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Original Signature of Member

116TH CONGRESS  
1ST SESSION

**H.R.** \_\_\_\_\_

To make revisions in title 51, United States Code, as necessary to keep the title current, and to make technical amendments to improve the United States Code.

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IN THE HOUSE OF REPRESENTATIVES

— — —, 2019

— — — introduced the following bill; which was referred to the Committee on the Judiciary

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**A BILL**

To make revisions in title 51, United States Code, as necessary to keep the title current, and to make technical amendments to improve the United States Code.

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

1     **SECTION 1. TABLE OF CONTENTS.**

2     The table of contents for this Act is as follows:

- Sec. 1. Table of contents.  
 Sec. 2. Purposes; restatement does not change meaning or effect of existing law.  
 Sec. 3. Revision of title 51, United States Code.  
 Sec. 4. Technical amendments.  
 Sec. 5. Transitional and savings provisions.  
 Sec. 6. Repeals.

3     **SEC. 2. PURPOSES; RESTATEMENT DOES NOT CHANGE MEANING OR**  
 4     **EFFECT OF EXISTING LAW.**

5     (a) PURPOSES.—The purposes of this Act are—

- 6         (1) to make revisions in title 51, United States Code, as necessary  
 7         to keep the title current; and  
 8         (2) to make technical amendments to improve the United States  
 9         Code.

10    (b) RESTATEMENT DOES NOT CHANGE MEANING OR EFFECT OF EXIST-  
 11    ING LAW.—

12         (1) IN GENERAL.—The restatement of existing law enacted by this  
 13         Act does not change the meaning or effect of the existing law. The re-  
 14         statement incorporates in title 51, United States Code, various provi-  
 15         sions that were enacted separately over a period of years, reorganizing  
 16         them, conforming style and terminology, modernizing obsolete lan-  
 17         guage, and correcting drafting errors. These changes serve to remove  
 18         ambiguities, contradictions, and other imperfections, but they do not  
 19         change the meaning or effect of the existing law or impair the prece-  
 20         dential value of earlier judicial decisions or other interpretations.

21         (2) RULE OF CONSTRUCTION.—

22             (A) IN GENERAL.—Notwithstanding the plain meaning rule or  
 23             other rules of statutory construction, a change in wording made  
 24             in the restatement of existing law enacted by this Act serves to  
 25             clarify the existing law as indicated in paragraph (1), but not to  
 26             change the meaning or effect of the existing law.

27             (B) REVISION NOTES.—Subparagraph (A) applies whether or  
 28             not a change in wording is explained by a revision note appearing  
 29             in a congressional report accompanying this Act. If such a revision  
 30             note does appear, a court shall consider the revision note in inter-  
 31             preting the change.

32     **SEC. 3. REVISION OF TITLE 51, UNITED STATES CODE.**

33     (a) REVISION OF TITLE TABLE OF CONTENTS.—The title table of con-  
 34     tents of title 51, United States Code, is amended—

35         (1) by striking the item relating to chapter 301 and inserting the  
 36         following:

“301. Funding ..... 30101”;

1 (2) by striking the item relating to chapter 315 and inserting the  
2 following:

“315. Facilities and Infrastructure ..... 31501”;  
“317 through 397. RESERVED  
“399. Miscellaneous ..... 39901”;

3 (3) by striking the item relating to chapter 409 and inserting the  
4 following:

“409. Aeronautics and Space Technology ..... 40901  
“411 through 497. RESERVED  
“499. Miscellaneous ..... 49901”;

5 (4) by striking the items relating to chapters 513 and 515 and in-  
6 serting the following:

“513. Space Resource Commercial Exploration and Utilization ..... 51301  
“515. Office of Spaceports ..... 51501  
“517. Development and Use of Commercial Cargo and Crew Transportation Capa-  
bilities. 51701”;

7 (5) by striking the item relating to chapter 701 and inserting the  
8 following:

“701. Use of Space Launch System or Alternatives ..... 70101”;  
and

9 (6) by inserting after the item relating to chapter 713 the following:

“715. Human Space Flight and Exploration ..... 71501  
“717. Advancing Human Space Exploration ..... 71701”.

10 (b) REVISION OF SECTION 20144.—Section 20144 of title 51, United  
11 States Code, is amended—

12 (1) in subsection (a), by striking “The Administration may carry out  
13 a program to award prizes only in conformity with this section.”; and

14 (2) in subsection (i)(4), by striking “Committee on Science and  
15 Technology” and inserting “Committee on Science, Space, and Tech-  
16 nology”.

17 (c) REVISION OF SECTION 20145.—Section 20145 of title 51, United  
18 States Code, is amended—

19 (1) by redesignating subsections (f) and (g) as subsections (g) and  
20 (h), respectively; and

21 (2) by inserting after subsection (e) the following:

22 “(f) PROCEEDS.—Proceeds from leases entered into under this section  
23 shall be deposited in the Administration construction and environmental  
24 compliance and restoration appropriations account. The proceeds shall be  
25 available for a period of 5 years, to the extent and in amounts provided in  
26 appropriations acts.”.

27 (d) REVISION OF SECTION 20303.—Section 20303 of title 51, United  
28 States Code, is amended—

29 (1) in subsection (c), by striking “(42 U.S.C. 16611(d))” and insert-  
30 ing “(Public Law 109–155, 119 Stat. 2900)”;

31 (2) by redesignating subsection (d) as subsection (e); and

32 (3) by inserting after subsection (c) the following:

1 “(d) EVALUATION AND EXPANSION OF INTERAGENCY CONTRIBUTION.—

2 “(1) IN GENERAL.—The Administrator shall evaluate and, to the extent possible—

3  
4 “(A) expand efforts to maximize the Administration’s contribution to interagency efforts to enhance science, technology, engineering, and mathematics education capabilities; and

5  
6 “(B) enhance the Nation’s technological excellence and global competitiveness.

7  
8  
9 “(2) IDENTIFICATION IN REPORT.—The Administrator shall identify the expanded efforts and enhancements made under paragraph (1) in the annual reports required by subsection (e).”.

10  
11  
12 (e) REVISION OF CHAPTER 301.—

13 (1) CHAPTER HEADING.—The chapter heading of chapter 301 of title 51, United States Code, is amended by striking “**APPROPRIATIONS, BUDGETS, AND ACCOUNTING**” and inserting “**FUNDING**”.

14  
15  
16  
17 (2) CHAPTER TABLE OF CONTENTS.—The chapter table of contents of chapter 301 of title 51, United States Code, is amended to read as follows:

18  
19 “SUBCHAPTER I—GENERAL PROVISIONS

“Sec.

“30101. Prior authorization of appropriations required.

“30102. Working capital fund.

“30103. Baselines and cost controls.

“30104. Reports on estimated costs for certain programs.

“30105. Annual report on program cost and control.

“SUBCHAPTER II—BUDGET PROVISIONS

“30121. General budget documentation requirements.

“30122. Consideration of decadal surveys.

“30123. Two-year budget request with 3d year estimate.”.

20 (3) REDESIGNATION OF EXISTING SECTIONS.—Chapter 301 of title 21 51, United States Code, is amended as follows:

22 (A) Section 30103 (Budgets) is redesignated as section 30121, 23 and transferred to appear after section 30104 (Baselines and cost 24 controls).

25 (B) Section 30104 (Baselines and cost controls) is redesignated 26 as section 30103.

27 (4) DESIGNATION OF SUBCHAPTERS.—

28 (A) Chapter 301 of title 51, United States Code, is amended 29 by inserting before section 30101 the following:

30 “SUBCHAPTER I—GENERAL PROVISIONS”.

31 (B) Chapter 301 of title 51, United States Code, is amended 32 by inserting before section 30121 (as redesignated and transferred 33 by paragraph (3)(A)) the following:

1 “SUBCHAPTER II—BUDGET PROVISIONS”.

2 (5) REVISION OF SECTION 30103.—Section 30103 (Baselines and cost  
3 controls) of title 51, United States Code (as redesignated by paragraph  
4 (3)(B)), is amended by striking “Committee on Science and Tech-  
5 nology” and inserting “Committee on Science, Space, and Technology”  
6 in—

7 (A) subsection (b)(2);

8 (B) subsection (c)(1);

9 (C) subsection (d)(3);

10 (D) subsection (e)(1)(A) (matter before clause (i)); and

11 (E) subsection (e)(2).

12 (6) ENACTMENT OF SECTIONS 30104 AND 30105.—Chapter 301 of  
13 title 51, United States Code, is amended by inserting after section  
14 30103 (Baselines and cost controls) (as redesignated by paragraph  
15 (3)(B) and amended by paragraph (5)) the following:

16 **“§ 30104. Reports on estimated costs for certain programs**

17 “For each program under the jurisdiction of the Administration for which  
18 development costs are expected to exceed \$200,000,000, the Administrator  
19 shall submit to Congress, at the time of submission of the President’s an-  
20 nual budget—

21 “(1) a 5-year budget detailing the estimated development costs of the  
22 program; and

23 “(2) an estimate of the life-cycle costs associated with the program.

24 **“§ 30105. Annual report on program cost and control**

25 “(a) ANNUAL REPORT.—Not later than April 30 of each year, the Ad-  
26 ministrator shall submit to the Committee on Commerce, Science, and  
27 Transportation of the Senate and the Committee on Science, Space, and  
28 Technology of the House of Representatives a report on the implementation  
29 during the preceding year for the corrective action plan referred to in sec-  
30 tion 1203(a)(4) of the National Aeronautics and Space Administration Au-  
31 thorization Act of 2010 (Public Law 111–267).

32 “(b) CONTENTS.—A report under this section shall contain the following:

33 “(1) DESCRIPTION OF OVER BUDGET OR DELAYED PROGRAMS.—For  
34 the year covered by the report, a description of each Administration  
35 program that has exceeded its cost baseline by 15 percent or more or  
36 is more than 2 years behind its projected development schedule.

37 “(2) CORRECTIVE PLANS.—For each program described under para-  
38 graph (1), a plan for decrease in scope or requirements, or other meas-  
39 ures, to be undertaken to control cost and schedule, including any cost  
40 monitoring or corrective actions undertaken pursuant to the National

1 Aeronautics and Space Administration Authorization Act of 2005  
2 (Public Law 109–155), and the amendments made by that Act.”.

3 (7) REVISION OF SECTION 30121.—Section 30121 of title 51, United  
4 States Code (as redesignated and transferred by paragraph (3)(A)), is  
5 amended—

6 (A) in the section heading, by striking “**Budgets**” and insert-  
7 ing “**General budget documentation requirements**”;  
8 and

9 (B) in subsection (b) (matter before paragraph (1)), by striking  
10 “Committee on Science and Technology” and inserting “Commit-  
11 tee on Science, Space, and Technology”.

12 (8) ENACTMENT OF SECTIONS 30122 AND 30123.—Chapter 301 of  
13 title 51, United States Code, is amended by adding at the end the fol-  
14 lowing:

15 **“§ 30122. Consideration of decadal surveys**

16 “The Administration shall take into account the current decadal surveys  
17 from the National Academies’ Space Studies Board when submitting the  
18 President’s budget request to Congress.

19 **“§ 30123. Two-year budget request with 3d year estimate**

20 “Each fiscal year, the President shall submit to Congress a budget re-  
21 quest for the Administration that includes—

22 “(1) a budget request for the immediate fiscal year and the following  
23 fiscal year; and

24 “(2) budget estimates for the 3d fiscal year.”.

25 (f) REVISION OF SECTION 30310.—Section 30310 of title 51, United  
26 States Code, is amended by striking “Section 526(a) of the Energy Inde-  
27 pendence and Security Act of 2007 (42 U.S.C. 17142(a))” and inserting  
28 “Section 526 of the Energy Independence and Security Act of 2007 (42  
29 U.S.C. 17142)”.

30 (g) ENACTMENT OF SECTION 30311.—

31 (1) CHAPTER TABLE OF CONTENTS.—The chapter table of contents  
32 of chapter 303 of title 51, United States Code, is amended by adding  
33 at the end the following:

“30311. Counterfeit parts.”.

34 (2) ENACTMENT OF SECTION.—Chapter 303 of title 51, United  
35 States Code, is amended by adding at the end the following:

36 **“§ 30311. Counterfeit parts**

37 “(a) IN GENERAL.—The Administrator shall plan, develop, and imple-  
38 ment a program, in coordination with other Federal agencies, to detect,  
39 track, catalog, and reduce the number of counterfeit electronic parts in the  
40 Administration supply chain.

1 “(b) REQUIREMENTS.—In carrying out the program, the Administrator  
2 shall establish—

3 “(1) counterfeit part identification training for all employees that  
4 procure, process, distribute, and install electronic parts that will—

5 “(A) teach employees how to identify counterfeit parts;

6 “(B) educate employees on procedures to follow if they suspect  
7 a part is counterfeit;

8 “(C) regularly update employees on new threats, identification  
9 techniques, and reporting requirements; and

10 “(D) integrate industry associations, manufacturers, suppliers,  
11 and other Federal agencies, as appropriate;

12 “(2) an internal database to track all suspected and confirmed coun-  
13 terfeit electronic parts that will maintain, at a minimum—

14 “(A) companies and individuals known and suspected of selling  
15 counterfeit parts;

16 “(B) parts known and suspected of being counterfeit, including  
17 lot and date codes, part numbers, and part images;

18 “(C) countries of origin;

19 “(D) sources of reporting;

20 “(E) United States Customs seizures; and

21 “(F) Government-Industry Data Exchange Program reports and  
22 other public or private sector database notifications; and

23 “(3) a mechanism—

24 “(A) to report all information on suspected and confirmed coun-  
25 terfeit electronic parts to law enforcement agency databases, in-  
26 dustry association databases, and other databases; and

27 “(B) to issue bulletins to industry on counterfeit electronic  
28 parts and related counterfeit activity.

29 “(c) REVIEW OF PROCUREMENT AND ACQUISITION POLICY.—

30 “(1) IN GENERAL.—In establishing the program, the Administrator  
31 shall amend acquisition and procurement policy in effect on October  
32 11, 2010, to require the purchase of electronic parts from trusted or  
33 approved manufacturers. To determine trusted or approved manufac-  
34 turers, the Administrator shall establish a list, assessed and adjusted  
35 at least annually, and create criteria for manufacturers to meet in  
36 order to be placed on the list.

37 “(2) CRITERIA.—The criteria may include—

38 “(A) authentication or encryption codes;

39 “(B) embedded security markings in parts;

40 “(C) unique, hard-to-copy labels and markings;

- 1 “(D) identifying distinct lot and serial codes on external packag-  
 2 ing;  
 3 “(E) radio frequency identification embedded into high-value  
 4 parts;  
 5 “(F) physical destruction of all defective, damaged, and sub-  
 6 standard parts that are by-products of the manufacturing process;  
 7 “(G) testing certifications;  
 8 “(H) maintenance of procedures for handling any counterfeit  
 9 parts that slip through;  
 10 “(I) maintenance of secure facilities to prevent unauthorized ac-  
 11 cess to proprietary information; and  
 12 “(J) maintenance of product return, buy back, and inventory  
 13 control practices that limit counterfeiting.”.

14 (h) ENACTMENT OF SECTIONS 30505 AND 30506.—

- 15 (1) CHAPTER TABLE OF CONTENTS.—The chapter table of contents  
 16 of chapter 305 of title 51, United States Code, is amended by adding  
 17 at the end the following:

“30505. Information security.

“30506. Workforce development for minority and underrepresented groups.”.

- 18 (2) ENACTMENT OF SECTIONS.—Chapter 305 of title 51, United  
 19 States Code, is amended by adding at the end the following:

20 **“§ 30505. Information security**

- 21 “(a) DEFINITION OF INFORMATION INFRASTRUCTURE.—In this section,  
 22 the term ‘information infrastructure’ means the underlying framework that  
 23 information systems and assets rely on to process, transmit, receive, or store  
 24 information electronically, including programmable electronic devices and  
 25 communications networks and any associated hardware, software, or data.

- 26 “(b) MONITORING RISK.—

- 27 “(1) BIENNIAL UPDATE ON SYSTEM IMPLEMENTATION.—On a bi-  
 28 ennial basis, the chief information officer of the Administration, in co-  
 29 ordination with other national security agencies, shall provide to the  
 30 Committee on Commerce, Science, and Transportation of the Senate  
 31 and the Committee on Science, Space, and Technology of the House  
 32 of Representatives—

- 33 “(A) an update on efforts to implement a system to provide dy-  
 34 namic, comprehensive, real-time information regarding risk of un-  
 35 authorized remote, proximity, and insider use or access, for all in-  
 36 formation infrastructure under the responsibility of the chief infor-  
 37 mation officer, and mission-related networks, including contractor  
 38 networks;



1           “(B) an assessment of whether the system has demonstrably  
2           and quantifiably reduced network risk compared with alternative  
3           methods of measuring security; and

4           “(C) an assessment of the progress that each center and facility  
5           has made toward implementing the system.

6           “(2) EXISTING ASSESSMENTS.—The assessments required of the In-  
7           specter General under section 3555 of title 44 shall evaluate the effec-  
8           tiveness of the system described in this subsection.

9           “(c) INFORMATION SECURITY AWARENESS AND EDUCATION.—

10           “(1) IN GENERAL.—In consultation with the Department of Edu-  
11           cation, other national security agencies, and other agency directorates,  
12           the chief information officer shall institute an information security  
13           awareness and education program for all operators and users of Ad-  
14           ministration information infrastructure, with the goal of reducing un-  
15           authorized remote, proximity, and insider use or access.

16           “(2) PROGRAM REQUIREMENTS.—

17           “(A) BRIEFINGS, EXERCISES, AND EXAMINATIONS.—The pro-  
18           gram shall include, at a minimum, ongoing classified and unclassi-  
19           fied threat-based briefings, and automated exercises and examina-  
20           tions that simulate common attack techniques.

21           “(B) PARTICIPATION.—All agency employees and contractors  
22           engaged in the operation or use of agency information infrastruc-  
23           ture shall participate in the program.

24           “(C) ACCESS.—Access to Administration information infrastruc-  
25           ture shall be granted only to operators and users who regularly  
26           satisfy the requirements of the program.

27           “(D) REWARDING ACHIEVEMENT.—The chief human capital of-  
28           ficer of the Administration, in consultation with the chief informa-  
29           tion officer, shall create a system to reward operators and users  
30           of agency information infrastructure for continuous high achieve-  
31           ment in the program.

32           **“§ 30506. Workforce development for minority and under-**  
33           **represented groups**

34           “(a) ADDRESSING IMPEDIMENTS.—To the extent practicable, the Admin-  
35           istrator shall take all necessary steps to address any impediments identified  
36           in the assessment described in subsection (b).

37           “(b) ASSESSMENT.—The assessment referred to in subsection (a) is the  
38           independent assessment of impediments to space science and engineering  
39           workforce development for minority and underrepresented groups at the Ad-  
40           ministration that was prepared under section 203(a) of the America COM-

1 PETES Reauthorization Act of 2010 (Public Law 111–358, 124 Stat.  
2 3994).”.

3 (i) REVISION OF SECTION 30704.—Section 30704(2) of title 51, United  
4 States Code, is amended by striking “the Buy American Act (41 U.S.C. 10a  
5 et seq.)” and inserting “chapter 83 of title 41”.

6 (j) ENACTMENT OF SECTION 30705.—

7 (1) CHAPTER TABLE OF CONTENTS.—The chapter table of contents  
8 of chapter 307 of title 51, United States Code, is amended by adding  
9 at the end the following:

“30705. Limitation on international agreements concerning outer space activities.”.

10 (2) ENACTMENT OF SECTION.—Chapter 307 of title 51, United  
11 States Code, is amended by adding at the end the following:

12 **“§ 30705. Limitation on international agreements concern-**  
13 **ing outer space activities**

14 “(a) DEFINITIONS.—In this section:

15 “(1) CONGRESSIONAL DEFENSE COMMITTEES.—The term ‘congres-  
16 sional defense committees’ means—

17 “(A) the Committee on Armed Services and the Committee on  
18 Appropriations of the Senate; and

19 “(B) the Committee on Armed Services and the Committee on  
20 Appropriations of the House of Representatives.

21 “(2) COVERED CONGRESSIONAL COMMITTEES.—The term ‘covered  
22 congressional committees’ means—

23 “(A) the Committee on Armed Services, the Committee on For-  
24 eign Relations, and the Select Committee on Intelligence of the  
25 Senate; and

26 “(B) the Committee on Armed Services, the Committee on For-  
27 eign Affairs, and the Permanent Select Committee on Intelligence  
28 of the House of Representatives.

29 “(b) CERTIFICATION.—If the United States becomes a signatory to a  
30 non-legally binding international agreement concerning an International  
31 Code of Conduct for Outer Space Activities or any similar agreement, at  
32 the same time as the United States becomes a signatory—

33 “(1) the President shall submit to the congressional defense commit-  
34 tees, the Permanent Select Committee on Intelligence of the House of  
35 Representatives, and the Select Committee on Intelligence of the Sen-  
36 ate a certification that the agreement has no legally-binding effect or  
37 basis for limiting the activities of the United States in outer space; and

38 “(2) the Secretary of Defense, the Chairman of the Joint Chiefs of  
39 Staff, and the Director of National Intelligence shall jointly submit to  
40 the congressional defense committees a certification that the agreement

1 will be equitable, enhance national security, and have no militarily sig-  
2 nificant impact on the ability of the United States to conduct military  
3 or intelligence activities in space.

4 “(c) BRIEFINGS AND NOTIFICATIONS REQUIRED.—

5 “(1) RESTATEMENT OF POLICY FORMULATION UNDER THE ARMS  
6 CONTROL AND DISARMAMENT ACT WITH RESPECT TO OUTER SPACE.—  
7 No action shall be taken that would obligate the United States to re-  
8 duce or limit the Armed Forces or armaments of the United States in  
9 outer space in a militarily significant manner, except pursuant to the  
10 treaty-making power of the President under Article II, Section 2,  
11 Clause II of the Constitution or unless authorized by the enactment of  
12 further affirmative legislation by Congress.

13 “(2) BRIEFINGS.—

14 “(A) REQUIREMENT.—The Secretary of Defense, the Secretary  
15 of State, and the Director of National Intelligence shall jointly  
16 provide to the covered congressional committees regular, detailed  
17 updates on the negotiation of a non-legally binding international  
18 agreement concerning an International Code of Conduct for Outer  
19 Space Activities or any similar agreement.

20 “(B) TERMINATION OF REQUIREMENT.—The requirement to  
21 provide regular briefings under subparagraph (A) shall terminate  
22 on the date on which the United States becomes a signatory to  
23 an agreement referred to in subparagraph (A), or on the date on  
24 which the President certifies to Congress that the United States  
25 is no longer negotiating an agreement referred to in subparagraph  
26 (A), whichever is earlier.

27 “(3) NOTIFICATIONS.—If the United States becomes a signatory to  
28 a non-legally binding international agreement concerning an Inter-  
29 national Code of Conduct for Outer Space Activities or any similar  
30 agreement, not less than 60 days prior to any action that would obli-  
31 gate the United States to reduce or limit the Armed Forces, arma-  
32 ments, or activities of the United States in outer space, the head of  
33 each Department or agency of the Federal Government that would be  
34 affected by the action shall submit to Congress a notice of the action  
35 and its effect on the Department or agency.”.

36 (k) REDESIGNATION OF CHAPTER 315 AS CHAPTER 399.—

37 (1) RESERVED CHAPTERS.—Title 51, United States Code, is amend-  
38 ed by inserting after section 31302 the following:

39 “**CHAPTERS 317 THROUGH 397—RESERVED**”.

40 (2) REDESIGNATION OF CHAPTER.—Title 51, United States Code, is  
41 amended by redesignating chapter 315 as chapter 399.

1 (3) REDESIGNATION OF SECTIONS.—Chapter 399 of title 51, United  
2 States Code (as redesignated by paragraph (2)), is amended—

3 (A) in the chapter table of contents, by redesignating the items  
4 for sections 31501 through 31505 as items for sections 39901  
5 through 39905, respectively; and

6 (B) by redesignating sections 31501 through 31505 as sections  
7 39901 through 39905, respectively.

8 (l) ENACTMENT OF CHAPTER 315.—

9 (1) ENACTMENT OF CHAPTER.—Title 51, United States Code, as  
10 amended by subsection (k), is amended by inserting after chapter 313  
11 (and before “**CHAPTERS 317 THROUGH 397—RESERVED**”  
12 as inserted by subsection (k)(1)) the following:

13 “**CHAPTER 315—FACILITIES AND INFRASTRUCTURE**

“Sec.

“31501. Policy and plan.

“31502. Maintenance and upgrade of Center facilities.

14 “§ 31501. Policy and plan

15 “(a) POLICY.—It is the policy of the United States that the Administra-  
16 tion maintain reliable and efficient facilities and infrastructure and that de-  
17 cisions on whether to dispose of, maintain, or modernize existing facilities  
18 or infrastructure be made in the context of meeting future Administration  
19 needs.

20 “(b) PLAN.—

21 “(1) IN GENERAL.—The Administrator shall develop a facilities and  
22 infrastructure plan.

23 “(2) GOAL.—The goal of the plan is to position the Administration  
24 to have the facilities and infrastructure, including laboratories, tools,  
25 and approaches, necessary to meet future Administration and other  
26 Federal agencies’ laboratory needs.

27 “(3) CONTENTS.—The plan shall identify—

28 “(A) current Administration and other Federal agency labora-  
29 tory needs;

30 “(B) future Administration research and development and test-  
31 ing needs;

32 “(C) a strategy for identifying facilities and infrastructure that  
33 are candidates for disposal, that is consistent with the national  
34 strategic direction set forth in—

35 “(i) the National Space Policy;

36 “(ii) the National Aeronautics Research, Development,  
37 Test, and Evaluation Infrastructure Plan;

1           “(iii) the National Aeronautics and Space Administration  
2           Authorization Act of 2005 (Public Law 109–155, 119 Stat.  
3           2895), the National Aeronautics and Space Administration  
4           Authorization Act of 2008 (Public Law 110–422, 122 Stat.  
5           4779), and the National Aeronautics and Space Administra-  
6           tion Authorization Act of 2010 (Public Law 111–267, 124  
7           Stat. 2805); and

8           “(iv) the human exploration roadmap under section 71721  
9           of this title;

10          “(D) a strategy for the maintenance, repair, upgrading, and  
11          modernization of Administration facilities and infrastructure, in-  
12          cluding laboratories and equipment;

13          “(E) criteria for—

14                 “(i) prioritizing deferred maintenance tasks;

15                 “(ii) maintaining, repairing, upgrading, or modernizing Ad-  
16                 ministration facilities and infrastructure; and

17                 “(iii) implementing processes, plans, and policies for guid-  
18                 ing the Administration’s Centers on whether to maintain, re-  
19                 pair, upgrade, or modernize a facility or infrastructure and  
20                 for determining the type of instrument to be used;

21          “(F) an assessment of modifications needed to maximize usage  
22          of facilities that offer unique and highly specialized benefits to the  
23          aerospace industry and the American public; and

24          “(G) implementation steps, including a timeline, milestones, and  
25          an estimate of resources required for carrying out the plan.

26          “(c) REQUIREMENT TO ESTABLISH POLICY.—

27                 “(1) IN GENERAL.—Not later than 180 days after March 21, 2017,  
28                 the Administrator shall establish and make publicly available a policy  
29                 that guides the Administration’s use of existing authorities to out-  
30                 grant, lease, excess to the General Services Administration, sell, decom-  
31                 mission, demolish, or otherwise transfer property, facilities, or infra-  
32                 structure.

33                 “(2) CRITERIA.—The policy shall include criteria for the use of au-  
34                 thorities, best practices, standardized procedures, and guidelines for  
35                 how to appropriately manage property, facilities, and infrastructure.

36          “(d) SUBMISSION TO CONGRESS.—Not later than 1 year after March 21,  
37          2017, the Administrator shall submit to the Committee on Commerce,  
38          Science, and Transportation of the Senate and the Committee on Science,  
39          Space, and Technology of the House of Representatives the plan developed  
40          under subsection (b).”.

41          “(2) REDESIGNATION OF SECTION 39902 AS SECTION 31502.—

1 (A) REDESIGNATION AND TRANSFER.—Section 39902 of title  
2 51, United States Code, as redesignated by subsection (k)(3)(B),  
3 is redesignated as section 31502 of title 51, United States Code,  
4 and transferred to appear after section 31501 of title 51, United  
5 States Code, as inserted by paragraph (1).

6 (B) AMENDMENT OF HEADING.—The heading of section 31502  
7 of title 51, United States Code, as redesignated and transferred  
8 by subparagraph (A), is amended by striking “**Maintenance of**  
9 **facilities**” and inserting “**Maintenance and upgrade of**  
10 **Center facilities**”.

11 (C) CONFORMING AMENDMENTS TO CHAPTER 399.—Chapter  
12 399 of title 51, United States Code, as redesignated and amended  
13 by subsections (k) and (l)(2)(A), is amended—

14 (i) in the chapter table of contents—

15 (I) by striking the item relating to section 39902; and

16 (II) by redesignating the items relating to sections  
17 39903, 39904, and 39905 as items relating to sections  
18 39902, 39903, and 39904, respectively; and

19 (ii) by redesignating sections 39903, 39904, and 39905 as  
20 sections 39902, 39903, and 39904, respectively.

21 (m) REVISION OF SECTION 39901.—Section 39901 of title 51, United  
22 States Code (as redesignated by subsection (k)(3)), is amended—

23 (1) by striking “The Administrator” and inserting “(a) TECH-  
24 NOLOGIES TO DECREASE RISK.—The Administrator”; and

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

26 “(b) INTERNATIONAL DISCUSSION.—

27 “(1) IN GENERAL.—The Administrator shall, in consultation with  
28 such other departments and agencies of the Federal Government as the  
29 Administrator considers appropriate, continue and strengthen discus-  
30 sions with the representatives of other space-faring countries, within  
31 the Inter-Agency Space Debris Coordination Committee and elsewhere,  
32 to deal with orbital debris mitigation.

33 “(2) INTERAGENCY EFFORT.—For purposes of carrying out this sub-  
34 section, the Director of the Office of Science and Technology Policy,  
35 in coordination with the Director of the National Security Council and  
36 using the President’s Council of Advisors on Science and Technology  
37 coordinating mechanism, shall develop an overall strategy for review by  
38 the President, with recommendations for proposed international col-  
39 laborative efforts to address the challenge of orbital debris mitigation.”.

1 (n) REVISION OF SECTION 40308.—Section 40308(a) of title 51, United  
 2 States Code, is amended by striking “(5 App. U.S.C.)” and inserting “(5  
 3 U.S.C. App.)”.

4 (o) REDESIGNATION OF CHAPTER 409 AS CHAPTER 499.—

5 (1) RESERVED CHAPTERS.—Title 51, United States Code, is amend-  
 6 ed by inserting after section 40704 the following:

7 **“CHAPTERS 411 THROUGH 497—RESERVED”**.

8 (2) REDESIGNATION OF CHAPTER.—Title 51, United States Code, is  
 9 amended by redesignating chapter 409 as chapter 499.

10 (3) REDESIGNATION OF SECTIONS.—Chapter 499 of title 51, United  
 11 States Code (as redesignated by paragraph (2)), is amended—

12 (A) in the chapter table of contents, by redesignating the items  
 13 for sections 40901 through 40909 as items for sections 49901  
 14 through 49909, respectively; and

15 (B) by redesignating sections 40901 through 40909 as sections  
 16 49901 through 49909, respectively.

17 (p) ENACTMENT OF CHAPTER 409.—Title 51, United States Code, is  
 18 amended by inserting after chapter 407 (and before **“CHAPTERS 411  
 19 THROUGH 497—RESERVED”** as inserted by subsection (o)(1)) the  
 20 following:

21 **“CHAPTER 409—AERONAUTICS AND SPACE  
 22 TECHNOLOGY**

“Sec.

“40901. Aeronautics research goals.

“40902. Research collaboration.

“40903. Goal for Administration space technology.

“40904. National space technology policy.

“40905. Commercial Reusable Suborbital Research Program.

23 **“§ 40901. Aeronautics research goals**

24 “The Administrator should ensure that the Administration maintains a  
 25 strong aeronautics research portfolio ranging from fundamental research  
 26 through systems research with specific research goals, including the follow-  
 27 ing:

28 “(1) AIRSPACE CAPACITY.—The Administration’s Aeronautics Re-  
 29 search Mission Directorate shall address research needs of the Next  
 30 Generation Air Transportation System, including the ability of the Na-  
 31 tional Airspace System to handle up to 3 times the current travel de-  
 32 mand by 2025.

33 “(2) ENVIRONMENTAL SUSTAINABILITY.—The Directorate shall—

34 “(A) consider and pursue concepts to reduce noise, emissions,  
 35 and fuel consumption while maintaining high safety standards;  
 36 and

1 “(B) pursue research relating to alternative fuels.

2 “(3) AVIATION SAFETY.—The Directorate shall proactively address  
3 safety challenges with new and current air vehicles and with operations  
4 in the Nation’s current and future air transportation system.

5 **“§ 40902. Research collaboration**

6 “(a) DEPARTMENT OF DEFENSE.—The Administrator shall continue to  
7 coordinate with the Secretary of Defense, through the National Partnership  
8 for Aeronautics Testing, to develop and implement joint plans for those ele-  
9 ments of the Nation’s research, development, testing, and engineering infra-  
10 structure that are of common interest and use.

11 “(b) FEDERAL AVIATION ADMINISTRATION.—The Administrator shall  
12 continue to coordinate with, and work closely with, the Administrator of the  
13 Federal Aviation Administration, under the framework of the Senior Policy  
14 Council, in development of the Next Generation Air Transportation Pro-  
15 gram. The Administrator shall encourage the Council to explore areas for  
16 greater collaboration, including areas in which the Administration can help  
17 to accelerate the development and demonstration of NextGen technologies.

18 **“§ 40903. Goal for Administration space technology**

19 “Building on its Innovative Partnerships Program and other partnering  
20 approaches, it is critical that the Administration maintain an Administra-  
21 tion space technology base that helps align mission directorate investments  
22 and supports long term needs—

23 “(1) to complement mission-directorate funded research; and

24 “(2) where appropriate, to support multiple users.

25 **“§ 40904. National space technology policy**

26 “(a) IN GENERAL.—The President, in consultation with appropriate Fed-  
27 eral agencies, shall develop a national policy to guide the space technology  
28 development programs of the United States through 2020. The policy shall  
29 include national goals for technology development and shall describe the role  
30 and responsibilities of each Federal agency that will carry out the policy.  
31 In developing the policy, the President shall utilize external studies that  
32 have been conducted on the state of United States technology development  
33 and have suggested policies to ensure continued competitiveness.

34 “(b) CONTENT.—At a minimum, the national space technology develop-  
35 ment policy shall describe for the Administration—

36 “(1) the priority areas of research for technology investment;

37 “(2) the basis on which and the process by which priorities for ensu-  
38 ing fiscal years will be selected;

39 “(3) the facilities and personnel needed to carry out the technology  
40 development program; and



1           “(4) the budget assumptions on which the policy is based, which for  
2           fiscal years 2011, 2012, and 2013 shall be the authorized level for the  
3           Administration’s technology program authorized by the National Aero-  
4           nautics and Space Administration Authorization Act of 2010 (Public  
5           Law 111–267, 124 Stat. 2805).

6           “(c) POLICY PREMISE.—The policy shall be based on the premise that  
7           the Federal Government has an established interest in conducting research  
8           and development programs that help preserve the role of the United States  
9           as a global leader in space technologies and their application.

10          “(d) CONSIDERATIONS.—In developing the national space technology de-  
11          velopment policy, the President shall consider the following issues:

12           “(1) LONG TERM AND INCREMENTAL DEVELOPMENT.—The extent to  
13           which the Administration should focus on long term, high-risk research  
14           or more incremental technology development, and the expected impact  
15           of that decision on the United States economy.

16           “(2) MILITARY AND COMMERCIAL NEEDS.—The extent to which the  
17           Administration should address military and commercial needs.

18           “(3) COORDINATION WITH FEDERAL AGENCIES.—How the Adminis-  
19           tration will coordinate its technology program with other Federal agen-  
20           cies.

21           “(4) ADMINISTRATION, UNIVERSITY, AND INDUSTRY RESEARCH.—  
22           The extent to which the Administration will conduct research in-house,  
23           fund university research, and collaborate on industry research and the  
24           expected impact of that mix of funding on the supply of United States  
25           workers for industry.

26          “(e) CONSULTATION.—In the development of the national space tech-  
27          nology development policy, the President shall consult widely with academic  
28          and industry experts and with Federal agencies. The Administrator may  
29          enter into an arrangement with the National Academy of Sciences to help  
30          develop the policy.

31          **“§ 40905. Commercial Reusable Suborbital Research Pro-**  
32          **gram**

33          “(a) FINDING THAT SUBORBITAL SCIENCE MISSIONS ARE CRITICAL.—  
34          The report entitled Revitalizing NASA’s Suborbital Program: Advancing  
35          Science, Driving Innovation, and Developing a Workforce (prepared by the  
36          Committee on NASA’s Suborbital Research Capabilities, Space Studies  
37          Board, Division on Engineering and Physical Sciences, National Research  
38          Council of the National Academies) found that suborbital science missions  
39          are absolutely critical to building an aerospace workforce capable of meeting  
40          the needs of current and future human and robotic space exploration.

1 “(b) ESTABLISHMENT.—The Administrator shall establish a Commercial  
2 Reusable Suborbital Research Program within the Space Technology Pro-  
3 gram.

4 “(c) MANAGEMENT.—The Administrator shall designate an officer or em-  
5 ployee of the Space Technology Program to act as the responsible official  
6 for the Commercial Reusable Suborbital Research Program. The designee  
7 shall be responsible for the development of short- and long-term strategic  
8 plans for maintaining, renewing, and extending suborbital facilities and ca-  
9 pabilities.

10 “(d) ACTIVITIES.—The Commercial Reusable Suborbital Research Pro-  
11 gram—

12 “(1) shall fund the development of payloads for scientific research,  
13 technology development, and education;

14 “(2) shall provide flight opportunities to microgravity environments  
15 and suborbital altitudes for the payloads referred to in paragraph (1);

16 “(3) may fund engineering and integration demonstrations, proofs of  
17 concept, or educational experiments for commercial reusable vehicle  
18 flights; and

19 “(4) shall endeavor to work with the Administration’s Mission Direc-  
20 torates to help achieve the Administration’s research, technology, and  
21 education goals.

22 “(e) REPORT.—The Administrator shall annually submit to the Commit-  
23 tee on Commerce, Science, and Transportation of the Senate and the Com-  
24 mittee on Science, Space, and Technology of the House of Representatives  
25 a report describing progress in carrying out the Commercial Reusable Sub-  
26 orbital Research program, including the number and type of suborbital mis-  
27 sions planned in each fiscal year.”.

28 (q) ENACTMENT OF SECTIONS 49910 THROUGH 49912.—

29 (1) CHAPTER TABLE OF CONTENTS.—The chapter table of contents  
30 of chapter 499 of title 51, United States Code (as redesignated and  
31 amended by subsection (o)), is amended by adding at the end the fol-  
32 lowing:

“49910. Programs to support STEM education.

“49911. Supporting women’s involvement in the fields of aerospace and space exploration.

“49912. Internship and fellowship opportunities.”.

33 (2) ENACTMENT OF SECTIONS.—Chapter 499 of title 51, United  
34 States Code (as redesignated and amended by subsection (o)), is  
35 amended by adding at the end the following:

36 **“§ 49910. Programs to support STEM education**

37 “(a) DEFINITION OF STEM.—In this section, the term ‘STEM’ means  
38 the academic and professional disciplines of science, technology, engineering,  
39 and mathematics.

1 “(b) EDUCATIONAL PROGRAM GOALS.—The Administration shall develop  
2 and maintain educational programs to—

3 “(1) carry out and support research-based programs and activities  
4 designed to increase student interest and participation in STEM, in-  
5 cluding students from minority and underrepresented groups;

6 “(2) improve public literacy in STEM;

7 “(3) employ proven strategies and methods for improving student  
8 learning and teaching in STEM;

9 “(4) provide curriculum support materials and other resources  
10 that—

11 “(A) are designed to be integrated with comprehensive STEM  
12 education;

13 “(B) are aligned with national science education standards; and

14 “(C) promote the adoption and implementation of high-quality  
15 education practices that build toward college and career-readiness;

16 and

17 “(5) create and support opportunities for enhanced and ongoing pro-  
18 fessional development for teachers using best practices that improve the  
19 STEM content and knowledge of the teachers, including through pro-  
20 grams linking STEM teachers with STEM educators at the higher edu-  
21 cation level.

22 **“§ 49911. Supporting women’s involvement in the fields of**  
23 **aerospace and space exploration**

24 “The Administrator shall encourage women and girls to study science,  
25 technology, engineering, and mathematics, pursue careers in aerospace, and  
26 further advance the Nation’s space science and exploration efforts through  
27 support of the following initiatives:

28 “(1) NASA GIRLS and NASA BOYS.

29 “(2) Aspire to Inspire.

30 “(3) Summer Institute in Science, Technology, Engineering, and Re-  
31 search.

32 **“§ 49912. Internship and fellowship opportunities**

33 “Not later than October 1, 2018, the Administrator shall institute a pro-  
34 cess to encourage the recruitment of qualified candidates who are women or  
35 individuals who are underrepresented in the fields of science, technology, en-  
36 gineering, and mathematics (STEM) and computer science for internships  
37 and fellowships at the Administration with relevance to the aerospace sector  
38 and related fields.”.

39 (r) REVISION OF SECTION 50905.—Section 50905 of title 51, United  
40 States Code, is amended—

1 (1) in the 2d sentence of subsection (a)(1), by striking “subsection  
2 (b)(2)(D)” and inserting “subsection (b)(2)(E)”;

3 (2) in the 3d sentence of subsection (a)(1), by striking “subsection  
4 (b)(2)(D)” and inserting “subsection (b)(2)(E)”;

5 (3) in the last sentence of subsection (a)(1), by striking “Committee  
6 on Science” and inserting “Committee on Science, Space, and Tech-  
7 nology”;

8 (4) in subsection (b)(4)(B), by striking “the date of enactment of the  
9 Commercial Space Launch Amendments Act of 2004” and inserting  
10 “December 23, 2004”;

11 (5) in subsection (b)(6)(A), by striking “the date of enactment of the  
12 Commercial Space Launch Amendments Act of 2004” and inserting  
13 “December 23, 2004”; and

14 (6) in subsection (b)(6)(B), by striking “the date of enactment of the  
15 Commercial Space Launch Amendments Act of 2004” and inserting  
16 “December 23, 2004”.

17 (s) REVISION OF SECTION 50922.—Section 50922 of title 51, United  
18 States Code, is amended—

19 (1) in subsection (a) (matter before paragraph (1)), by striking “the  
20 date of the enactment of this section,” and inserting “October 28,  
21 1998,”;

22 (2) in subsection (b) (matter before paragraph (1)), by striking “the  
23 date of the enactment of this section,” and inserting “October 28,  
24 1998,”;

25 (3) in subsection (c)(1)—

26 (A) by striking “the date of enactment of the Commercial Space  
27 Launch Amendments Act of 2004,” and inserting “December 23,  
28 2004,”;

29 (B) by striking “that Act,” and inserting “the Commercial  
30 Space Launch Amendments Act of 2004,”; and

31 (C) by striking “such date of enactment,” and inserting “De-  
32 cember 23, 2004,”;

33 (4) in subsection (c)(2)(A), by striking “the date of enactment of the  
34 Commercial Space Launch Amendments Act of 2004,” and inserting  
35 “December 23, 2004,”;

36 (5) in subsection (d)(2)—

37 (A) by striking “the date of enactment of the Commercial Space  
38 Launch Amendments Act of 2004,” and inserting “December 23,  
39 2004,”; and

40 (B) by striking “that Act” and inserting “the Commercial  
41 Space Launch Amendments Act of 2004”; and

1 (6) in subsection (d)(3), by striking “the date of enactment of the  
2 Commercial Space Launch Amendments Act of 2004” and inserting  
3 “December 23, 2004.”

4 (t) REVISION OF CHAPTER 515.—

5 (1) TABLE OF CONTENTS.—Chapter 515 of title 51, United States  
6 Code, is amended by inserting after the chapter heading the following:  
“Sec.  
“51501. Establishment of Office of Spaceports.”.

7 (2) REVISION OF SECTION 51501.—Section 51501 of title 51, United  
8 States Code, is amended—

9 (A) by redesignating subsections (a), (b), (c), (d), and (e) as  
10 subsections (b), (c), (d), (e), and (a), respectively, and transferring  
11 subsection (a), as redesignated, to appear at the beginning of the  
12 section;

13 (B) in the heading for subsection (a), as redesignated, by strik-  
14 ing “DEFINITION” and inserting “DEFINITION OF SPACEPORT”;

15 (C) in subsection (a), as redesignated, by inserting a comma  
16 after “In this section”;

17 (D) in subsection (b), as redesignated, by striking “the date of  
18 enactment of this section,” and inserting “October 5, 2018,”; and

19 (E) in subsection (d), as redesignated—

20 (i) by striking “functions assigned in subsection (b),” and  
21 inserting “functions assigned in subsection (c),”; and

22 (ii) by striking “host” from the end of the matter before  
23 paragraph (1) and inserting “host” at the beginning of para-  
24 graph (1).

25 (u) ENACTMENT OF CHAPTER 517.—Title 51, United States Code, is  
26 amended by inserting after chapter 515 the following:

27 **“CHAPTER 517—DEVELOPMENT AND USE OF COMMER-**  
28 **CIAL CARGO AND CREW TRANSPORTATION CAPABILI-**  
29 **TIES**

“Sec.

“51701. Commercial development of cargo transportation capabilities.

“51702. Commercial development of crew transportation capabilities.

“51703. Commercial Crew Program.

“51704. Policy regarding fair and open competition for space transportation services.

“51705. Transparency.

30 **“§ 51701. Commercial development of cargo transportation**  
31 **capabilities**

32 “The Administrator shall continue to support the existing Commercial  
33 Resupply Services program, aimed at enabling the commercial space indus-  
34 try in support of the Administration to develop reliable means of launching  
35 cargo and supplies to the International Space Station throughout the dura-

1 tion of the facility's operation. The Administrator may apply funds toward  
2 the reduction of risk to the timely start of the services, specifically—

3 “(1) efforts to conduct a flight test;

4 “(2) accelerate development; and

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

7 **“§ 51702. Commercial development of crew transportation**  
8 **capabilities**

9 “For the duration of the commercial crew development program, the Ad-  
10 ministrator may support follow-on commercially-developed crew transpor-  
11 tation systems dependent on the completion of each of the following:

12 “(1) HUMAN RATING REQUIREMENTS.—The Administrator shall de-  
13 velop and make available to the public detailed human rating processes  
14 and requirements to guide the design of commercially-developed crew  
15 transportation capabilities, which requirements shall be at least equiva-  
16 lent to proven requirements for crew transportation in use as of Octo-  
17 ber 11, 2010.

18 “(2) PROCUREMENT SYSTEM REVIEW.—

19 “(A) REVIEW OF CURRENT PRACTICES AND PROCESSES.—The  
20 Administrator shall review current Government procurement and  
21 acquisition practices and processes, including agreement authori-  
22 ties under chapter 201 of this title, to determine the most cost-  
23 effective means of procuring commercial crew transportation capa-  
24 bilities and related services in a manner that ensures appropriate  
25 accountability, transparency, and maximum efficiency in the pro-  
26 curement of the capabilities and services. The review shall include  
27 identification of proposed measures to address—

28 “(i) risk management and means of indemnification of  
29 commercial providers of the capabilities and services;

30 “(ii) quality control;

31 “(iii) safety oversight; and

32 “(iv) the application of Federal oversight processes within  
33 the jurisdiction of other Federal agencies.

34 “(B) REVIEW OF PROPOSED PROCUREMENT.—A description of  
35 the proposed procurement process and justification of the pro-  
36 posed procurement for its selection shall be included in any pro-  
37 posed initiation of procurement activity for commercially-developed  
38 crew transportation capabilities and services and shall be subject  
39 to review by the Committee on Commerce, Science, and Transpor-  
40 tation of the Senate and the Committee on Science, Space, and  
41 Technology of the House of Representatives before the initiation

1 of any competitive process to procure the capabilities or services.  
2 In support of the review by the committees, the Comptroller Gen-  
3 eral shall undertake an assessment of the proposed procurement  
4 process and provide a report to the committees not later than 90  
5 days after the date on which the Administrator provides the de-  
6 scription and justification to the committees.

7 “(3) USE OF GOVERNMENT-SUPPLIED CAPABILITIES AND INFRA-  
8 STRUCTURE.—In evaluating any proposed development activity for  
9 commercially-developed crew or cargo launch capabilities, the Adminis-  
10 trator shall identify the anticipated contribution of Government person-  
11 nel, expertise, technologies, and infrastructure to be utilized in support  
12 of design, development, or operations of the capabilities. This assess-  
13 ment shall include a clear delineation of the full requirements for the  
14 commercial crew service (including the contingency for crew rescue).  
15 The Administrator shall include details and associated costs of such  
16 support as part of any proposed development initiative for the procure-  
17 ment of commercially-developed crew or cargo launch capabilities or  
18 services.

19 “(4) FLIGHT DEMONSTRATION AND READINESS REQUIREMENTS.—  
20 The Administrator shall establish appropriate milestones and minimum  
21 performance objectives to be achieved before authority is granted to  
22 proceed to the procurement of commercially-developed crew transpor-  
23 tation capabilities or services. The guidelines shall include a procedure  
24 to provide independent assurance of flight safety and flight readiness  
25 before the authorization of United States government personnel to par-  
26 ticipate as crew onboard any commercial launch vehicle developed pur-  
27 suant to this section.

28 “(5) COMMERCIAL CREW RESCUE CAPABILITIES.—The provision of a  
29 commercial capability to provide International Space Station crew serv-  
30 ices shall include crew rescue requirements, and shall be undertaken  
31 through the procurement process initiated in conformance with this  
32 section. In the event such development is initiated, the Administrator  
33 shall make available any relevant government-owned intellectual prop-  
34 erty deriving from the development of a multipurpose crew vehicle au-  
35 thorized by this section and sections 71522 and 71523 of this title to  
36 commercial entities involved with such crew rescue capability develop-  
37 ment which shall be relevant to the design of a crew rescue capability.  
38 In addition, the Administrator shall seek to ensure that contracts for  
39 development of the multipurpose crew vehicle contain provisions for the  
40 licensing of relevant intellectual property to participating commercial  
41 providers of any crew rescue capability development undertaken pursu-

1 ant to this section. If 1 or more contractors involved with development  
2 of the multipurpose crew vehicle seek to compete in development of a  
3 commercial crew service with crew rescue capability, separate legislative  
4 authority must be enacted to enable the Administrator to provide fund-  
5 ing for any modifications of the multipurpose crew vehicle necessary to  
6 fulfill the International Space Station crew rescue function.

7 **“§ 51703. Commercial Crew Program**

8 “(a) OBJECTIVE.—The objective of the Commercial Crew Program shall  
9 be to assist in the development and certification of commercially provided  
10 transportation that—

11 “(1) can carry United States government astronauts (meaning a gov-  
12 ernment astronaut as defined in section 50902 of this title) safely, reli-  
13 ably, and affordably to and from the International Space Station;

14 “(2) can serve as a crew rescue vehicle; and

15 “(3) can accomplish paragraphs (1) and (2) as soon as practicable.

16 “(b) PRIMARY CONSIDERATION.—The objective described in subsection  
17 (a) shall be the primary consideration in the acquisition strategy for the  
18 Commercial Crew Program.

19 “(c) SAFETY.—

20 “(1) IN GENERAL.—The Administrator shall protect the safety of  
21 government astronauts (as defined in section 50902 of this title) by en-  
22 suring that each commercially provided transportation system under  
23 this section meets all applicable human rating requirements in accord-  
24 ance with section 51702(1) of this title.

25 “(2) LESSONS LEARNED.—Consistent with the findings and recom-  
26 mendations of the Columbia Accident Investigation Board, the Admin-  
27 istration shall ensure that safety and the minimization of the prob-  
28 ability of loss of crew are the critical priorities of the Commercial Crew  
29 Program.

30 “(d) COST MINIMIZATION.—The Administrator shall strive through the  
31 competitive selection process to minimize the life cycle cost to the Adminis-  
32 tration through the planned period of commercially provided crew transpor-  
33 tation services.

34 **“§ 51704. Policy regarding fair and open competition for**  
35 **space transportation services**

36 “It is the policy of the United States that, to foster the competitive devel-  
37 opment, operation, improvement, and commercial availability of space trans-  
38 portation services, and to minimize the life cycle cost to the Administration,  
39 the Administrator shall procure services for Federal Government access to  
40 and return from the International Space Station, whenever practicable, via



1 fair and open competition for well-defined, milestone-based, Federal Acquisition  
2 Regulation-based contracts under section 71511(a) of this title.

3 **“§ 51705. Transparency**

4 “The Administrator shall, to the greatest extent practicable and in a  
5 manner that does not add costs or schedule delays to the program, ensure  
6 all Commercial Crew Program and Commercial Resupply Services Program  
7 providers provide evidence-based support for their costs and schedules.”.

8 (v) REVISION OF SECTION 60304.—

9 (1) REVISION OF SECTION.—Section 60304 of title 51, United States  
10 Code, is amended—

11 (A) in the section heading, by striking “**Program evaluation**  
12 **tion**” and inserting “**Advisory committee**”;

13 (B) in subsection (a)—

14 (i) by striking “(a) ADVISORY COMMITTEE.—The Administrator shall” and inserting “The Administrator shall”; and

15 (ii) by striking “(5 App. U.S.C.),” and inserting “(5 U.S.C.  
16 App.),”; and

17 (C) by striking subsection (b).

18 (2) CONFORMING AMENDMENT.—The chapter table of contents of  
19 chapter 603 of title 51, United States Code, is amended by striking  
20 the item relating to section 60304 and inserting the following:

21 “60304. Advisory committee.”.

22 (w) ENACTMENT OF SECTIONS 60507 THROUGH 60510.—

23 (1) CHAPTER TABLE OF CONTENTS.—The chapter table of contents  
24 of chapter 605 of title 51, United States Code, is amended by adding  
25 at the end the following:

“60507. Interagency collaboration implementation approach.

“60508. Transitioning experimental research to operations.

“60509. Decadal Survey missions implementation for Earth observation.

“60510. Instrument testbeds and venture class missions.”.

26 (2) ENACTMENT OF SECTIONS.—Chapter 605 of title 51, United  
27 States Code, is amended by adding at the end the following:

28 **“§ 60507. Interagency collaboration implementation ap-  
29 proach**

30 “The Director of the Office of Science and Technology Policy shall estab-  
31 lish a mechanism to ensure greater coordination of the research, operations,  
32 and activities relating to civilian Earth observation of Federal agencies, in-  
33 cluding the Administration, that have active programs that contribute either  
34 directly or indirectly to those areas. The mechanism should include the de-  
35 velopment of a strategic implementation plan that is updated at least every  
36 3 years with a process for external independent advisory input. The strate-  
37 gic implementation plan should include—

1 “(1) a description of the responsibilities of the various Federal agen-  
2 cy roles in Earth observations;

3 “(2) recommended cost-sharing and procurement arrangements be-  
4 tween Federal agencies and other entities, including international ar-  
5 rangements; and

6 “(3) a plan for ensuring the provision of sustained, long-term space-  
7 based climate observations.

8 **“§ 60508. Transitioning experimental research to operations**

9 “Based on the implementation plan provided to Congress in March 2011,  
10 the Administrator of the National Aeronautics and Space Administration  
11 shall coordinate with the Administrator of the National Oceanic and Atmos-  
12 pheric Administration and the Director of the United States Geological Sur-  
13 vey to establish a formal mechanism that plans, coordinates, and supports  
14 the transitioning of the research findings, assets, and capabilities of the Na-  
15 tional Aeronautics and Space Administration to the operations of the Na-  
16 tional Oceanic and Atmospheric Administration and the United States Geo-  
17 logical Survey. In defining the mechanism, the National Aeronautics and  
18 Space Administration should consider the establishment of a formal or in-  
19 formal interagency transition office.

20 **“§ 60509. Decadal Survey missions implementation for Earth**  
21 **observation**

22 “The Administrator shall undertake to implement, as appropriate, mis-  
23 sions identified in the National Research Council’s Earth Science Decadal  
24 Survey within the scope of the funds authorized for the Earth Science Mis-  
25 sion Directorate.

26 **“§ 60510. Instrument testbeds and venture class missions**

27 “The Administrator shall pursue innovative ways to fly instrument-level  
28 payloads for early demonstration or as co-manifested payloads. Congress en-  
29 courages the use of the International Space Station as an accessible plat-  
30 form for the conduct of such activities. Additionally, in order to address the  
31 cost and schedule challenges associated with large flight systems, the Ad-  
32 ministration should pursue smaller systems to the extent practicable and  
33 warranted.”.

34 (x) REVISION OF CHAPTER 709.—

35 (1) CHAPTER TABLE OF CONTENTS.—The chapter table of contents  
36 of chapter 709 of title 51, United States Code, is amended by adding  
37 at the end the following:

“70908. Continuation of the International Space Station.

“70909. Maximum utilization of the International Space Station.

“70910. Operation, maintenance, and maximum utilization of United States Segment.

“70911. Management of national laboratory.

“70912. Primary objectives of International Space Station program.”.

1           (2) TECHNICAL AMENDMENT TO SECTION 70902.—Section 70902 of  
2 title 51, United States Code, is amended by striking “section 40904”  
3 and inserting “section 49904”.

4           (3) TECHNICAL AMENDMENT TO SECTION 70903.—Section 70903(1)  
5 of title 51, United States Code, is amended by striking “section  
6 40904” and inserting “section 49904”.

7           (4) TECHNICAL AMENDMENTS TO SECTION 70904.—Section 70904 of  
8 title 51, United States Code, is amended—

9               (A) in subsection (b)(2), by striking “section 40904” and insert-  
10 ing “section 49904”;

11               (B) in subsection (b)(3), by striking “Committee on Science and  
12 Technology” and inserting “Committee on Science, Space, and  
13 Technology”; and

14               (C) in subsection (c)(2), by striking “Committee on Science and  
15 Technology” and inserting “Committee on Science, Space, and  
16 Technology”.

17           (5) ENACTMENT OF SECTIONS 70908 THROUGH 70912.—Chapter 709  
18 of title 51, United States Code, is amended by adding at the end the  
19 following:

20 **“§ 70908. Continuation of the International Space Station**

21           “(a) POLICY.—It shall be the policy of the United States, in consultation  
22 with its international partners in the International Space Station program,  
23 to support full and complete utilization of the International Space Station  
24 through at least 2024.

25           “(b) ACTIONS.—In furtherance of the policy set forth in subsection (a),  
26 the Administration shall—

27               “(1) pursue international, commercial, and intragovernmental means  
28 to maximize International Space Station logistics supply, maintenance,  
29 and operational capabilities, reduce risks to International Space Station  
30 systems sustainability, and offset and minimize United States oper-  
31 ations costs relating to the International Space Station;

32               “(2) utilize, to the extent practicable, the International Space Sta-  
33 tion for the development of capabilities and technologies needed for the  
34 future of human space exploration beyond low-Earth orbit; and

35               “(3) utilize, if practical and cost effective, the International Space  
36 Station for Science Mission Directorate missions in low-Earth orbit.

37 **“§ 70909. Maximum utilization of the International Space**  
38 **Station**

39           “(a) IN GENERAL.—With assembly of the International Space Station  
40 complete, the Administration shall take steps to maximize the productivity  
41 and use of the International Space Station with respect to scientific and

1 technological research and development, advancement of space exploration,  
2 and international collaboration.

3 “(b) ACTIONS.—In carrying out subsection (a), the Administration shall,  
4 at a minimum, undertake the following:

5 “(1) INNOVATIVE USE OF U.S. SEGMENT.—The United States seg-  
6 ment of the International Space Station, which has been designated as  
7 a national laboratory, shall be developed, managed, and utilized in a  
8 manner that enables the effective and innovative use of the facility, as  
9 provided in section 70911 of this title.

10 “(2) INTERNATIONAL COOPERATION.—

11 “(A) DEFINITION OF NEAR-EARTH SPACE.—In this paragraph,  
12 the term ‘near-Earth space’ means the region of space that in-  
13 cludes low-Earth orbit and extends out to and includes geo-syn-  
14 chronous orbit.

15 “(B) USE OF INTERNATIONAL SPACE STATION.—The Inter-  
16 national Space Station shall continue to be utilized as a key com-  
17 ponent of international efforts to build missions and capabilities  
18 that further the development of a human presence beyond near-  
19 Earth space and advance United States security and economic  
20 goals. The Administrator shall actively seek ways to encourage and  
21 enable the use of International Space Station capabilities to sup-  
22 port those efforts.

23 “(3) DOMESTIC COLLABORATION.—The operations, management,  
24 and utilization of the International Space Station shall be conducted  
25 in a manner that provides opportunities for collaboration with other re-  
26 search programs and objectives of the United States Government in co-  
27 operation with commercial suppliers, users, and developers.

28 **“§ 70910. Operation, maintenance, and maximum utilization**  
29 **of United States Segment**

30 “(a) IN GENERAL.—The Administrator shall take all actions necessary to  
31 ensure the safe and effective operation, maintenance, and maximum utiliza-  
32 tion of the United States segment of the International Space Station  
33 through at least September 30, 2024.

34 “(b) PLANNING, MANAGEMENT, AND SUPPORT.—Utilization of research  
35 facilities and capabilities aboard the International Space Station (other than  
36 exploration-related research and technology development facilities and capa-  
37 bilities, and associated ground support and logistics), shall be planned, man-  
38 aged, and supported as provided in section 70911 of this title. Exploration-  
39 related research and technology development facilities, capabilities, and as-  
40 sociated ground support and logistics shall be planned, managed, and sup-  
41 ported by the appropriate Administration organizations and officials in a

1 manner that does not interfere with other activities under section 70911 of  
2 this title.

3 **“§ 70911. Management of national laboratory**

4 “(a) COOPERATIVE AGREEMENT WITH NOT-FOR-PROFIT ORGANIZATION  
5 FOR MANAGEMENT OF NATIONAL LABORATORY.—

6 “(1) IN GENERAL.—The Administrator shall provide initial financial  
7 assistance and enter into a cooperative agreement with an appropriate  
8 organization that is exempt from taxation under section 501(c)(3) of  
9 the Internal Revenue Code of 1986 (26 U.S.C. 501(c)(3)) to manage  
10 the activities of the International Space Station national laboratory in  
11 accordance with this section.

12 “(2) QUALIFICATIONS.—The organization with which the Adminis-  
13 trator enters into the cooperative agreement shall develop the capabili-  
14 ties to implement research and development projects utilizing the Inter-  
15 national Space Station national laboratory and to otherwise manage the  
16 activities of the International Space Station national laboratory.

17 “(3) PROHIBITION ON OTHER ACTIVITIES.—The cooperative agree-  
18 ment shall require the organization entering into the agreement to en-  
19 gage exclusively in activities relating to the management of the Inter-  
20 national Space Station national laboratory and activities that promote  
21 its long-term research and development mission as required by this sec-  
22 tion, without any other organizational objectives or responsibilities on  
23 behalf of the organization or any parent organization or other entity.

24 “(b) ADMINISTRATION LIAISON.—

25 “(1) DESIGNATION.—The Administrator shall designate an official  
26 or employee of the Space Operations Mission Directorate of the Admin-  
27 istration to act as liaison between the Administration and the organiza-  
28 tion with which the Administrator enters into a cooperative agreement  
29 under subsection (a) with regard to the management of the Inter-  
30 national Space Station national laboratory.

31 “(2) CONSULTATION WITH LIAISON.—The cooperative agreement  
32 shall require the organization entering into the agreement to carry out  
33 its responsibilities under the agreement in cooperation and consultation  
34 with the official or employee designated under paragraph (1).

35 “(c) PLANNING AND COORDINATION OF NATIONAL LABORATORY RE-  
36 SEARCH ACTIVITIES.—The Administrator shall provide initial financial as-  
37 sistance to the organization with which the Administrator enters into a co-  
38 operative agreement under subsection (a), in order for the organization to  
39 initiate the following:

40 “(1) Planning and coordination of the International Space Station  
41 national laboratory research activities.

1           “(2) Development and implementation of guidelines, selection cri-  
2           teria, and flight support requirements for non-Administration scientific  
3           utilization of International Space Station research capabilities and fa-  
4           cilities available in United States-owned modules of the International  
5           Space Station or in partner-owned facilities of the International Space  
6           Station allocated to United States utilization by international agree-  
7           ment.

8           “(3) Interaction with and integration of the International Space Sta-  
9           tion National Laboratory Advisory Committee established under section  
10          70906 of this title with the governance of the organization, and review  
11          of recommendations provided by that Committee regarding agreements  
12          with non-Administration departments and agencies of the United  
13          States Government, academic institutions and consortia, and commer-  
14          cial entities leading to the utilization of the International Space Station  
15          national laboratory facilities.

16          “(4) Coordination of transportation requirements in support of the  
17          International Space Station national laboratory research and develop-  
18          ment objectives, including provision for delivery of instruments, logis-  
19          tics support, and related experiment materials, and provision for return  
20          to Earth of collected samples, materials, and scientific instruments in  
21          need of replacement or upgrade.

22          “(5) Cooperation with the Administration, other departments and  
23          agencies of the United States Government, the States, and commercial  
24          entities in ensuring the enhancement and sustained operations of non-  
25          exploration-related research payload ground support facilities for the  
26          International Space Station, including the Space Life Sciences Labora-  
27          tory, the Space Station Processing Facility, and the Payload Oper-  
28          ations Integration Center.

29          “(6) Development and implementation of scientific outreach and edu-  
30          cation activities designed to ensure effective utilization of International  
31          Space Station research capabilities including the conduct of scientific  
32          assemblies, conferences, and other fora for the presentation of research  
33          findings, methods, and mechanisms for the dissemination of non-re-  
34          stricted research findings and the development of educational pro-  
35          grams, course supplements, interaction with educational programs at  
36          all grade levels, including student-focused research opportunities for  
37          conduct of research in the International Space Station national labora-  
38          tory facilities.

39          “(7) Other matters relating to the utilization of the International  
40          Space Station national laboratory facilities for research and develop-  
41          ment as the Administrator considers appropriate.

1 “(d) RESEARCH CAPACITY ALLOCATION AND INTEGRATION OF RE-  
2 SEARCH PAYLOADS

3 “(1) ALLOCATION OF INTERNATIONAL SPACE STATION RESEARCH  
4 CAPACITY.—International Space Station national laboratory managed  
5 experiments shall be guaranteed access to, and utilization of, not less  
6 than 50 percent of the United States research capacity allocation, in-  
7 cluding power, cold stowage, and requisite crew time onboard the Inter-  
8 national Space Station through at least September 30, 2024. Access to  
9 the International Space Station research capacity includes provision for  
10 the adequate upmass and downmass capabilities to utilize the Inter-  
11 national Space Station research capacity, as available. The Adminis-  
12 trator may allocate additional capacity to the International Space Sta-  
13 tion national laboratory should such capacity be in excess of Adminis-  
14 tration research requirements.

15 “(2) ADDITIONAL RESEARCH CAPABILITIES.—If any Administration  
16 research plan is determined to require research capacity onboard the  
17 International Space Station beyond the percentage allocated under  
18 paragraph (1), the research plan shall be prepared in the form of a  
19 requested research opportunity to be submitted to the process estab-  
20 lished under this section for the consideration of proposed research  
21 within the capacity allocated to the International Space Station na-  
22 tional laboratory. A proposal for such a research plan may include the  
23 establishment of partnerships with non-Administration institutions eli-  
24 gible to propose research to be conducted within the International  
25 Space Station national laboratory capacity. Until at least September  
26 30, 2024, the official or employee designated under subsection (b) may  
27 grant an exception to this requirement in the case of a proposed experi-  
28 ment considered essential for purposes of preparing for exploration be-  
29 yond low-Earth orbit, as determined by joint agreement between the or-  
30 ganization with which the Administrator enters into a cooperative  
31 agreement under subsection (a) and the official or employee designated  
32 under subsection (b).

33 “(3) RESEARCH PRIORITIES AND ENHANCED CAPACITY.—The orga-  
34 nization with which the Administrator enters into the cooperative  
35 agreement shall consider recommendations of the National Academies  
36 Decadal Survey on Biological and Physical Sciences in Space in estab-  
37 lishing research priorities and in developing proposed enhancements of  
38 research capacity and opportunities for the International Space Station  
39 national laboratory.

40 “(4) RESPONSIBILITY FOR RESEARCH PAYLOAD.—The Administra-  
41 tion shall retain its roles and responsibilities in providing research pay-

1 load physical, analytical, and operations integration during pre-flight,  
 2 post-flight, transportation, and orbital phases essential to ensure safe  
 3 and effective flight readiness and vehicle integration of research activi-  
 4 ties approved and prioritized by the organization with which the Ad-  
 5 ministrator enters into the cooperative agreement and the official or  
 6 employee designated under subsection (b).

7 **“§ 70912. Primary objectives of International Space Station**  
 8 **program**

9 “The primary objectives of the International Space Station program shall  
 10 be—

11 “(1) to achieve the long term goal and objectives under section  
 12 71512 of this title; and

13 “(2) to pursue a research program that advances knowledge and pro-  
 14 vides other benefits to the Nation.”.

15 (y) REVISION OF SECTION 71102.—Section 71102(1) of title 51, United  
 16 States Code, is amended by striking “attaching a tracking device,” and in-  
 17 serting “attaching a tracking device to,”.

18 (z) ENACTMENT OF CHAPTER 715.—Title 51, United States Code, is  
 19 amended by adding after chapter 713 the following:

20 **“CHAPTER 715—HUMAN SPACE FLIGHT AND**  
 21 **EXPLORATION**

“SUBCHAPTER I—GENERAL PROVISIONS

“Sec.

“71501. Definitions.

“SUBCHAPTER II—POLICY, GOALS, AND OBJECTIVES

“71511. Human space flight policy.

“71512. Goals and objectives.

“SUBCHAPTER III—EXPANSION OF HUMAN SPACE FLIGHT BEYOND THE  
 INTERNATIONAL SPACE STATION AND LOW-EARTH ORBIT

“71521. Space Launch System as follow-on launch vehicle to the space shuttle.

“71522. Multipurpose crew vehicle.

“71523. Utilization of existing workforce and assets in development of Space Launch System  
 and multipurpose crew vehicle.

“71524. Launch support and infrastructure modernization program.

“71525. Development of technologies and in-space capabilities for beyond near-Earth space  
 missions.

“SUBCHAPTER IV—SPACE SCIENCE

“71541. Technology development.

“71542. Suborbital research activities.

“71543. In-space servicing.

“71544. Ongoing restoration of radioisotope thermoelectric generator material production.

“71545. Coordinated approach for robotic missions.

“71546. Near-Earth object survey and policy with respect to threats posed.

“71547. Space weather.

22 “SUBCHAPTER I—GENERAL PROVISIONS

23 **“§ 71501. Definitions**

24 “In this chapter:



1           “(1) CIS-LUNAR SPACE.—The term ‘cis-lunar space’ means the re-  
2           gion of space from the Earth out to and including the region around  
3           the surface of the Moon.

4           “(2) DEEP SPACE.—The term ‘deep space’ means the region of space  
5           beyond cis-lunar space.

6           “(3) NEAR-EARTH SPACE.—The term ‘near-Earth space’ means the  
7           region of space that includes low-Earth orbit and extends out to and  
8           includes geo-synchronous orbit.

9           “(4) SPACE LAUNCH SYSTEM.—The term ‘Space Launch System’  
10           means the follow-on Government-owned civil launch system developed,  
11           managed, and operated by the Administration to serve as a key compo-  
12           nent to expand human presence beyond low-Earth orbit.

13           “SUBCHAPTER II—POLICY, GOALS, AND OBJECTIVES

14           **“§ 71511. Human space flight policy**

15           “(a) USE OF NON-UNITED STATES HUMAN SPACE FLIGHT TRANSPOR-  
16           TATION SERVICES.—

17           “(1) DEFINITIONS.—In this subsection:

18           “(A) COMMERCIAL PROVIDER.—The term ‘commercial provider’  
19           means any person providing human space flight transportation  
20           services, primary control of which is held by persons other than  
21           the Federal Government, a State or local government, or a foreign  
22           government.

23           “(B) QUALIFIED FOREIGN ENTITY.—The term ‘qualified foreign  
24           entity’ means a foreign entity that is in compliance with all appli-  
25           cable safety standards and is not prohibited from providing space  
26           transportation services under other law.

27           “(C) UNITED STATES COMMERCIAL PROVIDER.—The term  
28           ‘United States commercial provider’ means a commercial provider,  
29           organized under the laws of the United States or of a State, that  
30           is more than 50 percent owned by United States nationals.

31           “(2) IN GENERAL.—The Federal Government may not acquire  
32           human space flight transportation services from a foreign entity un-  
33           less—

34           “(A) no United States Government-operated human space flight  
35           capability is available;

36           “(B) no United States commercial provider is available; and

37           “(C) it is a qualified foreign entity.

38           “(3) ARRANGEMENTS WITH FOREIGN ENTITIES.—Nothing in this  
39           subsection shall prevent the Administrator from negotiating or entering  
40           into human space flight transportation arrangements with foreign enti-

1           ties to ensure safety of flight and continued International Space Sta-  
2           tion operations.

3           “(b) UNITED STATES HUMAN SPACE FLIGHT CAPABILITIES.—Congress  
4           reaffirms the policy stated in section 70501(a) of this title that the United  
5           States shall maintain an uninterrupted capability for human space flight  
6           and operations in low-Earth orbit, and beyond, as an essential instrument  
7           of national security and of the capacity to ensure continued United States  
8           participation and leadership in the exploration and utilization of space.

9           **“§ 71512. Goals and objectives**

10          “(a) LONG-TERM GOALS.—The long-term goals of the human space flight  
11          and exploration efforts of the Administration shall be—

12               “(1) to expand permanent human presence beyond low-Earth orbit  
13               and to do so, where practical, in a manner involving international, aca-  
14               demic, and industry partners;

15               “(2) crewed missions and progress toward achieving the goal in para-  
16               graph (1) to enable the potential for subsequent human exploration and  
17               the extension of human presence throughout the solar system; and

18               “(3) to enable a capability to extend human presence, including po-  
19               tential human habitation on another celestial body and a thriving space  
20               economy in the 21st century.

21          “(b) KEY OBJECTIVES.—The key objectives of the United States for  
22          human expansion into space shall be—

23               “(1) to sustain the capability for long-duration presence in low-Earth  
24               orbit, initially through continuation of the International Space Station  
25               and full utilization of the United States segment of the International  
26               Space Station as a national laboratory, and through assisting and en-  
27               abling an expanded commercial presence in, and access to, low-Earth  
28               orbit, as elements of a low-Earth orbit infrastructure;

29               “(2) to determine whether humans can live for extended periods in  
30               space with decreasing reliance on Earth, starting with utilization of  
31               low-Earth orbit infrastructure, to—

32                       “(A) identify potential roles that space resources such as energy  
33                       and materials can play;

34                       “(B) meet national and global needs and challenges such as po-  
35                       tential cataclysmic threats; and

36                       “(C) explore the viability of and lay the foundation for sustain-  
37                       able economic activities in space;

38               “(3) to maximize the role that human exploration of space can play  
39               in—

40                       “(A) advancing overall knowledge of the universe;

1           “(B) supporting United States national and economic security  
2           and the United States global competitive posture; and

3           “(C) inspiring young people in their educational pursuits;

4           “(4) to build on the cooperative and mutually beneficial framework  
5           established by the International Space Station partnership agreements  
6           and experience in developing and undertaking programs and meeting  
7           objectives designed to realize the goal of human space flight set forth  
8           in subsection (a); and

9           “(5) to achieve human exploration of Mars and beyond through the  
10          prioritization of those technologies and capabilities best suited for such  
11          a mission in accordance with the stepping stone approach to explo-  
12          ration under section 70504 of this title.

13       “SUBCHAPTER III—EXPANSION OF HUMAN SPACE FLIGHT BE-  
14       YOND THE INTERNATIONAL SPACE STATION AND LOW-  
15       EARTH ORBIT

16       “**§ 71521. Space Launch System as follow-on launch vehicle**  
17       **to the space shuttle**

18       “(a) POLICY.—It is the policy of the United States that the Administra-  
19       tion develop a Space Launch System as a follow-on to the space shuttle that  
20       can access cis-lunar space and the regions of space beyond low-Earth orbit  
21       in order to enable the United States to participate in global efforts to access  
22       and develop that increasingly strategic region.

23       “(b) INITIATION OF DEVELOPMENT.—

24           “(1) IN GENERAL.—As soon as practicable after October 11, 2010,  
25           the Administrator shall initiate development of a Space Launch System  
26           meeting the minimum capability requirements specified in subsection  
27           (c).

28           “(2) MODIFICATION OF CURRENT CONTRACTS.—In order to limit the  
29           Administration’s termination liability costs and support critical capa-  
30           bilities, the Administrator shall, to the extent practicable, extend or  
31           modify existing (as of October 11, 2010) vehicle development and asso-  
32           ciated contracts necessary to meet the requirement in paragraph (1),  
33           including contracts for ground testing of solid rocket motors, if nec-  
34           essary, to ensure their availability for development of the Space Launch  
35           System.

36       “(c) MINIMUM CAPABILITY REQUIREMENTS.—

37           “(1) IN GENERAL.—The Space Launch System developed pursuant  
38           to subsection (b) shall be designed to have, at a minimum, the follow-  
39           ing:

40           “(A) The initial capability of the core elements, without an  
41           upper stage, of lifting payloads weighing between 70 and 100 tons

1 into low-Earth orbit in preparation for transit for missions beyond  
2 low-Earth orbit.

3 “(B) The capability to carry an integrated upper Earth depart-  
4 ure stage bringing the total lift capability of the Space Launch  
5 System to 130 tons or more.

6 “(C) The capability to lift the multipurpose crew vehicle.

7 “(D) The capability to serve as a backup system for supplying  
8 and supporting International Space Station cargo delivery require-  
9 ments or crew delivery requirements not otherwise met by avail-  
10 able commercial or partner-supplied vehicles.

11 “(E) The capacity for efficient and timely evolution, including  
12 the incorporation of new technologies, competition of sub-elements,  
13 and commercial operations.

14 “(2) FLEXIBILITY.—The Space Launch System shall be designed  
15 from inception as a fully-integrated vehicle capable of carrying a total  
16 payload of 130 tons or more into low-Earth orbit in preparation for  
17 transit for missions beyond low-Earth orbit. The Space Launch System  
18 shall, to the extent practicable, incorporate capabilities for evolutionary  
19 growth to carry heavier payloads. Developmental work and testing of  
20 the core elements and the upper stage should proceed in parallel sub-  
21 ject to appropriations. Priority should be placed on the core elements  
22 with the goal for operational capability for the core elements not later  
23 than December 31, 2016.

24 “(3) TRANSITION NEEDS.—The Administrator shall ensure that crit-  
25 ical skills and capabilities are retained, modified, and developed, as ap-  
26 propriate, in areas relating to solid and liquid engines, large diameter  
27 fuel tanks, rocket propulsion, and other ground test capabilities for an  
28 effective transition to the follow-on Space Launch System.

29 **“§ 71522. Multipurpose crew vehicle**

30 “(a) INITIATION OF DEVELOPMENT.—

31 “(1) IN GENERAL.—The Administrator shall continue the develop-  
32 ment of a multipurpose crew vehicle to be available as soon as prac-  
33 ticable, and no later than for use with the Space Launch System. The  
34 vehicle shall continue to advance development of the human safety fea-  
35 tures, designs, and systems in the Orion project.

36 “(2) GOAL FOR OPERATIONAL CAPABILITY.—It shall be the goal to  
37 achieve full operational capability for the transportation vehicle devel-  
38 oped pursuant to this subsection by not later than December 31, 2016.  
39 For purposes of meeting such goal, the Administrator may undertake  
40 a test of the transportation vehicle at the International Space Station  
41 before that date.

1 “(b) MINIMUM CAPABILITY REQUIREMENTS.—The multipurpose crew ve-  
2 hicle developed pursuant to subsection (a) shall be designed to have, at a  
3 minimum, the following:

4 “(1) The capability to serve as the primary crew vehicle for missions  
5 beyond low-Earth orbit.

6 “(2) The capability to conduct regular in-space operations, such as  
7 rendezvous, docking, and extra-vehicular activities, in conjunction with  
8 payloads delivered by the Space Launch System developed pursuant to  
9 section 71521 of this title, or other vehicles, in preparation for missions  
10 beyond low-Earth orbit or servicing of assets described in section  
11 71543 of this title, or other assets in cis-lunar space.

12 “(3) The capability to provide an alternative means of delivery of  
13 crew and cargo to the International Space Station, in the event other  
14 vehicles, whether commercial vehicles or partner-supplied vehicles, are  
15 unable to perform that function.

16 “(4) The capacity for efficient and timely evolution, including the in-  
17 corporation of new technologies, competition of sub-elements, and com-  
18 mercial operations.

19 **“§ 71523. Utilization of existing workforce and assets in de-**  
20 **velopment of Space Launch System and multi-**  
21 **purpose crew vehicle**

22 “(a) IN GENERAL.—In developing the Space Launch System pursuant to  
23 section 71521 of this title and the multipurpose crew vehicle pursuant to  
24 section 71522 of this title, the Administrator shall, to the extent practicable,  
25 utilize—

26 “(1) existing (as of October 11, 2010) contracts, investments, work-  
27 force, industrial base, and capabilities from the space shuttle and Orion  
28 and Ares 1 projects, including—

29 “(A) spacesuit development activities for application to, and  
30 coordinated development of, a multipurpose crew vehicle suit and  
31 associated life-support requirements with potential development of  
32 standard Administration-certified suit and life support systems for  
33 use in alternative commercially-developed crew transportation sys-  
34 tems; and

35 “(B) space shuttle-derived components and Ares 1 components  
36 that use existing (as of October 11, 2010) United States propul-  
37 sion systems, including liquid fuel engines, external tank or tank-  
38 related capability, and solid rocket motor engines; and

39 “(2) associated testing facilities in existence or under construction as  
40 of October 11, 2010.

1 “(b) DISCHARGE OF REQUIREMENTS.—In meeting the requirements of  
2 subsection (a), the Administrator—

3 “(1) shall, to the extent practicable, utilize ground-based manufac-  
4 turing capability, ground testing activities, launch and operations infra-  
5 structure, and workforce expertise;

6 “(2) shall, to the extent practicable, minimize the modification and  
7 development of ground infrastructure and maximize the utilization of  
8 existing (as of October 11, 2010) software, vehicle, and mission oper-  
9 ations processes;

10 “(3) shall complete construction and activation of the A-3 test stand  
11 with a completion goal of September 30, 2013;

12 “(4) may procure, develop, and flight test applicable components;  
13 and

14 “(5) shall take appropriate actions to ensure timely and cost-effective  
15 development of the Space Launch System and the multipurpose crew  
16 vehicle, including the use of a procurement approach that incorporates  
17 adequate and effective oversight, the facilitation of contractor effi-  
18 ciencies, and the streamlining of contract and procurement require-  
19 ments.

20 “(c) CONTINUATION OF CONTRACTOR SUPPORT.—The Administrator may  
21 not terminate any contract that provides the system transitions necessary  
22 for shuttle-derived hardware to be used on the Space Launch System de-  
23 scribed in section 71521 of this title or the multipurpose crew vehicle de-  
24 scribed in section 71522 of this title.

25 **“§ 71524. Launch support and infrastructure modernization**  
26 **program**

27 “(a) IN GENERAL.—The Administrator shall carry out a program the pri-  
28 mary purpose of which is to prepare infrastructure at the Kennedy Space  
29 Center that is needed to enable processing and launch of the Space Launch  
30 System. Vehicle interfaces and other ground processing and payload integra-  
31 tion areas should be simplified to minimize overall costs, enhance safety,  
32 and complement the purpose of this section.

33 “(b) ELEMENTS.—The program required by this section shall include—

34 “(1) investments to improve civil and national security operations at  
35 the Kennedy Space Center, to enhance the overall capabilities of the  
36 Center, and to reduce the long-term cost of operations and mainte-  
37 nance;

38 “(2) measures to provide multi-vehicle support, improvements in pay-  
39 load processing, and partnering at the Kennedy Space Center; and

40 “(3) other measures that the Administrator considers appropriate,  
41 including investments to improve launch infrastructure at Administra-

1           tion flight facilities scheduled to launch cargo to the International  
2           Space Station under the program to develop commercial cargo trans-  
3           portation capabilities.

4           **“§ 71525. Development of technologies and in-space capabili-**  
5           **ties for beyond near-Earth space missions**

6           “(a) DEVELOPMENT AUTHORIZED.—The Administrator may initiate ac-  
7           tivities to develop the following:

8                 “(1) Technologies identified as necessary elements of missions be-  
9                 yond low-Earth orbit.

10                “(2) In-space capabilities such as refueling and storage technology,  
11                orbital transfer stages, innovative in-space propulsion technology, com-  
12                munications, and data management that facilitate a broad range of  
13                users (including military and commercial).

14                “(3) Applications defining the architecture and design of missions  
15                beyond low-Earth orbit.

16                “(4) Spacesuit development and associated life support technology.

17                “(5) Flagship missions.

18           “(b) INVESTMENTS.—In developing technologies and capabilities under  
19           subsection (a), the Administrator may make investments in—

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

24                “(2) a space-based transfer vehicle including technologies described  
25                in paragraph (1) with an ability to conduct space-based operations that  
26                provide capabilities—

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

29                    “(B) to provide opportunities for in-space servicing of and deliv-  
30                    ery to multiple space-based platforms; and

31                    “(C) to facilitate international efforts to expand human pres-  
32                    ence to deep space destinations;

33                “(3) advanced life support technologies and capabilities;

34                “(4) technologies and capabilities relating to in-space power, propul-  
35                sion, and energy systems;

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

38                “(6) technologies and capabilities relating to in situ resource utiliza-  
39                tion; and

40                “(7) expanded research to understand the greatest biological impedi-  
41                ments to human deep space missions, especially the radiation challenge.

1 “(c) UTILIZATION OF INTERNATIONAL SPACE STATION AS TESTBED.—  
2 The Administrator may utilize the International Space Station as a testbed  
3 for any technology or capability developed under subsection (a) in a manner  
4 consistent with sections 70908 through 70911 of this title.

5 “(d) COORDINATION.—The Administrator shall coordinate development of  
6 technologies and capabilities under this section through an overall Adminis-  
7 tration technology approach consistent with the plan required by section 905  
8 of the National Aeronautics and Space Administration Authorization Act of  
9 2010 (Public Law 111–267, 124 Stat. 2836), which outlines how the Ad-  
10 ministration’s space technology program will meet the goal described in sec-  
11 tion 40903 of this title, including an explanation of how the plan will link  
12 to other mission-directorate technology efforts.

13 “SUBCHAPTER IV—SPACE SCIENCE

14 **“§ 71541. Technology development**

15 “The Administrator shall ensure that the Science Mission Directorate  
16 maintains a long-term technology development program for space and Earth  
17 science. That effort should be coordinated with an overall Administration  
18 technology investment approach consistent with the plan required by section  
19 905 of the National Aeronautics and Space Administration Authorization  
20 Act of 2010 (Public Law 111–267, 124 Stat. 2836), which outlines how the  
21 Administration’s space technology program will meet the goal described in  
22 section 40903 of this title, including an explanation of how the plan will  
23 link to other mission-directorate technology efforts.

24 **“§ 71542. Suborbital research activities**

25 “(a) MANAGEMENT.—The Administrator shall designate an officer or em-  
26 ployee of the Science Mission Directorate to act as the responsible official  
27 for all Suborbital Research in the Science Mission Directorate. The designee  
28 shall be responsible for—

29 “(1) the development of short- and long-term strategic plans for  
30 maintaining, renewing, and extending suborbital facilities and capabili-  
31 ties;

32 “(2) monitoring progress toward goals in the plans; and

33 “(3) integration of suborbital activities and workforce development  
34 within the Administration, thereby ensuring the long-term recognition  
35 of their combined value to the directorate, to the Administration, and  
36 to the Nation.

37 “(b) ESTABLISHMENT OF SUBORBITAL RESEARCH PROGRAM.—The Ad-  
38 ministrator shall establish a Suborbital Research Program within the  
39 Science Mission Directorate that shall include the use of sounding rockets,  
40 aircraft, high altitude balloons, suborbital reusable launch vehicles, and com-  
41 mercial launch vehicles to advance science and train the next generation of



1 scientists and engineers in systems engineering and systems integration,  
2 which are vital to maintaining critical skills in the aerospace workforce. The  
3 program shall integrate existing (as of October 11, 2010) suborbital re-  
4 search programs with orbital missions at the discretion of the designated  
5 officer or employee and shall emphasize the participation of undergraduate  
6 and graduate students and post-doctoral researchers when formulating an-  
7 nouncements of opportunity.

8 “(e) ANNUAL REPORT.—The Administrator shall report annually to the  
9 Committee on Commerce, Science, and Transportation of the Senate and  
10 the Committee on Science, Space, and Technology of the House of Rep-  
11 resentatives on the number and type of suborbital missions conducted in  
12 each fiscal year and the number of undergraduate and graduate students  
13 that participated in the missions.

14 **“§ 71543. In-space servicing**

15 “The Administrator shall continue to take all necessary steps to ensure  
16 that provisions are made for robotic or human in-space servicing and repair  
17 of all future observatory-class scientific spacecraft intended to be deployed  
18 in Earth-orbit or at a Lagrangian point to the extent practicable and appro-  
19 priate. The Administrator should ensure that Administration investments  
20 and future capabilities for space technology, robotics, and human space  
21 flight take the ability to service and repair observatory-class scientific space-  
22 craft into account, as appropriate, and incorporate those capabilities into  
23 design and operational plans.

24 **“§ 71544. Ongoing restoration of radioisotope thermoelectric  
25 generator material production**

26 “The Administrator shall, in coordination with the Secretary of Energy,  
27 pursue a joint approach beginning in fiscal year 2011 toward restarting and  
28 sustaining the domestic production of radioisotope thermoelectric generator  
29 material for deep space and other science and exploration missions. Funds  
30 authorized by the National Aeronautics and Space Administration Author-  
31 ization Act of 2010 for the Administration shall be made available under  
32 a reimbursable agreement with the Department of Energy for the purpose  
33 of reestablishing facilities to produce fuel required for radioisotope thermo-  
34 electric generators to enable future missions.

35 **“§ 71545. Coordinated approach for robotic missions**

36 “The Administrator shall ensure that the Exploration Systems Mission  
37 Directorate and the Space Operations Mission Directorate coordinate with  
38 the Science Mission Directorate on an overall approach and plan for inter-  
39 agency and international collaboration on robotic missions that are devel-  
40 oped by the Administration or internationally developed, including lunar,

1 Lagrangian, near-Earth orbit, and Mars spacecraft, such as the Inter-  
2 national Lunar Network.

3 **“§ 71546. Near-Earth object survey and policy with respect**  
4 **to threats posed**

5 “(a) POLICY REAFFIRMATION.—Congress reaffirms the policy set forth in  
6 section 20102(g) of this title relating to surveying near-Earth asteroids and  
7 comets.

8 “(b) IMPLEMENTATION.—Consistent with section 71103 of this title, the  
9 Director of the Office of Science and Technology Policy shall implement, be-  
10 fore September 30, 2012, a policy for notifying Federal agencies and re-  
11 levant emergency response institutions of an impending near-Earth object  
12 threat if near-term public safety is at risk, and assign a Federal agency or  
13 agencies to be responsible for protecting the United States and working with  
14 the international community on such threats.

15 **“§ 71547. Space weather**

16 “The Director of the Office of Science and Technology Policy shall—

17 “(1) improve the Nation’s ability to prepare, avoid, mitigate, respond  
18 to, and recover from potentially devastating impacts of space weather  
19 events; and

20 “(2) coordinate the operational activities of the National Space  
21 Weather Program Council members, including the National Oceanic  
22 and Atmospheric Administration Space Weather Prediction Center and  
23 the U.S. Air Force Weather Agency.”.

24 (aa) ENACTMENT OF CHAPTER 717.—Title 51, United States Code, as  
25 amended by subsection (z), is amended by adding after chapter 715 the fol-  
26 lowing:

27 **“CHAPTER 717—ADVANCING HUMAN SPACE**  
28 **EXPLORATION**

“SUBCHAPTER I—GENERAL PROVISIONS

“Sec.

“71701. Definitions.

“SUBCHAPTER II—ADVANCING HUMAN DEEP SPACE EXPLORATION

“PART A—ASSURING CORE CAPABILITIES FOR EXPLORATION

“71711. Space launch system, Orion, and exploration ground systems.

“PART B—JOURNEY TO MARS

“71721. Human exploration roadmap.

“SUBCHAPTER III—ADVANCING SPACE SCIENCE

“71731. Policy on maintaining balanced space science portfolio.

“71732. Mission priorities for planetary science.

“71733. Extrasolar planet exploration strategy.

“71734. Astrobiology strategy.

“71735. Collaboration.

“SUBCHAPTER IV—SPACE TECHNOLOGY

“71741. Space technology infusion.

“71742. Space technology program.

“SUBCHAPTER V—MAXIMIZING EFFICIENCY

“PART A—ADMINISTRATION INFORMATION TECHNOLOGY AND  
CYBERSECURITY

- “71751. Information technology governance.  
“71752. Information technology strategic plan.  
“71753. Information security plan for cybersecurity.

“PART B—COLLABORATION AMONG MISSION DIRECTORATES AND OTHER  
MATTERS

- “71761. Collaboration among mission directorates.  
“71762. Administration launch capabilities collaboration.  
“71763. Education and outreach.  
“71764. Leveraging commercial satellite servicing capabilities across mission directorates.  
“71765. Flight opportunities.  
“71766. Space Act Agreements.

“SUBCHAPTER I—GENERAL PROVISIONS

**“§ 71701. Definitions**

“In this chapter:

“(1) APPROPRIATE COMMITTEES OF CONGRESS.—The term ‘appropriate committees of Congress’ means—

“(A) the Committee on Commerce, Science, and Transportation of the Senate; and

“(B) the Committee on Science, Space, and Technology of the House of Representatives.

“(2) CIS-LUNAR SPACE.—The term ‘cis-lunar space’ means the region of space from the Earth out to and including the region around the surface of the Moon.

“(3) DEEP SPACE.—The term ‘deep space’ means the region of space beyond low-Earth orbit, to include cis-lunar space.

“(4) ORION.—The term ‘Orion’ means the multipurpose crew vehicle described under section 71522 of this title.

“(5) SPACE LAUNCH SYSTEM.—The term ‘Space Launch System’ has the meaning given the term in section 71501 of this title.

“SUBCHAPTER II—ADVANCING HUMAN DEEP SPACE  
EXPLORATION

“PART A—ASSURING CORE CAPABILITIES FOR EXPLORATION

**“§ 71711. Space launch system, Orion, and exploration  
ground systems**

“(a) REAFFIRMATION.—Congress reaffirms the policy and minimum capability requirements for the Space Launch System under section 71521 of this title.

“(b) CONTINUED DEVELOPMENT OF FULLY INTEGRATED SPACE LAUNCH SYSTEM.—The Administrator shall continue the development of the fully integrated Space Launch System, including an upper stage needed to go beyond low-Earth orbit, in order to safely enable human space explo-

1 ration of the Moon, Mars, and beyond over the course of the next century  
2 as required in section 71521(c) of this title.

3 “(c) EXPLORATION MISSIONS.—The Administrator shall continue devel-  
4 opment of—

5 “(1) an uncrewed exploration mission to demonstrate the capability  
6 of both the Space Launch System and Orion as an integrated system  
7 by 2018;

8 “(2) subject to applicable human rating processes and requirements,  
9 a crewed exploration mission to demonstrate the Space Launch System,  
10 including the Core Stage and Exploration Upper Stages, by 2021;

11 “(3) subsequent missions beginning with EM-3 at operational flight  
12 rate sufficient to maintain safety and operational readiness using the  
13 Space Launch System and Orion to extend into cis-lunar space and  
14 eventually to Mars; and

15 “(4) a deep space habitat as a key element in a deep space explo-  
16 ration architecture along with the Space Launch System and Orion.

17 “(d) OTHER USES.—The Administrator shall assess the utility of the  
18 Space Launch System for use by the science community and for other Fed-  
19 eral Government launch needs, including consideration of overall cost and  
20 schedule savings from reduced transit times and increased science returns  
21 enabled by the unique capabilities of the Space Launch System.

22 “PART B—JOURNEY TO MARS

23 “§ 71721. **Human exploration roadmap**

24 “(a) IN GENERAL.—The Administrator shall develop a human exploration  
25 roadmap, including a critical decision plan, to expand human presence be-  
26 yond low-Earth orbit to the surface of Mars and beyond, considering poten-  
27 tial interim destinations such as cis-lunar space and the moons of Mars.

28 “(b) SCOPE.—The human exploration roadmap shall include—

29 “(1) an integrated set of exploration, science, and other goals and  
30 objectives of a United States human space exploration program to  
31 achieve the long-term goal of human missions near or on the surface  
32 of Mars in the 2030s;

33 “(2) opportunities for international, academic, and industry partner-  
34 ships for exploration-related systems, services, research, and technology  
35 if those opportunities provide cost-savings, accelerate program sched-  
36 ules, or otherwise benefit the goals and objectives developed under  
37 paragraph (1);

38 “(3) sets and sequences of precursor missions in cis-lunar space and  
39 other missions or activities necessary—

40 “(A) to demonstrate the proficiency of the capabilities and tech-  
41 nologies identified under paragraph (4); and

1           “(B) to meet the goals and objectives developed under para-  
2           graph (1), including anticipated timelines and missions for the  
3           Space Launch System and Orion;

4           “(4) an identification of the specific capabilities and technologies, in-  
5           cluding the Space Launch System, Orion, a deep space habitat, and  
6           other capabilities, that facilitate the goals and objectives developed  
7           under paragraph (1);

8           “(5) a description of how cis-lunar elements, objectives, and activities  
9           advance the human exploration of Mars;

10          “(6) an assessment of potential human health and other risks, in-  
11          cluding radiation exposure;

12          “(7) mitigation plans, whenever possible, to address the risks identi-  
13          fied in paragraph (6);

14          “(8) a description of those technologies already under development  
15          across the Federal Government or by other entities that facilitate the  
16          goals and objectives developed under paragraph (1);

17          “(9) a specific process for the evolution of the capabilities of the fully  
18          integrated Orion with the Space Launch System and a description of  
19          how these systems facilitate the goals and objectives developed under  
20          paragraph (1) and demonstrate the capabilities and technologies de-  
21          scribed in paragraph (4);

22          “(10) a description of the capabilities and technologies that need to  
23          be demonstrated or research data that could be gained through the uti-  
24          lization of the International Space Station and the status of the devel-  
25          opment of such capabilities and technologies;

26          “(11) a framework for international cooperation in the development  
27          of all capabilities and technologies identified under this section, includ-  
28          ing an assessment of the risks posed by relying on international part-  
29          ners for capabilities and technologies on the critical path of develop-  
30          ment;

31          “(12) a process for partnering with nongovernmental entities using  
32          Space Act Agreements or other acquisition instruments for future  
33          human space exploration; and

34          “(13) information on the phasing of planned intermediate destina-  
35          tions, Mars mission risk areas and potential risk mitigation approaches,  
36          technology requirements and phasing of required technology develop-  
37          ment activities, the management strategy to be followed, related Inter-  
38          national Space Station activities, planned international collaborative ac-  
39          tivities, potential commercial contributions, and other activities relevant  
40          to the achievement of the goal established in this section.

1 “(c) CONSIDERATIONS.—In developing the human exploration roadmap,  
2 the Administrator shall consider—

3 “(1) using key exploration capabilities, namely the Space Launch  
4 System and Orion;

5 “(2) using existing commercially available technologies and capabili-  
6 ties or those technologies and capabilities being developed by industry  
7 for commercial purposes;

8 “(3) establishing an organizational approach to ensure collaboration  
9 and coordination among the Administration’s Mission Directorates  
10 under section 71761 of this title, when appropriate, including to collect  
11 and return to Earth a sample from the Martian surface;

12 “(4) building upon the initial uncrewed mission, EM–1, and first  
13 crewed mission, EM–2, of the Space Launch System and Orion to es-  
14 tablish a sustainable cadence of missions extending human exploration  
15 missions into cis-lunar space, including anticipated timelines and mile-  
16 stones;

17 “(5) developing the robotic and precursor missions and activities that  
18 will demonstrate, test, and develop key technologies and capabilities es-  
19 sential for achieving human missions to Mars, including long-duration  
20 human operations beyond low-Earth orbit, space suits, solar electric  
21 propulsion, deep space habitats, environmental control life support sys-  
22 tems, Mars lander and ascent vehicle, entry, descent, landing, ascent,  
23 Mars surface systems, and in-situ resource utilization;

24 “(6) demonstrating and testing 1 or more habitat modules in cis-  
25 lunar space to prepare for Mars missions;

26 “(7) using public-private, firm fixed-price partnerships, where prac-  
27 ticable;

28 “(8) collaborating with international, academic, and industry part-  
29 ners, when appropriate;

30 “(9) any risks to human health and sensitive onboard technologies,  
31 including radiation exposure;

32 “(10) any risks identified through research outcomes under the Ad-  
33 ministration Human Research Program’s Behavioral Health Element;  
34 and

35 “(11) the recommendations and ideas of several independently devel-  
36 oped reports or concepts that describe potential Mars architectures or  
37 concepts and identify Mars as the long-term goal for human space ex-  
38 ploration, including the reports described under section 431 of the Na-  
39 tional Aeronautics and Space Administration Transition Authorization  
40 Act of 2017 (Public Law 115–10, 131 Stat. 38).

1 “(d) CRITICAL DECISION PLAN ON HUMAN SPACE EXPLORATION.—As  
2 part of the human exploration roadmap, the Administrator shall include a  
3 critical decision plan—

4 “(1) identifying and defining key decisions guiding human space ex-  
5 ploration priorities and plans that need to be made before June 30,  
6 2020, including decisions that may guide human space exploration ca-  
7 pability development, precursor missions, long-term missions, and ac-  
8 tivities;

9 “(2) defining decisions needed to maximize efficiencies and resources  
10 for reaching the near, intermediate, and long-term goals and objectives  
11 of human space exploration; and

12 “(3) identifying and defining timelines and milestones for a sustain-  
13 able cadence of missions beginning with EM-3 for the Space Launch  
14 System and Orion to extend human exploration from cis-lunar space  
15 to the surface of Mars.

16 “(e) REPORTS.—

17 “(1) INITIAL HUMAN EXPLORATION ROADMAP.—The Administrator  
18 shall submit to the appropriate committees of Congress—

19 “(A) an initial human exploration roadmap, including a critical  
20 decision plan, before December 1, 2017; and

21 “(B) an updated human exploration roadmap periodically as the  
22 Administrator considers necessary but not less than biennially.

23 “(2) CONTENTS.—Each human exploration roadmap under this sub-  
24 section shall include a description of—

25 “(A) the achievements and goals accomplished in the process of  
26 developing capabilities and technologies described in this section  
27 during the 2-year period prior to the submission of the human ex-  
28 ploration roadmap; and

29 “(B) the expected goals and achievements in the following 2-  
30 year period.

31 “(3) SUBMISSION WITH BUDGET.—Each human exploration roadmap  
32 under this section shall be included in the budget for that fiscal year  
33 transmitted to Congress under section 1105(a) of title 31.

34 “SUBCHAPTER III—ADVANCING SPACE SCIENCE

35 **“§ 71731. Policy on maintaining balanced space science port-**  
36 **folio**

37 “It is the policy of the United States to ensure, to the extent practicable,  
38 a steady cadence of large, medium, and small science missions.

39 **“§ 71732. Mission priorities for planetary science**

40 “(a) IN GENERAL.—In accordance with the priorities established in the  
41 most recent Planetary Science Decadal Survey, the Administrator shall en-

1 sure, to the greatest extent practicable, the completion of a balanced set of  
2 Discovery, New Frontiers, and Flagship missions at the cadence rec-  
3 ommended by the most recent Planetary Science Decadal Survey.

4 “(b) MISSION PRIORITY ADJUSTMENTS.—Consistent with the set of mis-  
5 sions described in subsection (a), and while maintaining the continuity of  
6 scientific data and steady development of capabilities and technologies, the  
7 Administrator may seek, if necessary, adjustments to mission priorities,  
8 schedule, and scope in light of changing budget projections.

9 **“§ 71733. Extrasolar planet exploration strategy**

10 “(a) STRATEGY.—

11 “(1) IN GENERAL.—The Administrator shall enter into an arrange-  
12 ment with the National Academies to develop a science strategy for the  
13 study and exploration of extrasolar planets, including the use of the  
14 Transiting Exoplanet Survey Satellite, the James Webb Space Tele-  
15 scope, a potential Wide-Field Infrared Survey Telescope mission, or  
16 any other telescope, spacecraft, or instrument, as appropriate.

17 “(2) REQUIREMENTS.—The strategy shall—

18 “(A) outline key scientific questions;

19 “(B) identify the most promising research in the field;

20 “(C) indicate the extent to which the mission priorities in exist-  
21 ing decadal surveys address the key extrasolar planet research and  
22 exploration goals;

23 “(D) identify opportunities for coordination with international  
24 partners, commercial partners, and not-for-profit partners; and

25 “(E) make recommendations regarding the activities under sub-  
26 paragraphs (A) through (D), as appropriate.

27 “(b) USE OF STRATEGY.—The Administrator shall use the strategy—

28 “(1) to inform roadmaps, strategic plans, and other activities of the  
29 Administration as they relate to extrasolar planet research and explo-  
30 ration; and

31 “(2) to provide a foundation for future activities and initiatives relat-  
32 ed to extrasolar planet research and exploration.

33 “(c) REPORT TO CONGRESS.—Not later than 18 months after March 21,  
34 2017, the National Academies shall submit to the Administrator and to the  
35 appropriate committees of Congress a report containing the strategy devel-  
36 oped under subsection (a).

37 **“§ 71734. Astrobiology strategy**

38 “(a) STRATEGY.—

39 “(1) IN GENERAL.—The Administrator shall enter into an arrange-  
40 ment with the National Academies to develop a science strategy for  
41 astrobiology that would outline key scientific questions, identify the



1 most promising research in the field, and indicate the extent to which  
2 the mission priorities in existing decadal surveys address the search for  
3 life’s origin, evolution, distribution, and future in the universe.

4 “(2) RECOMMENDATIONS.—The strategy shall include recommenda-  
5 tions for coordination with international partners.

6 “(b) USE OF STRATEGY.—The Administrator shall use the strategy devel-  
7 oped under subsection (a) in planning and funding research and other ac-  
8 tivities and initiatives in the field of astrobiology.

9 “(c) REPORT TO CONGRESS.—Not later than 18 months after March 21,  
10 2017, the National Academies shall submit to the Administrator and to the  
11 appropriate committees of Congress a report containing the strategy devel-  
12 oped under subsection (a).

### 13 **“§ 71735. Collaboration**

14 “The Administration shall continue to develop first-of-a-kind instruments  
15 that, once proved, can be transitioned to other agencies for operations.  
16 Whenever responsibilities for the development of sensors or for measure-  
17 ments are transferred to the Administration from another agency, the Ad-  
18 ministration shall seek, to the extent possible, to be reimbursed for the as-  
19 sumption of such responsibilities.

## 20 “SUBCHAPTER IV—SPACE TECHNOLOGY

### 21 **“§ 71741. Space technology infusion**

22 “(a) POLICY.—It is the policy of the United States that the Adminis-  
23 trator shall develop technologies to support the Administration’s core mis-  
24 sions, as described in section 2(3) of the National Aeronautics and Space  
25 Administration Authorization Act of 2010 (Public Law 111–267, 124 Stat.  
26 2807), and support sustained investments in early stage innovation, fun-  
27 damental research, and technologies to expand the boundaries of the na-  
28 tional aerospace enterprise.

29 “(b) PROPULSION TECHNOLOGIES.—A goal of propulsion technologies de-  
30 veloped under subsection (a) shall be to significantly reduce human travel  
31 time to Mars.

### 32 **“§ 71742. Space technology program**

33 “(a) SPACE TECHNOLOGY PROGRAM AUTHORIZED.—The Administrator  
34 shall conduct a space technology program (referred to in this section as the  
35 ‘Program’) to research and develop advanced space technologies that could  
36 deliver innovative solutions across the Administration’s space exploration  
37 and science missions.

38 “(b) CONSIDERATIONS.—In conducting the Program, the Administrator  
39 shall consider—

40 “(1) the recommendations of the National Academies’ review of the  
41 Administration’s Space Technology roadmaps and priorities; and

1           “(2) the applicable enabling aspects of the stepping stone approach  
2           to exploration under section 70504 of this title.

3           “(c) REQUIREMENTS.—In conducting the Program, the Administrator  
4 shall—

5           “(1) to the extent practicable, use a competitive process to select re-  
6           search and development projects;

7           “(2) to the extent practicable and appropriate, use small satellites  
8           and the Administration’s suborbital and ground-based platforms to  
9           demonstrate space technology concepts and developments; and

10           “(3) as appropriate, partner with other Federal agencies, univer-  
11           sities, private industry, and foreign countries.

12           “(d) SMALL BUSINESS PROGRAMS.—The Administrator shall organize  
13           and manage the Administration’s Small Business Innovation Research Pro-  
14           gram and Small Business Technology Transfer Program within the Pro-  
15           gram.

16           “(e) NONDUPLICATION CERTIFICATION.—The Administrator shall submit  
17           a budget for each fiscal year, as transmitted to Congress under section  
18           1105(a) of title 31, that avoids duplication of projects, programs, or mis-  
19           sions conducted by the Program with other projects, programs, or missions  
20           conducted by another office or directorate of the Administration.

21           “(f) COLLABORATION, COORDINATION, AND ALIGNMENT.—The Adminis-  
22           trator shall—

23           “(1) ensure that the Administration’s projects, programs, and activi-  
24           ties in support of technology research and development of advanced  
25           space technologies are fully coordinated and aligned;

26           “(2) ensure that the results of the projects, programs, and activities  
27           under paragraph (1) are shared and leveraged within the Administra-  
28           tion; and

29           “(3) ensure that the organizational responsibility for research and  
30           development activities in support of human space exploration not initi-  
31           ated as of March 21, 2017, is established on the basis of a sound ra-  
32           tionale.

33           “(g) ANNUAL REPORT.—The Administrator shall include in the Adminis-  
34           tration’s annual budget request for each fiscal year the rationale for assign-  
35           ing organizational responsibility for, in the year prior to the budget fiscal  
36           year, each initiated project, program, and mission focused on research and  
37           development of advanced technologies for human space exploration.

1                   “SUBCHAPTER V—MAXIMIZING EFFICIENCY  
2           “PART A—ADMINISTRATION INFORMATION TECHNOLOGY AND  
3                   CYBERSECURITY

4           **“§ 71751. Information technology governance**

5           “The Administrator shall, in a manner that reflects the unique nature of  
6 the Administration’s mission and expertise—

7           “(1) ensure the Administration Chief Information Officer, Mission  
8 Directorates, and Centers have appropriate roles in the management,  
9 governance, and oversight processes related to information technology  
10 operations and investments and information security programs for the  
11 protection of Administration systems;

12           “(2) ensure the Administration Chief Information Officer has the ap-  
13 propriate resources and insight to oversee Administration information  
14 technology and information security operations and investments;

15           “(3) provide an information technology program management frame-  
16 work to increase the efficiency and effectiveness of information tech-  
17 nology investments, including relying on metrics for identifying and re-  
18 ducing potential duplication, waste, and cost;

19           “(4) improve the operational linkage between the Administration  
20 Chief Information Officer and each Administration mission directorate,  
21 center, and mission support office to ensure both Administration and  
22 mission needs are considered in Administration-wide information tech-  
23 nology and information security management and oversight;

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

30           “(6) consider appropriate revisions to the charters of information  
31 technology boards and councils that inform information technology in-  
32 vestment and operation decisions; and

33           “(7) consider whether the Administration Chief Information Officer  
34 should have a seat on any boards or councils described in paragraph  
35 (6).

36           **“§ 71752. Information technology strategic plan**

37           “(a) IN GENERAL.—Subject to subsection (b), the Administrator shall de-  
38 velop an information technology strategic plan to guide Administration in-  
39 formation technology management and strategic objectives.

40           “(b) REQUIREMENTS.—In developing the strategic plan, the Adminis-  
41 trator shall ensure that the strategic plan addresses—

1 “(1) the deadline under section 306(a) of title 5; and

2 “(2) the requirements under section 3506 of title 44.

3 “(c) CONTENTS.—The strategic plan shall address, in a manner that re-  
4 flects the unique nature of the Administration’s mission and expertise—

5 “(1) near and long-term goals and objectives for leveraging informa-  
6 tion technology;

7 “(2) a plan for how the Administration will submit to Congress a  
8 list of information technology projects, including completion dates and  
9 risk level in accordance with guidance from the Office of Management  
10 and Budget;

11 “(3) an implementation overview for an Administration-wide ap-  
12 proach to information technology investments and operations, including  
13 reducing barriers to cross-center collaboration;

14 “(4) coordination by the Administration Chief Information Officer  
15 with centers and mission directorates to ensure that information tech-  
16 nology policies are effectively and efficiently implemented across the  
17 Administration;

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

23 “(6) a plan for improving the information security of Administration  
24 information and Administration information systems, including improv-  
25 ing security control assessments and role-based security training of em-  
26 ployees; and

27 “(7) submission by the Administration to Congress of information  
28 regarding high risk projects and cybersecurity risks.

29 “(d) CONGRESSIONAL OVERSIGHT.—The Administrator shall submit to  
30 the appropriate committees of Congress the strategic plan under subsection  
31 (a) and any updates to the strategic plan.

32 **“§ 71753. Information security plan for cybersecurity**

33 “(a) IN GENERAL.—Not later than 1 year after March 21, 2017, the Ad-  
34 ministrator shall implement the information security plan developed under  
35 subsection (b) and take such further actions as the Administrator considers  
36 necessary to improve the information security system in accordance with  
37 this section.

38 “(b) INFORMATION SECURITY PLAN.—Subject to subsections (c) and (d),  
39 the Administrator shall develop an Administration-wide information security  
40 plan to enhance information security for Administration information and in-  
41 formation infrastructure.

1 “(c) REQUIREMENTS.—In developing the plan under subsection (b), the  
2 Administrator shall ensure that the plan—

3 “(1) reflects the unique nature of the Administration’s mission and  
4 expertise;

5 “(2) is informed by policies, standards, guidelines, and directives on  
6 information security required for Federal agencies;

7 “(3) is consistent with the standards and guidelines under section  
8 11331 of title 40; and

9 “(4) meets applicable National Institute of Standards and Tech-  
10 nology information security standards and guidelines.

11 “(d) CONTENTS.—The plan shall address—

12 “(1) an overview of the requirements of the information security sys-  
13 tem;

14 “(2) an Administration-wide risk management framework for infor-  
15 mation security;

16 “(3) a description of the information security system management  
17 controls and common controls that are necessary to ensure compliance  
18 with information security-related requirements;

19 “(4) an identification and assignment of roles, responsibilities, and  
20 management commitment for information security at the Administra-  
21 tion;

22 “(5) coordination among organizational entities, including between  
23 each center, facility, mission directorate, and mission support office,  
24 and among Administration entities responsible for different aspects of  
25 information security;

26 “(6) the need to protect the information security of mission-critical  
27 systems and activities and high-impact and moderate-impact informa-  
28 tion systems; and

29 “(7) a schedule of frequent reviews and updates, as necessary, of the  
30 plan.

31 “PART B—COLLABORATION AMONG MISSION DIRECTORATES  
32 AND OTHER MATTERS

33 “§ 71761. **Collaboration among mission directorates**

34 “The Administrator shall encourage an interdisciplinary approach among  
35 all Administration mission directorates and divisions, whenever appropriate,  
36 for projects or missions—

37 “(1) to improve coordination, and encourage collaboration and early  
38 planning on scope;

39 “(2) to determine areas of overlap or alignment;

40 “(3) to find ways to leverage across divisional perspectives to maxi-  
41 mize outcomes; and

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

2 **“§ 71762. Administration launch capabilities collaboration**

3 “The Administrator shall pursue a strategy for acquisition of crewed  
4 transportation services and non-crewed launch services that continues to en-  
5 hance communication, collaboration, and coordination between the Launch  
6 Services Program and the Commercial Crew Program.

7 **“§ 71763. Education and outreach**

8 “The Administrator shall continue engagement with the public and edu-  
9 cation opportunities for students via all the Administration’s mission direc-  
10 torates to the maximum extent practicable.

11 **“§ 71764. Leveraging commercial satellite servicing capabili-  
12 ties across mission directorates**

13 “The Administrator shall—

14 “(1) identify orbital assets in both the Science Mission Directorate  
15 and the Human Exploration and Operations Mission Directorate that  
16 could benefit from satellite servicing-related technologies; and

17 “(2) work across all Administration mission directorates to evaluate  
18 opportunities for the private sector to perform such services or advance  
19 technical capabilities by leveraging the technologies and techniques de-  
20 veloped by Administration programs and other industry programs.

21 **“§ 71765. Flight opportunities**

22 “(a) DEVELOPMENT OF PAYLOADS.—

23 “(1) IN GENERAL.—In order to conduct necessary research, the Ad-  
24 ministrator shall continue and, as the Administrator considers appro-  
25 priate, expand the development of technology payloads for—

26 “(A) scientific research; and

27 “(B) investigating new or improved capabilities.

28 “(2) FUNDS.—For the purpose of carrying out paragraph (1), the  
29 Administrator shall make funds available for—

30 “(A) flight testing;

31 “(B) payload development; and

32 “(C) hardware related to subparagraphs (A) and (B).

33 “(b) REAFFIRMATION OF POLICY.—Congress reaffirms that the Adminis-  
34 trator should provide flight opportunities for payloads to microgravity envi-  
35 ronments and suborbital altitudes as authorized by section 40905 of this  
36 title.

37 **“§ 71766. Space Act Agreements**

38 “(a) FUNDED SPACE ACT AGREEMENTS.—To the extent appropriate, the  
39 Administrator shall seek to maximize the value of contributions provided by  
40 other parties under a funded Space Act Agreement in order to advance the  
41 Administration’s mission.

1 “(b) NON-EXCLUSIVITY.—

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

4 “(A) except as provided in paragraph (2), on a nonexclusive  
5 basis;

6 “(B) in a manner that ensures all non-government parties have  
7 equal access to Administration resources; and

8 “(C) exercising reasonable care not to reveal unique or propri-  
9 etary information.

10 “(2) EXCLUSIVITY.—If the Administrator determines an exclusive  
11 arrangement is necessary, the Administrator shall, to the greatest ex-  
12 tent practicable, issue the Space Act Agreement—

13 “(A) utilizing a competitive selection process when exclusive ar-  
14 rangements are necessary; and

15 “(B) pursuant to public announcements when exclusive arrange-  
16 ments are necessary.

17 “(c) TRANSPARENCY.—The Administrator shall publicly disclose on the  
18 Administration’s website and make available in a searchable format each  
19 Space Act Agreement, including an estimate of committed Administration  
20 resources and the expected benefits to Administration objectives for each  
21 agreement, with appropriate redactions for proprietary, sensitive, or classi-  
22 fied information, not later than 60 days after such agreement is signed by  
23 the parties.

24 “(d) ANNUAL REPORTS.—

25 “(1) REQUIREMENT.—Not later than 90 days after the end of each  
26 fiscal year, the Administrator shall submit to the appropriate commit-  
27 tees of Congress a report on the use of Space Act Agreement authority  
28 by the Administration during the previous fiscal year.

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

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

33 “(B) a description of—

34 “(i) the subject and terms;

35 “(ii) the parties;

36 “(iii) the responsible—

37 “(I) Mission Directorate;

38 “(II) Center; or

39 “(III) headquarters element;

40 “(iv) the value;

1                   “(v) the extent of the cost sharing among Federal Govern-  
2                   ment and non-Federal sources;

3                   “(vi) the time period or schedule; and

4                   “(vii) all milestones; and

5                   “(C) an indication of whether the agreement was renewed dur-  
6                   ing the previous fiscal year.

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

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

13                   “(A) the technology areas in which research projects were con-  
14                   ducted under that agreement;

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

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

19                    “(ii) has fostered within the technology and industrial base  
20                    new relationships and practices that support the United  
21                    States; and

22                   “(C) the total amount of value received by the Federal Govern-  
23                   ment during the fiscal year under that agreement.”.

24                  (bb) COMMITTEE NAME CHANGE.—

25                   (1) Section 20117(1) of title 51, United States Code, is amended by  
26                   striking “Committee on Science and Technology” and inserting “Com-  
27                   mittee on Science, Space, and Technology”.

28                   (2) Section 311 of the National Aeronautics and Space Administra-  
29                   tion Authorization Act of 2000 (Public Law 106–391, 51 U.S.C. 20143  
30                   note) is amended—

31                    (A) in subsection (a), by striking “Committee on Science” and  
32                    inserting “Committee on Science, Space, and Technology”; and

33                    (B) in subsection (b), by striking “Committees on Science and  
34                    Appropriations” and inserting “Committee on Science, Space, and  
35                    Technology and the Committee on Appropriations”.

36                   (3) Section 30303(b) of title 51, United States Code, is amended by  
37                   striking “Committee on Science and Technology” and inserting “Com-  
38                   mittee on Science, Space, and Technology”.

39                   (4) Section 30305(c) (matter before paragraph (1)) of title 51,  
40                   United States Code, is amended by striking “Committee on Science



1 and Technology” and inserting “Committee on Science, Space, and  
2 Technology”.

3 (5) Section 203(b) of the America COMPETES Reauthorization Act  
4 of 2010 (Public Law 111–358, 51 U.S.C. note prec. 30501) is amend-  
5 ed by striking “Committee on Science and Technology” and inserting  
6 “Committee on Science, Space, and Technology”.

7 (6) Section 30501(a) of title 51, United States Code, is amended by  
8 striking “Committee on Science and Technology” and inserting “Com-  
9 mittee on Science, Space, and Technology”.

10 (7) Section 30502 of title 51, United States Code, is amended—

11 (A) in subsection (a), by striking “Committee on Science and  
12 Technology” and inserting “Committee on Science, Space, and  
13 Technology”; and

14 (B) in subsection (d) (matter before paragraph (1)), by striking  
15 “Committee on Science and Technology” and inserting “Commit-  
16 tee on Science, Space, and Technology”.

17 (8) Section 30503(e) (matter before paragraph (1)) of title 51,  
18 United States Code, is amended by striking “Committee on Science  
19 and Technology” and inserting “Committee on Science, Space, and  
20 Technology”.

21 (9) Section 102 of the National Aeronautics and Space Administra-  
22 tion Authorization Act of 2005 (Public Law 109–155, 51 U.S.C. note  
23 prec. 49901 (formerly 40901)) is amended by striking “Committee on  
24 Science” and inserting “Committee on Science, Space, and Tech-  
25 nology” in the following provisions:

26 (A) Subsection (a)(2)(A).

27 (B) Subsection (a)(2)(B).

28 (C) Subsection (b) (matter before paragraph (1)).

29 (D) Subsection (c)(3).

30 (E) Subsection (d).

31 (F) Subsection (e)(2) (matter before subparagraph (A)).

32 (10) Section 49906(b) (matter before paragraph (1)) of title 51,  
33 United States Code (as redesignated by subsection (m)(3)), is amended  
34 by striking “Committee on Science and Technology” and inserting  
35 “Committee on Science, Space, and Technology”.

36 (11) Section 50134(b)(1) (matter before subparagraph (A)) of title  
37 51, United States Code, is amended by striking “Committee on Science  
38 and Technology” and inserting “Committee on Science, Space, and  
39 Technology”.

1 (12) Section 50505(a) of title 51, United States Code, is amended  
2 by striking “Committee on Science and Technology” and inserting  
3 “Committee on Science, Space, and Technology”.

4 (13) Section 50703 of title 51, United States Code, is amended by  
5 striking “Committee on Science and Technology” and inserting “Com-  
6 mittee on Science, Space, and Technology”.

7 (14) Section 621(b) (matter before paragraph (1)) of the National  
8 Aeronautics and Space Administration Authorization Act of 2008  
9 (Public Law 110–422, 51 U.S.C. 50903 note) is amended by striking  
10 “Committee on Science and Technology” and inserting “Committee on  
11 Science, Space, and Technology”.

12 (15) Section 50906(a) of title 51, United States Code, is amended  
13 by striking “Committee on Science” and inserting “Committee on  
14 Science, Space, and Technology”.

15 (16) Section 50914(d)(1) of title 51, United States Code, is amended  
16 by striking “Committee on Science” and inserting “Committee on  
17 Science, Space, and Technology”.

18 (17) Section 60505(b) of title 51, United States Code, is amended  
19 by striking “Committee on Science and Technology” and inserting  
20 “Committee on Science, Space, and Technology”.

21 (18) Section 502 of the National Aeronautics and Space Administra-  
22 tion Authorization Act of 2005 (Public Law 109–155, 51 U.S.C. 70501  
23 note) is amended—

24 (A) in subsection (b) (matter before paragraph (1)), by striking  
25 “Committee on Science” and inserting “Committee on Science,  
26 Space, and Technology”; and

27 (B) in subsection (c), by striking “Committee on Science” and  
28 inserting “Committee on Science, Space, and Technology”.

29 (19) Section 313(c) of the National Aeronautics and Space Adminis-  
30 tration Authorization Act of 2000 (Public Law 106–391, 51 U.S.C.  
31 70506 note) is amended by striking “Committee on Science” and in-  
32 serting “Committee on Science, Space, and Technology”.

33 (20) Section 203(b) of the National Aeronautics and Space Adminis-  
34 tration Authorization Act of 2000 (Public Law 106–391, 51 U.S.C.  
35 70901 note) is amended by striking “Committee on Science” and in-  
36 serting “Committee on Science, Space, and Technology”.

37 (21) Section 205(b) (matter before paragraph (1)) of the National  
38 Aeronautics and Space Administration Authorization Act of 2000  
39 (Public Law 106–391, 51 U.S.C. 70901 note) is amended by striking  
40 “Committee on Science” and inserting “Committee on Science, Space,  
41 and Technology”.

1     **SEC. 4. TECHNICAL AMENDMENTS.**

2     (a) TITLE 5, UNITED STATES CODE.—Section 914 of the Ronald W.  
3     Reagan National Defense Authorization Act for Fiscal Year 2005 (Public  
4     Law 108–375, 5 U.S.C. 552 note) is amended—

5         (1) in subsection (b)(1)(B), by striking “the Land Remote Sensing  
6         Policy Act of 1992 (15 U.S.C. 5601 et seq.);” and inserting “chapter  
7         601 of title 51, United States Code;”; and

8         (2) in subsection (e), by striking “section 3 of the Land Remote  
9         Sensing Policy Act of 1992 (15 U.S.C. 5602).” and inserting “section  
10         60101 of title 51, United States Code.”.

11    (b) TITLE 28, UNITED STATES CODE.—

12         (1) The chapter table of contents of chapter 123 of title 28, United  
13         States Code, is amended in the item for section 1932 (relating to revoca-  
14         tion of earned release credit) by striking “1932” and inserting  
15         “1933”.

16         (2) Section 1932 of title 28, United States Code (relating to revoca-  
17         tion of earned release credit), is redesignated as section 1933 of that  
18         title.

19    (c) TITLE 31, UNITED STATES CODE.—Section 1(4) of Public Law 107–  
20    74 (31 U.S.C. 1113 note), is amended by striking “Section 206 of the Na-  
21    tional Aeronautics and Space Act of 1958 (42 U.S.C. 2476).” and inserting  
22    “Section 20116 of title 51, United States Code.”.

23    (d) TITLE 36, UNITED STATES CODE.—The title table of contents of title  
24    36, United States Code, is amended—

25         (1) in the item for chapter 23, by striking “Council” and inserting  
26         “Museum”; and

27         (2) in the item for chapter 307, by striking “For” and inserting  
28         “for”.

29    (e) TITLE 42, UNITED STATES CODE.—

30         (1) Section 602(b)(1) of the National Aeronautics and Space Admin-  
31         istration Authorization Act of 2010 (42 U.S.C. 18362(b)(1)) is amend-  
32         ed by striking “section 302 of this Act.” and inserting “section 71521  
33         of title 51, United States Code.”.

34         (2) Section 603 of the National Aeronautics and Space Administra-  
35         tion Authorization Act of 2010 (42 U.S.C. 18363) is amended—

36                 (A) in subsection (a), by striking “(42 U.S.C. 17761(a)),” and  
37                 inserting “(51 U.S.C. 70501 note),”; and

38                 (B) in subsection (b), by striking “(42 U.S.C. 17761(a)).” and  
39                 inserting “(51 U.S.C. 70501 note).”.

40    (f) TITLE 51, UNITED STATES CODE.—

1 (1) Section 2 of the National Aeronautics and Space Administration  
2 Transition Authorization Act of 2017 (Public Law 115–10, 51 U.S.C.  
3 10101 note) is amended—

4 (A) in paragraph (8), by striking “section 504(a) of the Na-  
5 tional Aeronautics and Space Administration Authorization Act of  
6 2010 (42 U.S.C. 18354(a)).” and inserting “section 70911(a) of  
7 title 51, United States Code.”;

8 (B) in paragraph (10), by striking “section 303 of the National  
9 Aeronautics and Space Administration Authorization Act of 2010  
10 (42 U.S.C. 18323).” and inserting “section 71522 of title 51,  
11 United States Code.”; and

12 (C) in paragraph (11), by striking “section 3 of the National  
13 Aeronautics and Space Administration Authorization Act of 2010  
14 (42 U.S.C. 18302).” and inserting “section 71501 of title 51,  
15 United States Code.”.

16 (2) Section 20302(c) of title 51, United States Code, is amended—

17 (A) in paragraph (1), by striking “section 303 of the National  
18 Aeronautics and Space Administration Authorization Act of 2010  
19 (42 U.S.C. 18323).” and inserting “section 71522 of this title.”;  
20 and

21 (B) in paragraph (2)—

22 (i) by striking “means has the meaning” and inserting  
23 “has the meaning”; and

24 (ii) by striking “section 3 of the National Aeronautics and  
25 Space Administration Authorization Act of 2010 (42 U.S.C.  
26 18302).” and inserting “section 71501 of this title.”.

27 (3) Section 202 of the National Space Grant College and Fellowship  
28 Act (Public Law 100–147, title II, 51 U.S.C. 40301 note) is amend-  
29 ed—

30 (A) by striking “The Congress finds” and inserting “(a) Con-  
31 gress finds”; and

32 (B) by adding at the end the following:

33 “(b) The definitions in section 40302 of title 51, United States Code,  
34 apply in this section.”.

35 (4) Section 50111(c)(2) of title 51, United States Code, is amend-  
36 ed—

37 (A) in subparagraph (E), by striking “section 301(b)(2) of the  
38 National Aeronautics and Space Administration Transition Au-  
39 thorization Act of 2017;” and inserting “section 70912(2) of this  
40 title;”;

1 (B) in subparagraph (G), by striking “section 432 of the Na-  
2 tional Aeronautics and Space Administration Transition Author-  
3 ization Act of 2017;” and inserting “section 71721 of this title;”;  
4 and

5 (C) in subparagraph (J) (matter before clause (i)), by striking  
6 “section 503 of the National Aeronautics and Space Administra-  
7 tion Authorization Act of 2010 (42 U.S.C. 18353),” and inserting  
8 “section 70910 of this title,”.

9 (5) Section 302(c)(1) of the National Aeronautics and Space Admin-  
10 istration Transition Authorization Act of 2017 (Public Law 115–10, 51  
11 U.S.C. 50111 note) is amended by striking “(42 U.S.C. 18301 et  
12 seq.)” and inserting “(Public Law 111–267; 124 Stat. 2805)”.

13 (6) Section 501 of the National Aeronautics and Space Administra-  
14 tion Authorization Act, Fiscal Year 1993 (Public Law 102–588, 51  
15 U.S.C. 50501 note) is amended by striking “The Congress finds that—  
16 ” and inserting the following:

17 “(a) DEFINITIONS.—The definitions in section 50501 of title 51, United  
18 States Code, apply in this section.

19 “(b) IN GENERAL.—Congress finds that—”.

20 (7) Section 70501(a)(2) of title 51, United States Code, is amended  
21 by striking “section 421(f) of the National Aeronautics and Space Ad-  
22 ministration Transition Authorization Act of 2017” and inserting “sec-  
23 tion 71711(c) of this title”.

24 (8) Section 70504(a) of title 51, United States Code, is amended—

25 (A) in paragraph (1), by striking “section 202(b)(5) of the Na-  
26 tional Aeronautics and Space Administration Authorization Act of  
27 2010 (42 U.S.C. 18312(b)(5));” and inserting “section  
28 71512(b)(5) of this title;”;

29 (B) in paragraph (2), by striking “section 432 of the National  
30 Aeronautics and Space Administration Transition Authorization  
31 Act of 2017.” and inserting “section 71721 of this title.”.

## 32 **SEC. 5. TRANSITIONAL AND SAVINGS PROVISIONS.**

33 (a) DEFINITIONS.—In this section:

34 (1) RESTATED PROVISION.—The term “restated provision” means a  
35 provision of title 51, United States Code, that is enacted by section 3.

36 (2) SOURCE PROVISION.—The term “source provision” means a pro-  
37 vision of law that is replaced by a restated provision.

38 (b) CUTOFF DATE.—The restated provisions replace certain provisions of  
39 law enacted on or before August 9, 2019. If a law enacted after that date  
40 amends or repeals a source provision, that law is deemed to amend or re-  
41 peal, as the case may be, the corresponding restated provision. If a law en-

1 acted after that date is otherwise inconsistent with a restated provision or  
 2 a provision of this Act, that law supersedes the restated provision or provi-  
 3 sion of this Act to the extent of the inconsistency.

4 (c) ORIGINAL DATE OF ENACTMENT UNCHANGED.—A restated provision  
 5 is deemed to have been enacted on the date of enactment of the correspond-  
 6 ing source provision.

7 (d) REFERENCES TO RESTATED PROVISIONS.—A reference to a restated  
 8 provision is deemed to refer to the corresponding source provision.

9 (e) REFERENCES TO SOURCE PROVISIONS.—A reference to a source provi-  
 10 sion, including a reference in a regulation, order, or other law, is deemed  
 11 to refer to the corresponding restated provision.

12 (f) REGULATIONS, ORDERS, AND OTHER ADMINISTRATIVE ACTIONS.—A  
 13 regulation, order, or other administrative action in effect under a source  
 14 provision continues in effect under the corresponding restated provision.

15 (g) ACTIONS TAKEN AND OFFENSES COMMITTED.—An action taken or  
 16 an offense committed under a source provision is deemed to have been taken  
 17 or committed under the corresponding restated provision.

18 (h) LEGISLATIVE CONSTRUCTION.—An inference of legislative construc-  
 19 tion is not to be drawn by reason of a restated provision’s location in the  
 20 United States Code or by reason of the heading used for the restated provi-  
 21 sion.

22 **SEC. 6. REPEALS.**

23 The following provisions of law are repealed, except with respect to rights  
 24 and duties that matured, penalties that were incurred, or proceedings that  
 25 were begun before the date of enactment of this Act:

Schedule of Laws Repealed

Act	Section	United States Code Former Classification
National Aeronautics and Space Admin- istration Authorization Act, Fiscal Year 1989 (Public Law 100-685) .....	104 .....	31 U.S.C. 1105 note.
National Aeronautics and Space Admin- istration Authorization Act, Fiscal Year 1993 (Public Law 102-588) .....	210 .....	51 U.S.C. 30103 note.
National Aeronautics and Space Admin- istration Authorization Act of 2010 (Public Law 111-267) .....	201 .....	42 U.S.C. 18311.
	202 .....	42 U.S.C. 18312.
	301(b) .....	42 U.S.C. 18321(b).
	302 .....	42 U.S.C. 18322.
	303 .....	42 U.S.C. 18323.
	304 .....	42 U.S.C. 18324.
	305 .....	42 U.S.C. 18325.
	308 .....	42 U.S.C. 18326.
	401 .....	42 U.S.C. 18341.
	403 .....	42 U.S.C. 18342.
	501 .....	42 U.S.C. 18351.
	502 .....	42 U.S.C. 18352.
	503(a) .....	42 U.S.C. 18353(a).
	503(d) .....	42 U.S.C. 18353(d).
	503(e) .....	42 U.S.C. 18353(e).
	503(f) .....	42 U.S.C. 18353(f).

## Schedule of Laws Repealed—Continued

Act	Section	United States Code Former Classification
	504 .....	42 U.S.C. 18354.
	702 .....	42 U.S.C. 18371.
	703 .....	42 U.S.C. 18372.
	704 .....	42 U.S.C. 18373.
	706 .....	42 U.S.C. 18374.
	801 .....	42 U.S.C. 18381.
	802(b) through (e) .....	42 U.S.C. 18382(b) through (e).
	804 .....	42 U.S.C. 18383.
	805 .....	42 U.S.C. 18384.
	806(b), (c) .....	42 U.S.C. 18385(b), (c).
	807 .....	42 U.S.C. 18386.
	808 .....	42 U.S.C. 18387.
	809(b)(1), (2) .....	42 U.S.C. 18388(b)(1), (2).
	902 .....	42 U.S.C. 18401.
	903 .....	42 U.S.C. 18402.
	904 .....	42 U.S.C. 18403.
	906 .....	42 U.S.C. 18404.
	907 .....	42 U.S.C. 18405.
	1202(b) .....	42 U.S.C. 18441(b).
	1203(b) .....	42 U.S.C. 18442(b).
	1206 .....	42 U.S.C. 18444.
	1207 .....	42 U.S.C. 18445.
America COMPETES Reauthorization Act of 2010 (Public Law 111-358) ....	202(b) .....	51 U.S.C. note prec. 40901.
	203(c) .....	51 U.S.C. note prec. 30501.
	204(b) .....	51 U.S.C. 20303 note.
National Defense Authorization Act for Fiscal Year 2013 (Public Law 112-239) .....	913(a), (b) .....	51 U.S.C. 30701 note.
Science Appropriations Act, 2013 (Public Law 113-6, div. B, title III) .....	(1st, 2d provisos under heading "CONSTRUCTION AND ENVIRONMENTAL COMPLIANCE AND RESTORATION", at 127 Stat. 263).	51 U.S.C. 20145 note.
Inspiring the Next Space Pioneers, Innovators, Researchers, and Explorers (INSPIRE) Women Act (Public Law 115-7) .....	3 .....	51 U.S.C. note prec. 40901.
National Aeronautics and Space Administration Transition Authorization Act of 2017 (Public Law 115-10) .....	301(b) .....	51 U.S.C. 50111 note.
	301(e) .....	42 U.S.C. 18351, 51 U.S.C. 50111 note.
	302(d) .....	42 U.S.C. 18311, 51 U.S.C. 50111 note.
	302(e) .....	51 U.S.C. 50111 note.
	302(f) .....	42 U.S.C. 18341, 51 U.S.C. 50111 note.
	302(g) .....	51 U.S.C. 50111 note.
	302(h)(2) .....	51 U.S.C. 50111 note.
	303(c) .....	51 U.S.C. 50111, 51 U.S.C. 50111 note.
	421(b)(2) .....	51 U.S.C. 20301 note.
	421(d) .....	51 U.S.C. 20301 note.
	421(f) .....	51 U.S.C. 20301 note.
	421(g) .....	51 U.S.C. 20301 note.
	432(b) .....	51 U.S.C. 20302 note.
	501(b) .....	51 U.S.C. 20301 note.
	502(b) .....	51 U.S.C. 20301 note.
	508 .....	51 U.S.C. 20301 note.
	509 .....	51 U.S.C. 20301 note.
	517 .....	51 U.S.C. 20113 note.
	701(c) .....	51 U.S.C. 20301 note.
	701(d) .....	51 U.S.C. 20301 note.
	702(a) .....	51 U.S.C. 20301 note.
	702(b) .....	51 U.S.C. 20301 note.
	702(c) .....	51 U.S.C. 20301 note.
	702(d) .....	51 U.S.C. 20301 note.
	702(e) .....	51 U.S.C. 20301 note.
	702(f)(1) .....	51 U.S.C. 20301 note.
	702(h) .....	51 U.S.C. 20301 note.
	811(a) .....	51 U.S.C. 20111 note.
	812 .....	51 U.S.C. 20111 note.
	813(b) .....	51 U.S.C. 20111 note.

## Schedule of Laws Repealed—Continued

Act	Section	United States Code Former Classification
	821 .....	51 U.S.C. 20111 note.
	822(c) .....	51 U.S.C. 50131 note.
	824(b)(1) .....	51 U.S.C. note prec. 40901.
	825(c) .....	51 U.S.C. 50131 note.
	826 .....	51 U.S.C. 70102 note.
	837(b) .....	51 U.S.C. 31502 note.
	837(c) .....	51 U.S.C. 31502 note.
	837(d) .....	51 U.S.C. 31502 note.
	837(e) .....	51 U.S.C. 31502 note.
	841(b) .....	51 U.S.C. 20113 note.
	841(c) .....	51 U.S.C. 20113 note.
	841(d) .....	51 U.S.C. 20113 note.
	841(e) .....	51 U.S.C. 20113 note.
Women in Aerospace Education Act (Public Law 115-303) .....	3 .....	51 U.S.C. note prec. 40901.