

§ 70502. Exploration plan and programs

The Administrator shall—

(1) construct an architecture and implementation plan for the Administration's human exploration program that is not critically dependent on the achievement of milestones by fixed dates;

(2) implement an exploration research and technology development program to enable human and robotic operations consistent with section 20302(b) of this title;

(3) conduct an in-situ resource utilization technology program to develop the capability to use space resources to increase independence from Earth, and sustain exploration beyond low-Earth orbit; and

(4) pursue aggressively automated rendezvous and docking capabilities that can support the International Space Station and other mission requirements.

(Pub. L. 111-314, §3, Dec. 18, 2010, 124 Stat. 3430; Pub. L. 115-10, title IV, §415, Mar. 21, 2017, 131 Stat. 34.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70502	42 U.S.C. 16763.	Pub. L. 109-155, title V, §503, Dec. 30, 2005, 119 Stat. 2929.

Editorial Notes

AMENDMENTS

2017—Par. (2). Pub. L. 115-10 amended par. (2) generally. Prior to amendment, par. (2) read as follows: “implement an exploration technology development program to enable lunar human and robotic operations consistent with section 20302(b) of this title, including surface power to use on the Moon and other locations;”.

§ 70503. Ground-based analog capabilities

(a) IN GENERAL.—The Administrator may establish a ground-based analog capability in remote United States locations in order to assist in the development of lunar operations, life support, and in-situ resource utilization experience and capabilities.

(b) ENVIRONMENTAL CHARACTERISTICS.—The Administrator shall select locations for the activities described in subsection (a) that—

(1) are regularly accessible;

(2) have significant temperature extremes and range; and

(3) have access to energy and natural resources (including geothermal, permafrost, volcanic, or other potential resources).

(c) INVOLVEMENT OF LOCAL POPULATIONS AND PRIVATE SECTOR PARTNERS.—In carrying out this section, the Administrator shall involve local populations, academia, and industrial partners as much as possible to ensure that ground-based benefits and applications are encouraged and developed.

(Pub. L. 111-314, §3, Dec. 18, 2010, 124 Stat. 3430.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70503	42 U.S.C. 16764.	Pub. L. 109-155, title V, §504, Dec. 30, 2005, 119 Stat. 2929.

§ 70504. Stepping stone approach to exploration

(a) IN GENERAL.—The Administration—

(1) may conduct missions to intermediate destinations in sustainable steps in accordance with section 20302(b) of this title, and on a timetable determined by the availability of funding, in order to achieve the objective of human exploration of Mars specified in section 202(b)(5) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18312(b)(5)); and

(2) shall incorporate any such missions into the human exploration roadmap under section 432 of the National Aeronautics and Space Administration Transition Authorization Act of 2017.

(b) COST-EFFECTIVENESS.—In order to maximize the cost-effectiveness of the long-term space exploration and utilization activities of the United States, the Administrator shall take all necessary steps, including engaging international, academic, and industry partners, to ensure that activities in the Administration's human space exploration program balance how those activities might also help meet the requirements of future exploration and utilization activities leading to human habitation on the surface of Mars.

(c) COMPLETION.—Within budgetary considerations, once an exploration-related project enters its development phase, the Administrator shall seek, to the maximum extent practicable, to complete that project without undue delays.

(d) INTERNATIONAL PARTICIPATION.—In order to achieve the goal of successfully conducting a crewed mission to the surface of Mars, the President may invite the United States partners in the ISS program and other nations, as appropriate, to participate in an international initiative under the leadership of the United States.

(Pub. L. 111-314, §3, Dec. 18, 2010, 124 Stat. 3431; Pub. L. 115-10, title IV, §414, Mar. 21, 2017, 131 Stat. 34.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70504	42 U.S.C. 17731.	Pub. L. 110-422, title IV, §403, Oct. 15, 2008, 122 Stat. 4789.

Editorial Notes

REFERENCES IN TEXT

Section 432 of the National Aeronautics and Space Administration Transition Authorization Act of 2017, referred to in subsec. (a)(2), is section 432 of Pub. L. 115-10, which is set out in a note under section 20302 of this title.

AMENDMENTS

2017—Pub. L. 115-10 amended section generally. Prior to amendment, text read as follows: “In order to maxi-

mize the cost-effectiveness of the long-term exploration and utilization activities of the United States, the Administrator shall take all necessary steps, including engaging international partners, to ensure that activities in its lunar exploration program shall be designed and implemented in a manner that gives strong consideration to how those activities might also help meet the requirements of future exploration and utilization activities beyond the Moon. The timetable of the lunar phase of the long-term international exploration initiative shall be determined by the availability of funding. However, once an exploration-related project enters its development phase, the Administrator shall seek, to the maximum extent practicable, to complete that project without undue delays.”

§ 70505. Lunar outpost

(a) **ESTABLISHMENT.**—As the Administration works toward the establishment of a lunar outpost, the Administration shall make no plans that would require a lunar outpost to be occupied to maintain its viability. Any such outpost shall be operable as a human-tended facility capable of remote or autonomous operation for extended periods.

(b) **DESIGNATION.**—The United States portion of the first human-tended outpost established on the surface of the Moon shall be designated the “Neil A. Armstrong Lunar Outpost”.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3431.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70505(a)	42 U.S.C. 17732(a).	Pub. L. 110–422, title IV, § 404(a), (b), Oct. 15, 2008, 122 Stat. 4789.
70505(b)	42 U.S.C. 17732(b).	

§ 70506. Exploration technology research

The Administrator shall carry out a program of long-term exploration-related technology research and development, including such things as in-space propulsion, power systems, life support, and advanced avionics, that is not tied to specific flight projects. The program shall have the funding goal of ensuring that the technology research and development can be completed in a timely manner in order to support the safe, successful, and sustainable exploration of the solar system. In addition, in order to ensure that the broadest range of innovative concepts and technologies are captured, the long-term technology program shall have the goal of having a significant portion of its funding available for external grants and contracts with universities, research institutions, and industry.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3431.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70506	42 U.S.C. 17733(b).	Pub. L. 110–422, title IV, § 405(b), Oct. 15, 2008, 122 Stat. 4789.

Statutory Notes and Related Subsidiaries

PURPOSE

Pub. L. 110–422, title IV, § 405(a), Oct. 15, 2008, 122 Stat. 4789, provided that: “A robust program of long-term exploration-related technology research and development

will be essential for the success and sustainability of any enduring initiative of human and robotic exploration of the solar system.”

INNOVATIVE TECHNOLOGIES FOR HUMAN SPACE FLIGHT

Pub. L. 106–391, title III, § 313, Oct. 30, 2000, 114 Stat. 1594, provided that:

“(a) **ESTABLISHMENT OF PROGRAM.**—In order to promote a ‘faster, cheaper, better’ approach to the human exploration and development of space, the Administrator [of the National Aeronautics and Space Administration] shall establish a Human Space Flight Innovative Technologies program of ground-based and space-based research and development in innovative technologies. The program shall be part of the Technology and Commercialization program.

“(b) **AWARDS.**—At least 75 percent of the amount appropriated for Technology and Commercialization under section 101(b)(4) [114 Stat. 1581] for any fiscal year shall be awarded through broadly distributed announcements of opportunity that solicit proposals from educational institutions, industry, nonprofit institutions, National Aeronautics and Space Administration Centers, the Jet Propulsion Laboratory, other Federal agencies, and other interested organizations, and that allow partnerships among any combination of those entities, with evaluation, prioritization, and recommendations made by external peer review panels.

“(c) **PLAN.**—The Administrator shall provide to the Committee on Science [now Committee on Science, Space, and Technology] of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate, not later than December 1, 2000, a plan to implement the program established under subsection (a).”

§ 70507. Technology development

The Administrator shall establish an intra-Directorate long-term technology development program for space and Earth science within the Science Mission Directorate for the development of new technology. The program shall be independent of the flight projects under development. The Administration shall have a goal of funding the intra-Directorate technology development program at a level of 5 percent of the total Science Mission Directorate annual budget. The program shall be structured to include competitively awarded grants and contracts.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3431.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70507	42 U.S.C. 17741.	Pub. L. 110–422, title V, § 501, Oct. 15, 2008, 122 Stat. 4791.

§ 70508. Robotic or human servicing of spacecraft

The Administrator shall take all necessary steps to ensure that provision is made in the design and construction of all future observatory-class scientific spacecraft intended to be deployed in Earth orbit or at a Lagrangian point in space for robotic or human servicing and repair to the extent practicable and appropriate.

(Pub. L. 111–314, § 3, Dec. 18, 2010, 124 Stat. 3432.)

HISTORICAL AND REVISION NOTES

<i>Revised Section</i>	<i>Source (U.S. Code)</i>	<i>Source (Statutes at Large)</i>
70508	42 U.S.C. 17742.	Pub. L. 110–422, title V, § 502, Oct. 15, 2008, 122 Stat. 4791.