, Feb. 15, 2019, 133 Stat. 123.

Pub. L. 115–141, div. B, title III, Mar. 23, 2018, 132 Stat. 431.

PURPOSE

Pub. L. 110–422, title XI, § 1105(a), Oct. 15, 2008, 122 Stat. 4809, provided that: ''Prizes can play a useful role in encouraging innovation in the development of technologies and products that can assist NASA [National Aeronautics and Space Administration] in its aeronautics and space activities, and the use of such prizes by NASA should be encouraged.''

§ 20145. Lease of non-excess property

(a) IN GENERAL.—The Administrator may enter into a lease under this section with any person or entity (including another department or agency of the Federal Government or an entity of a State or local government) with regard to any non-excess real property and related personal property under the jurisdiction of the Administrator.

(b) CASH CONSIDERATION.—

(1) FAIR MARKET VALUE.—(A) A person or entity entering into a lease under this section shall provide cash consideration for the lease at fair market value as determined by the Administrator.

(B) Notwithstanding subparagraph (A), the Administrator may accept in-kind consideration for leases entered into for the purpose of developing renewable energy production facilities.

(2) UTILIZATION.—

(A) IN GENERAL.—The Administrator may utilize amounts of cash consideration received under this subsection for a lease entered into under this section to cover the full costs to the Administration in connection with the lease. These funds shall remain available until expended.

(B) CAPITAL REVITALIZATION AND IMPROVEMENTS.—Of any amounts of cash consideration received under this subsection that are not utilized in accordance with subparagraph (A)—

(i) 35 percent shall be deposited in a capital asset account to be established by the Administrator, shall be available for maintenance, capital revitalization, and improvements of the real property assets and related personal property under the jurisdiction of the Administrator, and shall remain available until expended; and

(ii) the remaining 65 percent shall be available to the respective center or facil-

ity of the Administration engaged in the lease of nonexcess real property, and shall remain available until expended for maintenance, capital revitalization, and improvements of the real property assets and related personal property at the respective center or facility subject to the concurrence of the Administrator.

(C) NO UTILIZATION FOR DAILY OPERATING COSTS.—Amounts utilized under subparagraph (B) may not be utilized for daily operating costs.

(c) ADDITIONAL TERMS AND CONDITIONS.—The Administrator may require such terms and conditions in connection with a lease under this section as the Administrator considers appropriate to protect the interests of the United States.

(d) RELATIONSHIP TO OTHER LEASE AUTHORITY.—The authority under this section to lease property of the Administration is in addition to any other authority to lease property of the Administration under law.

(e) LEASE RESTRICTIONS.—

(1) NO LEASE BACK OR OTHER CONTRACT.—The Administration is not authorized to lease back property under this section during the term of the out-lease or enter into other contracts with the lessee respecting the property.

(2) CERTIFICATION THAT OUT-LEASE WILL NOT HAVE NEGATIVE IMPACT ON MISSION.—The Administration is not authorized to enter into an out-lease under this section unless the Administrator certifies that the out-lease will not have a negative impact on the mission of the Administration.

(f) REPORTING REQUIREMENTS.—The Administrator shall submit an annual report by January 31st of each year. The report shall include the following:

(1) VALUE OF ARRANGEMENTS AND EXPENDITURES OF REVENUES.—Information that identifies and quantifies the value of the arrangements and expenditures of revenues received under this section.

(2) AVAILABILITY AND USE OF FUNDS FOR OPERATING PLAN.—The availability and use of funds received under this section for the Administration's operating plan.

(3) ANNUAL AND CUMULATIVE NUMBER OF LEASES.—The annual and cumulative number of leases entered into under this section, by National Aeronautics and Space Administration center and facility.

(4) ESTIMATED COST SAVINGS.—For each active lease agreement under this section, the estimated cost savings to the Administration resulting from reduced maintenance, operating, and associated costs in the previous fiscal year.

(5) OTHER QUANTIFIABLE BENEFITS.—Other quantifiable benefits, including additional cost savings not included under paragraph (4), to the Administration resulting from the use of leases under this section.

(g) REPORT ON ENHANCED-USE LEASING REQUIREMENTS.—Not later than 270 days after the date of the enactment of the National Aeronautics and Space Administration Authorization Act of 2022, the Administrator shall prepare and submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report on existing requirements for applicants seeking a lease under this section, including—

(1) any requirement related to the involvement of foreign entities, foreign entity ownership, and foreign entity investment; and

(2) at the discretion of the Administrator, any other requirement related to the protection and security of Administration missions and facilities.

(h) SUNSET.—The authority to enter into leases under this section shall expire December 31, 2032. The expiration under this subsection of authority to enter into leases under this section shall not affect the validity or term of leases or the Administration's retention of proceeds from leases entered into under this section before the expiration of the authority.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3352; Pub. L. 112–55, div. B, title III, Nov. 18, 2011, 125 Stat. 626; Pub. L. 115–10, title VIII, § 832, Mar. 21, 2017, 131 Stat. 67; Pub. L. 115–403, § 2, Dec. 31, 2018, 132 Stat. 5348; Pub. L. 116–94, div. I, title VI, § 602, Dec. 20, 2019, 133 Stat. 3028; Pub. L. 117–103, div. HH, title II, § 203, Mar. 15, 2022, 136 Stat. 1113; Pub. L. 117–167, div. B, title VII, § 10862, Aug. 9, 2022, 136 Stat. 1756.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20145	42 U.S.C. 2459j.	Pub. L. 85–568, title III, § 315, as added Pub. L. 108–7, div. K, title IV, § 418, Feb. 20, 2003, 117 Stat. 525; Pub. L. 110–161, div. B, title V, § 533(a)–(e), Dec. 26, 2007, 121 Stat. 1931; Pub. L. 110–422, title XI, § 1117(c), (d), Oct. 15, 2008, 122 Stat. 4814.

In subsection (f)(2), the word ''Administration's'' is substituted for ''Agency's'' for clarity.

In subsection (g), the words ''10 years after December 26, 2007'' are substituted for ''on the date that is ten years after the date of the enactment of the Commerce, Justice, Science, and Related Agencies Appropriations Act of 2008'' for consistency and to reflect the date of enactment of the Commerce, Justice, Science, and Related Agencies Appropriations Act, 2008 (Public Law 110–161, div. B, 121 Stat. 1884).

Editorial Notes

REFERENCES IN TEXT

The date of the enactment of the National Aeronautics and Space Administration Authorization Act of 2022, referred to in subsec. (g), is the date of enactment of title VII of div. B of Pub. L. 117–167, which was approved Aug. 9, 2022.

AMENDMENTS

2022—Subsec. (f)(3) to (5). Pub. L. 117–167, § 10862(b), added pars. (3) to (5).

Subsec. (g). Pub. L. 117–167, § 10862(c)(2), added subsec. (g). Former subsec. (g) redesignated (h).

Pub. L. 117–167, § 10862(a), substituted ''December 31, 2032'' for ''December 31, 2022''.

Pub. L. 117–103 substituted ''December 31, 2022'' for ''December 31, 2021''.

Subsec. (h). Pub. L. 117–167, § 10862(c)(1), redesignated subsec. (g) as (h).

2019—Subsec. (g). Pub. L. 116–94 substituted ''December 31, 2021'' for ''December 31, 2019''.
2018—Subsec. (g). Pub. L. 115–403 substituted ''December 31, 2019'' for ''December 31, 2018''.
2017—Subsec. (g). Pub. L. 115–10 substituted ''December 31, 2018'' for ''10 years after December 26, 2007''.
2011—Subsec. (b)(1). Pub. L. 112–55 designated existing provisions as subpar. (A) and added subpar. (B).

Statutory Notes and Related Subsidiaries

FINDINGS

Pub. L. 117–103, div. HH, title II, § 202, Mar. 15, 2022, 136 Stat. 1113, provided that: ''Congress finds the following:

''(1) NASA uses enhanced-use leasing to enter into agreements with private sector entities, State and local governments, academic institutions, and other Federal agencies for lease of non-excess, underutilized NASA properties and facilities.

''(2) NASA uses enhanced-use leasing authority to support responsible management of its real property, including to improve the use of underutilized property for activities that are compatible with NASA's mission and to reduce facility operating and maintenance costs.

''(3) In fiscal year 2019, under its enhanced-use lease authority, NASA leased 65 real properties.

''(4) In fiscal year 2019, NASA's use of enhanced-use leasing resulted in the collection of $10,843,025.77 in net revenue.

''(5) In fiscal year 2019, NASA used a portion of its enhanced-use leasing revenues for repairs of facility control systems such as lighting and heating, ventilation, and air conditioning.

''(6) NASA's use of enhanced-use leasing authority can contribute to reducing the rate of increase of the Agency's overall deferred maintenance cost.''

DEPOSIT OF PROCEEDS

Pub. L. 113–6, div. B, title III, Mar. 26, 2013, 127 Stat. 263, provided in part: ''That hereafter, notwithstanding section 315 of the National Aeronautics and Space Act of 1958 (see 51 U.S.C. 20145), all proceeds from leases entered into under that section shall be deposited into this account [funds appropriated under the headings 'NATIONAL AERONAUTICS AND SPACE ADMINISTRATION' and 'CONSTRUCTION AND ENVIRONMENTAL COMPLIANCE AND RESTORATION' of title III of div. B of Pub. L. 113–6]: *Provided further*, That such proceeds shall be available for a period of 5 years to the extent and in amounts as provided in annual appropriations Acts''.

Similar provisions were contained in the following appropriation acts:
Pub. L. 117–328, div. B, title III, Dec. 29, 2022, 136 Stat. 4548.
Pub. L. 117–103, div. B, title III, Mar. 15, 2022, 136 Stat. 137.
Pub. L. 116–260, div. B, title III, Dec. 27, 2020, 134 Stat. 1270.
Pub. L. 116–93, div. B, title III, Dec. 20, 2019, 133 Stat. 2418.
Pub. L. 116–6, div. C, title III, Feb. 15, 2019, 133 Stat. 123.
Pub. L. 115–141, div. B, title III, Mar. 23, 2018, 132 Stat. 431.
Pub. L. 115–31, div. B, title III, May 5, 2017, 131 Stat. 214.
Pub. L. 114–113, div. B, title III, Dec. 18, 2015, 129 Stat. 2317.
Pub. L. 113–235, div. B, title III, Dec. 16, 2014, 128 Stat. 2203.
Pub. L. 113–76, div. B, title III, Jan. 17, 2014, 128 Stat. 72.
Pub. L. 112–55, div. B, title III, Nov. 18, 2011, 125 Stat. 625.
Pub. L. 111–117, div. B, title III, Dec. 16, 2009, 123 Stat. 3144.

§ 20146. Retrocession of jurisdiction

(a) DEFINITION OF STATE.—In this section, the term ''State'' means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the United States Virgin Islands, Guam, American Samoa, the Northern Mariana Islands, and any other commonwealth, territory, or possession of the United States.

(b) RELINQUISHING LEGISLATIVE JURISDICTION.—Notwithstanding any other provision of law, the Administrator may relinquish to a State all or part of the legislative jurisdiction of the United States over lands or interests under the control of the Administrator in that State.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3353.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20146	42 U.S.C. 2459k.	Pub. L. 85–568, title III, § 316, as added Pub. L. 109–155, title VII, § 701, Dec. 30, 2005, 119 Stat. 2935.

§ 20147. Recovery and disposition authority

(a) DEFINITIONS.—In this section:

(1) ADMINISTRATION HUMAN SPACE FLIGHT VEHICLE.—The term ''Administration human space flight vehicle'' means a space vehicle, as defined in section 20138(a) of this title, that—

(A) is intended to transport one or more persons;

(B) is designed to operate in outer space; and

(C) is either—

(i) owned by the Administration; or

(ii) owned by an Administration contractor or cooperating party and operated as part of an Administration mission or a joint mission with the Administration.

(2) CREWMEMBER.—The term ''crewmember'' means an astronaut or other person assigned to an Administration human space flight vehicle.

(b) CONTROL OF REMAINS.—

(1) IN GENERAL.—Subject to paragraphs (2) and (3), when there is an accident or mishap resulting in the death of a crewmember of an Administration human space flight vehicle, the Administrator may take control over the remains of the crewmember and order autopsies and other scientific or medical tests.

(2) TREATMENT.—Each crewmember shall provide the Administrator with the crewmember's preferences regarding the treatment accorded to the crewmember's remains and the Administrator shall, to the extent possible, respect those stated preferences.

(3) CONSTRUCTION.—This section shall not be construed to permit the Administrator to interfere with any Federal investigation of a mishap or accident.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3353.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20147	42 U.S.C. 2459*l*.	Pub. L. 85–568, title III, § 317, as added Pub. L. 109–155, title VII, § 705, Dec. 30, 2005, 119 Stat. 2936.

§ 20148. Indemnification; NASA launch services and reentry services

(a) IN GENERAL.—Under such regulations in conformity with this section as the Administrator shall prescribe taking into account the availability, cost, and terms of liability insurance, any contract between the Administration and a provider may provide that the United States will indemnify the provider against successful claims (including reasonable expenses of litigation or settlement) by third parties for death, bodily injury, or loss of or damage to property resulting from launch services and reentry services carried out under the contract that the contract defines as unusually hazardous or nuclear in nature, but only to the extent the total amount of successful claims related to the activities under the contract—

(1) is more than the amount of insurance or demonstration of financial responsibility described in subsection (c)(3); and

(2) is not more than the amount specified in section 50915(a)(1)(B).

(b) TERMS OF INDEMNIFICATION.—A contract made under subsection (a) that provides indemnification shall provide for—

(1) notice to the United States of any claim or suit against the provider for death, bodily injury, or loss of or damage to property; and

(2) control of or assistance in the defense by the United States, at its election, of that claim or suit and approval of any settlement.

(c) LIABILITY INSURANCE OF THE PROVIDER.—

(1) IN GENERAL.—The provider under subsection (a) shall obtain liability insurance or demonstrate financial responsibility in amounts to compensate for the maximum probable loss from claims by—

(A) a third party for death, bodily injury, or property damage or loss resulting from a launch service or reentry service carried out under the contract; and

(B) the United States Government for damage or loss to Government property resulting from a launch service or reentry service carried out under the contract.

(2) MAXIMUM PROBABLE LOSSES.—

(A) IN GENERAL.—The Administrator shall determine the maximum probable losses under subparagraphs (A) and (B) of paragraph (1) not later than 90 days after the date that the provider requests such a determination and submits all information the Administrator requires.

(B) REVISIONS.—The Administrator may revise a determination under subparagraph (A) of this paragraph if the Administrator determines the revision is warranted based on new information.

(3) AMOUNT OF INSURANCE.—For the total claims related to one launch or reentry, a provider shall not be required to obtain insurance or demonstrate financial responsibility of more than—

(A)(i) $500,000,000 under paragraph (1)(A); or

(ii) $100,000,000 under paragraph (1)(B); or

(B) the maximum liability insurance available on the world market at reasonable cost.

(4) COVERAGE.—An insurance policy or demonstration of financial responsibility under this subsection shall protect the following, to the extent of their potential liability for involvement in launch services or reentry services:

(A) The Government.

(B) Personnel of the Government.

(C) Related entities of the Government.

(D) Related entities of the provider.

(E) Government astronauts.

(d) NO INDEMNIFICATION WITHOUT CROSS-WAIVER.—Notwithstanding subsection (a), the Administrator may not indemnify a provider under this section unless there is a cross-waiver between the Administration and the provider as described in subsection (e).

(e) CROSS-WAIVERS.—

(1) IN GENERAL.—The Administrator, on behalf of the United States and its departments, agencies, and instrumentalities, shall reciprocally waive claims with a provider under which each party to the waiver agrees to be responsible, and agrees to ensure that its related entities are responsible, for damage or loss to its property, or for losses resulting from any injury or death sustained by its employees or agents, as a result of activities arising out of the performance of the contract.

(2) LIMITATION.—The waiver made by the Government under paragraph (1) shall apply only to the extent that the claims are more than the amount of insurance or demonstration of financial responsibility required under subsection (c)(1)(B).

(f) WILLFUL MISCONDUCT.—Indemnification under subsection (a) may exclude claims resulting from the willful misconduct of the provider or its related entities.

(g) CERTIFICATION OF JUST AND REASONABLE AMOUNT.—No payment may be made under subsection (a) unless the Administrator or the Administrator's designee certifies that the amount is just and reasonable.

(h) PAYMENTS.—

(1) IN GENERAL.—Upon the approval by the Administrator, payments under subsection (a) may be made from funds appropriated for such payments.

(2) LIMITATION.—The Administrator shall not approve payments under paragraph (1), except to the extent provided in an appropriation law or to the extent additional legislative authority is enacted providing for such payments.

(3) ADDITIONAL APPROPRIATIONS.—If the Administrator requests additional appropriations to make payments under this subsection, then the request for those appropriations shall be made in accordance with the procedures established under section 50915.

(i) RULES OF CONSTRUCTION.—

(1) IN GENERAL.—The authority to indemnify under this section shall not create any rights in third persons that would not otherwise exist by law.

(2) OTHER AUTHORITY.—Nothing in this section may be construed as prohibiting the Administrator from indemnifying a provider or any other NASA contractor under other law, including under Public Law 85–804 (50 U.S.C. 1431 et seq.).

(3) ANTI-DEFICIENCY ACT.—Notwithstanding any other provision of this section—

(A) all obligations under this section are subject to the availability of funds; and

(B) nothing in this section may be construed to require obligation or payment of funds in violation of sections 1341, 1342, 1349 through 1351, and 1511 through 1519 of title 31, United States Code (commonly referred to as the ''Anti-Deficiency Act'').

(j) RELATIONSHIP TO OTHER LAWS.—The Administrator may not provide indemnification under this section for an activity that requires a license or permit under chapter 509.

(k) DEFINITIONS.—In this section:

(1) GOVERNMENT ASTRONAUT.—The term ''government astronaut'' has the meaning given the term in section 50902.

(2) LAUNCH SERVICES.—The term ''launch services'' has the meaning given the term in section 50902.

(3) PROVIDER.—The term ''provider'' means a person that provides domestic launch services or domestic reentry services to the Government.

(4) REENTRY SERVICES.—The term ''reentry services'' has the meaning given the term in section 50902.

(5) RELATED ENTITY.—The term ''related entity'' means a contractor or subcontractor.

(6) THIRD PARTY.—The term ''third party'' means a person except—

(A) the United States Government;

(B) related entities of the Government involved in launch services or reentry services;

(C) a provider;

(D) related entities of the provider involved in launch services or reentry services; or

(E) a government astronaut.

(Added Pub. L. 115–10, title III, § 305(a), Mar. 21, 2017, 131 Stat. 30.)

Editorial Notes

REFERENCES IN TEXT

Public Law 85–804, referred to in subsec. (i)(2), is Pub. L. 85–804, Aug. 28, 1958, 72 Stat. 972, which is classified generally to chapter 29 (§ 1431 et seq.) of Title 50, War and National Defense. For complete classification of this Act to the Code, see Tables.

§ 20149. Medical monitoring and research relating to human space flight

(a) IN GENERAL.—Notwithstanding any other provision of law, the Administrator may provide for—

(1) the medical monitoring and diagnosis of a former United States government astronaut or a former payload specialist for conditions that the Administrator considers potentially associated with human space flight; and

(2) the treatment of a former United States government astronaut or a former payload specialist for conditions that the Administrator considers associated with human space flight, including scientific and medical tests for psychological and medical conditions.

(b) REQUIREMENTS.—

(1) NO COST SHARING.—The medical monitoring, diagnosis, or treatment described in subsection (a) shall be provided without any deductible, copayment, or other cost sharing obligation.

(2) ACCESS TO LOCAL SERVICES.—The medical monitoring, diagnosis, and treatment described in subsection (a) may be provided by a local health care provider if it is unadvisable due to the health of the applicable former United States government astronaut or former payload specialist for that former United States government astronaut or former payload specialist to travel to the Lyndon B. Johnson Space Center, as determined by the Administrator.

(3) SECONDARY PAYMENT.—Payment or reimbursement for the medical monitoring, diagnosis, or treatment described in subsection (a) shall be secondary to any obligation of the United States Government or any third party under any other provision of law or contractual agreement to pay for or provide such medical monitoring, diagnosis, or treatment. Any costs for items and services that may be provided by the Administrator for medical monitoring, diagnosis, or treatment under subsection (a) that are not paid for or provided under such other provision of law or contractual agreement, due to the application of deductibles, copayments, coinsurance, other cost sharing, or otherwise, are reimbursable by the Administrator on behalf of the former United States government astronaut or former payload specialist involved to the extent such items or services are authorized to be provided by the Administrator for such medical monitoring, diagnosis, or treatment under subsection (a).

(4) CONDITIONAL PAYMENT.—The Administrator may provide for conditional payments for or provide medical monitoring, diagnosis, or treatment described in subsection (a) that is obligated to be paid for or provided by the United States or any third party under any other provision of law or contractual agreement to pay for or provide such medical monitoring, diagnosis, or treatment if—

(A) payment for (or the provision of) such medical monitoring, diagnosis, or treatment services has not been made (or provided) or cannot reasonably be expected to be made (or provided) promptly by the United States or such third party, respectively; and

(B) such payment (or such provision of services) by the Administrator is conditioned on reimbursement by the United States or such third party, respectively, for such medical monitoring, diagnosis, or treatment.

(c) EXCLUSIONS.—The Administrator may not—

(1) provide for medical monitoring or diagnosis of a former United States government astronaut or former payload specialist under subsection (a) for any psychological or medical condition that is not potentially associated with human space flight;

(2) provide for treatment of a former United States government astronaut or former payload specialist under subsection (a) for any psychological or medical condition that is not associated with human space flight; or

(3) require a former United States government astronaut or former payload specialist

to participate in the medical monitoring, diagnosis, or treatment authorized under subsection (a).

(d) PRIVACY.—Consistent with applicable provisions of Federal law relating to privacy, the Administrator shall protect the privacy of all medical records generated under subsection (a) and accessible to the Administration.

(e) REGULATIONS.—The Administrator shall promulgate such regulations as are necessary to carry out this section.

(f) DEFINITION OF UNITED STATES GOVERNMENT ASTRONAUT.—In this section, the term ''United States government astronaut'' has the meaning given the term ''government astronaut'' in section 50902, except it does not include an individual who is an international partner astronaut.

(g) DATA USE AND DISCLOSURE.—The Administrator may use or disclose data acquired in the course of medical monitoring, diagnosis, or treatment of a former United States government astronaut or a former payload specialist under subsection (a), in accordance with subsection (d). Former United States government astronaut or former payload specialist participation in medical monitoring, diagnosis, or treatment under subsection (a) shall constitute consent for the Administrator to use or disclose such data.

(Added Pub. L. 115–10, title IV, § 443(a), Mar. 21, 2017, 131 Stat. 45.)

Statutory Notes and Related Subsidiaries

ANNUAL REPORTS

Pub. L. 115–10, title IV, § 443(c), Mar. 21, 2017, 131 Stat. 47, provided that:

''(1) IN GENERAL.—Each fiscal year, not later than the date of submission of the President's annual budget request for that fiscal year under section 1105 of title 31, United States Code, the Administrator [of the National Aeronautics and Space Administration] shall publish a report, in accordance with applicable Federal privacy laws, on the activities of the Administration [National Aeronautics and Space Administration] under section 20149 of title 51, United States Code.

''(2) CONTENTS.—Each report under paragraph (1) shall include a detailed cost accounting of the Administration's activities under section 20149 of title 51, United States Code, and a 5-year budget estimate.

''(3) SUBMISSION TO CONGRESS.—The Administrator shall submit to the appropriate committees of Congress [Committee on Science, Space, and Technology of the House of Representatives and Committee on Commerce, Science, and Transportation of the Senate] each report under paragraph (1) not later than the date of submission of the President's annual budget request for that fiscal year under section 1105 of title 31, United States Code.''

INSPECTOR GENERAL AUDIT

Pub. L. 115–10, title IV, § 443(f), Mar. 21, 2017, 131 Stat. 47, provided that: ''The Inspector General of NASA [National Aeronautics and Space Administration] shall periodically audit or review, as the Inspector General considers necessary to prevent waste, fraud, and abuse, the activities of the Administration [National Aeronautics and Space Administration] under section 20149 of title 51, United States Code.''

SUBCHAPTER IV—UPPER ATMOSPHERE RESEARCH

§ 20161. Congressional declaration of purpose and policy

(a) PURPOSE.—The purpose of this subchapter is to authorize and direct the Administration to develop and carry out a comprehensive program of research, technology, and monitoring of the phenomena of the upper atmosphere so as to provide for an understanding of and to maintain the chemical and physical integrity of the Earth's upper atmosphere.

(b) POLICY.—Congress declares that it is the policy of the United States to undertake an immediate and appropriate research, technology, and monitoring program that will provide for understanding the physics and chemistry of the Earth's upper atmosphere.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3354.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20161	42 U.S.C. 2481.	Pub. L. 85–568, title IV, § 401, as added Pub. L. 94–39, § 8, June 19, 1975, 89 Stat. 222.

§ 20162. Definition of upper atmosphere

In this subchapter, the term ''upper atmosphere'' means that portion of the Earth's sensible atmosphere above the troposphere.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3354.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20162	42 U.S.C. 2482.	Pub. L. 85–568, title IV, § 402, as added Pub. L. 94–39, § 8, June 19, 1975, 89 Stat. 222.

§ 20163. Program authorized

(a) IN GENERAL.—In order to carry out the purposes of this subchapter, the Administration, in cooperation with other Federal agencies, shall initiate and carry out a program of research, technology, monitoring, and other appropriate activities directed to understand the physics and chemistry of the upper atmosphere.

(b) ACTIVITIES.—In carrying out the provisions of this subchapter, the Administration shall—

(1) arrange for participation by the scientific and engineering community, of both the Nation's industrial organizations and institutions of higher education, in planning and carrying out appropriate research, in developing necessary technology, and in making necessary observations and measurements;

(2) provide, by way of grant, contract, scholarships, or other arrangements, to the maximum extent practicable and consistent with other laws, for the widest practicable and appropriate participation of the scientific and engineering community in the program authorized by this subchapter; and

(3) make all results of the program authorized by this subchapter available to the appropriate regulatory agencies and provide for the widest practicable dissemination of such results.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3354.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20163	42 U.S.C. 2483.	Pub. L. 85–568, title IV, § 403, as added Pub. L. 94–39, § 8, June 19, 1975, 89 Stat. 222.

§ 20164. International cooperation

In carrying out the provisions of this subchapter, the Administration, subject to the direction of the President and after consultation with the Secretary of State, shall make every effort to enlist the support and cooperation of appropriate scientists and engineers of other countries and international organizations.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3355.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20164	42 U.S.C. 2484.	Pub. L. 85–568, title IV, § 404, as added Pub. L. 94–39, § 8, June 19, 1975, 89 Stat. 223.

CHAPTER 203—RESPONSIBILITIES AND VISION

Sec.

§ 20301. General responsibilities

(a) PROGRAMS.—The Administrator shall ensure that the Administration carries out a balanced set of programs that shall include, at a minimum, programs in—

(1) human space flight, in accordance with section 20302 of this title;

(2) aeronautics research and development; and

(3) scientific research, which shall include, at a minimum—

(A) robotic missions to study the Moon and other planets and their moons, and to deepen understanding of astronomy, astrophysics, and other areas of science that can be productively studied from space;

(B) Earth science research and research on the Sun-Earth connection through the development and operation of research satellites and other means;

(C) support of university research in space science, Earth science, and microgravity science; and

(D) research on microgravity, including research that is not directly related to human exploration.

(b) CONSULTATION AND COORDINATION.—In carrying out the programs of the Administration, the Administrator shall—

(1) consult and coordinate to the extent appropriate with other relevant Federal agencies, including through the National Science and Technology Council;

(2) work closely with the private sector, including by—

(A) encouraging the work of entrepreneurs who are seeking to develop new means to launch satellites, crew, or cargo;

(B) contracting with the private sector for crew and cargo services, including to the International Space Station, to the extent practicable;

(C) using commercially available products (including software) and services to the extent practicable to support all Administration activities; and

(D) encouraging commercial use and development of space to the greatest extent practicable; and

(3) involve other nations to the extent appropriate.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3355.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20301	42 U.S.C. 16611(a).	Pub. L. 109–155, title I, § 101(a), Dec. 30, 2005, 119 Stat. 2897.

Statutory Notes and Related Subsidiaries

IMPROVED PROCESS FOR YIELD DETERMINATION; REPORT; DEFINITIONS

Pub. L. 118–31, div. A, title XVI, § 1601(b)–(d), Dec. 22, 2023, 137 Stat. 583, provided that:

''(b) IMPROVED PROCESS FOR YIELD DETERMINATION.—Not later than one year after the date of the enactment of this Act [Dec. 22, 2023], the Secretary of Defense, the Secretary of Transportation, and the Administrator of the National Aeronautics and Space Administration shall jointly establish a process through which scientifically-valid yield determinations can be assessed for space launch vehicles while in flight.

''(c) REPORT.—Not later than 90 days after the completion of the LOX-Methane Assessment working group process, the Secretary of Defense, the Secretary of Transportation, and the Administrator of the National Aeronautics and Space Administration shall submit to the appropriate congressional committees a report that includes a description of the effects of the LOX-Methane Assessment on existing and future maximum credible event analyses and any resulting effects on commercial space launch, civil space activities, and national security.

''(d) DEFINITIONS.—In this section:

''(1) The term 'appropriate congressional committees' means the following:

''(A) The congressional defense committees [Committees on Armed Services and Appropriations of the Senate and the House of Representatives].

''(B) The Committee on Commerce, Science, and Transportation of the Senate.

''(C) The Committee on Science, Space, and Technology of the House of Representatives.

''(D) The Committee on Transportation and Infrastructure of the House of Representatives.

''(2) The term 'LOX-Methane Assessment working group' means the ongoing interagency working group studying the explosive characteristics of liquid oxygen and methane and comprised of representatives from the Department of Defense, the Department of Transportation, and the National Aeronautics and Space Administration.

''(3) The term 'launch vehicle' has the meaning given such term in section 50902(11) of title 51, United States Code.''

SPACE LAUNCH SYSTEM CONFIGURATIONS

Pub. L. 117–167, div. B, title VII, § 10812, Aug. 9, 2022, 136 Stat. 1735, provided that:

''(a) EXPLORATION GROUND SYSTEMS INFRASTRUCTURE.—The Administrator shall ensure that—

''(1) the necessary elements of a ground system infrastructure are in place to enable the preparation and use of the Space Launch System, specifically the Block 1 (at least 70 mt), Block 1B (at least 105 mt), and Block 2 (at least 130 mt) variants of the Space Launch System; and

''(2) not fewer than 2 bays of the vehicle assembly building of such ground system infrastructure are outfitted and dedicated to support Space Launch System stacking and preparations.

''(b) FLIGHT RATE AND SAFETY.—After the first crewed lunar landing of the Administration's Moon to Mars activities, the Administrator shall, to the extent practicable, seek to carry out a flight rate of 2 integrated Space Launch System and Orion crew vehicle missions annually until the lunar activities needed to enable a human mission to Mars are completed so as to maintain the critical human spaceflight production and operations skills necessary for the safety of human spaceflight activities in deep space.

''(c) MOBILE LAUNCH PLATFORM.—

''(1) IN GENERAL.—The Administrator is authorized to maintain 2 operational mobile launch platforms to enable the launch of multiple configurations of the Space Launch System.

''(2) SECOND MOBILE LAUNCH PLATFORM.—

''(A) IN GENERAL.—In implementing paragraph (1), the Administrator shall take all necessary steps to develop and complete a second mobile launch platform, to be in place by 2026, to support the first launch of the Block 1B variant of the Space Launch System.

''(B) REQUIREMENT.—Such second mobile launch platform shall be sized and constructed to accommodate the Block 2 variant of the Space Launch System.

''(d) REPORTS.—The Administrator shall submit to Congress—

''(1) not later than 45 days after the date of the enactment of this Act [Aug. 9, 2022], a report on the steps the Administrator and industry partners are taking—

''(A) to address the cost, schedule, and performance challenges in the development of the Mobile Launch–2 platform; and

''(B) to ensure that such platform is ready for operational use on a schedule that aligns with the current plans for an Artemis IV launch, which is currently anticipated in 2027; and

''(2) not later than 90 days after such date of enactment, a report that contains a list of the key milestones required for completing each of the Space Launch System variants, and an estimated date on which such milestones will be completed.

''(e) EXPLORATION UPPER STAGE.—

''(1) IN GENERAL.—To meet the capability requirements under section 302(c)(2) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18322(c)(2)), the Administrator shall continue development of the Exploration Upper Stage for the Space Launch System on a schedule consistent with the Artemis IV lunar mission.

''(2) BRIEFING.—Not later than 90 days after the date of the enactment of this Act, the Administrator shall brief the appropriate committees of Congress on the development and scheduled availability of the Exploration Upper Stage for the Artemis IV lunar mission.

''(f) MAIN PROPULSION TEST ARTICLE.—To meet the requirements under section 302(c)(3) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18322(c)(3)), the Administrator may initiate development of a main propulsion test article for the integrated Exploration Upper Stage element of the Space Launch System, consistent with cost and schedule constraints, particularly for long-lead propulsion hardware needed for flight.''

[For definitions of terms used in section 10812 of Pub. L. 116–167, set out above, see section 10802 of Pub. L. 117–167, set out as a Definitions note under section 10101 of this title.]

ROCKET ENGINE TEST INFRASTRUCTURE

Pub. L. 117–167, div. B, title VII, §10813, Aug. 9, 2022, 136 Stat. 1736, provided that:

''(a) IN GENERAL.—The Administrator shall, to the extent practicable, continue to carry out a program to modernize rocket propulsion test infrastructure at NASA facilities—

''(1) to increase capabilities;

''(2) to enhance safety;

''(3) to support propulsion development and testing; and

''(4) to foster the improvement of Government and commercial space transportation and exploration.

''(b) PROJECTS.—Projects funded under the program described in subsection (a) may include—

''(1) infrastructure and other facilities and systems relating to rocket propulsion test stands and rocket propulsion testing;

''(2) enhancements to test facility capacity and flexibility; and

''(3) such other projects as the Administrator considers appropriate to meet the goals described in that subsection.

''(c) REQUIREMENTS.—In carrying out the program under subsection (a), the Administrator shall—

''(1) to the extent practicable and appropriate, prioritize investments in projects that enhance test and flight certification capabilities, including for large thrust-level atmospheric and altitude engines and engine systems, and multi-engine integrated test capabilities;

''(2) continue to make underutilized test facilities available for commercial use on a reimbursable basis; and

''(3) ensure that no project carried out under this program adversely impacts, delays, or defers testing or other activities associated with facilities used for Government programs, including—

''(A) the Space Launch System and the Exploration Upper Stage of the Space Launch System;

''(B) in-space propulsion to support exploration missions; or

''(C) nuclear propulsion testing.

''(d) RULE OF CONSTRUCTION.—Nothing in this section shall preclude a NASA program, including the Space Launch System and the Exploration Upper Stage of the Space Launch System, from using the modernized test infrastructure developed under this section.

''(e) WORKING CAPITAL FUND STUDY.—

''(1) IN GENERAL.—Not later than 1 year after the date of the enactment of this division [Aug. 9, 2022], the Administrator shall submit to the appropriate committees of Congress a report on the use of the authority under section 30102 of title 51, United States Code, to promote increased use of NASA rocket propulsion test infrastructure for research, development, testing, and evaluation activities by other Federal agencies, firms, associations, corporations, and educational institutions.

''(2) MATTERS TO BE INCLUDED.—The report required by paragraph (1) shall include the following:

''(A) An assessment of prior use, if any, of the authority under section 30102 of title 51, United States Code, to improve testing infrastructure.

''(B) An analysis of any barrier to implementation of such authority for the purpose of promoting increased use of NASA rocket propulsion test infrastructure.''

[For definitions of terms used in section 10813 of Pub. L. 116–167, set out above, see section 10802 of Pub. L. 117–167, set out as a Definitions note under section 10101 of this title.]

SEARCH FOR LIFE

Pub. L. 117–167, div. B, title VII, §10822, Aug. 9, 2022, 136 Stat. 1740, provided that:

''(a) SENSE OF CONGRESS.—It is the sense of Congress that—

''(1) the report entitled 'An Astrobiology Strategy for the Search for Life in the Universe' published by the National Academies of Sciences, Engineering, and Medicine outlines key scientific questions and methods on the search for the origin, evolution, distribution, and future of life in the universe; and

''(2) the interaction of lifeforms with their environment, a central focus of astrobiology research, is a topic of broad significance to life sciences research in space and on Earth.

''(b) PROGRAM CONTINUATION.—

''(1) IN GENERAL.—The Administrator [of the National Aeronautics and Space Administration] shall continue to implement a collaborative, multidisciplinary science and technology development program to search for evidence of the existence or historical existence of life beyond Earth in support of—

''(A) the scientific priorities of the most recent decadal surveys on planetary science and astrobiology and astronomy and astrophysics of the National Academies of Sciences, Engineering, and Medicine; and

''(B) the objective described in section 20102(d)(10) of title 51, United States Code.

''(2) ELEMENT.—The program under paragraph (1) shall include activities relating to astronomy, biology, geology, and planetary science.

''(3) COORDINATION WITH LIFE SCIENCES PROGRAM.—In carrying out the program under paragraph (1), the Administrator shall coordinate efforts with the life sciences program of the [National Aeronautics and Space] Administration.

''(4) INSTRUMENTATION AND SENSOR TECHNOLOGY.—In carrying out the program under paragraph (1), the Administrator may invest in the development of new instrumentation and sensor technology.

''(5) TECHNOSIGNATURES.—In carrying out the program under paragraph (1), the Administrator may support, as appropriate, merit-reviewed, competitively selected research on technosignatures.''

SPACE NUCLEAR CAPABILITIES

Pub. L. 117–167, div. B, title VII, § 10841, Aug. 9, 2022, 136 Stat. 1751, provided that:

''(a) NUCLEAR PROPULSION.—

''(1) USE IN ROBOTIC AND HUMAN EXPLORATION ACTIVITIES.—The Administrator, in collaboration with other relevant Federal agencies and with industry, shall take all necessary steps to carry out research and development, ground-based testing and in-space testing, and other associated activities to enable the use of space nuclear propulsion in Administration robotic and human exploration activities, including in cargo missions to Mars in the late 2020's and crewed missions to Mars in the 2030's.

''(2) SPACE NUCLEAR PROPULSION PROGRAM.—

''(A) IN GENERAL.—The Administrator shall establish a space nuclear propulsion program to carry out the activities described in paragraph (1).

''(B) ELEMENTS.—The program established under subparagraph (A) shall include the following:

''(i) Research and development in both nuclear electric and nuclear thermal propulsion technology maturation efforts, to the extent practicable, and the development of consistent figures of merit across both nuclear electric and nuclear thermal systems, as recommended by the National Academies of Sciences, Engineering, and Medicine in the report entitled 'Space Nuclear Propulsion for Human Mars Exploration', so as to inform a down-selection of a nuclear electric or nuclear thermal propulsion system by 2026, or as early as practicable.

''(ii) Ground-based testing, to the extent practicable, including not less than 1 ground-based test of a full-scale, integrated nuclear propulsion system before any in-space test or demonstration of such system.

''(iii) In-space demonstration of a nuclear propulsion system in the late 2020's, which may be carried out as a cargo mission to Mars.

''(3) PLAN.—

''(A) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act [Aug. 9, 2022], the Administrator shall submit to the appropriate committees of Congress a plan to achieve an in-space flight test of a nuclear propulsion system that could support the first crewed mission to Mars in the 2030's.

''(B) ELEMENTS.—The plan required by subparagraph (A) shall include the following:

''(i) A timeline to mature enabling technologies and an outline of major milestones for integration of such technologies into the larger nuclear propulsion system.

''(ii) A cost estimate for maturing such technologies.

''(iii) A description of facility requirements for the program under paragraph (2) associated with such technologies.

''(iv) A description of the manner in which the Administrator will use the efforts described in paragraph (2)(B) to determine whether the in-space flight test should demonstrate a nuclear electric propulsion system or a nuclear thermal propulsion system.

''(C) An identification of any policy or regulatory challenges or barriers to conducting such in-space test or any precursor ground-based testing, and a description of options for addressing such challenges or barriers.

''(b) NUCLEAR SURFACE POWER PROGRAM.—

''(1) ESTABLISHMENT.—The Administrator shall establish a program for research, testing, and development of a space nuclear surface power reactor design.

''(2) PLAN.—

''(A) IN GENERAL.—The Administrator shall—

''(i) develop a plan and timeline for the program established under paragraph (1), taking into consideration mission needs; and

''(ii) include in such plan opportunities for participation by United States commercial entities.

''(B) SUBMISSION.—Not later than 1 year after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress the plan developed under subparagraph (A).

''(c) ASSESSMENT OF IN-SPACE PROPULSION TESTING FACILITIES.—

''(1) IN GENERAL.—The Administrator shall carry out a needs assessment for facilities and technical capabilities required to support ground-based testing of a full-scale, full-power integrated nuclear propulsion system.

''(2) ELEMENT.—The assessment required by paragraph (1) shall consider the potential development of facilities that will support long-term research and development of space nuclear propulsion systems.

''(3) REPORT.—Not later than 270 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report on the results of the assessment carried out under paragraph (1).''

[For definitions of terms used in section 10841 of Pub. L. 116–167, set out above, see section 10802 of Pub. L. 117–167, set out as a Definitions note under section 10101 of this title.]

PRIORITIZATION OF LOW-ENRICHED URANIUM TECHNOLOGY

Pub. L. 117–167, div. B, title VII, § 10842, Aug. 9, 2022, 136 Stat. 1753, provided that:

''(a) IN GENERAL.—The Administrator shall prioritize the use of low-enriched uranium, including high-assay low-enriched uranium, for space nuclear research and development, including ground and in-space testing and other related demonstration activities carried out under this title [see Short Title of 2022 Amendment note set out under section 10101 of this title].

''(b) INTERAGENCY COLLABORATION.—The Administrator shall, to the extent practicable, collaborate and coordinate with the Secretary of Defense, the Secretary of Energy, and the heads of other relevant Federal agencies on technology development, knowledge exchange, lessons learned regarding nuclear power and propulsion technologies, common fuels, flight demonstrations, and operational systems production for space applications.

''(c) REPORT ON NUCLEAR TECHNOLOGY PRIORITIZATION.—Not later than 120 days after the date of the enactment of this Act [Aug. 9, 2022], the Administrator shall submit to the appropriate committees of Congress a report that details the actions taken and planned, including a timeline for such actions, to implement subsection (a).''

[For definitions of terms used in section 10842 of Pub. L. 116–167, set out above, see section 10802 of Pub. L. 117–167, set out as a Definitions note under section 10101 of this title.]

FUNDING FOR CERTAIN LUNAR TRANSPORTATION AND HABITATION CAPABILITIES, LUNAR TERRAIN MOBILITY CAPABILITIES, EXPLORATION MISSION RATED SUITS, LUNAR COMMUNICATIONS AND NAVIGATION CAPABILITIES

Pub. L. 117–103, div. B, title III, Mar. 15, 2022, 136 Stat. 136, provided in part: ''That acquisition of human-rated deep space exploration lunar and cislunar transportation and habitation capabilities, human-rated lunar terrain mobility capabilities, exploration mission rated suits, lunar communications and navigation capabilities, and their associated components, may be funded incrementally in fiscal year 2022 and thereafter.''

FUNDING FOR ORION, SPACE LAUNCH SYSTEM, EXPLORATION GROUND SYSTEMS, AND MOBILE LAUNCH PLATFORMS

Pub. L. 115–141, div. B, title III, Mar. 23, 2018, 132 Stat. 430, provided in part: ''That acquisition of Orion crew vehicles, SLS launch vehicles, Exploration Ground Systems, mobile launch platforms, and their associated components may be funded incrementally in fiscal year 2018 and thereafter''.

SPACE LAUNCH SYSTEM, ORION, AND EXPLORATION GROUND SYSTEMS

Pub. L. 115–10, title IV, § 421, Mar. 21, 2017, 131 Stat. 35, as amended by Pub. L. 117–167, div. B, title VII, § 10817(a), Aug. 9, 2022, 136 Stat. 1740, provided that:

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

''(1) NASA has made steady progress in developing and testing the Space Launch System and Orion exploration systems with the successful Exploration Flight Test of Orion in December of 2014, the final qualification test firing of the 5-segment Space Launch System boosters in June 2016, and a full thrust, full duration test firing of the RS–25 Space Launch System core stage engine in August 2016.

''(2) Through the 21st Century Launch Complex program and Exploration Ground Systems programs, NASA has made significant progress in transforming exploration ground systems infrastructure to meet NASA's mission requirements for the Space Launch System and Orion and to modernize NASA's launch complexes to the benefit of the civil, defense, and commercial space sectors.

''(b) SPACE LAUNCH SYSTEM.—

''(1) SENSE OF CONGRESS.—It is the sense of Congress that use of the Space Launch System and Orion, with contributions from partnerships with the private sector, academia, and the international community, is the most practical approach to reaching the Moon, Mars, and beyond.

''(2) REAFFIRMATION.—Congress reaffirms the policy and minimum capability requirements for the Space Launch System under section 302 of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18322).

''(c) SENSE OF CONGRESS ON SPACE LAUNCH SYSTEM, ORION, AND EXPLORATION GROUND SYSTEMS.—It is the sense of Congress that—

''(1) as the United States works to send humans on a series of missions to Mars in the 2030s, the United States national space program should continue to make progress on its commitment by fully developing the Space Launch System, Orion, and related Exploration Ground Systems;

''(2) using the Space Launch System and Orion for a wide range of contemplated missions will facilitate the national defense, science, and exploration objectives of the United States;

''(3) the United States should have continuity of purpose for the Space Launch System and Orion in deep space exploration missions, using them beginning with the uncrewed mission, Artemis I, planned for 2018, followed by the crewed mission, Artemis II, in cis-lunar space planned for 2021, and for subsequent missions beginning with Artemis III extending into cis-lunar space and eventually to Mars;

''(4) the President's annual budget requests for the Space Launch System and Orion development, test, and operational phases should strive to accurately reflect the resource requirements of each of those phases;

''(5) the fully integrated Space Launch System, including an upper stage needed to go beyond low-Earth orbit, will safely enable human space exploration of the Moon, Mars, and beyond; and

''(6) the Administrator should budget for and undertake a robust ground test and uncrewed and crewed flight test and demonstration program for the Space Launch System and Orion in order to promote safety and reduce programmatic risk.

''(d) IN GENERAL.—The Administrator shall continue the development of the fully integrated Space Launch System, including an upper stage needed to go beyond low-Earth orbit, in order to safely enable human space exploration of the Moon, Mars, and beyond over the course of the next century as required in section 302(c) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18322(c)).

''(e) REPORT.—

''(1) IN GENERAL.—Not later than 60 days after the date of enactment of this Act [Mar. 21, 2017], the Administrator shall submit to the appropriate committees of Congress a report addressing the ability of Orion to meet the needs and the minimum capability requirements described in section 303(b)(3) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18323(b)(3)).

''(2) CONTENTS.—The report shall detail—

''(A) those components and systems of Orion that ensure it is in compliance with section 303(b)(3) of that Act (42 U.S.C. 18323(b)(3));

''(B) the expected date that Orion, integrated with a vehicle other than the Space Launch System, could be available to transport crew and cargo to the ISS;

''(C) any impacts to the deep space exploration missions under subsection (f) of this section due to enabling Orion to meet the minimum capability requirements described in section 303(b)(3) of that Act (42 U.S.C. 18323(b)(3)) and conducting the mission described in subparagraph (B) of this paragraph; and

''(D) the overall cost and schedule impacts associated with enabling Orion to meet the minimum capability requirements described in section 303(b)(3) of that Act (42 U.S.C. 18323(b)(3)) and conducting the mission described in subparagraph (B) of this paragraph.

''(f) EXPLORATION MISSIONS.—The Administrator shall continue development of—

''(1) an uncrewed exploration mission to demonstrate the capability of both the Space Launch System and Orion as an integrated system by 2018;

''(2) subject to applicable human rating processes and requirements, a crewed exploration mission to

demonstrate the Space Launch System, including the Core Stage and Exploration Upper Stages, by 2021;

''(3) subsequent missions beginning with Artemis III at operational flight rate sufficient to maintain safety and operational readiness using the Space Launch System and Orion to extend into cis-lunar space and eventually to Mars; and

''(4) a deep space habitat as a key element in a deep space exploration architecture along with the Space Launch System and Orion.

''(g) OTHER USES.—The Administrator shall assess the utility of the Space Launch System for use by the science community and for other Federal Government launch needs, including consideration of overall cost and schedule savings from reduced transit times and increased science returns enabled by the unique capabilities of the Space Launch System.

''(h) UTILIZATION REPORT.—

''(1) IN GENERAL.—The Administrator, in consultation with the Secretary of Defense and the Director of National Intelligence, shall prepare a report that addresses the effort and budget required to enable and utilize a cargo variant of the 130-ton Space Launch System configuration described in section 302(c) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18322(c)).

''(2) CONTENTS.—In preparing the report, the Administrator shall—

''(A) consider the technical requirements of the scientific and national security communities related to a cargo variant of the Space Launch System; and

''(B) directly assess the utility and estimated cost savings obtained by using a cargo variant of the Space Launch System for national security and space science missions.

''(3) SUBMISSION TO CONGRESS.—Not later than 180 days after the date of enactment of this Act [Mar. 21, 2017], the Administrator shall submit the report to the appropriate committees of Congress.''

[Pub. L. 117–167, div. B, title VII, §10817(a), Aug. 9, 2022, 136 Stat. 1740, which directed amendment of section 421 of the National Aeronautics and Space Administration Authorization Act of 2017, was executed by amending section 421 of Pub. L. 115–10, set out above, which is section 421 of the National Aeronautics and Space Administration Transition Authorization Act of 2017, to reflect the probable intent of Congress.]

[For definitions of terms used in section 421 of Pub. L. 115–10, set out above, see section 2 of Pub. L. 115–10, set out as a note under section 10101 of this title.]

MAINTAINING A BALANCED SPACE SCIENCE PORTFOLIO

Pub. L. 115–10, title V, §501, Mar. 21, 2017, 131 Stat. 48, provided that:

''(a) SENSE OF CONGRESS ON SCIENCE PORTFOLIO.—Congress reaffirms the sense of Congress that—

''(1) a balanced and adequately funded set of activities, consisting of research and analysis grant programs, technology development, suborbital research activities, and small, medium, and large space missions, contributes to a robust and productive science program and serves as a catalyst for innovation and discovery; and

''(2) the Administrator [of the National Aeronautics and Space Administration] should set science priorities by following the guidance provided by the scientific community through the National Academies of Sciences, Engineering, and Medicine's decadal surveys.

''(b) POLICY.—It is the policy of the United States to ensure, to the extent practicable, a steady cadence of large, medium, and small science missions.''

PLANETARY SCIENCE

Pub. L. 115–10, title V, §502, Mar. 21, 2017, 131 Stat. 48, provided that:

''(a) FINDINGS.—Congress finds that—

''(1) Administration [National Aeronautics and Space Administration] support for planetary science is critical to enabling greater understanding of the solar system and the origin of the Earth;

''(2) the United States leads the world in planetary science and can augment its success in that area with appropriate international, academic, and industry partnerships;

''(3) a mix of small, medium, and large planetary science missions is required to sustain a steady cadence of planetary exploration; and

''(4) robotic planetary exploration is a key component of preparing for future human exploration.

''(b) MISSION PRIORITIES.—

''(1) IN GENERAL.—In accordance with the priorities established in the most recent Planetary Science Decadal Survey, the Administrator [of the National Aeronautics and Space Administration] shall ensure, to the greatest extent practicable, the completion of a balanced set of Discovery, New Frontiers, and Flagship missions at the cadence recommended by the most recent Planetary Science Decadal Survey.

''(2) MISSION PRIORITY ADJUSTMENTS.—Consistent with the set of missions described in paragraph (1), and while maintaining the continuity of scientific data and steady development of capabilities and technologies, the Administrator may seek, if necessary, adjustments to mission priorities, schedule, and scope in light of changing budget projections.''

EXTRASOLAR PLANET EXPLORATION STRATEGY

Pub. L. 115–10, title V, §508, Mar. 21, 2017, 131 Stat. 50, provided that:

''(a) STRATEGY.—

''(1) IN GENERAL.—The Administrator [of the National Aeronautics and Space Administration] shall enter into an arrangement with the National Academies to develop a science strategy for the study and exploration of extrasolar planets, including the use of the Transiting Exoplanet Survey Satellite, the James Webb Space Telescope, a potential Wide-Field Infrared Survey Telescope mission, or any other telescope, spacecraft, or instrument, as appropriate.

''(2) REQUIREMENTS.—The strategy shall—

''(A) outline key scientific questions;

''(B) identify the most promising research in the field;

''(C) indicate the extent to which the mission priorities in existing decadal surveys address the key extrasolar planet research and exploration goals;

''(D) identify opportunities for coordination with international partners, commercial partners, and not-for-profit partners; and

''(E) make recommendations regarding the activities under subparagraphs (A) through (D), as appropriate.

''(b) USE OF STRATEGY.—The Administrator shall use the strategy—

''(1) to inform roadmaps, strategic plans, and other activities of the Administration [National Aeronautics and Space Administration] as they relate to extrasolar planet research and exploration; and

''(2) to provide a foundation for future activities and initiatives related to extrasolar planet research and exploration.

''(c) REPORT TO CONGRESS.—Not later than 18 months after the date of enactment of this Act [Mar. 21, 2017], the National Academies shall submit to the Administrator and to the appropriate committees of Congress [Committee on Science, Space, and Technology of the House of Representatives and Committee on Commerce, Science, and Transportation of the Senate] a report containing the strategy developed under subsection (a).''

ASTROBIOLOGY STRATEGY

Pub. L. 115–10, title V, §509, Mar. 21, 2017, 131 Stat. 50, provided that:

''(a) STRATEGY.—

''(1) IN GENERAL.—The Administrator [of the National Aeronautics and Space Administration] shall enter into an arrangement with the National Academies to develop a science strategy for astrobiology that would outline key scientific questions, identify the most promising research in the field, and indicate the extent to which the mission priorities in existing decadal surveys address the search for life's origin, evolution, distribution, and future in the Universe.

''(2) RECOMMENDATIONS.—The strategy shall include recommendations for coordination with international partners.

''(b) USE OF STRATEGY.—The Administrator shall use the strategy developed under subsection (a) in planning and funding research and other activities and initiatives in the field of astrobiology.

''(c) REPORT TO CONGRESS.—Not later than 18 months after the date of enactment of this Act [Mar. 21, 2017], the National Academies shall submit to the Administrator and to the appropriate committees of Congress [Committee on Science, Space, and Technology of the House of Representatives and Committee on Commerce, Science, and Transportation of the Senate] a report containing the strategy developed under subsection (a).''

SPACE TECHNOLOGY RESEARCH AND DEVELOPMENT

Pub. L. 115–10, title VII, §§ 701, 702, Mar. 21, 2017, 131 Stat. 56, 57 provided that:

''SEC. 701. SPACE TECHNOLOGY INFUSION.

''(a) SENSE OF CONGRESS ON SPACE TECHNOLOGY.—It is the sense of Congress that space technology is critical—

''(1) to developing technologies and capabilities that will make the Administration [National Aeronautics and Space Administration]'s core missions more affordable and more reliable;

''(2) to enabling a new class of Administration missions beyond low-Earth orbit; and

''(3) to improving technological capabilities and promote innovation for the Administration and the Nation.

''(b) SENSE OF CONGRESS ON PROPULSION TECHNOLOGY.—It is the sense of Congress that advancing propulsion technology would improve the efficiency of trips to Mars and could shorten travel time to Mars, reduce astronaut health risks, and reduce radiation exposure, consumables, and mass of materials required for the journey.

''(c) POLICY.—It is the policy of the United States that the Administrator [of the National Aeronautics and Space Administration] shall develop technologies to support the Administration's core missions, as described in section 2(3) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18301(3)), and support sustained investments in early stage innovation, fundamental research, and technologies to expand the boundaries of the national aerospace enterprise.

''(d) PROPULSION TECHNOLOGIES.—A goal of propulsion technologies developed under subsection (c) shall be to significantly reduce human travel time to Mars.

''SEC. 702. SPACE TECHNOLOGY PROGRAM.

''(a) SPACE TECHNOLOGY PROGRAM AUTHORIZED.—The Administrator [of the National Aeronautics and Space Administration] shall conduct a space technology program (referred to in this section as the 'Program') to research and develop advanced space technologies that could deliver innovative solutions across the Administration [National Aeronautics and Space Administration]'s space exploration and science missions.

''(b) CONSIDERATIONS.—In conducting the Program, the Administrator shall consider—

''(1) the recommendations of the National Academies' review of the Administration's Space Technology roadmaps and priorities; and

''(2) the applicable enabling aspects of the stepping stone approach to exploration under section 70504 of title 51, United States Code.

''(c) REQUIREMENTS.—In conducting the Program, the Administrator shall—

''(1) to the extent practicable, use a competitive process to select research and development projects;

''(2) to the extent practicable and appropriate, use small satellites and the Administration's suborbital and ground-based platforms to demonstrate space technology concepts and developments; and

''(3) as appropriate, partner with other Federal agencies, universities, private industry, and foreign countries.

''(d) SMALL BUSINESS PROGRAMS.—The Administrator shall organize and manage the Administration's Small Business Innovation Research Program and Small Business Technology Transfer Program within the Program.

''(e) NONDUPLICATION CERTIFICATION.—The Administrator shall submit a budget for each fiscal year, as transmitted to Congress under section 1105(a) of title 31, United States Code, that avoids duplication of projects, programs, or missions conducted by [the] Program with other projects, programs, or missions conducted by another office or directorate of the Administration.

''(f) COLLABORATION, COORDINATION, AND ALIGNMENT.—

''(1) IN GENERAL.—The Administrator shall—

''(A) ensure that the Administration's projects, programs, and activities in support of technology research and development of advanced space technologies are fully coordinated and aligned;

''(B) ensure that the results [of] the projects, programs, and activities under subparagraph (A) are shared and leveraged within the Administration; and

''(C) ensure that the organizational responsibility for research and development activities in support of human space exploration not initiated as of the date of enactment of this Act [Mar. 21, 2017] is established on the basis of a sound rationale.

''(2) SENSE OF CONGRESS.—It is the sense of Congress that projects, programs, and missions being conducted by the Human Exploration and Operations Mission Directorate in support of research and development of advanced space technologies and systems focusing on human space exploration should continue in that Directorate.

''(g) REPORT.—Not later than 180 days after the date of enactment of this Act, the Administrator shall provide to the appropriate committees of Congress a report—

''(1) comparing the Administration's space technology investments with the high-priority technology areas identified by the National Academies in the National Research Council's report on the Administration's Space Technology Roadmaps; and

''(2) including—

''(A) identification of how the Administration will address any gaps between the agency's investments and the recommended technology areas, including a projection of funding requirements; and

''(B) identification of the rationale described in subsection (f)(1)(C).

''(h) ANNUAL REPORT.—The Administrator shall include in the Administration's annual budget request for each fiscal year the rationale for assigning organizational responsibility for, in the year prior to the budget fiscal year, each initiated project, program, and mission focused on research and development of advanced technologies for human space exploration.''

Executive Documents

SPACE POLICY DIRECTIVE–6. NATIONAL STRATEGY FOR SPACE NUCLEAR POWER AND PROPULSION

Space Policy Directive–6, Dec. 16, 2020, 85 F.R. 82873, provided:

Memorandum for the Vice President[,] the Secretary of State[,] the Secretary of Defense[,] the Secretary of Commerce[,] the Secretary of Transportation[,] the

Secretary of Energy[,] the Director of the Office of Management and Budget[,] the Assistant to the President for National Security Affairs[,] the Administrator of the National Aeronautics and Space Administration[,] the Chairman of the Nuclear Regulatory Commission[, and] the Director of the Office of Science and Technology Policy

SECTION 1. *Policy*. The ability to use space nuclear power and propulsion (SNPP) systems safely, securely, and sustainably is vital to maintaining and advancing United States dominance and strategic leadership in space. SNPP systems include radioisotope power systems (RPSs) and fission reactors used for power or propulsion in spacecraft, rovers, and other surface elements. SNPP systems can allow operation of such elements in environments in which solar and chemical power are inadequate. They can produce more power at lower mass and volume compared to other energy sources, thereby enabling persistent presence and operations. SNPP systems also can shorten transit times for crewed and robotic spacecraft, thereby reducing radiation exposure in harsh space environments.

National Security Presidential Memorandum–20 (NSPM–20) of August 20, 2019 (Launch of Spacecraft Containing Space Nuclear Systems), updated the process for launches of spacecraft containing space nuclear systems. It established it as the policy of the United States to ''develop and use space nuclear systems when such systems safely enable or enhance space exploration or operational capabilities.''

Cooperation with commercial and international partners is critical to achieving America's objectives for space exploration. Presidential Policy Directive 4 of June 28, 2010 (National Space Policy), as amended by the Presidential Memorandum of December 11, 2017 (Reinvigorating America's Human Space Exploration Program) [82 F.R. 58501], established it as the policy of the United States to ''[l]ead an innovative and sustainable program of exploration with commercial and international partners to enable human expansion across the solar system and to bring back to Earth new knowledge and opportunities.''

This memorandum establishes a national strategy to ensure the development and use of SNPP systems when appropriate to enable and achieve the scientific, exploration, national security, and commercial objectives of the United States. In the context of this strategy only, the term ''development'' includes the full development process from design through testing and production, and the term ''use'' includes launch, operation, and disposition. This memorandum outlines high-level policy goals and a supporting roadmap that will advance the ability of the United States to use SNPP systems safely, securely, and sustainably. The execution of this strategy will be subject to relevant budgetary and regulatory processes and to the availability of appropriations.

SEC. 2. *Goals*. The United States will pursue goals for SNPP development and use that are both mission-enabling and ambitious in their substance and their timeline. These goals will enable a range of existing and future space missions, with the aim of accelerating achievement of key milestones, including in-space demonstration and use of new SNPP capabilities. This memorandum establishes the following such goals for the Nation:

(a) Develop uranium fuel processing capabilities that enable production of fuel that is suitable to lunar and planetary surface and in-space power, nuclear electric propulsion (NEP), and nuclear thermal propulsion (NTP) applications, as needed. These capabilities should support the ability to produce different uranium fuel forms to meet the nearest-term mission needs and, to the extent feasible, should maximize commonality—meaning use of the same or similar materials, processes, designs, or infrastructure—across these fuel forms. To maximize private-sector engagement and cost savings, these capabilities should be developed to enable a range of terrestrial as well as space applications, including future commercial applications;

(b) Demonstrate a fission power system on the surface of the Moon that is scalable to a power range of 40 kilowatt-electric (kWe) and higher to support a sustained lunar presence and exploration of Mars. To the extent feasible, this power system should align with mission needs for, and potential future government and commercial applications of, in-space power, NEP, and terrestrial nuclear power;

(c) Establish the technical foundations and capabilities—including through identification and resolution of the key technical challenges—that will enable options for NTP to meet future Department of Defense (DoD) and National Aeronautics and Space Administration (NASA) mission requirements; and

(d) Develop advanced RPS capabilities that provide higher fuel efficiency, higher specific energy, and longer operational lifetime than existing RPS capabilities, thus enabling survivable surface elements to support robotic and human exploration of the Moon and Mars and extending robotic exploration of the solar system.

SEC. 3. *Principles*. The United States will adhere to principles of safety, security, and sustainability in its development and use of SNPP systems, in accordance with all applicable Federal laws and consistent with international obligations and commitments.

(a) *Safety*. All executive departments and agencies (agencies) involved in the development and use of SNPP systems shall take appropriate measures to ensure, within their respective roles and responsibilities, the safe development, testing, launch, operation, and disposition of SNPP systems. For United States Government SNPP programs, the sponsoring agency holds primary responsibility for safety. For programs involving multiple agencies, the terms of cooperation shall designate a lead agency with primary responsibility for safety in each stage of development and use.

(i) Ground development. Activities associated with ground development, including ground testing, of SNPP systems shall be conducted in accordance with applicable Federal, State, and local laws and existing authorities of regulatory agencies.

(ii) Launch. NSPM–20 established safety guidelines and safety analysis and review processes for Federal Government launches of spacecraft containing space nuclear systems, including SNPP systems, and for launches for which the Department of Transportation has statutory authority to license as commercial space launch activities (commercial launches). These guidelines and processes address launch and any subsequent stages during which accidents may result in radiological effects on the public or the environment—for instance, in an unplanned reentry from Earth orbit or during an Earth flyby. Launch activities shall be conducted in accordance with these guidelines and processes.

(iii) Operation and disposition. The operation and disposition of SNPP systems shall be planned and conducted in a manner that protect human and environmental safety and national security assets. Fission reactor SNPP systems may be operated on interplanetary missions, in sufficiently high orbits, and in low-Earth orbits if they are stored in sufficiently high orbits after the operational part of their mission. In this context, a sufficiently high orbit is one in which the orbital lifetime of the spacecraft is long enough for the fission products to decay to a level of radioactivity comparable to that of uranium–235 by the time it reenters the Earth's atmosphere, and the risks to existing and future space missions and of collision with objects in space are minimized. Spacecraft operating fission reactors in low-Earth orbits shall incorporate a highly reliable operational system to ensure effective and controlled disposition of the reactor.

(b) *Security*. All agencies involved in the development and use of SNPP systems shall take appropriate measures to protect nuclear and radiological materials and sensitive information, consistent with sound nuclear nonproliferation principles. For United States Government SNPP programs, the sponsoring agency holds pri-

mary responsibility for security. For programs involving multiple agencies, the terms of cooperation shall designate a lead agency with primary responsibility for security in each stage of development and use. The use of highly enriched uranium (HEU) in SNPP systems should be limited to applications for which the mission would not be viable with other nuclear fuels or non-nuclear power sources. Before selecting HEU or, for fission reactor systems, any nuclear fuel other than low-enriched uranium (LEU), for any given SNPP design or mission, the sponsoring agency shall conduct a thorough technical review to assess the viability of alternative nuclear fuels. The sponsoring agency shall provide to the respective staffs of the National Security Council, the National Space Council, the Office of Science and Technology Policy, and the Office of Management and Budget a briefing that provides justification for why the use of HEU or other non-LEU fuel is required, and any steps the agency has taken to address nuclear safety, security, and proliferation-related risks. The Director of the Office of Science and Technology Policy shall ensure, through the National Science and Technology Council, that other relevant agencies are invited to participate in these briefings.

(c) *Sustainability*. All agencies involved in the development and use of SNPP systems shall take appropriate measures to conduct these activities in a manner that is suitable for the long-term sustainment of United States space capabilities and leadership in SNPP.

(i) Coordination and Collaboration. To maximize efficiency and return on taxpayer investment, the heads of relevant agencies shall seek and pursue opportunities to coordinate among existing and future SNPP development and use programs. Connecting current efforts with likely future applications will help ensure that such programs can contribute to long-term United States SNPP capabilities and leadership. Agencies also shall seek opportunities to partner with the private sector, including academic institutions, in order to facilitate contributions to United States SNPP capabilities and leadership. To help identify opportunities for collaboration, the heads of relevant agencies should conduct regular technical exchanges among SNPP programs, to the extent that such exchanges are consistent with the principle of security and comply with applicable Federal, State, and local laws. Agencies shall coordinate with the Department of State when seeking opportunities for international partnerships.

(ii) Commonality. The heads of relevant agencies shall seek to identify and use opportunities for commonality among SNPP systems, and between SNPP and terrestrial nuclear systems, whenever doing so could advance program and policy objectives without unduly inhibiting innovation or market development, or hampering system suitability to specific mission applications. For example, opportunities for commonality may exist in goals (e.g., demonstration timeline), reactor design, nuclear fuels (e.g., fuel type and form, and enrichment level), supplementary systems (e.g., power conversion, moderator, reflector, shielding, and system vessel), methods (e.g., additive manufacturing of fuel or reactor elements), and infrastructure (e.g., fuel supply, testing facilities, launch facilities, and workforce).

(iii) Cost-effectiveness. The heads of relevant agencies should pursue SNPP development and use solutions that are cost-effective while also consistent with the principles of safety and security. For any program or system, the heads of such agencies should seek to identify the combination of in-space and ground-based testing and certification that will best qualify the system for a given mission while ensuring public safety.

SEC. 4. *Roles and Responsibilities*. (a) The Vice President, on behalf of the President and acting through the National Space Council, shall coordinate United States policy related to use of SNPP systems.

(b) The Secretary of State shall, under the direction of the President, coordinate United States activities related to international obligations and commitments and international cooperation involving SNPP.

(c) The Secretary of Defense shall conduct and support activities associated with development and use of SNPP systems to enable and achieve United States national security objectives. When appropriate, the Secretary of Defense shall facilitate private-sector engagement in DoD SNPP activities.

(d) The Secretary of Commerce shall promote responsible United States commercial SNPP investment, innovation, and use, and shall, when consistent with the authorities of the Secretary, ensure the publication of clear, flexible, performance-based rules that are applicable to use of SNPP and are easily navigated. Under the direction of the Secretary of Commerce, the Department of Commerce (DOC) shall ascertain and communicate the views of private-sector partners and potential private-sector partners to relevant agency partners in order to facilitate public-private collaboration in SNPP development and use.

(e) The Secretary of Transportation's statutory authority includes licensing commercial launches and reentries, including vehicles containing SNPP systems. Within this capacity, the Secretary of Transportation shall, when appropriate, facilitate private-sector engagement in the launch or reentry aspect of SNPP development and use activities, in support of United States science, exploration, national security, and commercial objectives. To help ensure the launch safety of an SNPP payload, and consistent with 51 U.S.C. 50904, a payload review may be conducted as part of a license application review or may be requested by a payload owner or operator in advance of or apart from a license application.

(f) The Secretary of Energy shall, in coordination with sponsoring agencies and other agencies, as appropriate, support development and use of SNPP systems to enable and achieve United States scientific, exploration, and national security objectives. When appropriate, the Secretary of Energy shall work with sponsoring agencies and DOC to facilitate United States private-sector engagement in Department of Energy (DOE) SNPP activities. Under the direction of the Secretary of Energy and consistent with the authorities granted to DOE, including authorities under the Atomic Energy Act of 1954 (AEA), as amended, 42 U.S.C. 2011, *et seq*., DOE may authorize ground-based SNPP development activities, including DOE activities conducted in coordination with sponsoring agencies and private-sector entities. As directed in NSPM–20, the Secretary of Energy shall maintain, on a full-cost recovery basis, the capability and infrastructure to develop, furnish, and conduct safety analyses for space nuclear systems for use in United States Government space systems.

(g) The Administrator of NASA shall conduct and support activities associated with development and use of SNPP systems to enable and achieve United States space science and exploration objectives. The Administrator of NASA shall establish the performance requirements for SNPP capabilities necessary to achieve those objectives. When appropriate, the Administrator of NASA shall facilitate private-sector engagement in NASA SNPP activities, and shall coordinate with the Secretary of Commerce and, as appropriate, the Secretary of State and the Secretary of Energy, to help facilitate private-sector SNPP activities.

(h) The Nuclear Regulatory Commission (NRC) has statutory authority under the AEA for licensing and regulatory safety and security oversight of commercial nuclear activities taking place within the United States. The NRC should, as appropriate and particularly in circumstances within NRC authority where DOE regulatory authorities cannot be applied, enable private-sector engagement in SNPP development and use activities in support of United States science, exploration, national security, and commercial objectives.

(i) The Director of the Office and Science and Technology Policy shall coordinate United States policy related to research and development of SNPP systems.

SEC. 5. *Roadmap*. The United States will pursue a coordinated roadmap for federally-supported SNPP ac-

tivities to achieve the goals and uphold the principles established in this memorandum. This roadmap comprises the following elements, which the relevant agencies should pursue consistent with the following objective timeline, subject to relevant budgetary and regulatory processes and to the availability of appropriations:

(a) By the mid-2020s, develop uranium fuel processing capabilities that enable production of fuel that is suitable for lunar and planetary surface and in-space power, NEP, and NTP applications, as needed.

(i) Identify relevant mission needs. DoD and NASA should provide to DOE any mission needs (e.g., power density, environment, and timelines) relevant to the identification of fuels suitable for planetary surface and in-space power, NEP, and NTP applications.

(ii) Identify candidate fuel or fuels. DoD and NASA, in cooperation with DOE and private-sector partners, as appropriate, should identify candidate fuel or fuels to meet the identified mission requirements. This review and assessment should account for current and expected United States capabilities to produce and qualify for use candidate fuels, and for potential commonality of fuels or fuel variants across multiple planetary surface and in-space power, in-space propulsion, and terrestrial applications.

(iii) Qualify at least one candidate fuel. DoD and NASA, in cooperation with DOE and private-sector partners, as appropriate, should qualify a fuel or fuels for demonstrations of a planetary surface power reactor and an in-space propulsion system. While seeking opportunities to use private-sector-partner capabilities, agencies should ensure that the Federal Government retains an ability for screening and qualification of candidate fuels.

(iv) Supply fuel for demonstrations. DOE, in cooperation with NASA and DoD, and with private-sector partners, as appropriate, should identify feedstock and uranium that can be made available for planetary surface power and in-space propulsion demonstrations. DOE shall ensure that any provision of nuclear material for SNPP will not disrupt enriched uranium supplies for the United States nuclear weapons program and the naval propulsion program, and that SNPP needs are included among broader considerations of nuclear fuel supply provisioning and management.

(b) By the mid- to late-2020s, demonstrate a fission power system on the surface of the Moon that is scalable to a power range of 40 kWe and higher to support sustained lunar presence and exploration of Mars.

(i) Initiate a surface power project. NASA should initiate a fission surface power project for lunar surface demonstration by 2027, with scalability to Mars exploration. NASA should consult with DoD and other agencies, and with the private sector, as appropriate, when developing project requirements.

(ii) Conduct technology and requirements assessment. NASA, in coordination with DoD and other agencies, and with private-sector partners, as appropriate, should evaluate technology options for a surface power system including reactor designs, power conversion, shielding, and thermal management. NASA should work with other agencies, and private-sector partners, as appropriate, to evaluate opportunities for commonality among other SNPP needs, including in-space power and terrestrial power needs, possible NEP technology needs, and reactor demonstrations planned by NASA, other agencies, or the private sector.

(iii) Engage the private sector. DOE and NASA should determine a mechanism or mechanisms for engaging with the private sector to meet NASA's SNPP surface power needs in an effective manner consistent with the guiding principles set forth in this memorandum. In evaluating mechanisms, DOE and NASA should consider the possibility of NASA issuing a request for proposal for the development and construction of the surface power reactor system or demonstration.

(iv) System development. NASA should work with DOE, and with other agencies and private-sector partners, as appropriate, to develop the lunar surface power demonstration project.

(v) Conduct demonstration mission. NASA, in coordination with other agencies and with private-sector partners, as appropriate, should launch and conduct the lunar surface power demonstration project.

(c) By the late-2020s, establish the technical foundations and capabilities—including through identification and resolution of the key technical challenges—that will enable NTP options to meet future DoD and NASA mission needs.

(i) Conduct requirements assessment. DoD and NASA, in cooperation with DOE, and with other agencies and private-sector partners, as appropriate, should assess the ability of NTP capabilities to enable and advance existing and potential future DoD and NASA mission requirements.

(ii) Conduct technology assessment. DoD and NASA, in cooperation with DOE, and with other agencies and private-sector partners, as appropriate, should evaluate technology options and associated key technical challenges for an NTP system, including reactor designs, power conversion, and thermal management. DoD and NASA should work with their partners to evaluate and use opportunities for commonality with other SNPP needs, terrestrial power needs, and reactor demonstration projects planned by agencies and the private sector.

(iii) Technology development. DoD, in coordination with DOE and other agencies, and with private-sector partners, as appropriate, should develop reactor and propulsion system technologies that will resolve the key technical challenges in areas such as reactor design and production, propulsion system and spacecraft design, and SNPP system integration.

(d) By 2030, develop advanced RPS capabilities that provide higher fuel efficiency, higher specific energy, and longer operational lifetime than existing RPS capabilities, thus enabling survivable surface elements to support robotic and human exploration of the Moon and Mars and extending robotic exploration of the solar system.

(i) Maintain RPS capability. Mission sponsoring agencies should assess their needs for radioisotope heat source material to meet emerging mission requirements, and should work with DOE to jointly identify the means to produce or acquire the necessary material on a timeline that meets mission requirements.

(ii) Engage the private sector. NASA, in coordination with DOE and DOC, should conduct an assessment of opportunities for engaging the private sector to meet RPS needs in an effective manner consistent with the guiding principles established in this memorandum.

(iii) Conduct technology and requirements assessment. NASA, in coordination with DOE and DoD, and with other agencies and private-sector partners, as appropriate, should assess requirements for next-generation RPS systems and evaluate technology options for meeting those requirements.

(iv) System development. DOE, in coordination with NASA and DoD, and with other agencies and private-sector partners, as appropriate, should develop one or more next-generation RPS system or systems to meet the goals of higher fuel efficiency, higher specific energy, and longer operational lifetime for the required range of power.

SEC. 6. *Implementation*. The Vice President, through the National Space Council, shall coordinate implementation of this memorandum.

SEC. 7. *General Provisions*. (a) Nothing in this memorandum shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This memorandum shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This memorandum is not intended to, and does not, create any right or benefit, substantive or proce-

dural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

(d) The Secretary of Energy is authorized and directed to publish this memorandum in the Federal Register.

DONALD J. TRUMP.

§ 20302. Vision for space exploration

(a) IN GENERAL.—The Administrator shall establish a program to develop a sustained human presence in cis-lunar space or on the Moon, including a robust precursor program, to promote exploration, science, commerce, and United States preeminence in space, and as a stepping-stone to future exploration of Mars and other destinations. The Administrator is further authorized to develop and conduct appropriate international collaborations in pursuit of these goals.

(b) FUTURE EXPLORATION OF MARS.—The Administrator shall manage human space flight programs, including the Space Launch System and Orion, to enable humans to explore Mars and other destinations by defining a series of sustainable steps and conducting mission planning, research, and technology development on a timetable that is technically and fiscally possible, consistent with section 70504.

(c) DEFINITIONS.—In this section:

(1) ORION.—The term ''Orion'' means the multipurpose crew vehicle described under section 303 of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18323).

(2) SPACE LAUNCH SYSTEM.—The term ''Space Launch System'' means has the meaning[1] given the term in section 3 of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18302).

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3356; Pub. L. 115–10, title IV, § 413, Mar. 21, 2017, 131 Stat. 33.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20302	42 U.S.C. 16611(b).	Pub. L. 109–155, title I, § 101(b), Dec. 30, 2005, 119 Stat. 2898.

Editorial Notes

AMENDMENTS

2017—Subsec. (a). Pub. L. 115–10, § 413(1), inserted ''in cis-lunar space or'' after ''sustained human presence''.

Subsec. (b). Pub. L. 115–10, § 413(2), amended subsec. (b) generally. Prior to amendment, text read as follows: ''The Administrator shall manage human space flight programs to strive to achieve the following milestones (in conformity with section 70502 of this title):

''(1) Returning Americans to the Moon no later than 2020.

''(2) Launching the Crew Exploration Vehicle as close to 2010 as possible.

''(3) Increasing knowledge of the impacts of long duration stays in space on the human body using the most appropriate facilities available, including the International Space Station.

''(4) Enabling humans to land on and return from Mars and other destinations on a timetable that is technically and fiscally possible.''

Subsec. (c). Pub. L. 115–10, § 413(3), added subsec. (c).

Statutory Notes and Related Subsidiaries

MOON TO MARS

Pub. L. 117–167, div. B, title VII, § 10811, Aug. 9, 2022, 136 Stat. 1731, provided that:

''(a) SENSE OF CONGRESS.—It is the sense of Congress that—

''(1) advances in space technology and space exploration capabilities—

''(A) ensure the long-term technological preeminence, economic competitiveness, STEM workforce development, and national security of the United States; and

''(B) offer profound inspirational value for future generations;

''(2) the Artemis missions—

''(A) will make further progress on advancing the human exploration roadmap to achieve human presence beyond low-Earth orbit to the surface of Mars, as required under section 432 of the National Aeronautics and Space Administration Transition Authorization Act of 2017 (Public Law 115–10; 51 U.S.C. 20302 note);

''(B) should fulfill the goal of landing United States astronauts, including the first woman and the next man, on the Moon; and

''(C) should seek collaboration with commercial and international partners to establish sustainable lunar exploration, and should fund any sustainable lunar activities not directly required for the advancement of a human mission to Mars separately;

''(3) in carrying out the Artemis missions, the Administrator [of the National Aeronautics and Space Administration] should ensure that the entire Artemis program is inclusive and representative of all people of the United States, including women and minorities;

''(4) safe and successful execution of the roadmap to achieve human presence on Mars, including the Artemis missions, requires—

''(A) a clear strategic vision for achieving lunar and Mars exploration that is shared by NASA [National Aeronautics and Space Administration], international partners, nongovernmental partners, Congress, and the people of the United States;

''(B) a well-developed and executable timeline, budget, and mission architecture, to inform decisions, including decisions relating to workforce and infrastructure needs and the development of technical and nontechnical skills;

''(C) consistent NASA oversight of all relevant exploration activities, enabled by NASA leadership with authority, responsibility, and accountability for decisions and well-developed capabilities for systems engineering and integration;

''(D) clearly defined roles for NASA, international partners, and nongovernmental partners, including criteria for determining whether NASA should make, manage, or buy key capabilities; and

''(E) mechanisms to ensure NASA insight into the activities of its international and nongovernmental partners, as required to identify and mitigate risks to mission safety and success.

''(b) MOON TO MARS OFFICE AND PROGRAM.—

''(1) MOON TO MARS OFFICE.—Not later than 120 days after the date of the enactment of this Act [Aug. 9, 2022], the Administrator shall establish within the Exploration Systems Development Mission Directorate a Moon to Mars Program Office (referred to in this section as the 'Office') to lead and manage the Moon to Mars program established under paragraph (2), including Artemis missions and activities.

''(2) MOON TO MARS PROGRAM.—

''(A) ESTABLISHMENT.—Not later than 120 days after the date of the enactment of this Act, the Administrator shall establish a Moon to Mars Program (referred to in this section as the 'Program')

[1] So in original.

in accordance with sections 20302(b) and 70504 of title 51, United States Code, which shall include Artemis missions and activities, to achieve the goal of human exploration of Mars.

''(B) ELEMENTS.—The Program shall include the following elements:

''(i) The Space Launch System under section 20302 of title 51, United States Code.

''(ii) The Orion crew vehicle under such section.

''(iii) Exploration Ground Systems.

''(iv) An outpost in orbit around the Moon under section 70504 of such title [probably should be ''section 70505 of such title'']].

''(v) Human-rated landing systems.

''(vi) Spacesuits.

''(vii) Any other element needed to meet the requirements for the Program.

''(C) DIRECTION.—The Administrator shall ensure that—

''(i) each Artemis mission demonstrates or advances a technology or operational concept that will enable human missions to Mars;

''(ii) the Program incorporates each such mission into the human exploration roadmap under section 432 of the National Aeronautics and Space Administration Transition Authorization Act of 2017 (Public Law 115–10; 51 U.S.C. 20302 note); and

''(iii) the Program includes cislunar space exploration activities that—

''(I) use a combination of launches of the Space Launch System and space transportation services from United States commercial providers, as appropriate, for each such mission;

''(II) plan for not fewer than 1 Space Launch System launch annually beginning after the first successful crewed launch of Orion on the Space Launch System, with a goal of 2 Space Launch System launches annually as soon as practicable; and

''(III) establish an outpost in orbit around the Moon that—

''(aa) demonstrates technologies, systems, and operational concepts directly applicable to the space vehicle that will be used to transport humans to Mars;

''(bb) has the capability for periodic human habitation; and

''(cc) functions as a point of departure, return, or staging for missions to multiple locations on the lunar surface or other destinations.

''(3) DIRECTOR.—

''(A) IN GENERAL.—The Administrator shall appoint a Director for the Program, who shall lead the Office and report to the Associate Administrator of the Exploration Systems Development Mission Directorate.

''(B) ACCOUNTABILITY.—The Director shall have accountability for risk management and shall have authority, as consistent with NASA Space Flight Program and Project Management requirements—

''(i) to implement—

''(I) Program-level requirements; and

''(II) an architecture and program plan developed to meet such requirements;

''(ii) to manage resources, personnel, and contracts necessary to implement the Program, as appropriate;

''(iii) to manage cost, risk, schedule, and performance factors;

''(iv) to direct and oversee a Program-wide systems engineering and integration and integrated risk management function; and

''(v) to carry out other authorities, in accordance with [National Aeronautics and Space] Administration policies and procedures.

''(C) RESPONSIBILITIES.—The Director shall be responsible for—

''(i) developing and managing—

''(I) an integrated master plan, integrated master schedule, and integrated risk management procedures for the Program;

''(II) a Program-wide systems engineering and integration function as described in subsection (c);

''(III) plans for technology and capabilities development;

''(IV) logistics support, science data management, communications, and other plans that are relevant to the functions of the Office; and

''(V) performance measures to assess the progress of the Program;

''(ii) advising the Associate Administrator of the Exploration Systems Development Mission Directorate on the development of—

''(I) Program-level requirements, including for a human Mars orbital mission and a human mission to the surface of Mars; and

''(II) an architecture based on the requirements described in subclause (I); and

''(iii) informing the Associate Administrator of the Administration on coordination among NASA centers, as required to most efficiently achieve the goals of the Program.

''(c) SYSTEMS ENGINEERING AND INTEGRATION.—The Director of the Office shall—

''(1) establish within the Office a Program-wide systems engineering and integration function; and

''(2) appoint a manager for such function to manage systems engineering and integration activities across the Program, including with respect to the Program elements described in subsection (b)(2).

''(d) IMPLEMENTATION.—In the implementation of the Program, the Administrator shall ensure that—

''(1) for the purposes of reducing risk and complexity and making the maximum use of taxpayer investments to date, in conducting Artemis activities, the Administration does not take any action in regard to the design of the Exploration Upper Stage-enhanced Space Launch System that would preclude it from carrying an integrated human-rated lunar landing system for crewed lunar landing missions;

''(2) the Program maintains a robust series of ground-based and in-flight testing activities, including, with respect to each crewed system design, not less than 1 uncrewed flight test, followed by a crewed flight test, as appropriate, prior to use of the design on a human-rated lunar landing system or Mars mission; and

''(3) human lunar landing missions under the Program, including surface and in-space activities, are carried out solely by government astronauts.

''(e) STUDY.—Not later than 180 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress [Committee on Commerce, Science, and Transportation of the Senate and Committee on Science, Space, and Technology of the House of Representatives] a report detailing—

''(1) progress towards the establishment of—

''(A) the Office, the Program, and the Program architecture; and

''(B) the integrated master plan, integrated master schedule, and integrated risk management procedures for the Program;

''(2) performance measures and milestones for the Program and any interim assessment with respect to such performance measures, as practicable;

''(3) initial criteria for determining whether NASA should make, manage, or buy key capabilities within the Program or engage with international partners to access such capabilities;

''(4) strategies to ensure consistent insight into the activities of NASA partners, including nongovernmental partners, as required to identify and mitigate mission risks;

''(5) progress towards the establishment of a systems engineering and integration function; and

''(6) an annual budget profile for resources required to implement the Program during the 5-year period beginning on the date of the enactment of this Act.''

[For definition of ''STEM'' as used in section 10811 of Pub. L. 117–167, set out above, see section 18901 of Title 42, The Public Health and Welfare.]

[For definitions of ''Orion'', ''cislunar space'', and ''government astronauts'' as used in section 10811 of Pub. L. 117–167, set out above, see section 10802 of Pub. L. 117–167, set out as a Definitions note under section 10101 of this title.]

HUMAN SPACE EXPLORATION

Pub. L. 115–10, title IV, §§431, 432, Mar. 21, 2017, 131 Stat. 38, as amended by Pub. L. 117–167, div. B, title VII, §10817(b), Aug. 9, 2022, 136 Stat. 1740, provided that:

''SEC. 431. FINDINGS ON HUMAN SPACE EXPLORATION.

''Congress makes the following findings:

''(1) In accordance with section 204 of the National Aeronautics and Space Administration Authorization Act of 2010 (124 Stat. 2813), the National Academies of Sciences, Engineering, and Medicine, through its Committee on Human Spaceflight, conducted a review of the goals, core capabilities, and direction of human space flight, and published the findings and recommendations in a 2014 report entitled, 'Pathways to Exploration: Rationales and Approaches for a U.S. Program of Human Space Exploration'.

''(2) The Committee on Human Spaceflight included leaders from the aerospace, scientific, security, and policy communities.

''(3) With input from the public, the Committee on Human Spaceflight concluded that many practical and aspirational rationales for human space flight together constitute a compelling case for continued national investment and pursuit of human space exploration toward the horizon goal of Mars.

''(4) According to the Committee on Human Spaceflight, the rationales include economic benefits, national security, national prestige, inspiring students and other citizens, scientific discovery, human survival, and a sense of shared destiny.

''(5) The Committee on Human Spaceflight affirmed that Mars is the appropriate long-term goal for the human space flight program.

''(6) The Committee on Human Spaceflight recommended that NASA define a series of sustainable steps and conduct mission planning and technology development as needed to achieve the long-term goal of placing humans on the surface of Mars.

''(7) Expanding human presence beyond low-Earth orbit and advancing toward human missions to Mars requires early planning and timely decisions to be made in the near-term on the necessary courses of action for commitments to achieve short-term and long-term goals and objectives.

''(8) In addition to the 2014 report described in paragraph (1), there are several independently developed reports or concepts that describe potential Mars architectures or concepts and identify Mars as the long-term goal for human space exploration, including NASA's 'The Global Exploration Roadmap' of 2013, 'NASA's Journey to Mars–Pioneering Next Steps in Space Exploration' of 2015, NASA Jet Propulsion Laboratory's 'Minimal Architecture for Human Journeys to Mars' of 2015, and Explore Mars' 'The Humans to Mars Report 2016'.

''SEC. 432. HUMAN EXPLORATION ROADMAP.

''(a) SENSE OF CONGRESS.—It is the sense of Congress that—

''(1) expanding human presence beyond low-Earth orbit and advancing toward human missions to Mars in the 2030s requires early strategic planning and timely decisions to be made in the near-term on the necessary courses of action for commitments to achieve short-term and long-term goals and objectives;

''(2) for strong and sustained United States leadership, a need exists to advance a human exploration roadmap, addressing exploration objectives in collaboration with international, academic, and industry partners;

''(3) an approach that incrementally advances toward a long-term goal is one in which nearer-term developments and implementation would influence future development and implementation; and

''(4) a human exploration roadmap should begin with low-Earth orbit, then address in greater detail progress beyond low-Earth orbit to cis-lunar space, and then address future missions aimed at human arrival and activities near and then on the surface of Mars.

''(b) HUMAN EXPLORATION ROADMAP.—

''(1) IN GENERAL.—The Administrator shall develop a human exploration roadmap, including a critical decision plan, to expand human presence beyond low-Earth orbit to the surface of Mars and beyond, considering potential interim destinations such as cis-lunar space and the moons of Mars.

''(2) SCOPE.—The human exploration roadmap shall include—

''(A) an integrated set of exploration, science, and other goals and objectives of a United States human space exploration program to achieve the long-term goal of human missions near or on the surface of Mars in the 2030s;

''(B) opportunities for international, academic, and industry partnerships for exploration-related systems, services, research, and technology if those opportunities provide cost-savings, accelerate program schedules, or otherwise benefit the goals and objectives developed under subparagraph (A);

''(C) sets and sequences of precursor missions in cis-lunar space and other missions or activities necessary—

''(i) to demonstrate the proficiency of the capabilities and technologies identified under subparagraph (D); and

''(ii) to meet the goals and objectives developed under subparagraph (A), including anticipated timelines and missions for the Space Launch System and Orion;

''(D) an identification of the specific capabilities and technologies, including the Space Launch System, Orion, a deep space habitat, and other capabilities, that facilitate the goals and objectives developed under subparagraph (A);

''(E) a description of how cis-lunar elements, objectives, and activities advance the human exploration of Mars;

''(F) an assessment of potential human health and other risks, including radiation exposure;

''(G) mitigation plans, whenever possible, to address the risks identified in subparagraph (F);

''(H) a description of those technologies already under development across the Federal Government or by other entities that facilitate the goals and objectives developed under subparagraph (A);

''(I) a specific process for the evolution of the capabilities of the fully integrated Orion with the Space Launch System and a description of how these systems facilitate the goals and objectives developed under subparagraph (A) and demonstrate the capabilities and technologies described in subparagraph (D);

''(J) a description of the capabilities and technologies that need to be demonstrated or research data that could be gained through the utilization of the ISS and the status of the development of such capabilities and technologies;

''(K) a framework for international cooperation in the development of all capabilities and technologies identified under this section, including an assessment of the risks posed by relying on international partners for capabilities and technologies on the critical path of development;

''(L) a process for partnering with nongovernmental entities using Space Act Agreements or other acquisition instruments for future human space exploration; and

''(M) include [sic] information on the phasing of planned intermediate destinations, Mars mission risk areas and potential risk mitigation approaches, technology requirements and phasing of

required technology development activities, the management strategy to be followed, related ISS activities, planned international collaborative activities, potential commercial contributions, and other activities relevant to the achievement of the goal established in this section.

''(3) CONSIDERATIONS.—In developing the human exploration roadmap, the Administrator shall consider—

''(A) using key exploration capabilities, namely the Space Launch System and Orion;

''(B) using existing commercially available technologies and capabilities or those technologies and capabilities being developed by industry for commercial purposes;

''(C) establishing an organizational approach to ensure collaboration and coordination among NASA's Mission Directorates under section 821 [set out as a note under section 20111 of this title], when appropriate, including to collect and return to Earth a sample from the Martian surface;

''(D) building upon the initial uncrewed mission, Artemis I, and first crewed mission, Artemis II, of the Space Launch System and Orion to establish a sustainable cadence of missions extending human exploration missions into cis-lunar space, including anticipated timelines and milestones;

''(E) developing the robotic and precursor missions and activities that will demonstrate, test, and develop key technologies and capabilities essential for achieving human missions to Mars, including long-duration human operations beyond low-Earth orbit, space suits, solar electric propulsion, deep space habitats, environmental control life support systems, Mars lander and ascent vehicle, entry, descent, landing, ascent, Mars surface systems, and in-situ resource utilization;

''(F) demonstrating and testing 1 or more habitat modules in cis-lunar space to prepare for Mars missions;

''(G) using public-private, firm fixed-price partnerships, where practicable;

''(H) collaborating with international, academic, and industry partners, when appropriate;

''(I) any risks to human health and sensitive onboard technologies, including radiation exposure;

''(J) any risks identified through research outcomes under the NASA Human Research Program's Behavioral Health Element; and

''(K) the recommendations and ideas of several independently developed reports or concepts that describe potential Mars architectures or concepts and identify Mars as the long-term goal for human space exploration, including the reports described under section 431.

''(4) CRITICAL DECISION PLAN ON HUMAN SPACE EXPLORATION.—As part of the human exploration roadmap, the Administrator shall include a critical decision plan—

''(A) identifying and defining key decisions guiding human space exploration priorities and plans that need to be made before June 30, 2020, including decisions that may guide human space exploration capability development, precursor missions, long-term missions, and activities;

''(B) defining decisions needed to maximize efficiencies and resources for reaching the near, intermediate, and long-term goals and objectives of human space exploration; and

''(C) identifying and defining timelines and milestones for a sustainable cadence of missions beginning with Artemis III for the Space Launch System and Orion to extend human exploration from cis-lunar space to the surface of Mars.

''(5) REPORTS.—

''(A) INITIAL HUMAN EXPLORATION ROADMAP.—The Administrator shall submit to the appropriate committees of Congress—

''(i) an initial human exploration roadmap, including a critical decision plan, before December 1, 2017; and

''(ii) an updated human exploration roadmap periodically as the Administrator considers necessary but not less than biennially.

''(B) CONTENTS.—Each human exploration roadmap under this paragraph shall include a description of—

''(i) the achievements and goals accomplished in the process of developing such capabilities and technologies during the 2-year period prior to the submission of the human exploration roadmap; and

''(ii) the expected goals and achievements in the following 2-year period.

''(C) SUBMISSION WITH BUDGET.—Each human exploration roadmap under this section shall be included in the budget for that fiscal year transmitted to Congress under section 1105(a) of title 31, United States Code.''

[Pub. L. 117–167, div. B, title VII, §10817(b), Aug. 9, 2022, 136 Stat. 1740, which directed amendment of section 432(b) of the National Aeronautics and Space Administration Authorization Act of 2017, was executed by amending section 432(b) of Pub. L. 115–10, set out above, which is section 432(b) of the National Aeronautics and Space Administration Transition Authorization Act of 2017, to reflect the probable intent of Congress.]

[For definitions of terms used in sections 431 and 432 of Pub. L. 115–10, set out above, see section 2 of Pub. L. 115–10, set out as a note under section 10101 of this title.]

§ 20303. Contribution to innovation

(a) PARTICIPATION IN INTERAGENCY ACTIVITIES.—The Administration shall be a full participant in any interagency effort to promote innovation and economic competitiveness through near-term and long-term basic scientific research and development and the promotion of science, technology, engineering, and mathematics education, consistent with the Administration's mission, including authorized activities.

(b) HISTORIC FOUNDATION.—In order to carry out the participation described in subsection (a), the Administrator shall build on the historic role of the Administration in stimulating excellence in the advancement of physical science and engineering disciplines and in providing opportunities and incentives for the pursuit of academic studies in science, technology, engineering, and mathematics.

(c) BALANCED SCIENCE PROGRAM AND ROBUST AUTHORIZATION LEVELS.—The balanced science program authorized by section 101(d) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16611(d))[1] shall be an element of the contribution by the Administration to the interagency programs.

(d) ANNUAL REPORT.—

(1) REQUIREMENT.—The Administrator shall submit to Congress and the President an annual report describing the activities conducted pursuant to this section, including a description of the goals and the objective metrics upon which funding decisions were made.

(2) CONTENT.—Each report submitted pursuant to paragraph (1) shall include, with regard to science, technology, engineering, and mathematics education programs, at a minimum, the following:

(A) A description of each program.

[1] See References in Text note below.

(B) The amount spent on each program.

(C) The number of students or teachers served by each program.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3356.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20303(a)	42 U.S.C. 16611a(a).	Pub. L. 110–69, title II, § 2001(a), (b), (c), (e), Aug. 9, 2007, 121 Stat. 582.
20303(b)	42 U.S.C. 16611a(b).	
20303(c)	42 U.S.C. 16611a(c).	
20303(d)	42 U.S.C. 16611a(e).	

Editorial Notes

REFERENCES IN TEXT

Section 101(d) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16611(d)), referred to in subsec. (c), is section 101(d) of Pub. L. 109–155, title I, Dec. 30, 2005, 119 Stat. 2897, which was omitted from the Code following the enactment of this title by Pub. L. 111–314.

Statutory Notes and Related Subsidiaries

INTERNATIONAL SPACE STATION'S CONTRIBUTION TO NATIONAL COMPETITIVENESS ENHANCEMENT

Pub. L. 111–358, title II, § 204, Jan. 4, 2011, 124 Stat. 3994, provided that:

''(a) SENSE OF CONGRESS.—It is the sense of the Congress that the International Space Station represents a valuable and unique national asset which can be utilized to increase educational opportunities and scientific and technological innovation which will enhance the Nation's economic security and competitiveness in the global technology fields of endeavor. If the period for active utilization of the International Space Station is extended to at least the year 2020, the potential for such opportunities and innovation would be increased. Efforts should be made to fully realize that potential.

''(b) EVALUATION AND ASSESSMENT OF NASA'S INTERAGENCY CONTRIBUTION.—Pursuant to the authority provided in title II of the America COMPETES Act (Public Law 110–69 [see Tables for classification]), the Administrator [of NASA] shall evaluate and, where possible, expand efforts to maximize NASA's [National Aeronautics and Space Administration's] contribution to interagency efforts to enhance science, technology, engineering, and mathematics education capabilities, and to enhance the Nation's technological excellence and global competitiveness. The Administrator shall identify these enhancements in the annual reports required by section 2001(e) of that Act ([former] 42 U.S.C. 16611a(e)) [now 51 U.S.C. 20303(d)].

''(c) REPORT TO THE CONGRESS.—Within 120 days after the date of enactment of this Act [Jan. 4, 2011], the Administrator shall provide to the House of Representatives Committee on Science and Technology [now Committee on Science, Space, and Technology] and the Senate Committee on Commerce, Science, and Transportation a report on the assessment made pursuant to subsection (a). The report shall include—

''(1) a description of current and potential activities associated with utilization of the International Space Station which are supportive of the goals of educational excellence and innovation and competitive enhancement established or reaffirmed by this Act [see Short Title of 2011 Amendment note set out under section 1861 of Title 42, The Public Health and Welfare], including a summary of the goals supported, the number of individuals or organizations participating in or benefiting from such activities, and a summary of how such activities might be expanded or improved upon;

''(2) a description of government and private partnerships which are, or may be, established to effectively utilize the capabilities represented by the International Space Station to enhance United States competitiveness, innovation and science, technology, engineering, and mathematics education; and

''(3) a summary of proposed actions or activities to be undertaken to ensure the maximum utilization of the International Space Station to contribute to fulfillment of the goals and objectives of this Act, and the identification of any additional authority, assets, or funding that would be required to support such activities.''

§ 20304. Basic research enhancement

(a) DEFINITION OF BASIC RESEARCH.—In this section, the term ''basic research'' has the meaning given the term in Office of Management and Budget Circular No. A–11.

(b) COORDINATION.—The Administrator, the Director of the National Science Foundation, the Secretary of Energy, the Secretary of Defense, and the Secretary of Commerce shall, to the extent practicable, coordinate basic research activities related to physical sciences, technology, engineering, and mathematics.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3357.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20304	42 U.S.C. 16658.	Pub. L. 110–69, title II, § 2003, Aug. 9, 2007, 121 Stat. 583.

§ 20305. National Academies decadal surveys

(a) IN GENERAL.—The Administrator shall enter into agreements on a periodic basis with the National Academies for independent assessments, also known as decadal surveys, to take stock of the status and opportunities for Earth and space science discipline fields and Aeronautics research and to recommend priorities for research and programmatic areas over the next decade.

(b) INDEPENDENT COST ESTIMATES.—The agreements described in subsection (a) shall include independent estimates of the life cycle costs and technical readiness of missions assessed in the decadal surveys whenever possible.

(c) REEXAMINATION.—The Administrator shall request that each National Academies decadal survey committee identify any conditions or events, such as significant cost growth or scientific or technological advances, that would warrant the Administration asking the National Academies to reexamine the priorities that the decadal survey had established.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3357.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
20305	42 U.S.C. 17823.	Pub. L. 110–422, title XI, § 1104, Oct. 15, 2008, 122 Stat. 4809.

Statutory Notes and Related Subsidiaries

IMPLEMENTATION OF DECADAL SURVEY'S RECOMMENDED DECISION RULES

Pub. L. 112–55, div. B, title III, Nov. 18, 2011, 125 Stat. 622, provided in part: ''That NASA shall implement the recommendations of the most recent National Research

Council planetary decadal survey and shall follow the decadal survey's recommended decision rules regarding program implementation, including a strict adherence to the recommendation that NASA include in a balanced program a flagship class mission, which may be executed in cooperation with one or more international partners, if such mission can be appropriately descoped and all NASA costs for such mission can be accommodated within the overall funding levels appropriated by Congress''.

Subtitle III—Administrative Provisions

CHAPTER 301—APPROPRIATIONS, BUDGETS, AND ACCOUNTING

§ 30101. Prior authorization of appropriations required

Notwithstanding the provisions of any other law, no appropriation may be made to the Administration unless previously authorized by legislation enacted by Congress.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3357.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
30101	42 U.S.C. 2460.	Pub. L. 86–45, § 4, June 15, 1959, 73 Stat. 75.

The word ''hereafter'' is omitted as unnecessary.

§ 30102. Working capital fund

(a) ESTABLISHMENT.—There is hereby established in the United States Treasury an Administration working capital fund.

(b) AVAILABILITY OF AMOUNTS.—

(1) IN GENERAL.—Amounts in the fund are available for financing activities, services, equipment, information, and facilities as authorized by law to be provided—

(A) within the Administration;

(B) to other agencies or instrumentalities of the United States;

(C) to any State, territory, or possession or political subdivision thereof;

(D) to other public or private agencies; or

(E) to any person, firm, association, corporation, or educational institution on a reimbursable basis.

(2) CAPITAL REPAIRS.—The fund shall also be available for the purpose of funding capital repairs, renovations, rehabilitation, sustainment, demolition, or replacement of Administration real property, on a reimbursable basis within the Administration.

(3) INFORMATION TECHNOLOGY (IT) MODERNIZATION.—The fund shall also be available for the purpose of funding IT Modernization activities, as described in section 1077(b)(3)(A)–(E) of Public Law 115–91, on a non-reimbursable basis.

(4) NO FISCAL YEAR LIMITATION.—Amounts in the fund are available without regard to fiscal year limitation.

(c) CONTENTS.—The capital of the fund consists of—

(1) amounts appropriated to the fund;

(2) the reasonable value of stocks of supplies, equipment, and other assets and inventories on order that the Administrator transfers to the fund, less the related liabilities and unpaid obligations;

(3) payments received for loss or damage to property of the fund; and

(4) refunds or rebates received on an ongoing basis from a credit card services provider under the National Aeronautics and Space Administration's credit card programs.

(d) REIMBURSEMENT.—The fund shall be reimbursed, in advance, for supplies and services at rates that will approximate the expenses of operation, such as the accrual of annual leave, depreciation of plant, property, and equipment, and overhead.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3357; Pub. L. 113–6, div. B, title III, Mar. 26, 2013, 127 Stat. 264; Pub. L. 117–328, div. B, title III, Dec. 29, 2022, 136 Stat. 4549.)

HISTORICAL AND REVISION NOTES

Revised Section	*Source (U.S. Code)*	*Source (Statutes at Large)*
30102	42 U.S.C. 2459i.	Pub. L. 108–7, div. K, title III, (last par. under heading ''Administrative Provisions'', at 117 Stat. 520), Feb. 20, 2003, 117 Stat. 520.

Editorial Notes

REFERENCES IN TEXT

Section 1077(b)(3)(A)–(E) of Public Law 115–91, referred to in subsec. (b)(3), is section 1077(b)(3)(A)–(E) of Pub. L. 115–91, div. A, title X, subtitle G, Dec. 12, 2017, 131 Stat. 1587, which is set out in a note under section 11301 of Title 40, Public Buildings, Property, and Works.

AMENDMENTS

2022—Subsec. (b)(3), (4). Pub. L. 117–328 added par. (3) and redesignated former par. (3) as (4).

2013—Subsec. (c)(4). Pub. L. 113–6 added par. (4).

§ 30103. Budgets

(a) CATEGORIES.—The proposed budget for the Administration submitted by the President for each fiscal year shall be accompanied by documents showing—

(1) by program—

(A) the budget for space operations, including the International Space Station and the space shuttle;

(B) the budget for exploration systems;

(C) the budget for aeronautics;

(D) the budget for space science;

(E) the budget for Earth science;

(F) the budget for microgravity science;

(G) the budget for education;

(H) the budget for safety oversight; and

(I) the budget for public relations;

(2) the budget for technology transfer programs;

(3) the budget for the Integrated Enterprise Management Program, by individual element;

(4) the budget for the Independent Technical Authority, both total and by center;