

ment that facilitate a broad range of users (including military and commercial) and applications defining the architecture and design of such missions.

(3) Spacesuit development and associated life support technology.

(4) Flagship missions.

(b) Investments

In developing technologies and capabilities under subsection (a), the Administrator may make investments—

(1) in space technologies such as advanced propulsion, propellant depots, in situ resource utilization, and robotic payloads or capabilities that enable human missions beyond low-Earth orbit ultimately leading to Mars;

(2) in a space-based transfer vehicle including these technologies with an ability to conduct space-based operations that provide capabilities—

(A) to integrate with the Space Launch System and other space-based systems;

(B) to provide opportunities for in-space servicing of and delivery to multiple space-based platforms; and

(C) to facilitate international efforts to expand human presence to deep space destinations;

(3) in advanced life support technologies and capabilities;

(4) in technologies and capabilities relating to in-space power, propulsion, and energy systems;

(5) in technologies and capabilities relating to in-space propellant transfer and storage;

(6) in technologies and capabilities relating to in situ resource utilization; and

(7) in expanded research to understand the greatest biological impediments to human deep space missions, especially the radiation challenge.

(c) Utilization of ISS as testbed

The Administrator may utilize the ISS as a testbed for any technology or capability developed under subsection (a) in a manner consistent with the provisions of this chapter.

(d) Coordination

The Administrator shall coordinate development of technologies and capabilities under this section through an overall agency technology approach, as authorized by section 905 of this Act.

(Pub. L. 111-267, title III, §308, Oct. 11, 2010, 124 Stat. 2818.)

REFERENCES IN TEXT

Section 905 of this Act, referred to in subsec. (d), is Pub. L. 111-267, title IX, §905, Oct. 11, 2010, 124 Stat. 2836, which is not classified to the Code.

§ 18327. Report requirement

Within 90 days after October 11, 2010, or upon completion of reference designs for the Space Launch System and Multi-purpose Crew Vehicle authorized by this chapter, whichever occurs first, the Administrator shall provide a detailed report to the appropriate committees of Congress that provides an overall description of the

reference vehicle design, the assumptions, description, data, and analysis of the systems trades and resolution process, justification of trade decisions, the design factors which implement the essential system and vehicle capability requirements established by this chapter, the explanation and justification of any deviations from those requirements, the plan for utilization of existing contracts, civil service and contract workforce, supporting infrastructure utilization and modifications, and procurement strategy to expedite development activities through modification of existing contract vehicles, and the schedule of design and development milestones and related schedules leading to the accomplishment of operational goals established by this chapter. The Administrator shall provide an update of this report as part of the President's annual Budget Request.

(Pub. L. 111-267, title III, §309, Oct. 11, 2010, 124 Stat. 2819.)

SUBCHAPTER III—DEVELOPMENT AND USE OF COMMERCIAL CREW AND CARGO TRANSPORTATION CAPABILITIES

§ 18341. Commercial Cargo Development program

The Administrator shall continue to support the existing Commercial Orbital Transportation Services program, aimed at enabling the commercial space industry in support of NASA to develop reliable means of launching cargo and supplies to the ISS throughout the duration of the facility's operation. The Administrator may apply funds towards the reduction of risk to the timely start of these services, specifically—

(1) efforts to conduct a flight test;

(2) accelerate development; and

(3) develop the ground infrastructure needed for commercial cargo capability.

(Pub. L. 111-267, title IV, §401, Oct. 11, 2010, 124 Stat. 2820.)

§ 18342. Requirements applicable to development of commercial crew transportation capabilities and services

(a) FY 2011 contracts and procurement agreements

(1) In general

Except as provided in paragraph (2), the Administrator may not execute a contract or procurement agreement with respect to follow-on commercial crew services during fiscal year 2011.

(2) Exception

Notwithstanding paragraph (1), the Administrator may execute a contract or procurement agreement with respect to follow-on commercial crew services during fiscal year 2011 if—

(A) the requirements of paragraphs (1), (2), and (3) of subsection (b) are met; and

(B) the total amount involved for all such contracts and procurement agreements executed during fiscal year 2011 does not exceed \$50,000,000 for fiscal year 2011.

(b) Support

The Administrator may, beginning in fiscal year 2012 through the duration of the program,

support follow-on commercially-developed crew transportation systems dependent upon the completion of each of the following:

(1) Human rating requirements

Not later than 60 days after October 11, 2010, the Administrator shall develop and make available to the public detailed human rating processes and requirements to guide the design of commercially-developed crew transportation capabilities, which requirements shall be at least equivalent to proven requirements for crew transportation in use as of October 11, 2010.

(2) Commercial market assessment

Not later than 180 days after October 11, 2010, the Administrator shall submit to the appropriate committees of Congress an assessment, conducted, in coordination with the Federal Aviation Administration's Office of Commercial Space Transportation, for purposes of this paragraph, of the potential non-Government market for commercially-developed crew and cargo transportation systems and capabilities, including an assessment of the activities associated with potential private sector utilization of the ISS research and technology development capabilities and other potential activities in low-Earth orbit.

(3) Procurement system review

The Administrator shall review current Government procurement and acquisition practices and processes, including agreement authorities under the National Aeronautics and Space Act of 1958,¹ to determine the most cost-effective means of procuring commercial crew transportation capabilities and related services in a manner that ensures appropriate accountability, transparency, and maximum efficiency in the procurement of such capabilities and services, which review shall include an identification of proposed measures to address risk management and means of indemnification of commercial providers of such capabilities and services, and measures for quality control, safety oversight, and the application of Federal oversight processes within the jurisdiction of other Federal agencies. A description of the proposed procurement process and justification of the proposed procurement for its selection shall be included in any proposed initiation of procurement activity for commercially-developed crew transportation capabilities and services and shall be subject to review by the appropriate committees of Congress before the initiation of any competitive process to procure such capabilities or services. In support of the review by such committees, the Comptroller General shall undertake an assessment of the proposed procurement process and provide a report to the appropriate committees of Congress within 90 days after the date on which the Administrator provides the description and justification to such committees.

(4) Use of government-supplied capabilities and infrastructure

In evaluating any proposed development activity for commercially-developed crew or

cargo launch capabilities, the Administrator shall identify the anticipated contribution of government personnel, expertise, technologies, and infrastructure to be utilized in support of design, development, or operations of such capabilities. This assessment shall include a clear delineation of the full requirements for the commercial crew service (including the contingency for crew rescue). The Administrator shall include details and associated costs of such support as part of any proposed development initiative for the procurement of commercially-developed crew or cargo launch capabilities or services.

(5) Flight demonstration and readiness requirements

The Administrator shall establish appropriate milestones and minimum performance objectives to be achieved before authority is granted to proceed to the procurement of commercially-developed crew transportation capabilities or systems. The guidelines shall include a procedure to provide independent assurance of flight safety and flight readiness before the authorization of United States government personnel to participate as crew onboard any commercial launch vehicle developed pursuant to this section.

(6) Commercial crew rescue capabilities

The provision of a commercial capability to provide ISS crew services shall include crew rescue requirements, and shall be undertaken through the procurement process initiated in conformance with this section. In the event such development is initiated, the Administrator shall make available any relevant government-owned intellectual property deriving from the development of a multi-purpose crew vehicle authorized by this chapter to commercial entities involved with such crew rescue capability development which shall be relevant to the design of a crew rescue capability. In addition, the Administrator shall seek to ensure that contracts for development of the multi-purpose crew vehicle contain provisions for the licensing of relevant intellectual property to participating commercial providers of any crew rescue capability development undertaken pursuant to this section. If one or more contractors involved with development of the multi-purpose crew vehicle seek to compete in development of a commercial crew service with crew rescue capability, separate legislative authority must be enacted to enable the Administrator to provide funding for any modifications of the multi-purpose crew vehicle necessary to fulfill the ISS crew rescue function.

(Pub. L. 111-267, title IV, §403, Oct. 11, 2010, 124 Stat. 2820.)

REFERENCES IN TEXT

The National Aeronautics and Space Act of 1958, referred to in subsec. (b)(3), is Pub. L. 85-568, July 29, 1958, 72 Stat. 426, which was classified principally to chapter 26 (§2451 et seq.) of this title and was substantially repealed and restated as chapter 201 (§20101 et seq.) of Title 51, National and Commercial Space Programs, by Pub. L. 111-314, §§3, 6, Dec. 18, 2010, 124 Stat. 3328, 3444. For complete classification of this Act to the Code, see

¹ See References in Text note below.

Short Title of 1958 Act note set out under section 10101 of Title 51 and Tables.

SUBCHAPTER IV—CONTINUATION, SUPPORT, AND EVOLUTION OF THE INTERNATIONAL SPACE STATION

§ 18351. Continuation of the International Space Station through 2020

(a) Policy of the United States

It shall be the policy of the United States, in consultation with its international partners in the ISS program, to support full and complete utilization of the ISS through at least 2020.

(b) NASA actions

In furtherance of the policy set forth in subsection (a), NASA shall pursue international, commercial, and intragovernmental means to maximize ISS logistics supply, maintenance, and operational capabilities, reduce risks to ISS systems sustainability, and offset and minimize United States operations costs relating to the ISS.

(Pub. L. 111-267, title V, §501, Oct. 11, 2010, 124 Stat. 2822.)

§ 18352. Maximum utilization of the International Space Station

(a) In general

With assembly of the ISS complete, NASA shall take steps to maximize the productivity and use of the ISS with respect to scientific and technological research and development, advancement of space exploration, and international collaboration.

(b) NASA actions

In carrying out subsection (a), NASA shall, at a minimum, undertake the following:

(1) Innovative use of U.S. segment

The United States segment of the ISS, which has been designated as a National Laboratory, shall be developed, managed and utilized in a manner that enables the effective and innovative use of such facility, as provided in section 18354 of this title.

(2) International cooperation

The ISS shall continue to be utilized as a key component of international efforts to build missions and capabilities that further the development of a human presence beyond near-Earth space and advance United States security and economic goals. The Administrator shall actively seek ways to encourage and enable the use of ISS capabilities to support these efforts.

(3) Domestic collaboration

The operations, management, and utilization of the ISS shall be conducted in a manner that provides opportunities for collaboration with other research programs and objectives of the United States Government in cooperation with commercial suppliers, users, and developers.

(Pub. L. 111-267, title V, §502, Oct. 11, 2010, 124 Stat. 2823.)

§ 18353. Maintenance of the United States segment and assurance of continued operations of the International Space Station.

(a) In general

The Administrator shall take all actions necessary to ensure the safe and effective operation, maintenance, and maximum utilization of the United States segment of the ISS through at least September 30, 2020.

(b) Vehicle and component review

(1) In general

In carrying out subsection (a), the Administrator shall, as soon as is practicable after October 11, 2010, carry out a comprehensive assessment of the essential modules, operational systems and components, structural elements, and permanent scientific equipment on board or planned for delivery and installation aboard the ISS, including both United States and international partner elements, for purposes of identifying the spare or replacement modules, systems and components, elements, and equipment that are required to ensure complete, effective, and safe functioning and full scientific utilization of the ISS through September 30, 2020.

(2) Data

In carrying out the assessment, the Administrator shall assemble any existing data, and provide for the development of any data or analysis not currently available, that is necessary for purposes of the assessment.

(c) Reports

(1) Report on assessment

(A) Report required

Not later than 90 days after October 11, 2010, the Administrator shall submit to the appropriate committees of Congress a report on the assessment required by subsection (b).

(B) Elements

The report required by this paragraph shall include, at minimum, the following:

(i) A description of the spare or replacement modules, systems and components, elements, and equipment identified pursuant to the assessment that are currently produced, in inventory, or on order, a description of the state of their readiness, and a schedule for their delivery to the ISS (including the planned transportation means for such delivery), including for each such module, system or component, element, or equipment a description of—

(I) its specifications, including size, weight, and necessary configuration for launch and delivery to the ISS;

(II) its function;

(III) its location; and

(IV) its criticality for ISS system integrity.

(ii) A description of the spare or replacement modules, systems and components, elements, and equipment identified pursuant to the assessment that are not currently produced, in inventory, or on order,