AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

I

114TH CONGRESS
2D SESSION

H. R. 4945

To permanently secure the United States as the preeminent spacefaring nation, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

APRIL 14, 2016

Mr. BRIDENSTINE (for himself and Mr. LAMBORN) introduced the following bill; which was referred to the Committee on Science, Space, and Technology, and in addition to the Committees on Armed Services, Select Intelligence (Permanent Select), Rules, Ways and Means, Transportation and Infrastructure, Energy and Commerce, and Foreign Affairs, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

---

A BILL

To permanently secure the United States as the preeminent spacefaring nation, and for other purposes.

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

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the ''American Space Renaissance Act''.

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

TITLE I—NATIONAL SECURITY

SEC. 101. SPACE DOCTRINE, ORGANIZATION, ACQUISITION, AND ARCHITECTURE DEVELOPMENT.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) national security space capabilities play a critical strategic role to help ensure economic pros-

perity, military deterrence, and power projection; and

(2) civil and commercial space capabilities are critical for, and increasingly contribute to, national security missions.

(b) NATIONAL SECURITY DOCTRINE ON SPACE.—Not later than one year after the date of the enactment of this Act, the President, in consultation with the Secretary of Defense and the Director of National Intelligence, shall develop—

(1) doctrine for the Armed Forces and the intelligence community (as defined in section 3 of the National Security Act of 1947 (50 U.S.C. 3001)) governing the response of the United States to efforts by state and nonstate actors to deliberately—

(A) deny the United States or allies or partners of the United States access to space or space operations; or

(B) degrade or destroy Government or commercial space assets of the United States or allies or partners of the United States; and

(2) doctrine for the Armed Forces with respect to the rules of engagement for space forces.

(c) PRINCIPAL DEPARTMENT OF DEFENSE SPACE ADVISOR.—

(1) IN GENERAL.—Chapter 135 of title 10 is amended by adding at the end the following new section:

"§ 2279d. Principal Defense Space Advisor

''(a) IN GENERAL.—The Secretary of Defense shall designate an official of the Department to be the Principal Defense Space Advisor, who, in addition to the other duties of such official, shall act as the principal advisor to the Secretary on all space matters.

''(b) RESPONSIBILITIES.—The Principal Defense Space Advisor shall be responsible for the following:

''(1) Serving as the principal advisor to the Secretary of Defense, the Deputy Secretary of Defense, the Joint Chiefs of Staff, the Joint Requirements Oversight Council, the Deputy's Management Action Group, and the Defense Acquisition Board on all space matters.

''(2) Serving as the Principal Advisor on Space Control under section 2279a of this title.

''(3) Overseeing the entire space enterprise of the Department of Defense by reviewing all policies, strategies, plans, programming, and architecture assessments relating to space.

''(4) Conducting annual Defense-wide space strategic portfolio reviews in coordination with the

Defense Space Council and the Director of Cost Assessment and Program Evaluation.

''(5) Chairing the Defense Space Council.

''(6) Providing the Deputy's Management Action Group with independent assessments and recommendations, as requested by the Deputy Secretary, in cases where members of the Defense Space Council are unable to reach consensus.''.

(2) CLERICAL AMENDMENT.—The table of sections at the beginning of such chapter is amended by inserting after the item relating to section 2279c the following new item:

''2279d. Principal Defense Space Advisor.''.

(3) REPLACEMENT OF EXECUTIVE AGENT.—The position in the Department of Defense of the Principal Defense Space Advisor designated under section 2279d of title 10, United States Code, as added by paragraph (1), supersedes the position in the Department of Defense Executive Agent for Space.

(4) CONFORMING AMENDMENTS.—Title 10, United States Code, is amended—

(A) in section 2279a(a), by striking ''The Secretary of Defense'' and all that follows through ''such senior official,'' and inserting ''The Principal Defense Space Advisor estab-

lished by section 2279d of this title shall also serve as the Principal Advisor on Space Control and''; and

(B) by striking ''Department of Defense Executive Agent for Space'' and inserting ''Principal Defense Space Advisor'' each place it appears.

(d) SHARING OF CYBER AND SPACE SITUATIONAL AWARENESS INFORMATION.—

(1) STRATEGY.—Not later than 180 days after the date of the enactment of this Act, the Secretary of Defense shall develop and commence the implementation of a strategy to increase interoperability between systems that electronically share cyberspace situational awareness and space situational awareness data and information across the space and cyberspace enterprises of the Department of Defense, including among space, cyberspace, and air operations centers.

(2) SUBMISSION OF STRATEGY.—Not later than 180 days after the date of the enactment of this Act, the Secretary shall submit to the congressional defense committees the strategy developed under paragraph (1), including—

(A) a plan to carry out the increased operability between space systems described in such paragraph;

(B) a description of current and future initiatives to increase automated data transfer;

(C) cost estimates for developing, procuring, installing and sustaining the systems described in such paragraph; and

(D) a description of any regulatory or legislative actions required to fully implement the strategy.

(e) INTEGRATED MAJOR SPACE PROGRAM ACQUISITION.—

(1) LIMITATION.—Of the funds authorized to be appropriated or otherwise made available for fiscal year 2017 for the Under Secretary of Defense for Acquisition, Technology, and Logistics, not more than 50 percent may be obligated or expended until the date on which the Under Secretary certifies to the congressional defense committees that the Under Secretary is compliant with the assessment, reporting, and notification requirements under section 2275 of title 10, United States Code.

(2) ANNUAL CERTIFICATIONS.—Section 2275 of title 10, United States Code, is amended—

(A) by redesignating subsection (g) as subsection (h);

(B) by inserting after subsection (f) the following new subsection (g):

''(g) CERTIFICATION OF INTEGRATED PROGRAMS.—(1) During each of fiscal years 2018 through 2027, the Secretary of Defense shall certify to the congressional defense committees that each major satellite acquisition program that has received Milestone B approval is an integrated program with respect to acquisition and delivery of segments of the program.

''(2) A major satellite acquisition program may not receive Milestone C approval if the Secretary has not made a certification under paragraph (1) with respect to such program.

''(3) For each major satellite acquisition program that the Secretary does not make a certification under paragraph (1), the Secretary shall provide the congressional defense committees a briefing explaining why such certification may not be made, including a discussion of the matters described in subsection (e)(2).''; and

(C) in subsection (h), as redesignated by subparagraph (A), by adding at the end the following new paragraph:

''(5) MILESTONE C APPROVAL.—The term 'Milestone C approval' has the meaning given that term in section 2366(e) of this title.''.

(f) HOSTED PAYLOADS.—

(1) IN GENERAL.—Section 2273 of title 10, United States Code, is amended by adding at the end the following new subsection:

''(d) HOSTED PAYLOADS.—(1) To the extent practical, the Secretary shall ensure that any space architecture of the Department of Defense uses hosted payloads.

''(2) Beginning January 1, 2026, the Secretary shall give preference to launching hosted payloads on launch vehicles owned and operated by companies domiciled in the United States.

''(3) For each space program of the Department requiring the launch of assets into space, the Secretary shall ensure that any analysis of alternatives conducted for the program considers alternatives with hosted payloads and commercial services.''.

(2) PLAN.—Not later than 180 days after the date of the enactment of this Act, the Secretary of Defense, in consultation with the Director of the Space and Missile Systems Center and the Principal Defense Space Advisor designated under section 2279d of title 10, United States Code, as added by

subsection (c)(1), shall submit to the congressional defense committees a plan to increase the use of hosted payloads. The plan shall include the following elements:

(A) An analysis of how the Secretary can increase the use of the Hosted Payload Solutions program, including identification of planned missions over the next five fiscal years which may use hosted payloads.

(B) Criteria and standards necessary for new entrants to qualify for Hosted Payload Solutions program certification.

(g) PROTECTION CAPABILITIES.—

(1) ASSESSMENT.—Not later than one year after the date of the enactment of this Act, the Secretary of Defense, in consultation with the Principal Defense Space Advisor designated under section 2279d of title 10, United States Code, as added by subsection (c)(1), shall submit to the congressional defense committees an assessment of desirable protection capabilities that would enhance the integration of commercial space systems into national security space architectures.

(2) ELEMENTS.—The assessment under paragraph (1) shall include the following:

(A) A prioritized list by space mission area of protection capabilities that could improve the resilience of commercial space systems.

(B) The estimated costs for commercial operators to integrate the highest priority protection capabilities into commercial systems.

(C) An examination of any issues associated with the quality, integrity, security, reliability, and continuity of commercial space data.

(3) CONSULTATION.—Before submitting the assessment under paragraph (1), the Secretary shall consult with appropriate representatives from the commercial space industry with respect to the initial findings and recommendations of the Secretary developed under such paragraph.

(h) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) the Department of Defense should thoroughly examine the opportunities offered by high-volume satellite manufacturing as the capability for such manufacturing emerges; and

(2) high-volume satellite manufacturing could dramatically lower costs through leveraging econo-

mies of scale and also contribute to resiliency through proliferated constellations.

SEC. 102. SATELLITE COMMUNICATIONS.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) current and future satellite communications architectures of the Department of Defense should be resilient and integrated; and

(2) to achieve these goals, such architectures should include an enterprise-level situational awareness network and capabilities to dynamically, efficiently, and seamlessly allocate satellite communications capacity and shift between frequencies and levels of protection.

(b) ANALYSIS OF ALTERNATIVES.—

(1) MATTERS CONSIDERED.—Section 1611(a) of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92) is amended by adding at the end the following new sentences: ''Such analysis of alternatives shall provide detailed assumptions with respect to a comparison between the full life-cycle associated costs for military and commercial satellite communications, including estimates for military and personnel costs associated with operating and maintaining Government-owned, Govern-

ment-operated systems and other costs, including with respect to military construction. Such analysis of alternatives shall also consider technology development of commercial satellite communications, including high throughput capacity satellites, commercial investment, technology insertion plans, and upgrades. Such analysis of alternatives shall also include available data and the results of the Pathfinder program of the Air Force Space and Missile Systems Center and the Defense Information Systems Agency.''.

(2) INDEPENDENT REVIEW.—Such section is further amended by adding at the end the following new subsection:

''(c) INDEPENDENT REVIEW.—

''(1) COMPTROLLER GENERAL.—Not later than 90 days after the date on which the Secretary completes the analysis of alternatives under subsection (a), and prior to submitting the report under subsection (b), the Comptroller General of the United States shall review such analysis. In addition to any other matters the Comptroller considers appropriate, the review shall assess whether such analysis meets the requirements of subsection (a).

''(2) SUBMISSION.—The Secretary shall submit to the congressional defense committees the review required under paragraph (1) along with the analysis of alternatives conducted under section 1611(a) of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92).''.

(c) TERMINALS.—

(1) MULTIBAND.—With respect to any satellite communications terminal acquisition program of the Department beginning on or after the date of the enactment of this Act, the Secretary of Defense shall ensure that—

(A) such program will field multiband terminals;

(B) any requirements developed in support of such program, including through the Joint Requirements Oversight Council or the Requirements Oversight Councils of the military departments, take into consideration the terminal user preferences. the ease of platform integration into space system design requirements, and the total cost of ownership, including sustainment costs; and

(C) the Secretary—

(i) approves any exceptions to subparagraphs (A) and (B); and

(ii) not later than 60 days after such approval, notifies the congressional defense committees of such exceptions.

(2) STRATEGY.—

(A) Not later than one year after the date of the enactment of this Act, the Secretary of Defense, in consultation with the Under Secretary of Defense for Acquisition, Technology, and Logistics, Principal Defense Space Advisor designated under section 2279d of title 10, United States Code, as added by section 101(c)(1), and the acquisition executives of the military departments, shall develop a strategy to recapitalize legacy non-multiband satellite communications terminals to multiband satellite communications terminals.

(B) The strategy under subparagraph (A) shall include the following:

(i) A comprehensive recapitalization schedule for all platforms in the Department of Defense using satellite communications terminals.

(ii) A comprehensive list of all types of fielded non-multiband satellite communications terminals, the number of terminals currently in service, and the projected schedule for recapitalizing the terminals.

(iii) The priority, by military department, of terminal recapitalization.

(iv) Options for migrating the highest priority terminals in each military department to multiband terminals.

(3) BRIEFING.—Not later than one year after the date of the enactment of this Act, the Secretary shall provide the congressional defense committees a briefing on the strategy developed under paragraph (2).

(d) SPACE MODERNIZATION INITIATIVE PROTECTED TACTICAL SERVICE FUNDING.—In addition to any other amounts authorized to be appropriated to the Secretary of the Air Force for fiscal year 2017 for research, development, test, and evaluation, Air Force, there is authorized to be appropriated to the Secretary $150,700,000 for the Space Modernization Initiative activities related to Protected Tactical Service development and demonstration, including for the Protected Tactical Enterprise Service initiative.

(e) PATHFINDER FUNDING.—Of the amounts authorized to be appropriated to the Secretary of the Air Force for fiscal year 2017 for procurement, Air Force, there is authorized to be appropriated to the Secretary $30,000,000 for the Space and Missile Systems Center Satellite Communications Pathfinder program.

(f) PILOT PROGRAM FUNDING.—In addition to any other amounts authorized to be appropriated to the Secretary of the Air Force for any of fiscal years 2017 through 2021 for operation and maintenance, Air Force, there is authorized to be appropriated to the Secretary $50,000,000 for each of fiscal years 2017 through 2021 to carry out the pilot program for the acquisition of commercial satellite communication services and enterprise-level ground integration efforts under section 1605 of the Carl Levin and Howard P. ''Buck'' McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113–291; 10 U.S.C. 2208 note), as amended by section 1612 of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114–92).

(g) BRIEFING.—On a biannual basis, the Secretary of Defense shall provide the congressional defense committees a briefing on the progress of the following:

(1) Satellite communications Pathfinder activities.

(2) The pilot program under section 1603 of the National Defense Authorization Act of 2014 (Public Law 113–66; 10 U.S.C. 2359 note).

(3) Protected Tactical Service.

(4) Any initiative regarding enterprise-level ground architecture or any other initiative the Secretary determines appropriate.

(h) DHS STUDY.—Not later than 180 days after the date of the enactment of this Act, the Secretary of Homeland Security, in consultation with the Secretary of Defense, shall submit to the congressional defense committees a report on leveraging underused Mobile User Objective System satellite communications capacities of the Department of Defense, or other narrowband communication systems, to complement the communications and command-and-control systems of the Department of Homeland Security. Such report shall include an assessment of critical command-and-control requirements and connectivity requirements and existing capability shortfalls.

(i) PRESERVATION OF ELECTROMAGNETIC ACCESS.—The Federal Communications Commission—

(1) shall ensure that commercial satellites operating in geostationary and non-geostationary orbit have primary status for access to the electro-

magnetic spectrum in the 27.5–28.35 gigahertz band for current and future deployments of individually licensed earth stations; and

(2) may not require commercial satellite entities to secure primary access to such band through participation in an auction or through secondary market procedures.

SEC. 103. POSITIONING, NAVIGATION, AND TIMING.

(a) SENSE OF CONGRESS.—It is the sense of Congress that the importance of positioning, navigation, and timing for national security and economic prosperity requires highly reliable and secure positioning, navigation, and timing systems, such as the Global Positioning System, to support commercial, civil, and national security programs.

(b) STRATEGY ON PNT SIGNALS.—

(1) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the Secretary of Defense shall submit to the congressional defense committees a strategy to ensure that positioning, navigation, and timing receivers of the Department of Defense best leverage the global availability of positioning, navigation, and timing signals from the Global Positioning System, the Galileo system, and other positioning, navigation, and timing

systems, including commercial positioning, navigation, and timing solutions that use commercial satellite constellations.

(2) ELEMENTS.—The strategy under paragraph (1) shall address the following:

(A) Issues associated with monitoring and verification of the accuracy, integrity, availability, and security of foreign and commercial positioning, navigation, and timing signals.

(B) Mechanisms for timely notification to military users of the current and projected reliability of such foreign and commercial systems.

(C) Methods for sharing information across the Global Positioning System, the Galileo system, and other positioning, navigation, and timing systems to improve the interoperability and effectiveness of the systems for military users.

SEC. 104. WEATHER.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) commercial space-based weather satellite data and services that meet rigorous standards for quality, security, and reliability can help mitigate gaps in coverage of critical weather requirements, in-

crease resilience of the overall weather satellite architecture, and augment Government weather systems to create more and better data at lower costs to the taxpayer;

(2) the Department of Defense should incorporate commercial space-based weather satellite data into its weather modeling products; and

(3) the Department of Defense should maximize the use of, and incentivizes the growth of, commercial weather data and services of the United States and ensure that such data and services are secure, reliable, and enhance military effectiveness.

(b) NATIONAL EXECUTIVE COMMITTEE ON WEATHER.—

(1) IN GENERAL.—Not later than one year after the date of the enactment of this Act, the President shall establish a National Executive Committee on Weather to coordinate weather-related matters across the departments and agencies of the Federal Government. The President shall base the National Executive Committee on Weather on the National Space-Based Positioning, Navigation, and Timing Executive Committee.

(2) CO-CHAIRS; MEMBERS.—The President shall appoint the Deputy Secretary of Defense and

the Deputy Administrator of the National Oceanic and Atmospheric Administration to serve as co-chairs of the National Executive Committee on Weather. The President shall appoint such other officials of the Federal Government to serve on the National Executive Committee on Weather as the President determines appropriate.

(3) ORGANIZATION.—The National Executive Committee on Weather shall include—

(A) a permanent national coordination office secretariat;

(B) an international working group; and

(C) an engineering working group.

(c) COMMERCIAL WEATHER DATA QUALITY, SECURITY, AND RELIABILITY STANDARDS.—Not later than one year after the date of the enactment of this Act, the Secretary of Defense shall develop and certify quality, security, and reliability standards, including cybersecurity standards, for weather data and systems to facilitate the use of commercial weather data and services by the Armed Forces.

(d) SPACE SURVIVABILITY AND SURVEILLANCE FUNDING.—Of the amounts authorized to be appropriated to the Secretary of the Air Force for fiscal year 2017 for research, development, test, and evaluation, Air Force,

there is authorized to be appropriated to the Secretary $40,000,000 for space survivability and surveillance.

(e) GEOMAGNETIC STORM WARNING CAPABILITY.—

(1) IN GENERAL.—Not later than one year after the date of the enactment of this Act, the Secretary of Defense, in coordination with the Administrator of the National Oceanic and Atmospheric Administration and the Administrator of the National Aeronautics and Space Administration, shall commence the development of a follow-on geomagnetic storm warning capability that includes—

(A) the ability to forecast, detect, and issue warnings of electromagnetic pulse events, solar radio bursts, and energetic particles; and

(B) a timely notification and warning mechanism for governmental entities and private sector entities.

(2) COMMERCIAL CAPABILITIES.—In carrying out paragraph (1), the Secretary shall take into full consideration commercial capabilities.

(f) LIMITATION ON AVAILABILITY OF FUNDS FOR AIR FORCE WEATHER AGENCY.—

(1) CERTIFICATION.—Of the funds authorized to be appropriated or otherwise made available for fiscal year 2016 for the Air Force for weather model

forecasting (including with respect to operation and maintenance of the Air Force Weather Agency), not more than 10 percent may be obligated or expended until the date on which the Secretary of the Air Force certifies to the congressional defense committees that the Secretary has initiated a full and open competition to award a contract for the weather forecasting model used by the Air Force Weather Agency.

(2) COMPETITION.—In carrying out the full and open competition for the weather forecasting model described in paragraph (1), Secretary shall establish the technical standards required for commercial weather forecasting models to integrate into weather forecasting and data assimilation systems of the Department of Defense, including information assurance and security classification requirements.

(g) COMMERCIAL WEATHER DATA PILOT PROGRAM.—

(1) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the Secretary of Defense shall carry out a pilot program under which the Secretary shall award not fewer than one contract, using full and open competition, to assess the potential viability of using commercial

weather data in the weather modeling and forecasting of the Department of Defense. The pilot program shall be conducted consistent with data standards established under subsection (c).

(2) FUNDING.—There is authorized to be appropriated to the Secretary of Defense for fiscal year 2017 not less than $10,000,000 to carry out the pilot program under paragraph (1) by purchasing, evaluating, and calibrating commercial weather data that meets the standards and specifications set by the Secretary for purposes of the pilot program.

(3) BRIEFING.—Not later than 60 days after the date of the enactment of this Act, the Secretary of Defense shall provide to the congressional defense committees a briefing demonstrating how the Secretary plans to implement the pilot program under paragraph (1).

(h) SPACE BASED INFRARED SYSTEM WEATHER APPLICATIONS.—

(1) SENSE OF CONGRESS.—It is the sense of Congress that—

(A) the Space Based Infrared System has attributes including certain sensor capabilities, revisit rates, and polar reach which could enhance weather prediction capability, in addition

to weather data collected by the Department of Department, in support of meeting validated weather requirements; and

(B) the Secretary of Defense should fully examine and exploit the weather capabilities of such system.

(2) REPORT.—Not later than 180 days after the date of the enactment of this Act, the Secretary of Defense shall submit to the Committees on Armed Services of the House of Representatives and the Senate a report examining the potential of the Space Based Infrared System to generate useful weather data in support of numerical weather models and validated weather requirements of the Department of Defense.

(i) WEATHER REQUIREMENTS GAP MITIGATION.—

(1) SENSE OF CONGRESS.—It is the sense of Congress that the Department of Defense can leverage Defense Meteorological Satellite Program payloads, including the Special Sensor Microwave Imager/Sounder, to help mitigate gaps in critical validated weather requirements.

(2) REPORT.—Not later than 180 days after the date of the enactment of this Act, the Secretary of Defense shall submit to the Committees on Armed

Services of the House of Representatives and the Senate a report on using Defense Meteorological Satellite Program payloads to mitigate gaps in validated Department of Defense weather requirements, such as cloud characterization, theater weather imagery, ocean wind vectors, tropical cyclone intensity, snow depth, and sea ice weather requirements.

(j) PROHIBITION ON RELIANCE ON FOREIGN COUNTRIES FOR SPACE-BASED WEATHER DATA.—

(1) PROHIBITION.—The Secretary of Defense shall ensure that the Department of Defense does not plan to rely on space-based weather data for cloud characterization and theater weather imagery provided by foreign governments.

(2) CERTIFICATION.—Not later than 90 days after the date of the enactment of this Act, the Secretary shall submit to the congressional defense committees a certification that the Secretary is in compliance with the prohibition under paragraph (1).

(3) BRIEFING.—Not later than 180 days after the date of the enactment of this Act, the Secretary shall provide to the congressional defense committees a briefing on how the Department of Defense plans to comply with the prohibition under paragraph (1).

SEC. 105. SPACE SITUATIONAL AWARENESS.

(a) FUNDING.—In addition to any other amounts authorized to be appropriated to the Secretary of the Air Force for fiscal year 2017 for research, development, test, and evaluation, Air Force, and operation and maintenance, Air Force, there is authorized to be appropriated to the Secretary $30,200,000 for the operations and activities of the Joint Interagency Combined Space Operations Center.

(b) COMMERCIAL INTEGRATION CELL.—Not later than one year after the date of the enactment of this Act, the Secretary of Defense, in consultation with the Commander of United States Strategic Command, shall provide a briefing to the Committees on Armed Services of the House of Representatives and the Senate on making permanent the commercial integration cell pilot program conducted by the Joint Space Operations Center.

(c) REPORT ON COMMERCIAL SATELLITES.—Not later than one year after the date of the enactment of this Act, the Secretary of Defense shall submit to the Committees on Armed Services of the House of Representatives and the Senate a report that—

(1) identifies space situational awareness sensors desirable for commercial satellite operators and other non-Federal Government operators to integrate into the systems of the operators prior to

launch to provide space situational awareness data; and

(2) addresses issues associated with the quality, security, and reliability of the data derived from such commercial sensors.

SEC. 106. LAUNCH SERVICES.

(a) PRIORITY FOR UNITED STATES ENGINES.—

(1) IN GENERAL.—Beginning January 1, 2023, in awarding a contract for the procurement of property or services for space launch activities, the Secretary of Defense shall treat any offer that proposes the use of a rocket engine described in paragraph (2) as costing the Federal Government 25 percent less than the price listed in the offer.

(2) ENGINE DESCRIBED.—A rocket engine described in this paragraph is a rocket engine that uses articles, materials, and supplies that are allowable under section 8302(a)(1) of title 41, United States Code, in an acquisition for public use and are not subject to an exception under chapter 83 of such title (popularly known as the ''Buy American Act'').

(b) VENTURE-CLASS LAUNCH SERVICES.—

(1) PROGRAM.—Not later than one year after the date of the enactment of this Act, the Secretary of Defense, in consultation with the Principal De-

fense Space Advisor designated under section 2279d of title 10, United States Code, as added by section 101(c)(1), and the Director of the Space Test Program, shall establish a program to competitively award not fewer than four launch services contracts for venture-class launch missions.

(2) FUNDING.—Of the funds authorized to be appropriated by this Act or otherwise made available for fiscal year 2017 to the Secretary of the Air Force, not less than $27,600,000 shall be obligated or expended to carry out the program established under subsection (a).

(c) OPERATIONALLY RESPONSIVE SPACE.—

(1) PRIORITIZATION.—Section 2273a(c) of title 10, United States Code, is amended—

(A) by striking ''The mission'' and inserting ''(1) In accordance with paragraph (2), the mission'';

(B) by redesignating paragraphs (1) and (2) as subparagraphs (A) and (B), respectively; and

(C) by adding at the end the following new paragraph (2):

''(2)(A) The head of the Office shall ensure that, in developing the capabilities for operationally

responsive space, the Office prioritizes market research and the identification of commercial capabilities and services.

''(B) Before commencing the development of any program, the head of the Office shall certify to the congressional defense committees that no commercial capability or service, with or without minor modifications, can meet the requirements for which such program is being developed.''.

(2) BRIEFING.—Not later than 180 days after the date of the enactment of this Act, the Director of the Office of Operationally Responsive Space shall provide to the congressional defense committees a briefing outlining any rapid acquisition authority available to any other official of the Department of Defense that is not also available to the Director.

(d) EVALUATION OF LAUNCH SERVICES BACKUP.—Of the funds authorized to be appropriated by this Act or otherwise made available for fiscal year 2017 for the Air Force for foreign comparative testing, not less than $4,000,000 shall be obligated or expended to conduct studies on the potential for non-domestic launch services providers domiciled on the territory of allies of the United States to serve as a backup to perform national security missions.

SEC. 107. AIR FORCE SATELLITE CONTROL NETWORK.

(a) AIR FORCE SATELLITE CONTROL NETWORK.—Not later than January 1, 2018, the Secretary of the Air Force shall enter into a contract with a private entity to fully carry out the day-to-day operations of the Satellite Control Network of the Air Force.

(b) REPORT.—Not later than 180 days after the date of the enactment of this Act, the Secretary shall submit to the congressional defense committees a report that includes—

(1) the detailed strategy of the Secretary to carry out subsection (a); and

(2) an assessment of the use of a private entity to conduct all day-to-day constellation operations, not including mission planning and warfighting operations.

(c) BRIEFINGS.—Not later than 180 days after the date on which the Secretary submits the report under subsection (b), and every 180 days thereafter through January 1, 2020, the Secretary shall provide Congress with a briefing on carrying out subsection (a).

SEC. 108. REMOTE SENSING.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) the National Geospatial-Intelligence Agency and National Reconnaissance Office should continue

efforts to implement innovative technology upgrades, flexible licensing and sharing policies, analytic capability, cross-training, content-in-the-open, and use of international standards, such as the Open Geospatial Consortium; and

(2) the National Geospatial-Intelligence Agency should expand the use of open-source methods and data to effectively answer intelligence questions.

(b) BRIEFING.—Not later than 180 days after the date of the enactment of this Act, the Director of the National Geospatial-Intelligence Agency shall provide to the congressional defense committees a briefing on funding requirements and any new acquisition authorities necessary to accelerate the programs and initiatives outlined in the Commercial Geospatial Intelligence Strategy of the National Geospatial-Intelligence Agency.

SEC. 109. CONGRESSIONAL DEFENSE COMMITTEES DEFINED.

In this title, the term ''congressional defense committees'' has the meaning given that term in section 101(a)(16) of title 10, United States Code.

TITLE II—CIVIL

SEC. 201. DEFINITIONS.

In this title:

(1) ADMINISTRATOR.—The term ''Administrator'' means the Administrator of NASA.

(2) NASA.—The term ''NASA'' means the National Aeronautics and Space Administration.

SEC. 202. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) lack of consistency in leadership along with budget uncertainty in out-years makes it extremely difficult for NASA to have a clear purpose or mission; and

(2) NASA should undergo reorganization, altering its mission with a clearer focus, ridding itself of extraneous responsibilities handled elsewhere within the Federal Government or private industry, and standardizing activities across the whole of NASA.

(b) PURPOSE.—The purpose of this title is to provide NASA with clearer congressional intent, budget clarity, and stability in leadership.

(c) PIONEERING DOCTRINE.—

(1) IN GENERAL.—Title 51, United States Code, is amended—

(A) in section 20102—

(i) in subsection (d)—

(I) by striking paragraphs (4), (5), and (9);

(II) by redesignating paragraphs (6), (7), and (8) as paragraphs (4), (5), and (6), respectively; and

(III) by amending paragraphs (1) through (3) to read as follows:

''(1) The expansion of the human sphere of influence throughout the Solar System.

''(2) To be among those who first arrive at a destination in space and to open it for subsequent use and development by others.

''(3) To create and prepare infrastructure precursors in support of the future use and development of space by others.'';

(ii) by amending subsection (e) to read as follows:

''(e) PIONEERING DOCTRINE.—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 the pioneering of space. The objectives of such pioneering shall be to increase access to destinations in space, explore the possible options for development at these destinations, demonstrate the engineering feasibility of such develop-

ment, and transition those activities to Federal agencies outside of the Administration or persons or entities outside of the Federal Government.'';

(iii) by striking subsection (f) and redesignating subsections (g) and (h) as subsections (f) and (g), respectively; and

(iv) in subsection (g) (as so redesignated), by striking ''(g)'' and inserting ''(f)'';

(B) in section 20103—

(i) by amending paragraph (1) to read as follows:

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

''(A) research into, and the solution of, problems of flight—

''(i) within the Earth's atmosphere;

''(ii) to or from space through the Earth's atmosphere; and

''(iii) beyond the Earth's atmosphere;

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

''(C) such other activities as may be required for the pioneering of space.''; and

(ii) by adding at the end the following:

''(3) SPACE.—The term 'space' means the domain beyond the Earth's atmosphere.''; and

(C) in section 20112—

(i) by striking subsection (b);

(ii) by striking ''(a) PLANNING, DIRECTING, AND CONDUCTING AERONAUTICAL AND SPACE ACTIVITIES.—''; and

(iii) in paragraph (2), by striking ''the scientific community in planning scientific measurements'' and inserting ''future utilizers of space destinations, including commercial entities, the scientific community, and academia, in planning for measurements''.

(2) REPORT.—

(A) IN GENERAL.—Not later than 90 days after the date of enactment of this Act, the Administrator shall enter into an agreement with an independent entity outside of NASA to prepare a report that—

(i) identifies activities and assets of NASA that are consistent with the Pio-

neering Doctrine described in section 20102(e), United States Code, that should be consolidated or downsized; and

(ii) identifies activities and assets of NASA that are inconsistent with such Pioneering Doctrine and identifies which such activities or assets should be—

(I) transferred to other Federal agencies;

(II) privatized or otherwise transferred to commercial entities; or

(III) otherwise eliminated.

(B) REPORT TO CONGRESS.—Not later than 1 year after the date of enactment of this Act, the Administrator shall submit to Congress the report described in subparagraph (A).

(C) ACTION BY ADMINISTRATOR.—It is the sense of Congress that, not later than 30 days after submitting the report described in subparagraph (A), the Administrator should implement any recommendations of the report that the Administrator is permitted by law to implement.

(D) CONGRESSIONAL ACTION.—It is the sense of Congress that, not later than 90 days

after receiving the report described in subparagraph (A), Congress should consider legislation that is necessary to implement all appropriate recommendations of such report.

(d) ENSURING CONTINUITY IN NASA LEADERSHIP.—

(1) ADMINISTRATOR.—Section 20111 of title 51, United States Code, is amended—

(A) in subsection (a)—

(i) by striking ''ADMINISTRATOR.—There is established'' and inserting ''ADMINISTRATOR.—

''(1) IN GENERAL.—There is established'';

(ii) in paragraph (1) (as designated by clause (i) of this subparagraph)—

(I) by inserting '', pursuant to paragraph (2),'' after ''who shall be appointed''; and

(II) by inserting ''The term of the Administrator shall be 5 years.'' after ''and activities thereof.''; and

(iii) by adding at the end the following:

''(2) NOMINATIONS.—The President shall appoint the Administrator pursuant to paragraph (1),

from among the list of nominees provided by the vacating Administrator and the commission established in section 202(d)(2) of the American Space Renaissance Act.''.

(2) COMMISSION.—

(A) ESTABLISHMENT.—There is established a standing commission to be known as the NASA Leadership and Advising Commission (in this paragraph referred to as the ''Commission'').

(B) DUTIES.—The Commission shall—

(i) provide to the President recommendations for nominees to serve as Administrator of NASA each time there is a vacancy in the office, in accordance with section 20111(a) of title 51, United States Code;

(ii) provide to Congress, NASA, the Office of Management and Budget, and the Office of Science and Technology Policy, an analysis of, and recommendations for changes to, each long-term plan submitted by the Administrator pursuant to subsection (e)(4); and

(iii) provide to Congress an annual analysis of the President's annual budget request for NASA.

(C) MEMBERSHIP.—The Commission shall consist of 21 members, including a Chairperson. The members other than the Chairperson shall be appointed as follows:

(i) Four members shall be appointed by the President.

(ii) Four members shall be appointed by the Speaker of the House of Representatives.

(iii) Four members shall be appointed by the minority leader of the House of Representatives.

(iv) Four members shall be appointed by the majority leader of the Senate.

(v) Four members shall be appointed by the minority leader of the Senate.

(D) CHAIRPERSON.—If practicable and appropriate, the Chairperson of the Commission shall be a former Administrator or Deputy Administrator of NASA selected by the other members of the Commission. If the other members determine that it is not practicable or ap-

propriate, the members shall appoint an appropriate alternative.

(E) TERMS.—

(i) IN GENERAL.—Except as provided in clauses (ii) and (iii), each member, including the Chairperson, shall be appointed for a term of 5 years that is renewable without limitation.

(ii) TERMS OF INITIAL APPOINTEES.—Of the 4 initial members appointed by each of the officials listed in clauses (i) through (v) of subparagraph (C)—

(I) one shall be appointed for a term of 2 years;

(II) one shall be appointed for a term of 3 years;

(III) one shall be appointed for a term of 4 years; and

(IV) one shall be appointed for a term of 5 years.

(iii) VACANCIES.—Any member appointed to fill a vacancy occurring before the expiration of the term for which the member's predecessor was appointed shall

be appointed only for the remainder of that term. A member may serve after the expiration of that member's term until a successor has taken office. A vacancy in the Commission shall be filled in the manner in which the original appointment was made.

(F) QUALIFICATIONS.—The members of the Commission shall include a variety of space and aerospace policy, engineering, technical, science, legal, and finance professionals.

(G) POWERS.—

(i) HEARINGS AND SESSIONS.—The Commission may, for the purpose of carrying out this paragraph, hold hearings, sit and act at times and places, take testimony, and receive evidence as the Commission considers appropriate.

(ii) OBTAINING OFFICIAL DATA.—The Commission may secure directly from any employee or officer of NASA information necessary to enable the Commission to carry out this paragraph. Upon request of the Commission, and unless otherwise prohibited by law, such employee or officer

shall furnish such information to the Commission.

(iii) SUBPOENA POWER.—The Commission may issue subpoenas requiring the attendance and testimony of any witness and the production of any evidence relating to any matter which the Commission is empowered to investigate under this paragraph.

(H) PROHIBITION ON COMPENSATION.—Members of the Commission may not receive additional pay, allowances, or benefits by reason of their service on the Commission.

(I) TRAVEL EXPENSES.—Each member shall receive travel expenses, including per diem in lieu of subsistence, in accordance with applicable provisions under subchapter I of chapter 57 of title 5, United States Code.

(J) MEETINGS.—

(i) INITIAL MEETING.—The first meeting of the Commission shall occur not later than 30 days after a quorum of members has been appointed.

(ii) SUBSEQUENT MEETINGS.—The Commission shall meet—

(I) not less than once per quarter;

(II) not less than 30 days after the date on which the Commission receives each long-term plan submitted to the Commission pursuant to subsection (e)(4); and

(III) at the call of the Chairperson.

(K) QUORUM.—11 members of the Commission shall constitute a quorum.

(L) DIRECTOR AND STAFF.—To the extent provided for in advance in appropriations Acts, the Commission may appoint and fix the pay rate of a Director, a Press Secretary, and not more than 5 additional staff members, to support the duties of the Commission under this paragraph.

(e) LONG-TERM PLANS.—

(1) IN GENERAL.—The Administrator shall develop a 10-year plan and a 20-year plan in accordance with this subsection.

(2) 20-YEAR PLAN.—The 20-year plan required under this subsection shall outline broad goals for

NASA for the 20-year period beginning with the year in which the plan is developed.

(3) 10-YEAR PLAN.—The 10-year plan required under this subsection shall provide specific objectives and budget profiles, based on the broad goals outlined in the 20-year plan, for the 10-year period beginning with the year in which the plan is developed.

(4) REPORT.—Not later than 1 year after the date of enactment of this Act, and every 5 years thereafter, the Administrator shall submit to Congress and to the NASA Leadership and Advising Commission the most recent 10-year plan and 20-year plan developed under this subsection.

(f) MULTI-YEAR FUNDING.—

(1) BUDGET SUBMISSION.—Beginning with the annual budget submission for fiscal year 2018 and for each fiscal year thereafter the Administrator shall submit a multi-year budget request for NASA.

(2) RULES ON APPROPRIATIONS.—

(A) IN GENERAL.—Notwithstanding any other provision of law, beginning in fiscal year 2018, any amounts made available for NASA shall be multi-year appropriations or no-year appropriations.

(B) POINT OF ORDER.—In the House of Representatives, it shall not be in order to consider any provision of a general appropriations Act, or any amendment thereto or conference report thereon, providing appropriations for NASA unless the funds appropriated therein are multi-year or no-year appropriations. The point of order provided under the previous sentence may be waived if the Chairperson of the Committee on Science, Space, and Technology files a statement with the Speaker that the one-year funding is appropriate for that reason.

(3) AUTHORIZATION OF APPROPRIATIONS.—

(A) IN GENERAL.—There are authorized to be appropriated to NASA, to remain available for obligation until expended, for the purposes described in subparagraph (B)—

(i) for fiscal year 2017, $250,000,000; and

(ii) for each fiscal year thereafter, such sums as are necessary so that the amount available to the Administrator for such fiscal year under this paragraph is a total of $250,000,000.

(B) PURPOSES.—The Administrator may use amounts appropriated under subparagraph (A) to supplement spending for—

(i) NASA aeronautics and exploration programs, projects, or activities subject to development challenges; and

(ii) NASA infrastructure repair, maintenance, and upgrades.

(g) ACCOUNTABILITY.—

(1) PROGRAMS THAT EXCEED COST PROJECTIONS.—

(A) CONGRESSIONAL OVERSIGHT.—The directorate head of any program of NASA, or the head of any program of another agency for which NASA is the acquisition or procurement agent, that exceeds program life cost projections by less than 30 percent but not less than 15 percent shall, for each such fiscal year—

(i) be available to testify not less than once before the Committee on Science, Space, and Technology of the House of Representatives and once before the Committee on Commerce, Science, and Transportation of the Senate, if requested to do so by such committees; and

(ii) ensure that staff of such program are available to update the staff of such committees on the status of the program not less than once during each fiscal quarter.

(B) CANCELLATION.—Any program of NASA that exceeds program life cost projections by not less than 30 percent shall be cancelled and the Administrator shall not expend any additional funds on the program, other than termination costs, unless Congress authorizes continuation of the program by law not later than 6 months after the end of the first fiscal year in which the program first began to exceed such cost projections by such percentage.

(2) AUTOMATIC REMOVAL OF ADMINISTRATOR.—

(A) NASA INSPECTOR GENERAL REPORT.—Not later than 6 months after the date of enactment of this Act, the NASA Inspector General shall submit to the Committee on Science, Space, and Technology of the House of Representatives, the Committee on Commerce, Science, and Transportation of the Senate, the President, the NASA Leadership and Advising

Commission, and the Administrator a report recommending a mechanism for the automatic removal of an Administrator who has failed to achieve certain goals, which shall take into account—

(i) the number of programs of NASA that exceed cost projections during the tenure of the Administrator;

(ii) the number of programs of NASA experiencing significant delays with respect to targeted milestones, launches, or deployments during the tenure of the Administrator; and

(iii) lack of adherence to, or failure to complete, benchmarks in the long-term plans developed by the Administrator pursuant to subsection (e).

(B) IMPLEMENTATION.—Not later than 60 days after receipt by the Administrator of the report required under subparagraph (A), NASA shall implement the mechanism outlined in the report.

(3) COST PROJECTION.—For purposes of this subsection, the term ''cost projection'' means, with respect to a program of NASA, the cost commitment

of such program as outlined in the Program Memorandum officially documenting the outcome of Key Decision Point A, and for the purposes of this subsection subject to the concurrence of the Committee on Appropriations and the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Appropriations and the Committee on Commerce, Science, and Transportation of the Senate.

(h) TRANSITION OF TECHNOLOGIES AND CAPABILITIES.—NASA shall, whenever practicable and appropriate, transition technologies and capabilities to actors outside of NASA, including individuals, corporations, academic institutions, and nonprofit organizations, to the extent that doing so will not threaten national security. Such transfers shall be conducted in a transparent manner, and no such transfer shall infringe on intellectual property rights or other such clauses in NASA contracts.

(i) LIABILITY INSURANCE AND FINANCIAL RESPONSIBILITY REQUIREMENTS.—

(1) AMENDMENT.—Section 20138 of title 51, United States Code, is amended by adding at the end the following:

''(g) LAUNCH SERVICES PROGRAM.—

''(1) LIABILITY INSURANCE AND FINANCIAL RESPONSIBILITY REQUIREMENTS.—

''(A) GENERAL REQUIREMENTS.—A provider that enters into a contract with NASA for a launch or reentry under the NASA Launch Services Program 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 during launch or reentry; and

''(ii) a Federal, State, or local government against a person for damage or loss to Federal, State, or local government property resulting from an activity carried out during launch or reentry.

''(B) AMOUNTS.—The Administrator shall determine the amounts required under subparagraph (A) of this paragraph.

''(C) TOTAL CLAIMS.—For the total claims related to one launch or reentry, a provider is not required to obtain insurance or demonstrate

financial responsibility of more than the lesser of—

"(i) for a claim described in—

"(I) subparagraph (A)(i), $500,000,000; or

"(II) subparagraph (A)(ii), $100,000,000; or

"(ii) the maximum liability insurance available on the world market at reasonable cost.

"(D) COVERAGE.—An insurance policy or demonstration of financial responsibility under this paragraph shall protect the following, to the extent of their potential liability for involvement in launch services or reentry services, at no cost to the Government:

"(i) The Government and personnel, contractors, and subcontractors of the Government.

"(ii) Contractors, subcontractors, and customers of the provider.

"(iii) Contractors and subcontractors of the customer.

"(iv) Government astronauts.

''(2) DETERMINATION OF MAXIMUM PROBABLE LOSSES.—The Administrator shall determine the maximum probable losses under paragraph (1)(A)(i) and (ii) of this subsection associated with an activity under a contract described in this subsection not later than 90 days after a provider requires a determination and submits all information the Administrator requires. The Administrator shall amend the determination as warranted by new information.

''(3) ANNUAL REPORT.—

''(A) DETERMINATIONS.—Not later than November 15 of each year, the Administrator shall submit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on current determinations made under paragraph (2) of this subsection related to all contracts described in this subsection and the reasons for the determinations.

''(B) ADJUSTMENTS.—Not later than May 15 of each year, the Administrator shall review the amounts specified in paragraph (1)(C)(i) of this subsection and submit a report to Congress that contains proposed adjustments in the

amounts to conform with changed liability expectations and availability of insurance on the world market. The proposed adjustment takes effect 30 days after a report is submitted.

''(4) COLLECTION AND CREDITING PAYMENTS.—The Administrator shall collect a payment owed for damage or loss to Government property under NASA jurisdiction or control resulting from an activity carried out under a contract described in this subsection. The payment shall be credited to the current applicable appropriation, fund, or account of NASA.

''(5) FEDERAL JURISDICTION.—Any claim by a third party or space flight participant for death, bodily injury, or property damage or loss resulting from an activity carried out under a contract described in this subsection shall be the exclusive jurisdiction of the Federal courts.''.

(2) EFFECTIVE DATE.—The amendment made by paragraph (1) shall take effect on October 1, 2019.

SEC. 203. HUMAN MISSION TO MARS.

(a) FINDINGS.—Congress finds the following:

(1) In section 204 of the National Aeronautics and Space Administration Authorization Act of 2010

(42 U.S.C. 18301 et seq.), Congress required NASA to contract with the National Academies to perform a study of human spaceflight.

(2) The National Research Council of the National Academies released a report entitled ''Pathways to Exploration: Rationales and Approaches for a U.S. Program of Human Space Exploration'' in June of 2014. The report called for Mars to be the ''horizon goal'' for human space exploration.

(3) NASA continues to request funding levels, follow strategies, and pursue missions that the National Research Council report identified as problematic.

(4) NASA has yet to provide adequate details or funding requests for a plan to successfully send American astronauts to Mars.

(5) Billions of dollars have been invested in the Space Launch System and Orion capsule, which represent core elements of deep space exploration systems farthest along in development.

(b) SENSE OF CONGRESS.—The following is the sense of Congress:

(1) NASA should request budget levels, and Congress should continue to appropriate funds and carry out stringent oversight necessary to keep the

Space Launch System and Orion capsule on track and on budget.

(2) Congress should prioritize funding within NASA to meet the budget requirements of sending American astronauts to Mars.

(3) NASA should utilize the Moon and cislunar space in order to accomplish the goal of sending American astronauts to Mars.

(4) NASA should utilize commercial assets, when practicable and available, to support exploration beyond Earth orbit, including to Mars.

(c) MISSION TO MARS.—Until Americans land on Mars, NASA's main human spaceflight priority shall be to land Americans on Mars.

(d) ACTIVITIES RELATED TO MISSION.—Whenever possible, NASA aeronautics and exploration directorates shall seek to avoid developing technologies and capabilities that do not have applicability across multiple directorates, programs, or activities, including missions to Mars.

(e) INTERNATIONAL PARTNERSHIPS.—NASA shall, whenever practicable and not restricted by law—

(1) seek to secure specific investments in capabilities and technologies needed for deep space exploration; and

(2) clearly communicate what capabilities and technologies are being pursued through international partnerships.

(f) STRATEGIC PLANNING.—

(1) LANDING ON MARS.—The first 20-year plan required under section 202(e)(1) shall designate a 5-year range by which NASA intends for American astronauts to land on the surface of Mars. NASA shall include an update of this range in any subsequent 20-year plan developed before such landing occurs.

(2) NATIONAL RESEARCH COUNCIL CONCERNS.—The first 10-year plan required under section 202(e)(1) shall address the concerns raised by the National Research Council report described in subsection (a)(3), including concerns regarding budget projections, the launch frequency of the Space Launch System, and the efficacy of the Asteroid Redirect Mission. Specifically, the plan shall—

(A) provide for the cancellation of the Asteroid Redirect Mission, unless NASA can compellingly demonstrate the mission's utility;

(B) explain how NASA intends to avoid missions that lead to dead end technologies; and

(C) explain how NASA will look at all options to maximize the utility of early launches of the Space Launch System, including payloads (such as pressurized habitable modules) and experiments.

(3) CONTINUOUS PRESENCE BEYOND LOW-EARTH ORBIT.—Each 10-year plan and 20-year plan required under section 202(e)(1) shall specify how NASA intends to maintain a permanent human presence beyond low-Earth orbit.

(g) RULE OF CONSTRUCTION.—Nothing in this section shall be construed to supersede NASA's long-term goal of human space flight and exploration, as provided in section 202(a) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18312(a)), to expand permanent human presence beyond low-Earth orbit and to do so, where practical, in a manner involving international partners.

SEC. 204. HUMAN PRESENCE IN LOW-EARTH ORBIT.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) the United States should maintain a continuous human presence in low-Earth orbit; and

(2) activities related to the transport of cargo and crew, development operations, and on-orbit habi-

tats necessary for the purpose of housing Government astronauts and science experiments, should, to the maximum extent practicable, be the purview of the commercial sector.

(b) INTERNATIONAL SPACE STATION.—

(1) PLAN.—NASA shall formulate a plan for the remaining life of the International Space Station and continued human presence in low-Earth orbit, which shall be included in the first 10-year plan required under section 202(e)(1) and any subsequent 10-year plans as necessary. The plan required under this paragraph shall—

(A) describe how NASA intends to maximize the scientific utilization of the International Space Station;

(B) include specific objectives, such as astronaut missions and science experiments, to be carried out during the remaining life of the International Space Station;

(C) explore options for turning over the International Space Station to commercial operators;

(D) identify a transition strategy for the end of the United States commitment to the International Space Station;

(E) be coordinated in conjunction with all countries partner to the International Space Station;

(F) explore options for NASA's continued involvement in the International Space Station in the event it is turned over to commercial operators; and

(G) seek to ensure a return on investment to United States taxpayers.

(2) FUNDING.—It is the sense of Congress that the International Space Station should be fully funded in accordance with the President's annual budget request for the remainder of its needed life.

(3) TRANSITION STRATEGY.—NASA shall implement a transition strategy for continued human presence in low-Earth orbit identified in the plan pursuant to paragraph (1)(D) as soon as NASA determines that commercial habitats meet the requirements published pursuant to subsection (c)(1) and a demonstration has been successfully completed pursuant to subsection (c)(2).

(c) COMMERCIAL HABITATS.—

(1) PUBLICATION OF REQUIREMENTS.—Not later than 1 year after the date of enactment of this Act, NASA shall, in coordination with the Commer-

cial Space Transportation Advisory Committee, develop and publish the requirements it considers necessary for commercial contractors to provide on-orbit habitats to meet the human exploration and science missions of NASA, including housing Government astronauts and conducting scientific experiments.

(2) PILOT PROGRAM.—Not later than December 31, 2018, NASA shall establish a Commercial Habitat Pilot Program to demonstrate the viability of using commercially built on-orbit habitats that meet the requirements published pursuant to paragraph (1). Under the Pilot Program, NASA shall enter into not less than 1 competitively bid agreement with a private sector entity to demonstrate the viability and capabilities of crewed commercial low Earth orbit platforms. Any such an agreement shall include a commitment by the commercial partner to fund the development and construction of the private sector low-Earth orbit platform. If the private sector entity is successful in funding the fabrication of such a platform, the agreement with NASA shall—

(A) provide for the launch of the platform via the addition of a launch to the Commercial Resupply Services program; and

(B) include a contingent contract for NASA to utilize no less than 50 percent of the volume of the low-Earth orbit platform for an initial 3-year term.

(d) COMMERCIAL PARTNERSHIPS FOR RESUPPLY AND CREW OF THE INTERNATIONAL SPACE STATION AND FUTURE LOW-EARTH ORBIT PLATFORMS.—

(1) IN GENERAL.—NASA shall continue to utilize partnerships with commercial entities for resupply and crew movement for as long as the United States maintains a human presence in low-Earth orbit.

(2) FUNDING.—It is the sense of Congress that NASA should request budget levels, and Congress should continue to appropriate funds and carry out stringent oversight, necessary to keep the Commercial Crew and Commercial Resupply programs on track and on budget.

(e) PRIORITY FOR UNITED STATES ENGINES.—

(1) IN GENERAL.—For any mission for which NASA solicits bids for launch providers beginning after December 31, 2022, NASA shall consider any such bid that proposes to use an engine built in the United States as 25 percent less than the total cost of the bid.

(2) DEFINITION.—For purposes of this subsection, the term ''engine built in the United States'' means an engine which meets the requirements of the Buy American Act (41 U.S.C. 8301 et seq.).

(f) INTERNATIONAL PARTNERSHIPS.—Nothing in this section shall be construed to limit NASA's ability to enter into and utilize international partnerships for space exploration beyond low-Earth orbit.

(g) SPACE ACT AGREEMENTS.—NASA shall, when practicable and not restricted by law, continue to enter into and utilize Space Act Agreements or other mechanisms for partnering with the commercial space sector.

SEC. 205. SPACE DEBRIS REMEDIATION.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) the growing population of orbital space debris poses a significant threat to the safety and cost-effectiveness of future civil, commercial, and national security space activities in critical regions of Earth orbit;

(2) scientific research conducted by NASA and other international space agencies concludes that the amount of orbital space debris will continue to grow at an accelerating rate unless steps are taken to re-

mediate at least some of the existing orbital space debris; and

(3) the United States Government does not currently have a coherent plan for developing the capabilities for space debris remediation.

(b) SPACE DEBRIS REMEDIATION.—Not later than 1 year after the date of enactment of this Act, the Administrator, working in collaboration with the Department of Defense, the National Oceanic and Atmospheric Administration, and the Federal Aviation Administration, shall submit to Congress a report on the feasibility of remediating orbital space debris to reduce the collision risk for future space activities. The report shall address factors that include—

(1) an assessment of the types of orbital space debris and orbital altitudes that are the highest priority for remediation;

(2) a cost-benefit analysis of remediating the high priority space debris objects;

(3) an assessment of the available technologies and policies to perform such remediation and any gaps that need to be addressed;

(4) the feasibility of conducting a competitive bid process or prize competition to develop private

sector space debris remediation services that can be purchased by the United States Government; and

(5) an assessment of Federal agency roles and responsibilities to provide oversight of remediation activities.

SEC. 206. GAO REPORT ON INSURING NASA CLASS C AND CLASS D PAYLOADS AND CARGO.

Not later than 1 year after the date of enactment of this Act, the Comptroller General shall submit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on the feasibility of NASA insuring its Class C and Class D payloads and cargo, including—

(1) the feasibility of insuring such payloads for a period of time that begins at the time of ignition and ends—

(A) at the time when the payload is deployed into its intended orbit; or

(B) 1 year after the date on which the payload is deployed into its intended orbit;

(2) any risk such insurance will place on United States taxpayers;

(3) any effect of such insurance on launch prices; and

(4) the feasibility of requiring launch providers to include in launch bids the cost of providing first party insurance of such payloads.

TITLE III—COMMERCIAL

SEC. 301. OFFICE OF COMMERCIAL SPACE TRANSPORTATION.

(a) FINDINGS.—Congress finds the following:

(1) The commercial space industry is rapidly expanding and holds enormous potential for innovation and economic growth for the United States.

(2) The Office of Commercial Space Transportation of the Federal Aviation Administration plays a critical role in facilitating commercial space activities, and inadequate funding could hinder the industry.

(b) REAUTHORIZATION.—Section 50921 of title 51, United States Code, is amended—

(1) by striking paragraphs (1) through (5) and inserting the following:

''(1) $43,200,000 for fiscal year 2017;

''(2) $55,500,000 for fiscal year 2018;

''(3) $66,000,000 for fiscal year 2019;

''(4) $80,500,000 for fiscal year 2020; and

''(5) $99,000,000 for fiscal year 2021.'';

(2) by striking ''There are'' and inserting ''(a) There are''; and

(3) by adding at the end the following:

''(b) The Assistant Secretary for Commercial Space Transportation shall serve as the Associate Administrator for Commercial Space Transportation.''.

(c) ESTABLISHMENT OF ASSISTANT SECRETARY FOR COMMERCIAL SPACE TRANSPORTATION.—Section 102(e) of title 49, United States Code, is amended—

(1) in paragraph (1) by striking ''6'' and inserting ''7''; and

(2) in paragraph (1)(A) by inserting ''an Assistant Secretary for Commercial Space Transportation,'' after ''an Assistant Secretary for Research and Technology,''.

(d) WORKLOAD METRIC.—

(1) IN GENERAL.—Not later than 120 days after the date of enactment of this Act, the Assistant Secretary for Commercial Space Transportation shall develop a metric for the workload of the Office.

(2) CONTENTS OF METRIC.—In developing the metric required under paragraph (1), the Assistant Secretary shall take into consideration the conclusions and recommendations contained in the report by the Government Accountability Office entitled

''Federal Aviation Administration: Commercial Space Launch Industry Developments Present Multiple Challenges'' published in August 2015.

(3) REPORT TO CONGRESS.—Section 50923 of title 51, United States Code, is amended—

(A) in paragraph (1) by striking ''and'' at the end;

(B) in paragraph (2) by striking the period at the end and inserting ''; and''; and

(C) by adding at the end the following:

''(3) uses the workload metric developed under section 301(c) of the American Space Renaissance Act.''.

(e) REGULATIONS REQUIRED.—

(1) Not later than 1 year after the date of enactment of this Act, the Assistant Secretary shall issue a notice of proposed rulemaking to—

(A) update the regulations that are under the authority of the Office contained in part 400 of title 14, Code of Federal Regulations, prioritizing the regulations in subchapter C of such part, to move to a performance-based approach to regulating the United States commercial space industry; and

(B) carry out this Act and the amendments made by this Act.

(2) Not later than 3 years after the Secretary issues the regulations under paragraph (1), and every 3 years thereafter, the Secretary shall review all regulations under the authority of the Office and update such regulations as necessary.

SEC. 302. OFFICE OF SPACEPORTS.

(a) IN GENERAL.—Chapter 509 of title 51, United States Code, is amended—

(1) in section 50902, by adding at the end the following new paragraph:

''(26) 'spaceport' means any facility directly related to enabling spacecraft to launch or reentry, but only if such facility is located at, or in close proximity to, a launch site or reentry site that is a launch site operator licensed by the Federal Aviation Administration.''; and

(2) by adding at the end the following:

''§ 50924. Office of Spaceports

''(a) FINDING.—Congress finds that a robust network of space transportation infrastructure, including commercial spaceports, is vital to the growth of the domestic commercial space industry.

''(b) ESTABLISHMENT.—

''(1) IN GENERAL.—The Secretary shall establish, within the Office of Commercial Space Transportation, an Office of Spaceports to support, promote, enable, establish, and oversee domestic commercial spaceports.

''(2) RECOGNITION.—In carrying out paragraph (1), the Secretary shall recognize the unique needs and distinctions of spaceports that launch to orbit and those that are involved in suborbital launch activities.

''(c) DIRECTOR.—The Assistant Secretary for Commercial Space Transportation shall designate a Director of the Office of Spaceports.''.

(b) SPACE TRANSPORTATION INFRASTRUCTURE MATCHING GRANTS.—

(1) DEFINITION.—Section 51101 of title 51, United States Code, is amended by adding at the end the following:

''(7) 'Secretary of Transportation' and 'Secretary' (as used in reference to the Secretary of Transportation) mean the Secretary of Transportation, acting through the Director of the Office of Spaceports.''.

(2) FUNDING.—Section 51102 of title 51, United States Code, is amended by adding at the end the following:

''(c) FUNDING.—Of the amounts made available to the Secretary under section 48103 of title 49, one-half of 1 percent shall be set aside for project grants under this chapter.''.

(c) CONFORMING AMENDMENTS.—

(1) The analysis for chapter 509 of title 51, United States Code, is amended by adding at the end the following:

''50924. Office of Spaceports.''.

(d) GAO STUDY AND REPORT.—

(1) STUDY.—The Comptroller General of the United States shall conduct a study regarding spaceport activities carried out pursuant to chapter 509 of title 51, United States Code, including—

(A) funding options such as establishing a common user fee for launch providers or launch customers;

(B) the adaptation of compliance requirements of the Airport Improvement Program for the unique operation of spaceports; and

(C) any necessary changes to improve the spaceport application review process.

(2) USER-FUNDED SPACEPORTS.—In reviewing funding options described under paragraph (1)(A), the Comptroller General shall distinguish between spaceports that are user-funded and those that are not.

(3) REPORT.—Not later than 1 year after the date of enactment of this Act, the Comptroller General shall submit to Congress a report containing the study required under paragraph (1).

(e) DOT REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary, in consultation with the Secretary of Defense, the Administrator of the National Oceanic and Atmospheric Administration, and the Administrator of the National Aeronautics and Space Administration, shall submit to Congress a report that—

(1) describes the demand for launches and ways to improve and enhance space infrastructure;

(2) analyzes whether additional domestic spaceports, particularly spaceports capable of launch to polar orbits, are necessary to satisfy some of the demand; and

(3) outlines any potential locations for such spaceports.

(f) SPACEPORT DEVELOPMENT.—If the report under subsection (d) contains a recommendation of a potential location for a spaceport, the Assistant Secretary for Commercial Space Transportation may collaborate with the applicable State government, local government, or private industry representing the area identified to facilitate the establishment and licensing of a spaceport.

SEC. 303. SITUATIONAL AWARENESS OF OBJECTS IN EARTH ORBIT.

(a) FINDINGS.—Congress finds the following:

(1) Earth's orbit contains spacecraft and debris that poses a great danger to other objects on orbit.

(2) The threat of collisions and increased space debris will only increase as barriers to access to space become lower, and the number and types of governmental, international, and commercial space actors continue to grow.

(3) High-fidelity situational awareness of actors and objects in orbit is necessary to protect access to space and prevent catastrophic collisions.

(4) There are a growing number of commercial, academic, and international sources of space situation awareness data and analytical techniques that can significantly enhance the safety and efficiency of on-orbit activities.

(b) AMENDMENT TO TITLE 51.—

(1) IN GENERAL.—Chapter 509 of title 51, United States Code, is amended by adding at the end the following new section:

"§ 50925. Information and services for situation awareness of objects in Earth orbit

''(a) IN GENERAL.—The Secretary of Transportation—

''(1) may—

''(A) obtain data and information from an entity for situational awareness of an object in Earth orbit and the state of the space environment; and

''(B) provide information and services for situational awareness of an object in Earth orbit and the state of the space environment to an entity if the Secretary determines that providing such information or services contributes to the public health and safety, the safety of property, or the safety of persons in outer space and is consistent with the national security and foreign policy interests of the United States; and

''(2) shall establish a space situational awareness Space Awareness Advisory Committee that con-

sists of commercial, academic, international, and government space situational awareness data and analysis experts to advise the Secretary on all matters related to obtaining, and disseminating to stakeholders, data and information regarding objects in Earth orbit and the state of the space environment, in order to ensure the protection of sensitive national security information and intellectual property while maximizing the accuracy of data and information to improve safety, efficiency, and innovation.

''(b) ENTITIES.—The Secretary may provide information and services under subsection (a) to, and may obtain data and information under subsection (a) from, any entity, including any of the following:

''(1) A State.

''(2) A political subdivision of a State.

''(3) Any other entity of the United States Government.

''(4) The government of a foreign country.

''(5) A private or quasi-governmental entity organized under the laws of the United States or a foreign country.

''(c) AGREEMENT.—The Secretary may not provide information or services under subsection (a) to an entity, other than the United States Government or an agency

or instrumentality thereof, unless the entity enters into an agreement with the Secretary under which the entity—

''(1) agrees not to transfer any data or technical information received under the agreement, including the analysis of data, to any other entity without the express approval of the Secretary; and

''(2) agrees to any other terms and conditions considered necessary by the Secretary.

''(d) PROCEDURES.—The Secretary shall, in consultation with the Space Awareness Advisory Committee, establish procedures to carry out this section.

''(e) CONTRACTOR.—The Secretary shall, to the extent practicable, provide information or services under this section through a contractor.

''(f) IMMUNITY.—The United States, any agencies and instrumentalities thereof, and any individuals, firms, corporations, and other persons acting for the United States, shall be immune from any suit in any court for any cause of action arising from the provision or receipt of space situational awareness information or services, whether or not provided in accordance with this section, or any related action or omission.

''(g) NONDISCLOSURE.—Any information received under subsection (a), records of agreements entered into under subsection (c), or analyses or data provided as a

part of the provision of services or information under this section shall be exempt from disclosure under section 552(b)(3) of title 5.

''(h) IMPLEMENTATION PLAN.—

''(1) IN GENERAL.—Not later than 6 months after the date of enactment of this section, the Secretary of Transportation, in coordination with the Secretary of Defense, the Secretary of State, the Secretary of Commerce, the Administrator of the National Aeronautics and Space Administration, the Director of National Intelligence, and the heads of such other Government departments and agencies as the Secretary considers appropriate, shall develop an implementation plan to establish the capability to provide information and services under subsection (a).

''(2) SUBMISSION.—The Secretary shall submit the implementation plan to the following congressional committees:

''(A) The Select Committee on Intelligence of the Senate.

''(B) The Permanent Select Committee on Intelligence of the House of Representatives.

''(C) The Committee on Armed Services of the Senate.

''(D) The Committee on Armed Services of the House of Representatives.

''(E) The Committee on Commerce, Science, and Transportation of the Senate.

''(F) The Committee on Transportation and Infrastructure of the House of Representatives.

''(G) The Committee on Science, Space, and Technology of the House of Representatives.

''(3) EXECUTION.—Not later than 1 year after the submission of the implementation plans under paragraph (2), the Secretary of Transportation, in coordination with the Secretary of Defense, the Secretary of State, the Secretary of Commerce, the Administrator of the National Aeronautics and Space Administration, the Director of National Intelligence, and the heads of such other Government departments and agencies as the Secretary considers appropriate, shall initiate the implementation plan, including the testing of the capabilities necessary to carry out the objectives in subsection (a)(1).''.

(2) CONFORMING AMENDMENTS.—

(A) The analysis for chapter 509 of title 51, United States Code, is amended by adding at the end the following:

"50925. Information and services for situation awareness of objects in Earth orbit.".

(B) Section 50917(a) of such title is amended by inserting "or of an agreement described in section 50924(c)" before the period at the end.

SEC. 304. SPACE TRAFFIC MANAGEMENT.

(a) IN GENERAL.—Chapter 509 of title 51, United States Code, is further amended—

(1) in section 50902, by adding at the end the following new paragraph:

"(27) 'space traffic management' means a set of technical and regulatory provisions and processes used to oversee, coordinate, regulate, and promote safe and responsible space activities."; and

(2) by adding at the end the following new section:

"§ 50926. Space traffic management

"(a) DESIGNATION.—Not later than September, 30, 2020, the Secretary of Transportation, in coordination with the Secretary of Defense, the Secretary of State, the Secretary of Commerce, the Administrator of the National Aeronautics and Space Administration, the Director of

National Intelligence, and the heads of such other Government departments and agencies as the Secretary considers appropriate, shall designate a lead Government agency for space traffic management activities and services except for activities and services related to national security assets.

''(b) ACTIVITIES.—In carrying out space traffic management activities and services, the lead agency designated under subsection (a)—

''(1) shall use the information and services for situational awareness of objects in Earth orbit collected under section 50925; and

''(2) may take such actions as are necessary to minimize the collision of objects in Earth orbit that could jeopardize the safety of individuals in space, degrade or destroy functional satellites, or lead to the creation of significant amounts of orbital debris.

''(c) PROCEDURES.—Not later than September 30, 2020, the lead agency designated under subsection (a) shall, by performance-based regulation, establish procedures to prevent the collision of objects on orbit. Such procedures shall clearly define the rationales for actions taken by the lead agency under subsection (b) and the specific steps the lead agency will follow to reach any decisions. Such rationales and steps shall be clearly communicated

to all affected actors. In developing such procedures, the head of the lead agency shall consider:

''(1) Compelling the movement of space objects.

''(2) Commenting on orbital regimes for non-governmental space objects during the launch or mission licensing process.

''(3) Requiring the placement of tracking devices on all objects launched into space.

''(4) Restricting unmaneuverable satellites from specific, highly congested orbital regions.''.

(b) CONFORMING AMENDMENT.—The analysis for chapter 509 of title 51, United States Code, is further amended by adding at the end the following:

''50926. Space traffic management.''.

(c) REPORT ON ADJUDICATION PROCESSES.—Not later than 1 year after the date of enactment of this Act, the Secretary of Transportation, in consultation with relevant departments and agencies, shall submit to Congress a report on adjudication processes for actors affected by section 50926 of title 51, United States Code (as added by subsection (a)). Such report shall contain statutory and regulatory recommendations.

(d) PROHIBITION ON DELEGATION OF AUTHORITY.—No space traffic management activities described under section 50926 of title 51, United States Code (as added by subsection (a)), may be performed by the Fed-

eral Aviation Administration Office of Air Traffic Organization nor by any other entity with responsibility for air traffic control.

(e) INTERNATIONAL STANDARDS AND AUTHORITIES.—Upon the issuance of the regulations containing the procedures required under section 50925(c) of title 51, United States Code, the Secretary of State shall seek to enter into bi- and multi-lateral agreements with other spacefaring nations based upon such regulations in order to normalize standards and authorities amongst spacefaring nations.

(f) MEETING OF NATIONS.—

(1) MEETING OF NATIONS.—The Secretary of State shall seek to convene a meeting of nations to develop a unified international space traffic management regime based on the norms of behavior set by Federal law, regulation, and any bi- or multi-lateral agreement in place.

(2) COORDINATION.—In developing the regime under paragraph (1), the Secretary of State shall—

(A) work in coordination with the Secretary of Defense, the Secretary of Transportation, the Secretary of Commerce, the Administrator of the National Aeronautics and Space Administration, the Director of National Intel-

ligence, and the heads of such other Government departments and agencies as the Secretary determines appropriate; and

(B) when practicable, use existing multilateral mechanisms such as the United Nations Committee on the Peaceful Uses of Outer Space.

SEC. 305. SPACE-BASED DATA.

(a) FINDINGS.—Congress finds the following:

(1) The pace of development of new commercial space technologies and markets creates a beneficial opportunity for improving all space programs sponsored by the United States Government.

(2) Industry is developing smaller, more affordable satellites which can be deployed in distributed constellations and enables cheaper launch services.

(3) These investments from the private sector can address critical Government needs in space.

(b) SENSE OF CONGRESS.—It is the sense of Congress that all appropriate Federal agencies should explore how to take immediate advantage of the continued growth of space technologies, data, products, infrastructure, and services made available for commercial, market driven purposes, and should further establish programs to encourage the emergence of new commercial capabilities.

(c) TREATMENT OF COMMERCIAL SPACE-BASED WEATHER DATA.—Not later than 90 days after the date of enactment of this Act, and consistent with United States law and the National Space Policy issued June 28, 2010, the Administrator of the National Oceanic and Atmospheric Administration shall promulgate specific rules regarding the Administration's treatment of weather data acquired from commercial space-based systems with respect to Resolution 40 of the World Meteorological Organization. Such rules shall—

(1) ensure that the National Oceanic and Atmospheric Administration does not release more than the minimum amount of data required under the Resolution; and

(2) consider data release time delays, data tiers, and Resolution restrictions.

(d) REPORT ON EARTH SCIENCE MISSIONS.—Not later than 270 days after the date of enactment of this Act, the Administrator of NASA, in consultation with the heads of other relevant Federal agencies, shall submit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report that includes—

(1) an evaluation of how emerging capabilities in industry can provide new or alternative architectures for Federal Earth science missions that routinely collect data about atmospheric, oceanic, or terrestrial phenomena;

(2) an evaluation of how emerging capabilities in industry can provide new in-space platforms and services for affordable in-space technology demonstration, new sensor and instrument development, and other applications; and

(3) a strategy for implementing new Federal programs that leverage such commercial capabilities, products, and services more rapidly and efficiently.

SEC. 306. DEPARTMENT OF COMMERCE SPACE-RELATED ACTIVITIES.

(a) REPORT.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary of Commerce shall provide to Congress a report on feasibility and benefits of reorganizing portions of the Department to better coordinate and support its space-related economic and regulatory activities.

(2) OBJECTIVES.—Objectives of such reorganization include—

(A) stronger Department of Commerce leadership in interagency functions where space commerce activities are either regulated or reviewed; and

(B) bringing the benefits of space-based economic activities more directly to the attention of the Secretary.

(3) OFFICES.—Offices to be considered for this reorganization are the Office of Commercial Remote Sensing Regulatory Affairs, the Office of Space Commerce, those portions of the International Trade Administration Bureau of Industry and Security that may have unique space-related functions, and other offices that the Secretary determines to be appropriate.

(b) PRIOR COMMENT.—Prior to the submission of the report to Congress, the Secretary shall allow for the Advisory Committee on Commercial Remote Sensing to comment on the draft report. Such comments shall be transmitted to Congress along with the report.

SEC. 307. COMMERCIAL REMOTE SENSING LICENSING REFORM.

(a) SENSE OF CONGRESS.—The following is the sense of Congress:

(1) The process for licensing commercial remote sensing under section 60121 of title 51, United States Code, should be reformed to allow license applicants to understand the legitimate and identifiable technical, national security, or foreign policy issues being considered and which specific department or agency is considering them, in an established, responsive timeline.

(2) In order to protect United States leadership and commercial viability in remote sensing technologies, the Federal Government should not limit commercial entities from providing remote sensing capabilities or data products that are already offered or available in the international marketplace.

(3) Before the Director of Commercial Remote Sensing Regulatory Affairs denies a license application for, or places any restrictions on, a remote sensing license, the Director should take into account mitigation procedures that are in place under law, regulation, or contract to protect national security.

(b) DEADLINES FOR LICENSE APPLICATIONS AND REVIEWS.—Section 60121(c) of title 51, United States Code, is amended to read as follows:

''(c) DEADLINE FOR ACTION ON APPLICATION.—

''(1) IN GENERAL.—Subject to paragraphs (2) and (3), the Secretary shall review any license application and make a determination thereon within 60 days of the receipt of such license application.

''(2) FIRST EXTENDED REVIEW PERIOD.—If the Secretary determines that additional time is necessary, the Secretary may extend the 60-day review period for a license application by not more than 30 days.

''(3) SECOND EXTENDED REVIEW PERIOD.—The Secretary may extend the extended review period for a license application provided in paragraph (2) by not more than an additional 30 days only if the Secretary of Defense or the Director of National Intelligence determines that such an extension is necessary due to national security concerns. The Secretary may not extend the extended review period an additional 30 days if the decision for extension is not made within 3 days of the expiration of the review period described in paragraph (2).''.

(c) RATIONALE FOR DENIAL.—Section 60121 of title 51, United States Code, is amended by adding at the end the following:

''(f) RATIONALE FOR DENIAL.—

''(1) DENIAL PAPERWORK.—In any case in which the Secretary denies a license under this subchapter, the Secretary shall provide the applicant with a copy of the denial within 30 days of the denial, which shall identify any other Federal entity with which the Secretary consulted in making the decision. Subject to paragraph (2), the copy of the denial shall include a clearly articulated rationale for the denial.

''(2) CLASSIFIED INFORMATION.—If the rationale for a denial described in paragraph (1) includes classified information, the Secretary shall provide to the applicant all such information for which the license applicant has the required security clearance.

''(3) SUBMISSION TO CONGRESS.—Not later than 30 days after a license is denied under this subchapter, the Secretary shall submit to Congress a copy of the denial and the clearly articulated rationale for the denial, including all classified information.''.

(d) RETROACTIVE LICENSING RESTRICTIONS.—Commercial remote sensing licensing restrictions shall only be changed retroactively for national security issues certified by the Director of National Intelligence. Should a retroactive change occur, the affected actors shall be com-

pensated for lost revenue from contracts signed based on services approved under the original license.

(e) LIST OF APPROVED COUNTRIES FOR DIRECT DOWNLINK.—

(1) IN GENERAL.—The Secretary of Commerce, in consultation with the Secretary of Defense and the Director of National Intelligence, shall keep a list of nations with respect to which United States commercial entities may receive expedited licensing action approval to directly downlink raw remote sensing data within resolution and license terms.

(2) CONSIDERATIONS.—When determining the list described in paragraph (1), the Secretary shall consider nations where a valid export license can be obtained for space-related technology.

(3) REVIEW.—The Secretary shall review the list described in paragraph (1) once every 2 years and update as necessary.

(f) REGULATIONS.—

(1) NOTICE OF PROPOSED RULEMAKING.—Not later than 3 months after the date of enactment of this Act, the Secretary of Commerce shall issue a Notice of Proposed Rulemaking to revise regulations contained in part 960 of title 15, Code of Federal Regulations, in order to create different categories of

remote sensing licenses, taking into consideration the national security concerns of the United States as well as—

(A) the type of entity applying for a license, such as an academic institution or commercial entity;

(B) the intended purpose of the license, such as conducting research or developing operational constellations; and

(C) whether the license is intended to be used for a one-time payload.

(2) REVISION OF REGULATIONS.—Not later than 1 year after the date of enactment of this Act, the Secretary shall revise the regulations described in paragraph (1) pursuant to such paragraph.

SEC. 308. WEATHER.

(a) COMMERCIAL SPACE-BASED DATA BUYS.—Beginning in fiscal year 2018 and each fiscal year thereafter, the Administrator of the National Oceanic and Atmospheric Administration shall include in its annual budget request a line item for commercial space-based data buys.

(b) COMMERCIAL SOLUTIONS TO PROGRAMS OF RECORD.—When practicable, the National Oceanic and Atmospheric Administration shall incorporate commercial solutions, including purchases of commercial data streams,

to update, augment, or serve as a follow-on to its existing programs of record, and shall seek to avoid starting new programs of record unless such commercial solutions have been exhausted. Before commencing the development of any program, the Administrator shall certify to Congress that no commercial capability or service, with or without reasonable modifications, can meet the requirements for which such program is being developed.

(c) AUTHORIZATION.—For the purposes of commercial space-based data buys to meet mission requirements of the National Environmental Satellite, Data, and Information Service, there are authorized to be appropriated—

(1) $15,000,000 for fiscal year 2017;

(2) $30,000,000 for fiscal year 2018;

(3) $55,000,000 for fiscal year 2019;

(4) $90,000,000 for fiscal year 2020; and

(5) $130,000,000 for fiscal year 2021.

SEC. 309. AMERICAN SPACE COMPETITIVENESS.

(a) ENHANCED PAYLOAD REVIEW AND DETERMINATION.—

(1) SENSE OF CONGRESS.—It is the sense of Congress that section 50904 of title 51, United States Code, provides the Secretary of Transportation with the authorities necessary to meet the obligations of the United States under the Treaty on

Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, done at Washington, London, and Moscow on January 27, 1967, commonly known as the Outer Space Treaty of 1967.

(2) REGULATIONS REQUIRED.—Not later than 1 year after the date of enactment of this Act, the Assistant Secretary for Commercial Space Transportation shall issue such regulations as are necessary to provide for an enhanced review and determination process for payloads and associated activities after deployment pursuant to a license issued under chapter 509 of title 51, United States Code. Such process shall provide for the following:

(A) The Assistant Secretary for Commercial Space Transportation shall act as the final issuer of a launch or reentry license.

(B) Review and determination by the Assistant Secretary, with enhanced appropriate coordination with and participation by the Department of State, the Department of Defense, the Department of Commerce, NASA, the Office of the Director of National Intelligence,

and other Federal agencies, consistent with applicable law.

(C) Evaluation of disclosures from a payload owner or operator sufficient to determine if review and determination is necessary for a specific payload or payload class, and if review and determination is found necessary—

(i) approval or denial of the planned activities associated with the deployed payload within 60 days after submission by the payload owner or operator, with approval deemed if the Assistant Secretary does not reach a decision before the end of such period;

(ii) establishment of specific conditions, if necessary, that ensure the deployment of the payload and associated activities—

(I) are consistent with the international treaty obligations of the United States;

(II) do not harm the national security interests of the United States;

(III) do not result in harmful interference with approved and oper-

ating payloads and associated activities; and

(IV) do not harm historic artifacts;

(iii) provision to the payload owner or operator of a clearly articulated rationale, in any case in which the Assistant Secretary for Commercial Space Transportation denies or intends to deny a launch or reentry license application due to the nature of the deployed payload and associated activities, that—

(I) shall not prejudice the Assistant Secretary in a subsequent review of the submission with remedies addressing the rationale; and

(II) allows the applicant to access all relevant classified information for which the applicant or its assignees have the required security clearance;

(iv) a requirement that the payload owner or operator—

(I) inform the Assistant Secretary of any material changes to the

payload or any associated activities prior to launch; and

(II) report to the Assistant Secretary any material anomalies or departures from the submitted plan during the course of operations; and

(v) penalties for noncompliance with any conditions set forth in a license issued for the deployment of the payload and associated activities, which may include—

(I) a maximum civil penalty of $1,000,000, that shall be adjudicated in district courts of the United States; and

(II) the forfeiture of any current, or denial of future, launch or reentry licenses by or involving the payload owner or operator.

(3) EXEMPTIONS.—The following payloads, or classes of payload, and associated activities are exempt from any regulations issued pursuant to this subsection:

(A) An activity subject to regulation by the Federal Communications Commission under the Communications Act of 1934 (47 U.S.C. 151 et

seq.) or by the Secretary of Commerce under chapter 601 of title 51, United States Code.

(B) A mission conducted for or with 1 or more Federal agencies, and determined to be subject to sufficient supervision by the enhanced interagency review process established under paragraph (2)(B).

(b) EXEMPTION.—Chapter 509 of title 51, United States Code, is amended—

(1) by adding at the end the following new section:

"§ 50924. Exemption from non-space transportation vehicle regulations

''No vehicle design or mission holding a permit or license under this chapter for purposes of space transportation shall be subject to any regulations promulgated by the Federal Aviation Administration for purposes of regulating non-space transportation vehicles.''; and

(2) in the analysis for such chapter, by adding at the end the following new item:

''50924. Exemption from non-space transportation vehicle regulations.''.

(c) PRIZE ACCOUNT.—Chapter 505 of title 51, United States Code, is amended—

(1) by adding at the end the following new section:

"§ 50507. Prize for commercial space activities

''(a) ESTABLISHMENT.—The Assistant Secretary for Commercial Space Transportation shall establish a prize for certain space-related activities carried out by a United States-owned commercial entity for activities under a license to operate space transportation under chapter 509 of this title.

''(b) ELIGIBLE ACTIVITIES.—The activities for which an entity is eligible to receive a prize under this subsection shall include the following:

''(1) Operation of space stations beyond low-Earth orbit housing space flight participants or scientific experiments.

''(2) Lunar missions.

''(3) Asteroid missions.

''(4) Mars missions.

''(5) Debris clean up and salvage.

''(6) Point-to-point missions on Earth.

''(c) REQUIREMENTS.—The Assistant Secretary shall promulgate the requirements for qualification for a prize under this subsection, and the amount of such prize in relation to the activity accomplished.''; and

(2) in the analysis for such chapter, by adding at the end the following new item:

''50507. Prize for commercial space activities.''.

(d) LIABILITY INSURANCE AND FINANCIAL RESPONSIBILITY REQUIREMENTS.—Section 50914 of title 51, United States Code, is amended—

(1) in subsection (a)(1)—

(A) the matter preceding subparagraph (A) by inserting ''and property'' after ''obtain liability''; and

(B) in subparagraph (B)—

(i) by inserting '', State, or municipal government'' after ''United States Government''; and

(ii) by striking ''Government property'' and inserting ''United States Government, State, or municipal property, as applicable,''; and

(2) by striking subsection (e) and inserting the following:

''(e) LAUNCHES OR REENTRIES INVOLVING GOVERNMENT FACILITIES AND PERSONNEL.—The Secretary of Transportation shall establish requirements consistent with this chapter for proof of financial responsibility and other assurances necessary to protect Federal, State, and municipal governments and their executive agencies and personnel from liability, death, bodily injury, or property damage or loss as a result of a launch site or reentry site

or a reentry involving a facility or personnel of a Federal, State, or municipal government. The Secretary may not relieve a Federal, State, or municipal government of liability under this subsection for death, bodily injury, or property damage or loss resulting from the willful misconduct of the Federal, State, or municipal government or its agents.''.

(e) CREDIT FOR PAYLOADS LAUNCHED BY DOMESTIC LAUNCH PROVIDERS.—

(1) IN GENERAL.—Subpart D of part IV of subchapter A of chapter 1 of the Internal Revenue Code of 1986 is amended by adding at the end the following new section:

''SEC. 45S. SPACE PAYLOADS LAUNCHED BY DOMESTIC LAUNCH PROVIDERS.

''(a) IN GENERAL.—For purposes of section 38, the space payload credit determined under this section for the taxable year is an amount equal to 10 percent of the sum of the insured value of all payloads of the taxpayer launched by a domestic launch provider, or on a launch vehicle that meets the requirements of the Buy American Act (41 U.S.C. 8301 et seq.), during the taxable year.

''(b) DOMESTIC LAUNCH PROVIDER.—The term 'domestic launch provider' means a domestic C corporation or partnership in the trade or business of providing launch

services for space transportation pursuant to a license or permit under chapter 509 of title 51, United States Code, to conduct launch activities.

''(c) LAUNCH.—A space flight vehicle shall be treated as launched if the ignition of a main engine occurs on a launch pad, a spaceport runway, or when released from an airborne platform.''.

(2) CREDIT MADE PART OF GENERAL BUSINESS CREDIT.—Subsection (b) of section 38 of such Code is amended by striking ''plus'' at the end of paragraph (35), by striking the period at the end of paragraph (36) and inserting '', plus'', and by adding at the end the following new paragraph:

''(37) the space payload credit determined under section 45S(a).''.

(3) CLERICAL AMENDMENT.—The table of sections for subpart D of part IV of subchapter A of chapter 1 of such Code is amended by adding at the end the following new item:

''Sec. 45S. Space payloads launched by domestic launch providers.''.

(4) EFFECTIVE DATE.—The amendments made by this subsection shall apply to taxable years beginning after the date of the enactment of this Act.

(f) STUDY ON LIFTING CERTAIN LAUNCH RESTRICTIONS.—

(1) IN GENERAL.—Prior to any decision by the United States Trade Representative to lift a restriction on a commercial company utilizing an Indian launch vehicle, the United States Trade Representative shall—

(A) notify the Comptroller General of the United States of the intent to lift such restriction; and

(B) allow for a public 30-day comment period, beginning not earlier than the date of the submission of the study under paragraph (2), on the proposed decision and the results of such study.

(2) STUDY.—Not later than 30 days after receiving a notification under paragraph (1), the Comptroller General of the United States shall submit to Congress and the United States Trade Representative a study on the ramifications of lifting such restriction on the domestic launch industry.

(g) LOAN GUARANTEE PROGRAM.—

(1) ESTABLISHMENT.—The Secretary of Commerce shall establish a program to make loan guarantees to eligible entities to carry out eligible activities.

(2) OBJECTIVES.—The objectives of the program established under paragraph (1) are—

(A) to promote the creation of jobs in the United States space sector, including in manufacturing, operations, and construction; and

(B) to encourage startup companies.

(3) ELIGIBLE ACTIVITIES.—

(A) IN GENERAL.—The Secretary, in consultation with the Secretary of Transportation, the Administrator of the National Aeronautics and Space Administration, the Director of National Intelligence, and the Secretary of Defense, shall develop a list of activities that may qualify for a loan guarantee under this subsection.

(B) CONSIDERATIONS.—In developing the list of activities under subparagraph (A), the Secretary shall consider the following:

(i) Manufacturing—

(I) satellites;

(II) space transportation vehicles; and

(III) habitats.

(ii) Hardware necessary for operations of satellites and other space vehicles, such

as control centers and other ground stations.

(iii) Construction of, upgrades to, and maintenance of infrastructure necessary to support the space industry.

(iv) Technology research and development activities determined by the Secretary to have the potential to advance the state of space-related technology in the United States.

(4) ELIGIBLE ENTITY DEFINED.—The term ''eligible entity'' means—

(A) a commercial entity that is domestically owned or a domestic subsidiary; or

(B) an FAA-licensed spaceport.

(5) TERMS AND CONDITIONS.—The Secretary shall ensure that any guarantee made pursuant to this subsection is made in accordance with the same or substantially similar terms and conditions as contained in section 1702 of the Energy Policy Act of 2005 (42 U.S.C. 16512).

(h) ELECTROMAGNETIC SPECTRUM FOR COMMERCIAL SPACE LAUNCH ACTIVITIES.—

(1) SENSE OF CONGRESS.—It is the sense of Congress that—

(A) commercial space launch services have expanded over the past several years and are expected to continue growing, to the benefit of national security and civil space interests; and

(B) commercial space launch services will require assured access to the appropriate electromagnetic spectrum for their launch-related mission requirements.

(2) SPECTRUM ALLOCATION AND AUTHORIZATIONS.—Not later than 180 days after the date of the enactment of this Act, the Federal Communications Commission and the Assistant Secretary of Commerce for Communications and Information, in order to streamline the process for obtaining any necessary authorization to use electromagnetic spectrum for commercial space launch activities and thereby ensure certainty of access to the spectrum required for a robust and active commercial space launch services sector, shall take such actions as are necessary to—

(A) ensure that the process for obtaining such an authorization (including the application process and the process for coordination between the Commission and the Assistant Secretary and coordination between commercial

space launch companies and other users of the spectrum) is standardized and clearly defined;

(B) minimize the number and complexity of such authorizations required per launch mission, to the extent practicable; and

(C) allocate electromagnetic spectrum for commercial space launch activities on a co-primary, interference-protected basis.

SEC. 310. SPACE TRAINING AIRCRAFT.

(a) ESTABLISHMENT.—The Secretary of Transportation shall establish a program to allow commercial entities to operate space training flights using aircraft with valid airworthiness certificates, including those in an experimental category, issued by the Federal Aviation Administration.

(b) EXEMPTIONS.—A space training flight operating under the program shall not be subject to—

(1) the aircraft certification requirements of part 121 of title 14, Code of Federal Regulations; and

(2) the prohibition on the operation of aircraft with experimental certificates carrying persons or property for compensation or hire under part 91 of title 14, Code of Federal Regulations.

(c) ELIGIBILITY.—A space training flight is eligible for the exemptions under subsection (b) if—

(1) such flight originates and terminates at an FAA-licensed spaceport;

(2) the commercial entity operating the space training flight provides written notification to all passengers describing the exemptions such flight qualifies for under this section; and

(3) all passengers of the flight provide the commercial entity with written consent.

(d) STATUTORY CONSTRUCTION.—Nothing in this section shall be construed to prohibit a commercial entity from operating a flight using an experimental aircraft if such operation is otherwise permitted by law.

SEC. 311. WORKFORCE ENHANCEMENT.

Section 83 of the Internal Revenue Code of 1986 is amended by adding at the end the following:

''(i) STOCK OR OPTION-RELATED COMPENSATION TRANSFERRED BY A STARTUP DOMESTIC COMMERCIAL SPACE COMPANY.—

''(1) IN GENERAL.—Any person described in paragraph (2) may elect to include in his gross income for the taxable year in which such person sells or otherwise disposes of stock or options described in

paragraph (2) in an arm's length transaction, the excess of—

"(A) the fair market value of such property at the time of such sale or disposition (determined without regard to any restriction other than a restriction which by its terms will never lapse), over

"(B) the amount (if any) paid for such property.

If such election is made, subsection (a) shall not apply with respect to the transfer of such stock or option.

"(2) PERSON DESCRIBED.—A person is described in this paragraph if the person—

"(A) performs services in connection with which stock or option-related compensation is transferred by a domestic commercial space company during any taxable year in which the company incurs start-up expenditures (whether or not claimed by such company), and

"(B) does not own or is considered as not owning within the meaning of section 318—

"(i) more than 1 percent of the outstanding stock of the corporation or stock possessing more than 1 percent of the total

combined voting power of all stock of the corporation, or

''(ii) if the employer is not a corporation, does not own more than 1 percent of the capital or profits interest in the employer.

''(3) DOMESTIC COMMERCIAL SPACE COMPANY.—The term 'domestic commercial space company' means a company engaging in a line of business unique to a space company, such as launch, satellite operations, software development, satellite manufacturing, spacecraft manufacturing, and space transportation vehicle manufacturing, with operations and employees based in the United States.

''(4) START-UP EXPENDITURES.—The term 'start-up expenditures' has the meaning given such term by section 195.''.

○