

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.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the
5 “American Space Renaissance Act”.

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

Sec. 1. Short title; table of contents.

TITLE I—NATIONAL SECURITY

- Sec. 101. Space doctrine, organization, acquisition, and architecture development.
- Sec. 102. Satellite communications.
- Sec. 103. Positioning, navigation, and timing.
- Sec. 104. Weather.
- Sec. 105. Space situational awareness.
- Sec. 106. Launch services.
- Sec. 107. Air Force Satellite Control Network.
- Sec. 108. Remote sensing.
- Sec. 109. Congressional defense committees defined.

TITLE II—CIVIL

- Sec. 201. Definitions.
- Sec. 202. National Aeronautics and Space Administration.
- Sec. 203. Human mission to Mars.
- Sec. 204. Human presence in low-Earth orbit.
- Sec. 205. Space debris remediation.
- Sec. 206. GAO report on insuring NASA Class C and Class D payloads and cargo.

TITLE III—COMMERCIAL

- Sec. 301. Office of Commercial Space Transportation.
- Sec. 302. Office of Spaceports.
- Sec. 303. Situational awareness of objects in Earth orbit.
- Sec. 304. Space traffic management.
- Sec. 305. Space-based data.
- Sec. 306. Department of Commerce space-related activities.
- Sec. 307. Commercial remote sensing licensing reform.
- Sec. 308. Weather.
- Sec. 309. American space competitiveness.
- Sec. 310. Space training aircraft.
- Sec. 311. Workforce enhancement.

1 **TITLE I—NATIONAL SECURITY**

2 **SEC. 101. SPACE DOCTRINE, ORGANIZATION, ACQUISITION,** 3 **AND ARCHITECTURE DEVELOPMENT.**

4 (a) SENSE OF CONGRESS.—It is the sense of Con-
 5 gress that—

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

1 perity, military deterrence, and power projection;
2 and

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

6 (b) NATIONAL SECURITY DOCTRINE ON SPACE.—

7 Not later than one year after the date of the enactment
8 of this Act, the President, in consultation with the Sec-
9 retary of Defense and the Director of National Intel-
10 ligence, shall develop—

11 (1) doctrine for the Armed Forces and the in-
12 telligence community (as defined in section 3 of the
13 National Security Act of 1947 (50 U.S.C. 3001))
14 governing the response of the United States to ef-
15 forts by state and nonstate actors to deliberately—

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

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

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

24 (c) PRINCIPAL DEPARTMENT OF DEFENSE SPACE
25 ADVISOR.—

1 (1) IN GENERAL.—Chapter 135 of title 10 is
2 amended by adding at the end the following new sec-
3 tion:

4 **“§ 2279d. Principal Defense Space Advisor**

5 “(a) IN GENERAL.—The Secretary of Defense shall
6 designate an official of the Department to be the Principal
7 Defense Space Advisor, who, in addition to the other du-
8 ties of such official, shall act as the principal advisor to
9 the Secretary on all space matters.

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

12 “(1) Serving as the principal advisor to the Sec-
13 retary of Defense, the Deputy Secretary of Defense,
14 the Joint Chiefs of Staff, the Joint Requirements
15 Oversight Council, the Deputy’s Management Action
16 Group, and the Defense Acquisition Board on all
17 space matters.

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

20 “(3) Overseeing the entire space enterprise of
21 the Department of Defense by reviewing all policies,
22 strategies, plans, programming, and architecture as-
23 sessments relating to space.

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

1 Defense Space Council and the Director of Cost As-
2 sessment and Program Evaluation.

3 “(5) Chairing the Defense Space Council.

4 “(6) Providing the Deputy’s Management Ac-
5 tion Group with independent assessments and rec-
6 ommendations, as requested by the Deputy Sec-
7 retary, in cases where members of the Defense
8 Space Council are unable to reach consensus.”.

9 (2) CLERICAL AMENDMENT.—The table of sec-
10 tions at the beginning of such chapter is amended
11 by inserting after the item relating to section 2279c
12 the following new item:

“2279d. Principal Defense Space Advisor.”.

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

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

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

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

4 (B) by striking “Department of Defense
5 Executive Agent for Space” and inserting
6 “Principal Defense Space Advisor” each place it
7 appears.

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

10 (1) STRATEGY.—Not later than 180 days after
11 the date of the enactment of this Act, the Secretary
12 of Defense shall develop and commence the imple-
13 mentation of a strategy to increase interoperability
14 between systems that electronically share cyberspace
15 situational awareness and space situational aware-
16 ness data and information across the space and
17 cyberspace enterprises of the Department of De-
18 fense, including among space, cyberspace, and air
19 operations centers.

20 (2) SUBMISSION OF STRATEGY.—Not later than
21 180 days after the date of the enactment of this Act,
22 the Secretary shall submit to the congressional de-
23 fense committees the strategy developed under para-
24 graph (1), including—

1 (A) a plan to carry out the increased oper-
2 ability between space systems described in such
3 paragraph;

4 (B) a description of current and future ini-
5 tiatives to increase automated data transfer;

6 (C) cost estimates for developing, pro-
7 curing, installing and sustaining the systems
8 described in such paragraph; and

9 (D) a description of any regulatory or leg-
10 islative actions required to fully implement the
11 strategy.

12 (e) INTEGRATED MAJOR SPACE PROGRAM ACQUI-
13 SITION.—

14 (1) LIMITATION.—Of the funds authorized to
15 be appropriated or otherwise made available for fis-
16 cal year 2017 for the Under Secretary of Defense
17 for Acquisition, Technology, and Logistics, not more
18 than 50 percent may be obligated or expended until
19 the date on which the Under Secretary certifies to
20 the congressional defense committees that the Under
21 Secretary is compliant with the assessment, report-
22 ing, and notification requirements under section
23 2275 of title 10, United States Code.

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

1 (A) by redesignating subsection (g) as sub-
2 section (h);

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

5 “(g) CERTIFICATION OF INTEGRATED PROGRAMS.—

6 (1) During each of fiscal years 2018 through 2027, the
7 Secretary of Defense shall certify to the congressional de-
8 fense committees that each major satellite acquisition pro-
9 gram that has received Milestone B approval is an inte-
10 grated program with respect to acquisition and delivery
11 of segments of the program.

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

16 “(3) For each major satellite acquisition program
17 that the Secretary does not make a certification under
18 paragraph (1), the Secretary shall provide the congres-
19 sional defense committees a briefing explaining why such
20 certification may not be made, including a discussion of
21 the matters described in subsection (e)(2).”; and

22 (C) in subsection (h), as redesignated by
23 subparagraph (A), by adding at the end the fol-
24 lowing new paragraph:

1 “(5) MILESTONE C APPROVAL.—The term
2 ‘Milestone C approval’ has the meaning given that
3 term in section 2366(e) of this title.”.

4 (f) HOSTED PAYLOADS.—

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

8 “(d) HOSTED PAYLOADS.—(1) To the extent prac-
9 tical, the Secretary shall ensure that any space architec-
10 ture of the Department of Defense uses hosted payloads.

11 “(2) Beginning January 1, 2026, the Secretary shall
12 give preference to launching hosted payloads on launch ve-
13 hicles owned and operated by companies domiciled in the
14 United States.

15 “(3) For each space program of the Department re-
16 quiring the launch of assets into space, the Secretary shall
17 ensure that any analysis of alternatives conducted for the
18 program considers alternatives with hosted payloads and
19 commercial services.”.

20 (2) PLAN.—Not later than 180 days after the
21 date of the enactment of this Act, the Secretary of
22 Defense, in consultation with the Director of the
23 Space and Missile Systems Center and the Principal
24 Defense Space Advisor designated under section
25 2279d of title 10, United States Code, as added by

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

5 (A) An analysis of how the Secretary can
6 increase the use of the Hosted Payload Solu-
7 tions program, including identification of
8 planned missions over the next five fiscal years
9 which may use hosted payloads.

10 (B) Criteria and standards necessary for
11 new entrants to qualify for Hosted Payload So-
12 lutions program certification.

13 (g) PROTECTION CAPABILITIES.—

14 (1) ASSESSMENT.—Not later than one year
15 after the date of the enactment of this Act, the Sec-
16 retary of Defense, in consultation with the Principal
17 Defense Space Advisor designated under section
18 2279d of title 10, United States Code, as added by
19 subsection (c)(1), shall submit to the congressional
20 defense committees an assessment of desirable pro-
21 tection capabilities that would enhance the integra-
22 tion of commercial space systems into national secu-
23 rity space architectures.

24 (2) ELEMENTS.—The assessment under para-
25 graph (1) shall include the following:

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

4 (B) The estimated costs for commercial
5 operators to integrate the highest priority pro-
6 tection capabilities into commercial systems.

7 (C) An examination of any issues associ-
8 ated with the quality, integrity, security, reli-
9 ability, and continuity of commercial space
10 data.

11 (3) CONSULTATION.—Before submitting the as-
12 sessment under paragraph (1), the Secretary shall
13 consult with appropriate representatives from the
14 commercial space industry with respect to the initial
15 findings and recommendations of the Secretary de-
16 veloped under such paragraph.

17 (h) SENSE OF CONGRESS.—It is the sense of Con-
18 gress that—

19 (1) the Department of Defense should thor-
20 oughly examine the opportunities offered by high-
21 volume satellite manufacturing as the capability for
22 such manufacturing emerges; and

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

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

3 **SEC. 102. SATELLITE COMMUNICATIONS.**

4 (a) SENSE OF CONGRESS.—It is the sense of Con-
5 gress that—

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

9 (2) to achieve these goals, such architectures
10 should include an enterprise-level situational aware-
11 ness network and capabilities to dynamically, effi-
12 ciently, and seamlessly allocate satellite communica-
13 tions capacity and shift between frequencies and lev-
14 els of protection.

15 (b) ANALYSIS OF ALTERNATIVES.—

16 (1) MATTERS CONSIDERED.—Section 1611(a)
17 of the National Defense Authorization Act for Fiscal
18 Year 2016 (Public Law 114–92) is amended by add-
19 ing at the end the following new sentences: “Such
20 analysis of alternatives shall provide detailed as-
21 sumptions with respect to a comparison between the
22 full life-cycle associated costs for military and com-
23 mercial satellite communications, including estimates
24 for military and personnel costs associated with op-
25 erating and maintaining Government-owned, Govern-

1 ment-operated systems and other costs, including
2 with respect to military construction. Such analysis
3 of alternatives shall also consider technology develop-
4 ment of commercial satellite communications, includ-
5 ing high throughput capacity satellites, commercial
6 investment, technology insertion plans, and up-
7 grades. Such analysis of alternatives shall also in-
8 clude available data and the results of the Path-
9 finder program of the Air Force Space and Missile
10 Systems Center and the Defense Information Sys-
11 tems Agency.”.

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

15 “(c) INDEPENDENT REVIEW.—

16 “(1) COMPTROLLER GENERAL.—Not later than
17 90 days after the date on which the Secretary com-
18 pletes the analysis of alternatives under subsection
19 (a), and prior to submitting the report under sub-
20 section (b), the Comptroller General of the United
21 States shall review such analysis. In addition to any
22 other matters the Comptroller considers appropriate,
23 the review shall assess whether such analysis meets
24 the requirements of subsection (a).

1 “(2) SUBMISSION.—The Secretary shall submit
2 to the congressional defense committees the review
3 required under paragraph (1) along with the anal-
4 ysis of alternatives conducted under section 1611(a)
5 of the National Defense Authorization Act for Fiscal
6 Year 2016 (Public Law 114–92).”.

7 (c) TERMINALS.—

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

13 (A) such program will field multiband ter-
14 minals;

15 (B) any requirements developed in support
16 of such program, including through the Joint
17 Requirements Oversight Council or the Require-
18 ments Oversight Councils of the military de-
19 partments, take into consideration the terminal
20 user preferences, the ease of platform integra-
21 tion into space system design requirements, and
22 the total cost of ownership, including
23 sustainment costs; and

24 (C) the Secretary—

1 (i) approves any exceptions to sub-
2 paragraphs (A) and (B); and

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

6 (2) STRATEGY.—

7 (A) Not later than one year after the date
8 of the enactment of this Act, the Secretary of
9 Defense, in consultation with the Under Sec-
10 retary of Defense for Acquisition, Technology,
11 and Logistics, Principal Defense Space Advisor
12 designated under section 2279d of title 10,
13 United States Code, as added by section
14 101(c)(1), and the acquisition executives of the
15 military departments, shall develop a strategy
16 to recapitalize legacy non-multiband satellite
17 communications terminals to multiband satellite
18 communications terminals.

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

21 (i) A comprehensive recapitalization
22 schedule for all platforms in the Depart-
23 ment of Defense using satellite commu-
24 nications terminals.

1 (ii) A comprehensive list of all types
2 of fielded non-multiband satellite commu-
3 nications terminals, the number of termi-
4 nals currently in service, and the projected
5 schedule for recapitalizing the terminals.

6 (iii) The priority, by military depart-
7 ment, of terminal recapitalization.

8 (iv) Options for migrating the highest
9 priority terminals in each military depart-
10 ment to multiband terminals.

11 (3) BRIEFING.—Not later than one year after
12 the date of the enactment of this Act, the Secretary
13 shall provide the congressional defense committees a
14 briefing on the strategy developed under paragraph
15 (2).

16 (d) SPACE MODERNIZATION INITIATIVE PROTECTED
17 TACTICAL SERVICE FUNDING.—In addition to any other
18 amounts authorized to be appropriated to the Secretary
19 of the Air Force for fiscal year 2017 for research, develop-
20 ment, test, and evaluation, Air Force, there is authorized
21 to be appropriated to the Secretary \$150,700,000 for the
22 Space Modernization Initiative activities related to Pro-
23 tected Tactical Service development and demonstration,
24 including for the Protected Tactical Enterprise Service ini-
25 tiative.

1 (e) PATHFINDER FUNDING.—Of the amounts au-
2 thorized to be appropriated to the Secretary of the Air
3 Force for fiscal year 2017 for procurement, Air Force,
4 there is authorized to be appropriated to the Secretary
5 \$30,000,000 for the Space and Missile Systems Center
6 Satellite Communications Pathfinder program.

7 (f) PILOT PROGRAM FUNDING.—In addition to any
8 other amounts authorized to be appropriated to the Sec-
9 retary of the Air Force for any of fiscal years 2017
10 through 2021 for operation and maintenance, Air Force,
11 there is authorized to be appropriated to the Secretary
12 \$50,000,000 for each of fiscal years 2017 through 2021
13 to carry out the pilot program for the acquisition of com-
14 mercial satellite communication services and enterprise-
15 level ground integration efforts under section 1605 of the
16 Carl Levin and Howard P. “Buck” McKeon National De-
17 fense Authorization Act for Fiscal Year 2015 (Public Law
18 113–291; 10 U.S.C. 2208 note), as amended by section
19 1612 of the National Defense Authorization Act for Fiscal
20 Year 2016 (Public Law 114–92).

21 (g) BRIEFING.—On a biannual basis, the Secretary
22 of Defense shall provide the congressional defense commit-
23 tees a briefing on the progress of the following:

24 (1) Satellite communications Pathfinder activi-
25 ties.

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

4 (3) Protected Tactical Service.

5 (4) Any initiative regarding enterprise-level
6 ground architecture or any other initiative the Sec-
7 retary determines appropriate.

8 (h) DHS STUDY.—Not later than 180 days after the
9 date of the enactment of this Act, the Secretary of Home-
10 land Security, in consultation with the Secretary of De-
11 fense, shall submit to the congressional defense commit-
12 tees a report on leveraging underused Mobile User Objec-
13 tive System satellite communications capacities of the De-
14 partment of Defense, or other narrowband communication
15 systems, to complement the communications and com-
16 mand-and-control systems of the Department of Home-
17 land Security. Such report shall include an assessment of
18 critical command-and-control requirements and
19 connectivity requirements and existing capability short-
20 falls.

21 (i) PRESERVATION OF ELECTROMAGNETIC AC-
22 CESS.—The Federal Communications Commission—

23 (1) shall ensure that commercial satellites oper-
24 ating in geostationary and non-geostationary orbit
25 have primary status for access to the electro-

1 magnetic spectrum in the 27.5–28.35 gigahertz band
2 for current and future deployments of individually li-
3 censed earth stations; and

4 (2) may not require commercial satellite entities
5 to secure primary access to such band through par-
6 ticipation in an auction or through secondary market
7 procedures.

8 **SEC. 103. POSITIONING, NAVIGATION, AND TIMING.**

9 (a) SENSE OF CONGRESS.—It is the sense of Con-
10 gress that the importance of positioning, navigation, and
11 timing for national security and economic prosperity re-
12 quires highly reliable and secure positioning, navigation,
13 and timing systems, such as the Global Positioning Sys-
14 tem, to support commercial, civil, and national security
15 programs.

16 (b) STRATEGY ON PNT SIGNALS.—

17 (1) IN GENERAL.—Not later than 180 days
18 after the date of the enactment of this Act, the Sec-
19 retary of Defense shall submit to the congressional
20 defense committees a strategy to ensure that posi-
21 tioning, navigation, and timing receivers of the De-
22 partment of Defense best leverage the global avail-
23 ability of positioning, navigation, and timing signals
24 from the Global Positioning System, the Galileo sys-
25 tem, and other positioning, navigation, and timing

1 systems, including commercial positioning, naviga-
2 tion, and timing solutions that use commercial sat-
3 ellite constellations.

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

6 (A) Issues associated with monitoring and
7 verification of the accuracy, integrity, avail-
8 ability, and security of foreign and commercial
9 positioning, navigation, and timing signals.

10 (B) Mechanisms for timely notification to
11 military users of the current and projected reli-
12 ability of such foreign and commercial systems.

13 (C) Methods for sharing information
14 across the Global Positioning System, the
15 Galileo system, and other positioning, naviga-
16 tion, and timing systems to improve the inter-
17 operability and effectiveness of the systems for
18 military users.

19 **SEC. 104. WEATHER.**

20 (a) SENSE OF CONGRESS.—It is the sense of Con-
21 gress that—

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

1 crease resilience of the overall weather satellite ar-
2 chitecture, and augment Government weather sys-
3 tems to create more and better data at lower costs
4 to the taxpayer;

5 (2) the Department of Defense should incor-
6 porate commercial space-based weather satellite data
7 into its weather modeling products; and

8 (3) the Department of Defense should maximize
9 the use of, and incentivizes the growth of, commer-
10 cial weather data and services of the United States
11 and ensure that such data and services are secure,
12 reliable, and enhance military effectiveness.

13 (b) NATIONAL EXECUTIVE COMMITTEE ON WEATH-
14 ER.—

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

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

1 the Deputy Administrator of the National Oceanic
2 and Atmospheric Administration to serve as co-
3 chairs of the National Executive Committee on
4 Weather. The President shall appoint such other of-
5 ficials of the Federal Government to serve on the
6 National Executive Committee on Weather as the
7 President determines appropriate.

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

10 (A) a permanent national coordination of-
11 fice secretariat;

12 (B) an international working group; and

13 (C) an engineering working group.

14 (c) COMMERCIAL WEATHER DATA QUALITY, SECUR-
15 ITY, AND RELIABILITY STANDARDS.—Not later than one
16 year after the date of the enactment of this Act, the Sec-
17 retary of Defense shall develop and certify quality, secu-
18 rity, and reliability standards, including cybersecurity
19 standards, for weather data and systems to facilitate the
20 use of commercial weather data and services by the Armed
21 Forces.

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

1 there is authorized to be appropriated to the Secretary
2 \$40,000,000 for space survivability and surveillance.

3 (e) GEOMAGNETIC STORM WARNING CAPABILITY.—

4 (1) IN GENERAL.—Not later than one year
5 after the date of the enactment of this Act, the Sec-
6 retary of Defense, in coordination with the Adminis-
7 trator of the National Oceanic and Atmospheric Ad-
8 ministration and the Administrator of the National
9 Aeronautics and Space Administration, shall com-
10 mence the development of a follow-on geomagnetic
11 storm warning capability that includes—

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

15 (B) a timely notification and warning
16 mechanism for governmental entities and pri-
17 vate sector entities.

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

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

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

1 forecasting (including with respect to operation and
2 maintenance of the Air Force Weather Agency), not
3 more than 10 percent may be obligated or expended
4 until the date on which the Secretary of the Air
5 Force certifies to the congressional defense commit-
6 tees that the Secretary has initiated a full and open
7 competition to award a contract for the weather
8 forecasting model used by the Air Force Weather
9 Agency.

10 (2) COMPETITION.—In carrying out the full
11 and open competition for the weather forecasting
12 model described in paragraph (1), Secretary shall es-
13 tablish the technical standards required for commer-
14 cial weather forecasting models to integrate into
15 weather forecasting and data assimilation systems of
16 the Department of Defense, including information
17 assurance and security classification requirements.

18 (g) COMMERCIAL WEATHER DATA PILOT PRO-
19 GRAM.—

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

1 weather data in the weather modeling and fore-
2 casting of the Department of Defense. The pilot pro-
3 gram shall be conducted consistent with data stand-
4 ards established under subsection (c).

5 (2) FUNDING.—There is authorized to be ap-
6 propriated to the Secretary of Defense for fiscal year
7 2017 not less than \$10,000,000 to carry out the
8 pilot program under paragraph (1) by purchasing,
9 evaluating, and calibrating commercial weather data
10 that meets the standards and specifications set by
11 the Secretary for purposes of the pilot program.

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

18 (h) SPACE BASED INFRARED SYSTEM WEATHER AP-
19 PPLICATIONS.—

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

22 (A) the Space Based Infrared System has
23 attributes including certain sensor capabilities,
24 revisit rates, and polar reach which could en-
25 hance weather prediction capability, in addition

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

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

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

16 (i) WEATHER REQUIREMENTS GAP MITIGATION.—

17 (1) SENSE OF CONGRESS.—It is the sense of
18 Congress that the Department of Defense can lever-
19 age Defense Meteorological Satellite Program pay-
20 loads, including the Special Sensor Microwave
21 Imager/Sounder, to help mitigate gaps in critical
22 validated weather requirements.

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

1 Services of the House of Representatives and the
2 Senate a report on using Defense Meteorological
3 Satellite Program payloads to mitigate gaps in vali-
4 dated Department of Defense weather requirements,
5 such as cloud characterization, theater weather im-
6 agery, ocean wind vectors, tropical cyclone intensity,
7 snow depth, and sea ice weather requirements.

8 (j) PROHIBITION ON RELIANCE ON FOREIGN COUN-
9 TRIES FOR SPACE-BASED WEATHER DATA.—

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

15 (2) CERTIFICATION.—Not later than 90 days
16 after the date of the enactment of this Act, the Sec-
17 retary shall submit to the congressional defense com-
18 mittees a certification that the Secretary is in com-
19 pliance with the prohibition under paragraph (1).

20 (3) BRIEFING.—Not later than 180 days after
21 the date of the enactment of this Act, the Secretary
22 shall provide to the congressional defense commit-
23 tees a briefing on how the Department of Defense
24 plans to comply with the prohibition under para-
25 graph (1).

1 **SEC. 105. SPACE SITUATIONAL AWARENESS.**

2 (a) **FUNDING.**—In addition to any other amounts au-
3 thorized to be appropriated to the Secretary of the Air
4 Force for fiscal year 2017 for research, development, test,
5 and evaluation, Air Force, and operation and mainte-
6 nance, Air Force, there is authorized to be appropriated
7 to the Secretary \$30,200,000 for the operations and ac-
8 tivities of the Joint Interagency Combined Space Oper-
9 ations Center.

10 (b) **COMMERCIAL INTEGRATION CELL.**—Not later
11 than one year after the date of the enactment of this Act,
12 the Secretary of Defense, in consultation with the Com-
13 mander of United States Strategic Command, shall pro-
14 vide a briefing to the Committees on Armed Services of
15 the House of Representatives and the Senate on making
16 permanent the commercial integration cell pilot program
17 conducted by the Joint Space Operations Center.

18 (c) **REPORT ON COMMERCIAL SATELLITES.**—Not
19 later than one year after the date of the enactment of this
20 Act, the Secretary of Defense shall submit to the Commit-
21 tees on Armed Services of the House of Representatives
22 and the Senate a report that—

23 (1) identifies space situational awareness sen-
24 sors desirable for commercial satellite operators and
25 other non-Federal Government operators to inte-
26 grate into the systems of the operators prior to

1 launch to provide space situational awareness data;
2 and

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

6 **SEC. 106. LAUNCH SERVICES.**

7 (a) **PRIORITY FOR UNITED STATES ENGINES.**—

8 (1) **IN GENERAL.**—Beginning January 1, 2023,
9 in awarding a contract for the procurement of prop-
10 erty or services for space launch activities, the Sec-
11 retary of Defense shall treat any offer that proposes
12 the use of a rocket engine described in paragraph
13 (2) as costing the Federal Government 25 percent
14 less than the price listed in the offer.

15 (2) **ENGINE DESCRIBED.**—A rocket engine de-
16 scribed in this paragraph is a rocket engine that
17 uses articles, materials, and supplies that are allow-
18 able under section 8302(a)(1) of title 41, United
19 States Code, in an acquisition for public use and are
20 not subject to an exception under chapter 83 of such
21 title (popularly known as the “Buy American Act”).

22 (b) **VENTURE-CLASS LAUNCH SERVICES.**—

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

1 fense Space Advisor designated under section 2279d
2 of title 10, United States Code, as added by section
3 101(c)(1), and the Director of the Space Test Pro-
4 gram, shall establish a program to competitively
5 award not fewer than four launch services contracts
6 for venture-class launch missions.

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

13 (c) OPERATIONALLY RESPONSIVE SPACE.—

14 (1) PRIORITIZATION.—Section 2273a(c) of title
15 10, United States Code, is amended—

16 (A) by striking “The mission” and insert-
17 ing “(1) In accordance with paragraph (2), the
18 mission”;

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

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

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

1 responsive space, the Office prioritizes market re-
2 search and the identification of commercial capabili-
3 ties and services.

4 “(B) Before commencing the development of
5 any program, the head of the Office shall certify to
6 the congressional defense committees that no com-
7 mercial capability or service, with or without minor
8 modifications, can meet the requirements for which
9 such program is being developed.”.

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

17 (d) EVALUATION OF LAUNCH SERVICES BACKUP.—
18 Of the funds authorized to be appropriated by this Act
19 or otherwise made available for fiscal year 2017 for the
20 Air Force for foreign comparative testing, not less than
21 \$4,000,000 shall be obligated or expended to conduct
22 studies on the potential for non-domestic launch services
23 providers domiciled on the territory of allies of the United
24 States to serve as a backup to perform national security
25 missions.

1 **SEC. 107. AIR FORCE SATELLITE CONTROL NETWORK.**

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

7 (b) REPORT.—Not later than 180 days after the date
8 of the enactment of this Act, the Secretary shall submit
9 to the congressional defense committees a report that in-
10 cludes—

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

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

17 (c) BRIEFINGS.—Not later than 180 days after the
18 date on which the Secretary submits the report under sub-
19 section (b), and every 180 days thereafter through Janu-
20 ary 1, 2020, the Secretary shall provide Congress with a
21 briefing on carrying out subsection (a).

22 **SEC. 108. REMOTE SENSING.**

23 (a) SENSE OF CONGRESS.—It is the sense of Con-
24 gress that—

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

1 efforts to implement innovative technology upgrades,
2 flexible licensing and sharing policies, analytic capa-
3 bility, cross-training, content-in-the-open, and use of
4 international standards, such as the Open Geospatial
5 Consortium; and

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

9 (b) BRIEFING.—Not later than 180 days after the
10 date of the enactment of this Act, the Director of the Na-
11 tional Geospatial-Intelligence Agency shall provide to the
12 congressional defense committees a briefing on funding re-
13 quirements and any new acquisition authorities necessary
14 to accelerate the programs and initiatives outlined in the
15 Commercial Geospatial Intelligence Strategy of the Na-
16 tional Geospatial-Intelligence Agency.

17 **SEC. 109. CONGRESSIONAL DEFENSE COMMITTEES DE-**
18 **FINED.**

19 In this title, the term “congressional defense commit-
20 tees” has the meaning given that term in section
21 101(a)(16) of title 10, United States Code.

22 **TITLE II—CIVIL**

23 **SEC. 201. DEFINITIONS.**

24 In this title:

1 (1) ADMINISTRATOR.—The term “Adminis-
2 trator” means the Administrator of NASA.

3 (2) NASA.—The term “NASA” means the Na-
4 tional Aeronautics and Space Administration.

5 **SEC. 202. NATIONAL AERONAUTICS AND SPACE ADMINIS-**
6 **TRATION.**

7 (a) SENSE OF CONGRESS.—It is the sense of Con-
8 gress that—

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

13 (2) NASA should undergo reorganization, alter-
14 ing its mission with a clearer focus, ridding itself of
15 extraneous responsibilities handled elsewhere within
16 the Federal Government or private industry, and
17 standardizing activities across the whole of NASA.

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

21 (c) PIONEERING DOCTRINE.—

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

24 (A) in section 20102—

25 (i) in subsection (d)—

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

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

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

8 “(1) The expansion of the human sphere of in-
9 fluence throughout the Solar System.

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

13 “(3) To create and prepare infrastructure pre-
14 cursors in support of the future use and develop-
15 ment of space by others.”;

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

18 “(e) PIONEERING DOCTRINE.—Congress declares
19 that the general welfare of the United States requires that
20 the unique competence in scientific and engineering sys-
21 tems of the Administration also be directed toward the
22 pioneering of space. The objectives of such pioneering
23 shall be to increase access to destinations in space, explore
24 the possible options for development at these destinations,
25 demonstrate the engineering feasibility of such develop-

1 ment, and transition those activities to Federal agencies
 2 outside of the Administration or persons or entities out-
 3 side of the Federal Government.”;

4 (iii) by striking subsection (f) and re-
 5 designating subsections (g) and (h) as sub-
 6 sections (f) and (g), respectively; and

7 (iv) in subsection (g) (as so redesign-
 8 nated), by striking “(g)” and inserting
 9 “(f)”;

10 (B) in section 20103—

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

13 “(1) AERONAUTICAL AND SPACE ACTIVITIES.—

14 The term ‘aeronautical and space activities’ means—

15 “(A) research into, and the solution of,
 16 problems of flight—

17 “(i) within the Earth’s atmosphere;

18 “(ii) to or from space through the
 19 Earth’s atmosphere; and

20 “(iii) beyond the Earth’s atmosphere;

21 “(B) the development, construction, test-
 22 ing, and operation for pioneering purposes of
 23 aeronautical and space vehicles; and

24 “(C) such other activities as may be re-
 25 quired for the pioneering of space.”; and

1 (ii) by adding at the end the fol-
2 lowing:

3 “(3) SPACE.—The term ‘space’ means the do-
4 main beyond the Earth’s atmosphere.”; and

5 (C) in section 20112—

6 (i) by striking subsection (b);

7 (ii) by striking “(a) PLANNING, DI-
8 RECTING, AND CONDUCTING AERO-
9 NAUTICAL AND SPACE ACTIVITIES.—”;
10 and

11 (iii) in paragraph (2), by striking “the
12 scientific community in planning scientific
13 measurements” and inserting “future uti-
14 lizers of space destinations, including com-
15 mercial entities, the scientific community,
16 and academia, in planning for measure-
17 ments”.

18 (2) REPORT.—

19 (A) IN GENERAL.—Not later than 90 days
20 after the date of enactment of this Act, the Ad-
21 ministrators shall enter into an agreement with
22 an independent entity outside of NASA to pre-
23 pare a report that—

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

1 neering Doctrine described in section
2 20102(e), United States Code, that should
3 be consolidated or downsized; and

4 (ii) identifies activities and assets of
5 NASA that are inconsistent with such Pio-
6 neering Doctrine and identifies which such
7 activities or assets should be—

8 (I) transferred to other Federal
9 agencies;

10 (II) privatized or otherwise trans-
11 ferred to commercial entities; or

12 (III) otherwise eliminated.

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

17 (C) ACTION BY ADMINISTRATOR.—It is the
18 sense of Congress that, not later than 30 days
19 after submitting the report described in sub-
20 paragraph (A), the Administrator should imple-
21 ment any recommendations of the report that
22 the Administrator is permitted by law to imple-
23 ment.

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

1 after receiving the report described in subpara-
2 graph (A), Congress should consider legislation
3 that is necessary to implement all appropriate
4 recommendations of such report.

5 (d) ENSURING CONTINUITY IN NASA LEADER-
6 SHIP.—

7 (1) ADMINISTRATOR.—Section 20111 of title
8 51, United States Code, is amended—

9 (A) in subsection (a)—

10 (i) by striking “ADMINISTRATOR.—
11 There is established” and inserting “AD-
12 MINISTRATOR.—

13 “(1) IN GENERAL.—There is established”;

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

16 (I) by inserting “, pursuant to
17 paragraph (2),” after “who shall be
18 appointed”; and

19 (II) by inserting “The term of
20 the Administrator shall be 5 years.”
21 after “and activities thereof.”; and

22 (iii) by adding at the end the fol-
23 lowing:

24 “(2) NOMINATIONS.—The President shall ap-
25 point the Administrator pursuant to paragraph (1),

1 from among the list of nominees provided by the
2 vacating Administrator and the commission estab-
3 lished in section 202(d)(2) of the American Space
4 Renaissance Act.”.

5 (2) COMMISSION.—

6 (A) ESTABLISHMENT.—There is estab-
7 lished a standing commission to be known as
8 the NASA Leadership and Advising Commis-
9 sion (in this paragraph referred to as the
10 “Commission”).

11 (B) DUTIES.—The Commission shall—

12 (i) provide to the President rec-
13 ommendations for nominees to serve as
14 Administrator of NASA each time there is
15 a vacancy in the office, in accordance with
16 section 20111(a) of title 51, United States
17 Code;

18 (ii) provide to Congress, NASA, the
19 Office of Management and Budget, and
20 the Office of Science and Technology Pol-
21 icy, an analysis of, and recommendations
22 for changes to, each long-term plan sub-
23 mitted by the Administrator pursuant to
24 subsection (e)(4); and

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

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

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

10 (ii) Four members shall be appointed
11 by the Speaker of the House of Represent-
12 atives.

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

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

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

20 (D) CHAIRPERSON.—If practicable and ap-
21 propriate, the Chairperson of the Commission
22 shall be a former Administrator or Deputy Ad-
23 ministrator of NASA selected by the other
24 members of the Commission. If the other mem-
25 bers determine that it is not practicable or ap-

1 appropriate, the members shall appoint an appro-
2 priate alternative.

3 (E) TERMS.—

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

9 (ii) TERMS OF INITIAL AP-
10 PPOINTEES.—Of the 4 initial members ap-
11 pointed by each of the officials listed in
12 clauses (i) through (v) of subparagraph
13 (C)—

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

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

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

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

22 (iii) VACANCIES.—Any member ap-
23 pointed to fill a vacancy occurring before
24 the expiration of the term for which the
25 member's predecessor was appointed shall

1 be appointed only for the remainder of that
2 term. A member may serve after the expi-
3 ration of that member's term until a suc-
4 cessor has taken office. A vacancy in the
5 Commission shall be filled in the manner
6 in which the original appointment was
7 made.

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

12 (G) POWERS.—

13 (i) HEARINGS AND SESSIONS.—The
14 Commission may, for the purpose of car-
15 rying out this paragraph, hold hearings, sit
16 and act at times and places, take testi-
17 mony, and receive evidence as the Commis-
18 sion considers appropriate.

19 (ii) OBTAINING OFFICIAL DATA.—The
20 Commission may secure directly from any
21 employee or officer of NASA information
22 necessary to enable the Commission to
23 carry out this paragraph. Upon request of
24 the Commission, and unless otherwise pro-
25 hibited by law, such employee or officer

1 shall furnish such information to the Com-
2 mission.

3 (iii) SUBPOENA POWER.—The Com-
4 mission may issue subpoenas requiring the
5 attendance and testimony of any witness
6 and the production of any evidence relating
7 to any matter which the Commission is
8 empowered to investigate under this para-
9 graph.

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

14 (I) TRAVEL EXPENSES.—Each member
15 shall receive travel expenses, including per diem
16 in lieu of subsistence, in accordance with appli-
17 cable provisions under subchapter I of chapter
18 57 of title 5, United States Code.

19 (J) MEETINGS.—

20 (i) INITIAL MEETING.—The first
21 meeting of the Commission shall occur not
22 later than 30 days after a quorum of mem-
23 bers has been appointed.

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

1 (I) not less than once per quar-
2 ter;

3 (II) not less than 30 days after
4 the date on which the Commission re-
5 ceives each long-term plan submitted
6 to the Commission pursuant to sub-
7 section (e)(4); and

8 (III) at the call of the Chair-
9 person.

10 (K) QUORUM.—11 members of the Com-
11 mission shall constitute a quorum.

12 (L) DIRECTOR AND STAFF.—To the extent
13 provided for in advance in appropriations Acts,
14 the Commission may appoint and fix the pay
15 rate of a Director, a Press Secretary, and not
16 more than 5 additional staff members, to sup-
17 port the duties of the Commission under this
18 paragraph.

19 (e) LONG-TERM PLANS.—

20 (1) IN GENERAL.—The Administrator shall de-
21 velop a 10-year plan and a 20-year plan in accord-
22 ance with this subsection.

23 (2) 20-YEAR PLAN.—The 20-year plan required
24 under this subsection shall outline broad goals for

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

3 (3) 10-YEAR PLAN.—The 10-year plan required
4 under this subsection shall provide specific objectives
5 and budget profiles, based on the broad goals out-
6 lined in the 20-year plan, for the 10-year period be-
7 ginning with the year in which the plan is developed.

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

14 (f) MULTI-YEAR FUNDING.—

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

19 (2) RULES ON APPROPRIATIONS.—

20 (A) IN GENERAL.—Notwithstanding any
21 other provision of law, beginning in fiscal year
22 2018, any amounts made available for NASA
23 shall be multi-year appropriations or no-year
24 appropriations.

1 (B) POINT OF ORDER.—In the House of
2 Representatives, it shall not be in order to con-
3 sider any provision of a general appropriations
4 Act, or any amendment thereto or conference
5 report thereon, providing appropriations for
6 NASA unless the funds appropriated therein
7 are multi-year or no-year appropriations. The
8 point of order provided under the previous sen-
9 tence may be waived if the Chairperson of the
10 Committee on Science, Space, and Technology
11 files a statement with the Speaker that the one-
12 year funding is appropriate for that reason.

13 (3) AUTHORIZATION OF APPROPRIATIONS.—

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

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

19 and

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

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

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

7 (ii) NASA infrastructure repair, main-
8 tenance, and upgrades.

9 (g) ACCOUNTABILITY.—

10 (1) PROGRAMS THAT EXCEED COST PROJEC-
11 TIONS.—

12 (A) CONGRESSIONAL OVERSIGHT.—The di-
13 rectorate head of any program of NASA, or the
14 head of any program of another agency for
15 which NASA is the acquisition or procurement
16 agent, that exceeds program life cost projec-
17 tions by less than 30 percent but not less than
18 15 percent shall, for each such fiscal year—

19 (i) be available to testify not less than
20 once before the Committee on Science,
21 Space, and Technology of the House of
22 Representatives and once before the Com-
23 mittee on Commerce, Science, and Trans-
24 portation of the Senate, if requested to do
25 so by such committees; and

1 (ii) ensure that staff of such program
2 are available to update the staff of such
3 committees on the status of the program
4 not less than once during each fiscal quar-
5 ter.

6 (B) CANCELLATION.—Any program of
7 NASA that exceeds program life cost projec-
8 tions by not less than 30 percent shall be can-
9 celled and the Administrator shall not expend
10 any additional funds on the program, other
11 than termination costs, unless Congress author-
12 izes continuation of the program by law not
13 later than 6 months after the end of the first
14 fiscal year in which the program first began to
15 exceed such cost projections by such percentage.

16 (2) AUTOMATIC REMOVAL OF ADMINIS-
17 TRATOR.—

18 (A) NASA INSPECTOR GENERAL RE-
19 PORT.—Not later than 6 months after the date
20 of enactment of this Act, the NASA Inspector
21 General shall submit to the Committee on
22 Science, Space, and Technology of the House of
23 Representatives, the Committee on Commerce,
24 Science, and Transportation of the Senate, the
25 President, the NASA Leadership and Advising

1 Commission, and the Administrator a report
2 recommending a mechanism for the automatic
3 removal of an Administrator who has failed to
4 achieve certain goals, which shall take into ac-
5 count—

6 (i) the number of programs of NASA
7 that exceed cost projections during the ten-
8 ure of the Administrator;

9 (ii) the number of programs of NASA
10 experiencing significant delays with respect
11 to targeted milestones, launches, or deploy-
12 ments during the tenure of the Adminis-
13 trator; and

14 (iii) lack of adherence to, or failure to
15 complete, benchmarks in the long-term
16 plans developed by the Administrator pur-
17 suant to subsection (e).

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

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

1 of such program as outlined in the Program Memo-
2 randum officially documenting the outcome of Key
3 Decision Point A, and for the purposes of this sub-
4 section subject to the concurrence of the Committee
5 on Appropriations and the Committee on Science,
6 Space, and Technology of the House of Representa-
7 tives and the Committee on Appropriations and the
8 Committee on Commerce, Science, and Transpor-
9 tation of the Senate.

10 (h) TRANSITION OF TECHNOLOGIES AND CAPABILI-
11 TIES.—NASA shall, whenever practicable and appro-
12 priate, transition technologies and capabilities to actors
13 outside of NASA, including individuals, corporations, aca-
14 demic institutions, and nonprofit organizations, to the ex-
15 tent that doing so will not threaten national security. Such
16 transfers shall be conducted in a transparent manner, and
17 no such transfer shall infringe on intellectual property
18 rights or other such clauses in NASA contracts.

19 (i) LIABILITY INSURANCE AND FINANCIAL RESPON-
20 SIBILITY REQUIREMENTS.—

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

24 “(g) LAUNCH SERVICES PROGRAM.—

1 “(1) LIABILITY INSURANCE AND FINANCIAL RE-
2 SPONSIBILITY REQUIREMENTS.—

3 “(A) GENERAL REQUIREMENTS.—A pro-
4 vider that enters into a contract with NASA for
5 a launch or reentry under the NASA Launch
6 Services Program shall obtain liability insur-
7 ance or demonstrate financial responsibility in
8 amounts to compensate for the maximum prob-
9 able loss from claims by—

10 “(i) a third party for death, bodily in-
11 jury, or property damage or loss resulting
12 from an activity carried out during launch
13 or reentry; and

14 “(ii) a Federal, State, or local govern-
15 ment against a person for damage or loss
16 to Federal, State, or local government
17 property resulting from an activity carried
18 out during launch or reentry.

19 “(B) AMOUNTS.—The Administrator shall
20 determine the amounts required under subpara-
21 graph (A) of this paragraph.

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

1 financial responsibility of more than the lesser
2 of—

3 “(i) for a claim described in—

4 “(I) subparagraph (A)(i),
5 \$500,000,000; or

6 “(II) subparagraph (A)(ii),
7 \$100,000,000; or

8 “(ii) the maximum liability insurance
9 available on the world market at reason-
10 able cost.

11 “(D) COVERAGE.—An insurance policy or
12 demonstration of financial responsibility under
13 this paragraph shall protect the following, to
14 the extent of their potential liability for involve-
15 ment in launch services or reentry services, at
16 no cost to the Government:

17 “(i) The Government and personnel,
18 contractors, and subcontractors of the Gov-
19 ernment.

20 “(ii) Contractors, subcontractors, and
21 customers of the provider.

22 “(iii) Contractors and subcontractors
23 of the customer.

24 “(iv) Government astronauts.

1 “(2) DETERMINATION OF MAXIMUM PROBABLE
2 LOSSES.—The Administrator shall determine the
3 maximum probable losses under paragraph (1)(A)(i)
4 and (ii) of this subsection associated with an activity
5 under a contract described in this subsection not
6 later than 90 days after a provider requires a deter-
7 mination and submits all information the Adminis-
8 trator requires. The Administrator shall amend the
9 determination as warranted by new information.

10 “(3) ANNUAL REPORT.—

11 “(A) DETERMINATIONS.—Not later than
12 November 15 of each year, the Administrator
13 shall submit to the Committee on Science,
14 Space, and Technology of the House of Rep-
15 resentatives and the Committee on Commerce,
16 Science, and Transportation of the Senate a re-
17 port on current determinations made under
18 paragraph (2) of this subsection related to all
19 contracts described in this subsection and the
20 reasons for the determinations.

21 “(B) ADJUSTMENTS.—Not later than May
22 15 of each year, the Administrator shall review
23 the amounts specified in paragraph (1)(C)(i) of
24 this subsection and submit a report to Congress
25 that contains proposed adjustments in the

1 amounts to conform with changed liability ex-
2 pectations and availability of insurance on the
3 world market. The proposed adjustment takes
4 effect 30 days after a report is submitted.

5 “(4) COLLECTION AND CREDITING PAY-
6 MENTS.—The Administrator shall collect a payment
7 owed for damage or loss to Government property
8 under NASA jurisdiction or control resulting from
9 an activity carried out under a contract described in
10 this subsection. The payment shall be credited to the
11 current applicable appropriation, fund, or account of
12 NASA.

13 “(5) FEDERAL JURISDICTION.—Any claim by a
14 third party or space flight participant for death,
15 bodily injury, or property damage or loss resulting
16 from an activity carried out under a contract de-
17 scribed in this subsection shall be the exclusive juris-
18 diction of the Federal courts.”.

19 (2) EFFECTIVE DATE.—The amendment made
20 by paragraph (1) shall take effect on October 1,
21 2019.

22 **SEC. 203. HUMAN MISSION TO MARS.**

23 (a) FINDINGS.—Congress finds the following:

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

1 (42 U.S.C. 18301 et seq.), Congress required NASA
2 to contract with the National Academies to perform
3 a study of human spaceflight.

4 (2) The National Research Council of the Na-
5 tional Academies released a report entitled “Path-
6 ways to Exploration: Rationales and Approaches for
7 a U.S. Program of Human Space Exploration” in
8 June of 2014. The report called for Mars to be the
9 “horizon goal” for human space exploration.

10 (3) NASA continues to request funding levels,
11 follow strategies, and pursue missions that the Na-
12 tional Research Council report identified as problem-
13 atic.

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

17 (5) Billions of dollars have been invested in the
18 Space Launch System and Orion capsule, which rep-
19 resent core elements of deep space exploration sys-
20 tems farthest along in development.

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

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

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

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

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

9 (4) NASA should utilize commercial assets,
10 when practicable and available, to support explo-
11 ration beyond Earth orbit, including to Mars.

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

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

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

22 (1) seek to secure specific investments in capa-
23 bilities and technologies needed for deep space explo-
24 ration; and

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

4 (f) STRATEGIC PLANNING.—

5 (1) LANDING ON MARS.—The first 20-year plan
6 required under section 202(e)(1) shall designate a 5-
7 year range by which NASA intends for American as-
8 tronauts to land on the surface of Mars. NASA shall
9 include an update of this range in any subsequent
10 20-year plan developed before such landing occurs.

11 (2) NATIONAL RESEARCH COUNCIL CON-
12 CERNs.—The first 10-year plan required under sec-
13 tion 202(e)(1) shall address the concerns raised by
14 the National Research Council report described in
15 subsection (a)(3), including concerns regarding
16 budget projections, the launch frequency of the
17 Space Launch System, and the efficacy of the Aster-
18 oid Redirect Mission. Specifically, the plan shall—

19 (A) provide for the cancellation of the As-
20 teroid Redirect Mission, unless NASA can com-
21 pellingly demonstrate the mission's utility;

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

1 (C) explain how NASA will look at all op-
2 tions to maximize the utility of early launches
3 of the Space Launch System, including pay-
4 loads (such as pressurized habitable modules)
5 and experiments.

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

11 (g) RULE OF CONSTRUCTION.—Nothing in this sec-
12 tion shall be construed to supersede NASA’s long-term
13 goal of human space flight and exploration, as provided
14 in section 202(a) of the National Aeronautics and Space
15 Administration Authorization Act of 2010 (42 U.S.C.
16 18312(a)), to expand permanent human presence beyond
17 low-Earth orbit and to do so, where practical, in a manner
18 involving international partners.

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

20 (a) SENSE OF CONGRESS.—It is the sense of Con-
21 gress that—

22 (1) the United States should maintain a contin-
23 uous human presence in low-Earth orbit; and

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

1 tats necessary for the purpose of housing Govern-
2 ment astronauts and science experiments, should, to
3 the maximum extent practicable, be the purview of
4 the commercial sector.

5 (b) INTERNATIONAL SPACE STATION.—

6 (1) PLAN.—NASA shall formulate a plan for
7 the remaining life of the International Space Station
8 and continued human presence in low-Earth orbit,
9 which shall be included in the first 10-year plan re-
10 quired under section 202(e)(1) and any subsequent
11 10-year plans as necessary. The plan required under
12 this paragraph shall—

13 (A) describe how NASA intends to maxi-
14 mize the scientific utilization of the Inter-
15 national Space Station;

16 (B) include specific objectives, such as as-
17 tronaut missions and science experiments, to be
18 carried out during the remaining life of the
19 International Space Station;

20 (C) explore options for turning over the
21 International Space Station to commercial oper-
22 ators;

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

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

4 (F) explore options for NASA's continued
5 involvement in the International Space Station
6 in the event it is turned over to commercial op-
7 erators; and

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

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

14 (3) TRANSITION STRATEGY.—NASA shall im-
15 plement a transition strategy for continued human
16 presence in low-Earth orbit identified in the plan
17 pursuant to paragraph (1)(D) as soon as NASA de-
18 termines that commercial habitats meet the require-
19 ments published pursuant to subsection (c)(1) and a
20 demonstration has been successfully completed pur-
21 suant to subsection (c)(2).

22 (c) COMMERCIAL HABITATS.—

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

1 cial Space Transportation Advisory Committee, de-
2 velop and publish the requirements it considers nec-
3 essary for commercial contractors to provide on-orbit
4 habitats to meet the human exploration and science
5 missions of NASA, including housing Government
6 astronauts and conducting scientific experiments.

7 (2) PILOT PROGRAM.—Not later than December
8 31, 2018, NASA shall establish a Commercial Habi-
9 tat Pilot Program to demonstrate the viability of
10 using commercially built on-orbit habitats that meet
11 the requirements published pursuant to paragraph
12 (1). Under the Pilot Program, NASA shall enter
13 into not less than 1 competitively bid agreement
14 with a private sector entity to demonstrate the via-
15 bility and capabilities of crewed commercial low
16 Earth orbit platforms. Any such an agreement shall
17 include a commitment by the commercial partner to
18 fund the development and construction of the private
19 sector low-Earth orbit platform. If the private sector
20 entity is successful in funding the fabrication of such
21 a platform, the agreement with NASA shall—

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

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

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

8 (1) IN GENERAL.—NASA shall continue to uti-
9 lize partnerships with commercial entities for resup-
10 ply and crew movement for as long as the United
11 States maintains a human presence in low-Earth
12 orbit.

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

19 (e) PRIORITY FOR UNITED STATES ENGINES.—

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

1 (2) DEFINITION.—For purposes of this sub-
2 section, the term “engine built in the United States”
3 means an engine which meets the requirements of
4 the Buy American Act (41 U.S.C. 8301 et seq.).

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

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

13 **SEC. 205. SPACE DEBRIS REMEDIATION.**

14 (a) SENSE OF CONGRESS.—It is the sense of Con-
15 gress that—

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

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

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

3 (3) the United States Government does not cur-
4 rently have a coherent plan for developing the capa-
5 bilities for space debris remediation.

6 (b) SPACE DEBRIS REMEDIATION.—Not later than
7 1 year after the date of enactment of this Act, the Admin-
8 istrator, working in collaboration with the Department of
9 Defense, the National Oceanic and Atmospheric Adminis-
10 tration, and the Federal Aviation Administration, shall
11 submit to Congress a report on the feasibility of remedi-
12 ating orbital space debris to reduce the collision risk for
13 future space activities. The report shall address factors
14 that include—

15 (1) an assessment of the types of orbital space
16 debris and orbital altitudes that are the highest pri-
17 ority for remediation;

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

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

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

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

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

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

8 Not later than 1 year after the date of enactment
9 of this Act, the Comptroller General shall submit to the
10 Committee on Science, Space, and Technology of the
11 House of Representatives and the Committee on Com-
12 merce, Science, and Transportation of the Senate a report
13 on the feasibility of NASA insuring its Class C and Class
14 D payloads and cargo, including—

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

18 (A) at the time when the payload is de-
19 ployed into its intended orbit; or

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

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

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

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

4 **TITLE III—COMMERCIAL**

5 **SEC. 301. OFFICE OF COMMERCIAL SPACE TRANSPOR-** 6 **TATION.**

7 (a) FINDINGS.—Congress finds the following:

8 (1) The commercial space industry is rapidly
9 expanding and holds enormous potential for innova-
10 tion and economic growth for the United States.

11 (2) The Office of Commercial Space Transpor-
12 tation of the Federal Aviation Administration plays
13 a critical role in facilitating commercial space activi-
14 ties, and inadequate funding could hinder the indus-
15 try.

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

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

20 “(1) \$43,200,000 for fiscal year 2017;

21 “(2) \$55,500,000 for fiscal year 2018;

22 “(3) \$66,000,000 for fiscal year 2019;

23 “(4) \$80,500,000 for fiscal year 2020; and

24 “(5) \$99,000,000 for fiscal year 2021.”;

1 (2) by striking “There are” and inserting “(a)
2 There are”; and

3 (3) by adding at the end the following:

4 “(b) The Assistant Secretary for Commercial Space
5 Transportation shall serve as the Associate Administrator
6 for Commercial Space Transportation.”.

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

10 (1) in paragraph (1) by striking “6” and insert-
11 ing “7”; and

12 (2) in paragraph (1)(A) by inserting “an As-
13 sistant Secretary for Commercial Space Transporta-
14 tion,” after “an Assistant Secretary for Research
15 and Technology,”.

16 (d) WORKLOAD METRIC.—

17 (1) IN GENERAL.—Not later than 120 days
18 after the date of enactment of this Act, the Assist-
19 ant Secretary for Commercial Space Transportation
20 shall develop a metric for the workload of the Office.

21 (2) CONTENTS OF METRIC.—In developing the
22 metric required under paragraph (1), the Assistant
23 Secretary shall take into consideration the conclu-
24 sions and recommendations contained in the report
25 by the Government Accountability Office entitled

1 “Federal Aviation Administration: Commercial
2 Space Launch Industry Developments Present Multiple
3 Challenges” published in August 2015.

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

6 (A) in paragraph (1) by striking “and” at
7 the end;

8 (B) in paragraph (2) by striking the period
9 at the end and inserting “; and”; and

10 (C) by adding at the end the following:

11 “(3) uses the workload metric developed under
12 section 301(c) of the American Space Renaissance
13 Act.”.

14 (e) REGULATIONS REQUIRED.—

15 (1) Not later than 1 year after the date of en-
16 actment of this Act, the Assistant Secretary shall
17 issue a notice of proposed rulemaking to—

18 (A) update the regulations that are under
19 the authority of the Office contained in part
20 400 of title 14, Code of Federal Regulations,
21 prioritizing the regulations in subchapter C of
22 such part, to move to a performance-based ap-
23 proach to regulating the United States commer-
24 cial space industry; and

1 (B) carry out this Act and the amend-
2 ments made by this Act.

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

8 **SEC. 302. OFFICE OF SPACEPORTS.**

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

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

13 “(26) ‘spaceport’ means any facility directly re-
14 lated to enabling spacecraft to launch or reentry, but
15 only if such facility is located at, or in close prox-
16 imity to, a launch site or reentry site that is a
17 launch site operator licensed by the Federal Aviation
18 Administration.”; and

19 (2) by adding at the end the following:

20 **“§ 50924. Office of Spaceports**

21 “(a) FINDING.—Congress finds that a robust net-
22 work of space transportation infrastructure, including
23 commercial spaceports, is vital to the growth of the domes-
24 tic commercial space industry.

25 “(b) ESTABLISHMENT.—

1 “(1) IN GENERAL.—The Secretary shall estab-
2 lish, within the Office of Commercial Space Trans-
3 portation, an Office of Spaceports to support, pro-
4 mote, enable, establish, and oversee domestic com-
5 mercial spaceports.

6 “(2) RECOGNITION.—In carrying out paragraph
7 (1), the Secretary shall recognize the unique needs
8 and distinctions of spaceports that launch to orbit
9 and those that are involved in suborbital launch ac-
10 tivities.

11 “(c) DIRECTOR.—The Assistant Secretary for Com-
12 mercial Space Transportation shall designate a Director
13 of the Office of Spaceports.”.

14 (b) SPACE TRANSPORTATION INFRASTRUCTURE
15 MATCHING GRANTS.—

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

19 “(7) ‘Secretary of Transportation’ and ‘Sec-
20 retary’ (as used in reference to the Secretary of
21 Transportation) mean the Secretary of Transpor-
22 tation, acting through the Director of the Office of
23 Spaceports.”.

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

4 “(c) FUNDING.—Of the amounts made available to
5 the Secretary under section 48103 of title 49, one-half of
6 1 percent shall be set aside for project grants under this
7 chapter.”.

8 (c) CONFORMING AMENDMENTS.—

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

“50924. Office of Spaceports.”.

12 (d) GAO STUDY AND REPORT.—

13 (1) STUDY.—The Comptroller General of the
14 United States shall conduct a study regarding space-
15 port activities carried out pursuant to chapter 509
16 of title 51, United States Code, including—

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

20 (B) the adaptation of compliance require-
21 ments of the Airport Improvement Program for
22 the unique operation of spaceports; and

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

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

6 (3) REPORT.—Not later than 1 year after the
7 date of enactment of this Act, the Comptroller Gen-
8 eral shall submit to Congress a report containing the
9 study required under paragraph (1).

10 (e) DOT REPORT.—Not later than 1 year after the
11 date of enactment of this Act, the Secretary, in consulta-
12 tion with the Secretary of Defense, the Administrator of
13 the National Oceanic and Atmospheric Administration,
14 and the Administrator of the National Aeronautics and
15 Space Administration, shall submit to Congress a report
16 that—

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

19 (2) analyzes whether additional domestic space-
20 ports, particularly spaceports capable of launch to
21 polar orbits, are necessary to satisfy some of the de-
22 mand; and

23 (3) outlines any potential locations for such
24 spaceports.

1 (f) SPACEPORT DEVELOPMENT.—If the report under
2 subsection (d) contains a recommendation of a potential
3 location for a spaceport, the Assistant Secretary for Com-
4 mercial Space Transportation may collaborate with the ap-
5 plicable State government, local government, or private in-
6 dustry representing the area identified to facilitate the es-
7 tablishment and licensing of a spaceport.

8 **SEC. 303. SITUATIONAL AWARENESS OF OBJECTS IN EARTH**
9 **ORBIT.**

10 (a) FINDINGS.—Congress finds the following:

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

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

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

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

1 (b) AMENDMENT TO TITLE 51.—

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

5 **“§ 50925. Information and services for situation**
6 **awareness of objects in Earth orbit**

7 “(a) IN GENERAL.—The Secretary of Transpor-
8 tation—

9 “(1) may—

10 “(A) obtain data and information from an
11 entity for situational awareness of an object in
12 Earth orbit and the state of the space environ-
13 ment; and

14 “(B) provide information and services for
15 situational awareness of an object in Earth
16 orbit and the state of the space environment to
17 an entity if the Secretary determines that pro-
18 viding such information or services contributes
19 to the public health and safety, the safety of
20 property, or the safety of persons in outer space
21 and is consistent with the national security and
22 foreign policy interests of the United States;
23 and

24 “(2) shall establish a space situational aware-
25 ness Space Awareness Advisory Committee that con-

1 sists of commercial, academic, international, and
2 government space situational awareness data and
3 analysis experts to advise the Secretary on all mat-
4 ters related to obtaining, and disseminating to stake-
5 holders, data and information regarding objects in
6 Earth orbit and the state of the space environment,
7 in order to ensure the protection of sensitive na-
8 tional security information and intellectual property
9 while maximizing the accuracy of data and informa-
10 tion to improve safety, efficiency, and innovation.

11 “(b) ENTITIES.—The Secretary may provide infor-
12 mation and services under subsection (a) to, and may ob-
13 tain data and information under subsection (a) from, any
14 entity, including any of the following:

15 “(1) A State.

16 “(2) A political subdivision of a State.

17 “(3) Any other entity of the United States Gov-
18 ernment.

19 “(4) The government of a foreign country.

20 “(5) A private or quasi-governmental entity or-
21 ganized under the laws of the United States or a
22 foreign country.

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

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

3 “(1) agrees not to transfer any data or tech-
4 nical information received under the agreement, in-
5 cluding the analysis of data, to any other entity
6 without the express approval of the Secretary; and

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

9 “(d) PROCEDURES.—The Secretary shall, in con-
10 sultation with the Space Awareness Advisory Committee,
11 establish procedures to carry out this section.

12 “(e) CONTRACTOR.—The Secretary shall, to the ex-
13 tent practicable, provide information or services under this
14 section through a contractor.

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

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

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

4 “(h) IMPLEMENTATION PLAN.—

5 “(1) IN GENERAL.—Not later than 6 months
6 after the date of enactment of this section, the Sec-
7 retary of Transportation, in coordination with the
8 Secretary of Defense, the Secretary of State, the
9 Secretary of Commerce, the Administrator of the
10 National Aeronautics and Space Administration, the
11 Director of National Intelligence, and the heads of
12 such other Government departments and agencies as
13 the Secretary considers appropriate, shall develop an
14 implementation plan to establish the capability to
15 provide information and services under subsection
16 (a).

17 “(2) SUBMISSION.—The Secretary shall submit
18 the implementation plan to the following congress-
19 sional committees:

20 “(A) The Select Committee on Intelligence
21 of the Senate.

22 “(B) The Permanent Select Committee on
23 Intelligence of the House of Representatives.

24 “(C) The Committee on Armed Services of
25 the Senate.

1 “(D) The Committee on Armed Services of
2 the House of Representatives.

3 “(E) The Committee on Commerce,
4 Science, and Transportation of the Senate.

5 “(F) The Committee on Transportation
6 and Infrastructure of the House of Representa-
7 tives.

8 “(G) The Committee on Science, Space,
9 and Technology of the House of Representa-
10 tives.

11 “(3) EXECUTION.—Not later than 1 year after
12 the submission of the implementation plans under
13 paragraph (2), the Secretary of Transportation, in
14 coordination with the Secretary of Defense, the Sec-
15 retary of State, the Secretary of Commerce, the Ad-
16 ministrator of the National Aeronautics and Space
17 Administration, the Director of National Intel-
18 ligence, and the heads of such other Government de-
19 partments and agencies as the Secretary considers
20 appropriate, shall initiate the implementation plan,
21 including the testing of the capabilities necessary to
22 carry out the objectives in subsection (a)(1).”.

23 (2) CONFORMING AMENDMENTS.—

1 (A) The analysis for chapter 509 of title
2 51, United States Code, is amended by adding
3 at the end the following:

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

4 (B) Section 50917(a) of such title is
5 amended by inserting “or of an agreement de-
6 scribed in section 50924(c)” before the period
7 at the end.

8 **SEC. 304. SPACE TRAFFIC MANAGEMENT.**

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

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

13 “(27) ‘space traffic management’ means a set
14 of technical and regulatory provisions and processes
15 used to oversee, coordinate, regulate, and promote
16 safe and responsible space activities.”; and

17 (2) by adding at the end the following new sec-
18 tion:

19 **“§ 50926. Space traffic management**

20 “(a) DESIGNATION.—Not later than September, 30,
21 2020, the Secretary of Transportation, in coordination
22 with the Secretary of Defense, the Secretary of State, the
23 Secretary of Commerce, the Administrator of the National
24 Aeronautics and Space Administration, the Director of

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

6 “(b) ACTIVITIES.—In carrying out space traffic man-
7 agement activities and services, the lead agency designated
8 under subsection (a)—

9 “(1) shall use the information and services for
10 situational awareness of objects in Earth orbit col-
11 lected under section 50925; and

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

17 “(c) PROCEDURES.—Not later than September 30,
18 2020, the lead agency designated under subsection (a)
19 shall, by performance-based regulation, establish proce-
20 dures to prevent the collision of objects on orbit. Such pro-
21 cedures shall clearly define the rationales for actions taken
22 by the lead agency under subsection (b) and the specific
23 steps the lead agency will follow to reach any decisions.
24 Such rationales and steps shall be clearly communicated

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

3 “(1) Compelling the movement of space objects.

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

7 “(3) Requiring the placement of tracking de-
8 vices on all objects launched into space.

9 “(4) Restricting unmaneuverable satellites from
10 specific, highly congested orbital regions.”.

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

“50926. Space traffic management.”.

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

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

1 eral Aviation Administration Office of Air Traffic Organi-
2 zation nor by any other entity with responsibility for air
3 traffic control.

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

12 (f) MEETING OF NATIONS.—

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

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

21 (A) work in coordination with the Sec-
22 retary of Defense, the Secretary of Transpor-
23 tation, the Secretary of Commerce, the Admin-
24 istrator of the National Aeronautics and Space
25 Administration, the Director of National Intel-

1 ligence, and the heads of such other Govern-
2 ment departments and agencies as the Sec-
3 retary determines appropriate; and

4 (B) when practicable, use existing multilat-
5 eral mechanisms such as the United Nations
6 Committee on the Peaceful Uses of Outer
7 Space.

8 **SEC. 305. SPACE-BASED DATA.**

9 (a) FINDINGS.—Congress finds the following:

10 (1) The pace of development of new commercial
11 space technologies and markets creates a beneficial
12 opportunity for improving all space programs spon-
13 sored by the United States Government.

14 (2) Industry is developing smaller, more afford-
15 able satellites which can be deployed in distributed
16 constellations and enables cheaper launch services.

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

19 (b) SENSE OF CONGRESS.—It is the sense of Con-
20 gress that all appropriate Federal agencies should explore
21 how to take immediate advantage of the continued growth
22 of space technologies, data, products, infrastructure, and
23 services made available for commercial, market driven
24 purposes, and should further establish programs to en-
25 courage the emergence of new commercial capabilities.

1 (c) TREATMENT OF COMMERCIAL SPACE-BASED
2 WEATHER DATA.—Not later than 90 days after the date
3 of enactment of this Act, and consistent with United
4 States law and the National Space Policy issued June 28,
5 2010, the Administrator of the National Oceanic and At-
6 mospheric Administration shall promulgate specific rules
7 regarding the Administration’s treatment of weather data
8 acquired from commercial space-based systems with re-
9 spect to Resolution 40 of the World Meteorological Orga-
10 nization. Such rules shall—

11 (1) ensure that the National Oceanic and At-
12 mospheric Administration does not release more
13 than the minimum amount of data required under
14 the Resolution; and

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

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

1 (1) an evaluation of how emerging capabilities
2 in industry can provide new or alternative architec-
3 tures for Federal Earth science missions that rou-
4 tinely collect data about atmospheric, oceanic, or ter-
5 restrial phenomena;

6 (2) an evaluation of how emerging capabilities
7 in industry can provide new in-space platforms and
8 services for affordable in-space technology dem-
9 onstration, new sensor and instrument development,
10 and other applications; and

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

14 **SEC. 306. DEPARTMENT OF COMMERCE SPACE-RELATED**
15 **ACTIVITIES.**

16 (a) REPORT.—

17 (1) IN GENERAL.—Not later than 180 days
18 after the date of enactment of this Act, the Sec-
19 retary of Commerce shall provide to Congress a re-
20 port on feasibility and benefits of reorganizing por-
21 tions of the Department to better coordinate and
22 support its space-related economic and regulatory
23 activities.

24 (2) OBJECTIVES.—Objectives of such reorga-
25 nization include—

1 (A) stronger Department of Commerce
2 leadership in interagency functions where space
3 commerce activities are either regulated or re-
4 viewed; and

5 (B) bringing the benefits of space-based
6 economic activities more directly to the atten-
7 tion of the Secretary.

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

16 (b) PRIOR COMMENT.—Prior to the submission of the
17 report to Congress, the Secretary shall allow for the Advi-
18 sory Committee on Commercial Remote Sensing to com-
19 ment on the draft report. Such comments shall be trans-
20 mitted to Congress along with the report.

21 **SEC. 307. COMMERCIAL REMOTE SENSING LICENSING RE-**
22 **FORM.**

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

1 (1) The process for licensing commercial remote
2 sensing under section 60121 of title 51, United
3 States Code, should be reformed to allow license ap-
4 plicants to understand the legitimate and identifiable
5 technical, national security, or foreign policy issues
6 being considered and which specific department or
7 agency is considering them, in an established, re-
8 sponsive timeline.

9 (2) In order to protect United States leadership
10 and commercial viability in remote sensing tech-
11 nologies, the Federal Government should not limit
12 commercial entities from providing remote sensing
13 capabilities or data products that are already offered
14 or available in the international marketplace.

15 (3) Before the Director of Commercial Remote
16 Sensing Regulatory Affairs denies a license applica-
17 tion for, or places any restrictions on, a remote sens-
18 ing license, the Director should take into account
19 mitigation procedures that are in place under law,
20 regulation, or contract to protect national security.

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

24 “(c) DEADLINE FOR ACTION ON APPLICATION.—

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

5 “(2) FIRST EXTENDED REVIEW PERIOD.—If
6 the Secretary determines that additional time is nec-
7 essary, the Secretary may extend the 60-day review
8 period for a license application by not more than 30
9 days.

10 “(3) SECOND EXTENDED REVIEW PERIOD.—
11 The Secretary may extend the extended review pe-
12 riod for a license application provided in paragraph
13 (2) by not more than an additional 30 days only if
14 the Secretary of Defense or the Director of National
15 Intelligence determines that such an extension is
16 necessary due to national security concerns. The
17 Secretary may not extend the extended review period
18 an additional 30 days if the decision for extension is
19 not made within 3 days of the expiration of the re-
20 view period described in paragraph (2).”.

21 (c) RATIONALE FOR DENIAL.—Section 60121 of title
22 51, United States Code, is amended by adding at the end
23 the following:

24 “(f) RATIONALE FOR DENIAL.—

1 “(1) DENIAL PAPERWORK.—In any case in
2 which the Secretary denies a license under this sub-
3 chapter, the Secretary shall provide the applicant
4 with a copy of the denial within 30 days of the de-
5 nial, which shall identify any other Federal entity
6 with which the Secretary consulted in making the
7 decision. Subject to paragraph (2), the copy of the
8 denial shall include a clearly articulated rationale for
9 the denial.

10 “(2) CLASSIFIED INFORMATION.—If the ration-
11 ale for a denial described in paragraph (1) includes
12 classified information, the Secretary shall provide to
13 the applicant all such information for which the li-
14 cense applicant has the required security clearance.

15 “(3) SUBMISSION TO CONGRESS.—Not later
16 than 30 days after a license is denied under this
17 subchapter, the Secretary shall submit to Congress
18 a copy of the denial and the clearly articulated ra-
19 tionale for the denial, including all classified infor-
20 mation.”.

21 (d) RETROACTIVE LICENSING RESTRICTIONS.—Com-
22 mercial remote sensing licensing restrictions shall only be
23 changed retroactively for national security issues certified
24 by the Director of National Intelligence. Should a retro-
25 active change occur, the affected actors shall be com-

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

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

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

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

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

19 (f) REGULATIONS.—

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

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

4 (A) the type of entity applying for a li-
5 cense, such as an academic institution or com-
6 mercial entity;

7 (B) the intended purpose of the license,
8 such as conducting research or developing oper-
9 ational constellations; and

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

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

16 **SEC. 308. WEATHER.**

17 (a) COMMERCIAL SPACE-BASED DATA BUYS.—Be-
18 ginning in fiscal year 2018 and each fiscal year thereafter,
19 the Administrator of the National Oceanic and Atmos-
20 pheric Administration shall include in its annual budget
21 request a line item for commercial space-based data buys.

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

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

9 (c) AUTHORIZATION.—For the purposes of commer-
10 cial space-based data buys to meet mission requirements
11 of the National Environmental Satellite, Data, and Infor-
12 mation Service, there are authorized to be appropriated—

- 13 (1) \$15,000,000 for fiscal year 2017;
- 14 (2) \$30,000,000 for fiscal year 2018;
- 15 (3) \$55,000,000 for fiscal year 2019;
- 16 (4) \$90,000,000 for fiscal year 2020; and
- 17 (5) \$130,000,000 for fiscal year 2021.

18 **SEC. 309. AMERICAN SPACE COMPETITIVENESS.**

19 (a) ENHANCED PAYLOAD REVIEW AND DETERMINA-
20 TION.—

21 (1) SENSE OF CONGRESS.—It is the sense of
22 Congress that section 50904 of title 51, United
23 States Code, provides the Secretary of Transpor-
24 tation with the authorities necessary to meet the ob-
25 ligations of the United States under the Treaty on

1 Principles Governing the Activities of States in the
2 Exploration and Use of Outer Space, Including the
3 Moon and Other Celestial Bodies, done at Wash-
4 ington, London, and Moscow on January 27, 1967,
5 commonly known as the Outer Space Treaty of
6 1967.

7 (2) REGULATIONS REQUIRED.—Not later than
8 1 year after the date of enactment of this Act, the
9 Assistant Secretary for Commercial Space Transpor-
10 tation shall issue such regulations as are necessary
11 to provide for an enhanced review and determination
12 process for payloads and associated activities after
13 deployment pursuant to a license issued under chap-
14 ter 509 of title 51, United States Code. Such proc-
15 ess shall provide for the following:

16 (A) The Assistant Secretary for Commer-
17 cial Space Transportation shall act as the final
18 issuer of a launch or reentry license.

19 (B) Review and determination by the As-
20 sistant Secretary, with enhanced appropriate
21 coordination with and participation by the De-
22 partment of State, the Department of Defense,
23 the Department of Commerce, NASA, the Of-
24 fice of the Director of National Intelligence,

1 and other Federal agencies, consistent with ap-
2 plicable law.

3 (C) Evaluation of disclosures from a pay-
4 load owner or operator sufficient to determine
5 if review and determination is necessary for a
6 specific payload or payload class, and if review
7 and determination is found necessary—

8 (i) approval or denial of the planned
9 activities associated with the deployed pay-
10 load within 60 days after submission by
11 the payload owner or operator, with ap-
12 proval deemed if the Assistant Secretary
13 does not reach a decision before the end of
14 such period;

15 (ii) establishment of specific condi-
16 tions, if necessary, that ensure the deploy-
17 ment of the payload and associated activi-
18 ties—

19 (I) are consistent with the inter-
20 national treaty obligations of the
21 United States;

22 (II) do not harm the national se-
23 curity interests of the United States;

24 (III) do not result in harmful in-
25 terference with approved and oper-

1 ating payloads and associated activi-
2 ties; and

3 (IV) do not harm historic arti-
4 facts;

5 (iii) provision to the payload owner or
6 operator of a clearly articulated rationale,
7 in any case in which the Assistant Sec-
8 retary for Commercial Space Transpor-
9 tation denies or intends to deny a launch
10 or reentry license application due to the
11 nature of the deployed payload and associ-
12 ated activities, that—

13 (I) shall not prejudice the Assist-
14 ant Secretary in a subsequent review
15 of the submission with remedies ad-
16 dressing the rationale; and

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

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

23 (I) inform the Assistant Sec-
24 retary of any material changes to the

1 payload or any associated activities
2 prior to launch; and

3 (II) report to the Assistant Sec-
4 retary any material anomalies or de-
5 partures from the submitted plan dur-
6 ing the course of operations; and

7 (v) penalties for noncompliance with
8 any conditions set forth in a license issued
9 for the deployment of the payload and as-
10 sociated activities, which may include—

11 (I) a maximum civil penalty of
12 \$1,000,000, that shall be adjudicated
13 in district courts of the United States;
14 and

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

19 (3) EXEMPTIONS.—The following payloads, or
20 classes of payload, and associated activities are ex-
21 empt from any regulations issued pursuant to this
22 subsection:

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

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

3 (B) A mission conducted for or with 1 or
4 more Federal agencies, and determined to be
5 subject to sufficient supervision by the en-
6 hanced interagency review process established
7 under paragraph (2)(B).

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

10 (1) by adding at the end the following new sec-
11 tion:

12 **“§ 50924. Exemption from non-space transportation**
13 **vehicle regulations**

14 “No vehicle design or mission holding a permit or li-
15 cense under this chapter for purposes of space transpor-
16 tation shall be subject to any regulations promulgated by
17 the Federal Aviation Administration for purposes of regu-
18 lating non-space transportation vehicles.”; and

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

“50924. Exemption from non-space transportation vehicle regulations.”.

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

23 (1) by adding at the end the following new sec-
24 tion:

1 **“§ 50507. Prize for commercial space activities**

2 “(a) ESTABLISHMENT.—The Assistant Secretary for
3 Commercial Space Transportation shall establish a prize
4 for certain space-related activities carried out by a United
5 States-owned commercial entity for activities under a li-
6 cense to operate space transportation under chapter 509
7 of this title.

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

11 “(1) Operation of space stations beyond low-
12 Earth orbit housing space flight participants or sci-
13 entific experiments.

14 “(2) Lunar missions.

15 “(3) Asteroid missions.

16 “(4) Mars missions.

17 “(5) Debris clean up and salvage.

18 “(6) Point-to-point missions on Earth.

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

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

“50507. Prize for commercial space activities.”.

1 (d) LIABILITY INSURANCE AND FINANCIAL RESPON-
2 SIBILITY REQUIREMENTS.—Section 50914 of title 51,
3 United States Code, is amended—

4 (1) in subsection (a)(1)—

5 (A) the matter preceding subparagraph

6 (A) by inserting “and property” after “obtain
7 liability”; and

8 (B) in subparagraph (B)—

9 (i) by inserting “, State, or municipal
10 government” after “United States Govern-
11 ment”; and

12 (ii) by striking “Government prop-
13 erty” and inserting “United States Gov-
14 ernment, State, or municipal property, as
15 applicable,”; and

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

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

1 or a reentry involving a facility or personnel of a Federal,
2 State, or municipal government. The Secretary may not
3 relieve a Federal, State, or municipal government of liabil-
4 ity under this subsection for death, bodily injury, or prop-
5 erty damage or loss resulting from the willful misconduct
6 of the Federal, State, or municipal government or its
7 agents.”.

8 (e) CREDIT FOR PAYLOADS LAUNCHED BY DOMES-
9 TIC LAUNCH PROVIDERS.—

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

14 **“SEC. 45S. SPACE PAYLOADS LAUNCHED BY DOMESTIC**
15 **LAUNCH PROVIDERS.**

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

23 “(b) DOMESTIC LAUNCH PROVIDER.—The term ‘do-
24 mestic launch provider’ means a domestic C corporation
25 or partnership in the trade or business of providing launch

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

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

8 (2) CREDIT MADE PART OF GENERAL BUSINESS
9 CREDIT.—Subsection (b) of section 38 of such Code
10 is amended by striking “plus” at the end of para-
11 graph (35), by striking the period at the end of
12 paragraph (36) and inserting “, plus”, and by add-
13 ing at the end the following new paragraph:

14 “(37) the space payload credit determined
15 under section 45S(a).”.

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

“Sec. 45S. Space payloads launched by domestic launch providers.”.

20 (4) EFFECTIVE DATE.—The amendments made
21 by this subsection shall apply to taxable years begin-
22 ning after the date of the enactment of this Act.

23 (f) STUDY ON LIFTING CERTAIN LAUNCH RESTRIC-
24 TIONS.—

1 (1) IN GENERAL.—Prior to any decision by the
2 United States Trade Representative to lift a restric-
3 tion on a commercial company utilizing an Indian
4 launch vehicle, the United States Trade Representa-
5 tive shall—

6 (A) notify the Comptroller General of the
7 United States of the intent to lift such restric-
8 tion; and

9 (B) allow for a public 30-day comment pe-
10 riod, beginning not earlier than the date of the
11 submission of the study under paragraph (2),
12 on the proposed decision and the results of such
13 study.

14 (2) STUDY.—Not later than 30 days after re-
15 ceiving a notification under paragraph (1), the
16 Comptroller General of the United States shall sub-
17 mit to Congress and the United States Trade Rep-
18 resentative a study on the ramifications of lifting
19 such restriction on the domestic launch industry.

20 (g) LOAN GUARANTEE PROGRAM.—

21 (1) ESTABLISHMENT.—The Secretary of Com-
22 merce shall establish a program to make loan guar-
23 antees to eligible entities to carry out eligible activi-
24 ties.

1 (2) OBJECTIVES.—The objectives of the pro-
2 gram established under paragraph (1) are—

3 (A) to promote the creation of jobs in the
4 United States space sector, including in manu-
5 facturing, operations, and construction; and

6 (B) to encourage startup companies.

7 (3) ELIGIBLE ACTIVITIES.—

8 (A) IN GENERAL.—The Secretary, in con-
9 sultation with the Secretary of Transportation,
10 the Administrator of the National Aeronautics
11 and Space Administration, the Director of Na-
12 tional Intelligence, and the Secretary of De-
13 fense, shall develop a list of activities that may
14 qualify for a loan guarantee under this sub-
15 section.

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

19 (i) Manufacturing—

20 (I) satellites;

21 (II) space transportation vehicles;

22 and

23 (III) habitats.

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

1 as control centers and other ground sta-
2 tions.

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

6 (iv) Technology research and develop-
7 ment activities determined by the Sec-
8 retary to have the potential to advance the
9 state of space-related technology in the
10 United States.

11 (4) ELIGIBLE ENTITY DEFINED.—The term
12 “eligible entity” means—

13 (A) a commercial entity that is domesti-
14 cally owned or a domestic subsidiary; or

15 (B) an FAA-licensed spaceport.

16 (5) TERMS AND CONDITIONS.—The Secretary
17 shall ensure that any guarantee made pursuant to
18 this subsection is made in accordance with the same
19 or substantially similar terms and conditions as con-
20 tained in section 1702 of the Energy Policy Act of
21 2005 (42 U.S.C. 16512).

22 (h) ELECTROMAGNETIC SPECTRUM FOR COMMER-
23 CIAL SPACE LAUNCH ACTIVITIES.—

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

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

5 (B) commercial space launch services will
6 require assured access to the appropriate elec-
7 tromagnetic spectrum for their launch-related
8 mission requirements.

9 (2) SPECTRUM ALLOCATION AND AUTHORIZA-
10 TIONS.—Not later than 180 days after the date of
11 the enactment of this Act, the Federal Communica-
12 tions Commission and the Assistant Secretary of
13 Commerce for Communications and Information, in
14 order to streamline the process for obtaining any
15 necessary authorization to use electromagnetic spec-
16 trum for commercial space launch activities and
17 thereby ensure certainty of access to the spectrum
18 required for a robust and active commercial space
19 launch services sector, shall take such actions as are
20 necessary to—

21 (A) ensure that the process for obtaining
22 such an authorization (including the application
23 process and the process for coordination be-
24 tween the Commission and the Assistant Sec-
25 retary and coordination between commercial

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

3 (B) minimize the number and complexity
4 of such authorizations required per launch mis-
5 sion, to the extent practicable; and

6 (C) allocate electromagnetic spectrum for
7 commercial space launch activities on a co-pri-
8 mary, interference-protected basis.

9 **SEC. 310. SPACE TRAINING AIRCRAFT.**

10 (a) **ESTABLISHMENT.**—The Secretary of Transpor-
11 tation shall establish a program to allow commercial enti-
12 ties to operate space training flights using aircraft with
13 valid airworthiness certificates, including those in an ex-
14 perimental category, issued by the Federal Aviation Ad-
15 ministration.

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

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

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

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

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

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

9 (3) all passengers of the flight provide the com-
10 mercial entity with written consent.

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

15 **SEC. 311. WORKFORCE ENHANCEMENT.**

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

18 “(i) STOCK OR OPTION-RELATED COMPENSATION
19 TRANSFERRED BY A STARTUP DOMESTIC COMMERCIAL
20 SPACE COMPANY.—

21 “(1) IN GENERAL.—Any person described in
22 paragraph (2) may elect to include in his gross in-
23 come for the taxable year in which such person sells
24 or otherwise disposes of stock or options described in

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

3 “(A) the fair market value of such prop-
4 erty at the time of such sale or disposition (de-
5 termined without regard to any restriction other
6 than a restriction which by its terms will never
7 lapse), over

8 “(B) the amount (if any) paid for such
9 property.

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

13 “(2) PERSON DESCRIBED.—A person is de-
14 scribed in this paragraph if the person—

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

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

23 “(i) more than 1 percent of the out-
24 standing stock of the corporation or stock
25 possessing more than 1 percent of the total

1 combined voting power of all stock of the
2 corporation, or

3 “(ii) if the employer is not a corpora-
4 tion, does not own more than 1 percent of
5 the capital or profits interest in the em-
6 ployer.

7 “(3) DOMESTIC COMMERCIAL SPACE COM-
8 PANY.—The term ‘domestic commercial space com-
9 pany’ means a company engaging in a line of busi-
10 ness unique to a space company, such as launch,
11 satellite operations, software development, satellite
12 manufacturing, spacecraft manufacturing, and space
13 transportation vehicle manufacturing, with oper-
14 ations and employees based in the United States.

15 “(4) START-UP EXPENDITURES.—The term
16 ‘start-up expenditures’ has the meaning given such
17 term by section 195.”.

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