I

117TH CONGRESS
2D SESSION

H. R. 6391

To ensure continued United States leadership in space and low-Earth orbit.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 12, 2022

Mr. WEBER of Texas introduced the following bill; which was referred to the Committee on Science, Space, and Technology, and in addition to the Committee on Armed Services, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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A BILL

To ensure continued United States leadership in space and low-Earth orbit.

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

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the ''U.S. Leadership in Space Act of 2022''.

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

SEC. 2. DEFINITIONS.

In this Act:

(1) ADMINISTRATION.—The term ''Administration'' means the National Aeronautics and Space Administration.

(2) ADMINISTRATOR.—The term ''Administrator'' means the Administrator of the National Aeronautics and Space Administration.

(3) APPROPRIATE COMMITTEES OF CONGRESS.—Except as otherwise expressly provided, 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.

(4) CISLUNAR SPACE.—The term ''cislunar space'' means the region of space beyond low-Earth orbit out to and including the region around the surface of the Moon.

(5) DEEP SPACE.—The term ''deep space'' means the region of space beyond low-Earth orbit, including cislunar space.

(6) DEVELOPMENT COST.—The term ''development cost'' has the meaning given the term in section 30104 of title 51, United States Code.

(7) ISS.—The term ''ISS'' means the International Space Station.

(8) ISS MANAGEMENT ENTITY.—The term ''ISS management entity'' means the organization with which the Administrator has entered into a cooperative agreement under section 504(a) of the Na-

tional Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18354(a)).

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

(10) ORION.—The term ''Orion'' means the multipurpose crew vehicle described in section 303 of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18323).

(11) OSTP.—The term ''OSTP'' means the Office of Science and Technology Policy.

(12) SPACE LAUNCH SYSTEM.—The term ''Space Launch System'' means the Space Launch System authorized under section 302 of the National Aeronautics and Space Administration Act of 2010 (42 U.S.C. 18322).

TITLE I—AUTHORIZATION OF APPROPRIATIONS

SEC. 101. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Administration for fiscal year 2021 as follows:

(1) For Exploration, $6,706,400,000.

(2) For Space Operations, $3,988,200,000.

(3) For Science, $7,274,700,000.

(4) For Aeronautics, $828,700,000.

(5) For Space Technology, $1,206,000,000.

(6) For Science, Technology, Engineering, and Mathematics Engagement, $120,000,000.

(7) For Safety, Security, and Mission Services, $2,936,500,000.

(8) For Construction and Environmental Compliance and Restoration, $390,300,000.

(9) For Inspector General, $44,200,000.

TITLE II—HUMAN SPACEFLIGHT AND EXPLORATION

SEC. 201. COMPETITIVENESS WITHIN THE HUMAN LANDING SYSTEM PROGRAM.

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

(1) the development of technologies that enable human exploration of the lunar surface and other celestial bodies;

(2) commercial entities in the United States have made significant investment and progress toward the development of human-class lunar landers;

(3) NASA developed the Artemis program—

(A) to fulfill the goal of landing United States astronauts, including the first woman and the next man, on the Moon; and

(B) to collaborate with commercial and international partners to establish sustainable lunar exploration by 2028;

(4) in carrying out the Artemis program, the Administrator should ensure that the entire Artemis program is inclusive and representative of all people of the United States, including women and minorities; and

(5) maintaining multiple technically credible providers within NASA commercial programs is a best practice that reduces programmatic risk.

(b) STATEMENT OF POLICY.—It shall be the policy of the United States—

(1) to bolster the domestic space technology industrial base, using existing tools and authorities, particularly in areas central to competition between the United States and the People's Republic of China; and

(2) to mitigate threats and minimize challenges to the superiority of the United States in space technology, including lunar infrastructure and lander capabilities.

(c) HUMAN LANDING SYSTEM PROGRAM.—

(1) IN GENERAL.—Not later than 60 days after the date of the enactment of this division, the Ad-

ministrator shall maintain competitiveness within the human landing system program by funding design, development, testing, and evaluation for not fewer than 2 entities.

(2) REQUIREMENTS.—In carrying out the human landing system program referred to in paragraph (1), the Administrator shall, to the extent practicable—

(A) encourage reusability and sustainability of systems developed; and

(B) offer existing capabilities and assets of NASA centers to support such partnerships.

(3) BRIEFING.—Not later than 60 days after the date of the enactment of this division, the Administrator shall provide to the appropriate committees of Congress a briefing on the implementation of paragraph (1).

(4) AUTHORIZATION OF APPROPRIATIONS.—In addition to amounts otherwise appropriated for the Artemis program, for fiscal years 2021 through 2025, there is authorized to be appropriated $10,032,000,000 to NASA to carry out the human landing system program.

(5) SAVINGS.—The Administrator shall not, in order to comply with the obligations referred to in

paragraph (1), modify, terminate, or rescind any selection decisions or awards made under the human landing system program that were announced prior to the date of the enactment of this division.

(d) APPROPRIATE COMMITTEES OF CONGRESS DEFINED.—In this section, the term ''appropriate committees of Congress'' means—

(1) the Committee on Commerce, Science, and Transportation and the Committee on Appropriations of the Senate; and

(2) the Committee on Science, Space, and Technology and the Committee on Appropriations of the House of Representatives.

SEC. 202. SPACE LAUNCH SYSTEM CONFIGURATIONS.

(a) MOBILE LAUNCH PLATFORM.—The Administrator is authorized to maintain 2 operational mobile launch platforms to enable the launch of multiple configurations of the Space Launch System.

(b) EXPLORATION UPPER STAGE.—To meet the capability requirements under section 302(c)(2) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18322(c)(2)), the Administrator shall continue development of the Exploration Upper Stage for the Space Launch System with a sched-

uled availability sufficient for use on the third launch of the Space Launch System.

(c) BRIEFING.—Not later than 90 days after the date of the enactment of this division, the Administrator shall brief the appropriate committees of Congress on the development and scheduled availability of the Exploration Upper Stage for the third launch of the Space Launch System.

(d) MAIN PROPULSION TEST ARTICLE.—To meet the requirements under section 302(c)(3) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18322(c)(3)), the Administrator shall—

(1) immediately on completion of the first full-duration integrated core stage test of the Space Launch System, initiate development of a main propulsion test article for the integrated core stage propulsion elements of the Space Launch System, consistent with cost and schedule constraints, particularly for long-lead propulsion hardware needed for flight;

(2) not later than 180 days after the date of the enactment of this division, submit to the appropriate committees of Congress a detailed plan for the development and operation of such main propulsion test article; and

(3) use existing capabilities of NASA centers for the design, manufacture, and operation of the main propulsion test article.

SEC. 203. ADVANCED SPACESUITS.

(a) SENSE OF CONGRESS.—It is the sense of Congress that next-generation advanced spacesuits are a critical technology for human space exploration and use of low-Earth orbit, cislunar space, the surface of the Moon, and Mars.

(b) DEVELOPMENT PLAN.—The Administrator shall establish a detailed plan for the development and manufacture of advanced spacesuits, consistent with the deep space exploration goals and timetables of NASA.

(c) DIVERSE ASTRONAUT CORPS.—The Administrator shall ensure that spacesuits developed and manufactured after the date of the enactment of this division are capable of accommodating a wide range of sizes of astronauts so as to meet the needs of the diverse NASA astronaut corps.

(d) ISS USE.—Throughout the operational life of the ISS, the Administrator should fully use the ISS for testing advanced spacesuits.

(e) SPACESUIT TECHNOLOGY PARTNERSHIPS TO FULLY MEET NASA'S NEEDS.—

(1) IN GENERAL.—In developing an advanced spacesuit, the Administrator shall, to the maximum extent practicable, partner with leverage the capabilities unique to Johnson Space Center's workforce and pursue agreements for design, development, and manufacturing of advanced spacesuits with 2 or more industry partners who are able to demonstrate design concepts at which meet all identified Agency requirements for advanced spacesuits, providing maximum consideration for the measurement of all associated design, development, manufacturing, and other costs weighted against EVA cadence and availability on ISS, future commercial platforms, and cislunar needs.

(2) AGREEMENTS WITH PRIVATE ENTITIES.—In carrying out this subsection, the Administrator may enter into 2 or more agreements with 2 or more private entities for the manufacture of advanced spacesuits, as the Administrator considers appropriate.

(f) BRIEFING.—Not later than 180 days after the date of the enactment of this division, and semiannually thereafter until NASA procures advanced spacesuits under this section, the Administrator shall brief the appro-

priate committees of Congress on the development plan in subsection (b).

SEC. 204. ACQUISITION OF DOMESTIC SPACE TRANSPORTATION AND LOGISTICS RESUPPLY SERVICES.

(a) IN GENERAL.—Except as provided in subsection (b), the Administrator shall not enter into any contract with a person or entity that proposes to use, or will use, a foreign launch provider for a commercial service to provide space transportation or logistics resupply for—

(1) the ISS; or

(2) any Government-owned or Government-funded platform in Earth orbit or cislunar space, on the lunar surface, or elsewhere in space.

(b) EXCEPTION.—The Administrator may enter into a contract with a person or an entity that proposes to use, or will use, a foreign launch provider for a commercial service to carry out an activity described in subsection (a) if—

(1) a domestic vehicle or service is unavailable; or

(2) the launch vehicle or service is a contribution by a partner to an international no-exchange-of-funds collaborative effort.

(c) RULE OF CONSTRUCTION.—Nothing in this section shall be construed to prohibit the Administrator from entering into 1 or more no-exchange-of-funds collaborative agreements with an international partner in support of the deep space exploration plan of NASA.

SEC. 205. ROCKET ENGINE TEST INFRASTRUCTURE.

(a) IN GENERAL.—The Administrator shall continue to carry out a program to modernize rocket propulsion test infrastructure at NASA facilities—

(1) to increase capabilities;

(2) to enhance safety;

(3) to support propulsion development and testing; and

(4) to foster the improvement of Government and commercial space transportation and exploration.

(b) PROJECTS.—Projects funded under the program described in subsection (a) may include—

(1) infrastructure and other facilities and systems relating to rocket propulsion test stands and rocket propulsion testing;

(2) enhancements to test facility capacity and flexibility; and

(3) such other projects as the Administrator considers appropriate to meet the goals described in that subsection.

(c) REQUIREMENTS.—In carrying out the program under subsection (a), the Administrator shall—

(1) prioritize investments in projects that enhance test and flight certification capabilities for large thrust-level atmospheric and altitude engines and engine systems, and multi-engine integrated test capabilities;

(2) continue to make underutilized test facilities available for commercial use on a reimbursable basis; and

(3) ensure that no project carried out under this program adversely impacts, delays, or defers testing or other activities associated with facilities used for Government programs, including—

(A) the Space Launch System and the Exploration Upper Stage of the Space Launch System;

(B) in-space propulsion to support exploration missions; or

(C) nuclear propulsion testing.

(d) RULE OF CONSTRUCTION.—Nothing in this section shall preclude a NASA program, including the Space

Launch System and the Exploration Upper Stage of the Space Launch System, from using the modernized test infrastructure developed under this section.

(e) WORKING CAPITAL FUND STUDY.—

(1) IN GENERAL.—Not later than 180 days after the date of the enactment of this division, the Administrator shall submit to the appropriate committees of Congress a report on the use of the authority under section 30102 of title 51, United States Code, to promote increased use of NASA rocket propulsion test infrastructure for research, development, testing, and evaluation activities by other Federal agencies, firms, associations, corporations, and educational institutions.

(2) MATTERS TO BE INCLUDED.—The report required by paragraph (1) shall include the following:

(A) An assessment of prior use, if any, of the authority under section 30102 of title 51, United States Code, to improve testing infrastructure.

(B) An analysis of any barrier to implementation of such authority for the purpose of promoting increased use of NASA rocket propulsion test infrastructure.

SEC. 206. PEARL RIVER MAINTENANCE.

(a) IN GENERAL.—The Administrator shall coordinate with the Chief of the Army Corps of Engineers to ensure the continued navigability of the Pearl River and Little Lake channels sufficient to support NASA barge operations surrounding Stennis Space Center and the Michoud Assembly Facility.

(b) REPORT TO CONGRESS.—Not later than 180 days after the date of the enactment of this division, the Administrator shall submit to the appropriate committees of Congress a report on efforts under subsection (a).

(c) APPROPRIATE COMMITTEES OF CONGRESS DEFINED.—In this section, the term ''appropriate committees of Congress'' means—

(1) the Committee on Commerce, Science, and Transportation, the Committee on Environment and Public Works, and the Committee on Appropriations of the Senate; and

(2) the Committee on Science, Space, and Technology, the Committee on Transportation and Infrastructure, and the Committee on Appropriations of the House of Representatives.

SEC. 207. VALUE OF INTERNATIONAL SPACE STATION AND CAPABILITIES IN LOW-EARTH ORBIT.

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

(1) it is in the national and economic security interests of the United States to maintain a continuous presence in low-Earth orbit, in perpetuity;

(2) low-Earth orbit should be used as a test bed to advance human space exploration and scientific discoveries to advance human space exploration, scientific discoveries, and commercial development; and

(3) the ISS is a critical component of economic, commercial, and industrial development in low-Earth orbit.

(b) HUMAN PRESENCE REQUIREMENT.—The United States shall continuously maintain the capability for a continuous human presence in low-Earth orbit through and beyond the useful life of the ISS.

SEC. 208. EXTENSION AND MODIFICATION RELATING TO INTERNATIONAL SPACE STATION.

(a) POLICY.—Section 501(a) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18351(a)) is amended by striking ''2024'' and inserting ''2030''.

(b) MAINTENANCE OF UNITED STATES SEGMENT AND ASSURANCE OF CONTINUED OPERATIONS.—Section 503(a) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18353(a)) is

amended by striking ''September 30, 2024'' and inserting ''September 30, 2030''.

(c) RESEARCH CAPACITY ALLOCATION AND INTEGRATION OF RESEARCH PAYLOADS.—Section 504(d) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18354(d)) is amended—

(1) in paragraph (1), in the first sentence—

(A) by striking ''As soon as practicable'' and all that follows through ''2011,'' and inserting ''The''; and

(B) by striking ''September 30, 2024'' and inserting ''September 30, 2030''; and

(2) in paragraph (2), in the third sentence, by striking ''September 30, 2024'' and inserting ''September 30, 2030''.

(d) MAINTENANCE OF USE.—Section 70907 of title 51, United States Code, is amended—

(1) in the section heading, by striking ''**2024**'' and inserting ''**2030**'';

(2) in subsection (a), by striking ''September 30, 2024'' and inserting ''September 30, 2030''; and

(3) in subsection (b)(3), by striking ''September 30, 2024'' and inserting ''September 30, 2030''.

(e) TRANSITION PLAN REPORTS.—Section 50111(c)(2) of title 51, United States Code is amended—

(1) in the matter preceding subparagraph (A), by striking ''2023'' and inserting ''2028''; and

(2) in subparagraph (J), by striking ''2028'' and inserting ''2030''.

(f) ELIMINATION OF INTERNATIONAL SPACE STATION NATIONAL LABORATORY ADVISORY COMMITTEE.—Section 70906 of title 51, United States Code, is repealed.

(g) CONFORMING AMENDMENTS.—Chapter 709 of title 51, United States Code, is amended—

(1) by redesignating section 70907 as section 70906; and

(2) in the table of sections for the chapter, by striking the items relating to sections 70906 and 70907 and inserting the following:

''70906. Maintaining use through at least 2030.''.

SEC. 209. DEPARTMENT OF DEFENSE ACTIVITIES ON INTERNATIONAL SPACE STATION.

(a) IN GENERAL.—Not later than 180 days after the date of the enactment of this division, the Secretary of Defense shall—

(1) identify and review each activity, program, and project of the Department of Defense completed, being carried out, or planned to be carried out on the ISS as of the date of the review; and

(2) provide to the appropriate committees of Congress a briefing that describes the results of the review.

(b) APPROPRIATE COMMITTEES OF CONGRESS DEFINED.—In this section, the term ''appropriate committees of Congress'' means—

(1) the Committee on Armed Services, the Committee on Appropriations, and the Committee on Commerce, Science, and Transportation of the Senate; and

(2) the Committee on Armed Services, the Committee on Appropriations, and the Committee on Science, Space, and Technology of the House of Representatives.

SEC. 210. COMMERCIAL DEVELOPMENT IN LOW-EARTH ORBIT.

(a) STATEMENT OF POLICY.—It is the policy of the United States to encourage the development of a thriving and robust United States commercial sector in low-Earth orbit.

(b) PREFERENCE FOR UNITED STATES COMMERCIAL PRODUCTS AND SERVICES.—The Administrator shall continue to increase the use of assets, products, and services of private entities in the United States to fulfill the low-Earth orbit requirements of the Administration.

(c) NONCOMPETITION.—

(1) IN GENERAL.—Except as provided in paragraph (2), the Administrator may not offer to a foreign person or a foreign government a spaceflight product or service relating to the ISS, if a comparable spaceflight product or service, as applicable, is offered by a private entity in the United States.

(2) EXCEPTION.—The Administrator may offer a spaceflight product or service relating to the ISS to the government of a country that is a signatory to the Agreement Among the Government of Canada, Governments of Member States of the European Space Agency, the Government of Japan, the Government of the Russian Federation, and the Government of the United States of America Concerning Cooperation on the Civil International Space Station, signed at Washington January 29, 1998, and entered into force on March 27, 2001 (TIAS 12927), including an international partner astronaut (as defined in section 50902 of title 51, United States Code) that is sponsored by the government of such a country.

(d) SHORT-DURATION COMMERCIAL MISSIONS.—To provide opportunities for additional transport of astronauts to the ISS and help establish a commercial market

in low-Earth orbit, the Administrator may permit short-duration missions to the ISS for commercial passengers on a fully or partially reimbursable basis.

(e) PROGRAM AUTHORIZATION.—

(1) ESTABLISHMENT.—The Administrator shall establish a low-Earth orbit commercial development program to encourage the fullest commercial use and development of space by private entities in the United States.

(2) ELEMENTS.—The program established under paragraph (1) shall, to the maximum extent practicable, include activities—

(A) to stimulate demand for—

(i) space-based commercial research, development, and manufacturing;

(ii) spaceflight products and services; and

(iii) human spaceflight products and services in low-Earth orbit;

(B) to improve the capability of the ISS to accommodate commercial users; and

(C) subject to paragraph (3), to foster the development of commercial space stations and habitats.

(3) COMMERCIAL SPACE STATIONS AND HABITATS.—

(A) PRIORITY.—With respect to an activity to develop a commercial space station or habitat, the Administrator shall give priority to an activity for which a private entity provides a significant share of the cost to develop and operate the activity.

(B) REPORT.—Not later than 30 days after the date that an award or agreement is made to carry out an activity to develop a commercial space station or habitat, the Administrator shall submit to the appropriate committees of Congress a report on the development of the commercial space station or habitat, as applicable, that includes—

(i) a business plan that describes the manner in which the project will—

(I) meet the future requirements of NASA for low-Earth orbit human space-flight services; and

(II) fulfill the cost-share funding prioritization under subparagraph (A); and

(ii) a review of the viability of the operational business case, including—

(I) the level of expected Government participation; and

(II) a list of anticipated non-governmental an international customers and associated contributions.

SEC. 211. MAINTAINING A NATIONAL LABORATORY IN SPACE.

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

(1) the United States segment of the International Space Station (as defined in section 70905 of title 51, United States Code), which is designated as a national laboratory under section 70905(b) of title 51, United States Code—

(A) benefits the scientific community and promotes commerce in space;

(B) fosters stronger relationships among NASA and other Federal agencies, the private sector, and research groups and universities;

(C) advances science, technology, engineering, and mathematics education through use of the unique microgravity environment; and

(D) advances human knowledge and international cooperation;

(2) after the ISS is decommissioned, the United States should maintain a national microgravity laboratory in space;

(3) in maintaining a national microgravity laboratory in space, the United States should make appropriate accommodations for different types of ownership and operation arrangements for the ISS and future space stations;

(4) to the maximum extent practicable, a national microgravity laboratory in space should be maintained in cooperation with international space partners; and

(5) NASA should continue to support fundamental science research on future platforms in low-Earth orbit and cislunar space, orbital and suborbital flights, drop towers, and other microgravity testing environments.

(b) REPORT.—The Administrator, in coordination with the National Space Council and other Federal agencies as the Administrator considers appropriate, shall issue a report detailing the feasibility of establishing a microgravity national laboratory federally funded research

and development center to carry out activities relating to the study and use of in-space conditions.

SEC. 212. INTERNATIONAL SPACE STATION NATIONAL LABORATORY; PROPERTY RIGHTS IN INVENTIONS.

(a) IN GENERAL.—Subchapter III of chapter 201 of title 51, United States Code, is amended by adding at the end the following:

"§ 20150. Property rights in designated inventions

''(a) EXCLUSIVE PROPERTY RIGHTS.—Notwithstanding section 3710a of title 15, chapter 18 of title 35, section 20135, or any other provision of law, a designated invention shall be the exclusive property of a user, and shall not be subject to a Government-purpose license, if—

''(1)(A) the Administration is reimbursed under the terms of the contract for the full cost of a contribution by the Federal Government of the use of Federal facilities, equipment, materials, proprietary information of the Federal Government, or services of a Federal employee during working hours, including the cost for the Administration to carry out its responsibilities under paragraphs (1) and (4) of section 504(d) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18354(d));

''(B) Federal funds are not transferred to the user under the contract; and

''(C) the designated invention was made (as defined in section 20135(a))—

''(i) solely by the user; or

''(ii)(I) by the user with the services of a Federal employee under the terms of the contract; and

''(II) the Administration is reimbursed for such services under subparagraph (B); or

''(2) the Administrator determines that the relevant field of commercial endeavor is sufficiently immature that granting exclusive property rights to the user is necessary to help bolster demand for products and services produced on crewed or crew-tended space stations.

''(b) NOTIFICATION TO CONGRESS.—On completion of a determination made under paragraph (2), the Administrator shall submit to the appropriate committees of Congress a notification of the determination that includes a written justification.

''(c) PUBLIC AVAILABILITY.—A determination or part of such determination under paragraph (1) shall be made available to the public on request, as required under

section 552 of title 5, United States Code (commonly referred to as the 'Freedom of Information Act').

''(d) RULE OF CONSTRUCTION.—Nothing in this section may be construed to affect the rights of the Federal Government, including property rights in inventions, under any contract, except in the case of a written contract with the Administration or the ISS management entity for the performance of a designated activity.

''(e) DEFINITIONS.—In this section—

''(1) CONTRACT.—The term 'contract' has the meaning giving the term in section 20135(a).

''(2) DESIGNATED ACTIVITY.—The term 'designated activity' means any non-NASA scientific use of the ISS national laboratory as described in section 504 of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18354).

''(3) DESIGNATED INVENTION.—The term 'designated invention' means any invention, product, or service conceived or first reduced to practice by any person in the performance of a designated activity under a written contract with the Administration or the ISS management entity.

''(4) FULL COST.—The term 'full cost' means the cost of transporting materials or passengers to

and from the ISS, including any power needs, the disposal of mass, crew member time, stowage, power on the ISS, data downlink, crew consumables, and life support.

''(5) GOVERNMENT-PURPOSE LICENSE.—The term 'Government-purpose license' means the reservation by the Federal Government of an irrevocable, nonexclusive, nontransferable, royalty-free license for the use of an invention throughout the world by or on behalf of the United States or any foreign government pursuant to a treaty or agreement with the United States.

''(6) ISS MANAGEMENT ENTITY.—The term 'ISS management entity' means the organization with which the Administrator enters into a cooperative agreement under section 504(a) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18354(a)).

''(7) USER.—The term 'user' means a person, including a nonprofit organization or small business firm (as such terms are defined in section 201 of title 35), or class of persons that enters into a written contract with the Administration or the ISS management entity for the performance of designated activities.''.

(b) CONFORMING AMENDMENT.—The table of sections for chapter 201 of title 51, United States Code, is amended by inserting after the item relating to section 20149 the following:

''20150. Property rights in designated inventions.''.

SEC. 213. DATA FIRST PRODUCED DURING NON-NASA SCIENTIFIC USE OF THE ISS NATIONAL LABORATORY.

(a) DATA RIGHTS.—Subchapter III of chapter 201 of title 51, United States Code, as amended by section 212, is further amended by adding at the end the following:

''§ 20151. Data rights

''(a) NON-NASA SCIENTIFIC USE OF THE ISS NATIONAL LABORATORY.—The Federal Government may not use or reproduce, or disclose outside of the Government, any data first produced in the performance of a designated activity under a written contract with the Administration or the ISS management entity, unless—

''(1) otherwise agreed under the terms of the contract with the Administration or the ISS management entity, as applicable;

''(2) the designated activity is carried out with Federal funds;

''(3) disclosure is required by law;

''(4) the Federal Government has rights in the data under another Federal contract, grant, cooperative agreement, or other transaction; or

''(5) the data is—

''(A) otherwise lawfully acquired or independently developed by the Federal Government;

''(B) related to the health and safety of personnel on the ISS; or

''(C) essential to the performance of work by the ISS management entity or NASA personnel.

''(b) DEFINITIONS.—In this section:

''(1) CONTRACT.—The term 'contract' has the meaning given the term under section 20135(a).

''(2) DATA.—

''(A) IN GENERAL.—The term 'data' means recorded information, regardless of form or the media on which it may be recorded.

''(B) INCLUSIONS.—The term 'data' includes technical data and computer software.

''(C) EXCLUSIONS.—The term 'data' does not include information incidental to contract administration, such as financial, administra-

tive, cost or pricing, or management information.

''(3) DESIGNATED ACTIVITY.—The term 'designated activity' has the meaning given the term in section 20150.

''(4) ISS MANAGEMENT ENTITY.—The term 'ISS management entity' has the meaning given the term in section 20150.''.

(b) SPECIAL HANDLING OF TRADE SECRETS OR CONFIDENTIAL INFORMATION.—Section 20131(b)(2) of title 51, United States Code, is amended to read as follows:

''(2) INFORMATION DESCRIBED.—

''(A) ACTIVITIES UNDER AGREEMENT.—Information referred to in paragraph (1) is information that—

''(i) results from activities conducted under an agreement entered into under subsections (e) and (f) of section 20113; and

''(ii) would be a trade secret or commercial or financial information that is privileged or confidential within the meaning of section 552(b)(4) of title 5 if the information had been obtained from a non-

Federal party participating in such an agreement.

''(B) CERTAIN DATA.—Information referred to in paragraph (1) includes data (as defined in section 20151) that—

''(i) was first produced by the Administration in the performance of any designated activity (as defined in section 20150); and

''(ii) would be a trade secret or commercial or financial information that is privileged or confidential within the meaning of section 552(b)(4) of title 5 if the data had been obtained from a non-Federal party.''.

(c) CONFORMING AMENDMENT.—The table of sections for chapter 201 of title 51, United States Code, as amended by section 212, is further amended by inserting after the item relating to section 20150 the following:

''20151. Data rights.''.

SEC. 214. STEPPINGSTONE APPROACH TO EXPLORATION.

(a) IN GENERAL.—Section 70504 of title 51, United States Code, is amended to read as follows:

''§ 70504. Steppingstone approach to exploration

''(a) IN GENERAL.—The Administrator, in sustainable steps, may conduct missions to intermediate destina-

tions, such as the Moon, in accordance with section 20302(b), and on a timetable determined by the availability of funding, in order to achieve the objective of human exploration of Mars specified in section 202(b)(5) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18312(b)(5)), if the Administrator—

''(1) determines that each such mission demonstrates or advances a technology or operational concept that will enable human missions to Mars; and

''(2) incorporates each such mission into the human exploration roadmap under section 432 of the National Aeronautics and Space Administration Transition Authorization Act of 2017 (Public Law 115–10; 51 U.S.C. 20302 note).

''(b) CISLUNAR SPACE EXPLORATION ACTIVITIES.—In conducting a mission under subsection (a), the Administrator shall—

''(1) use a combination of launches of the Space Launch System and space transportation services from United States commercial providers, as appropriate, for the mission;

''(2) plan for not fewer than 1 Space Launch System launch annually beginning after the first

successful crewed launch of Orion on the Space Launch System; and

''(3) establish an outpost in orbit around the Moon that—

''(A) demonstrates technologies, systems, and operational concepts directly applicable to the space vehicle that will be used to transport humans to Mars;

''(B) has the capability for periodic human habitation; and

''(C) can function as a point of departure, return, or staging for Administration or non-governmental or international partner missions to multiple locations on the lunar surface or other destinations.

''(c) COST-EFFECTIVENESS.—To maximize the cost-effectiveness of the long-term space exploration and utilization activities of the United States, the Administrator shall take all necessary steps, including engaging non-governmental and international partners, to ensure that activities in the Administration's human space exploration program are balanced in order to help meet the requirements of future exploration and utilization activities leading to human habitation on the surface of Mars.

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

''(e) INTERNATIONAL PARTICIPATION.—To achieve the goal of successfully conducting a crewed mission to the surface of Mars, the Administrator shall invite the partners in the ISS program and other nations, as appropriate, to participate in an international initiative under the leadership of the United States.''.

(b) DEFINITION OF CISLUNAR SPACE.—Section 10101 of title 51, United States Code, is amended by adding at the end the following:

''(3) CISLUNAR SPACE.—The term 'cislunar space' means the region of space beyond low-Earth orbit out to and including the region around the surface of the Moon.''.

(c) TECHNICAL AND CONFORMING AMENDMENTS.—Section 3 of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18302) is amended by striking paragraphs (2) and (3) and inserting the following:

''(2) 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.

''(3) CISLUNAR SPACE.—The term 'cislunar space' means the region of space beyond low-Earth orbit out to and including the region around the surface of the Moon.''.

SEC. 215. TECHNICAL AMENDMENTS RELATING TO ARTEMIS MISSIONS.

(a) Section 421 of the National Aeronautics and Space Administration Authorization Act of 2017 (Public Law 115–10; 51 U.S.C. 20301 note) is amended—

(1) in subsection (c)(3)—

(A) by striking ''EM–1'' and inserting ''Artemis I'';

(B) by striking ''EM–2'' and inserting ''Artemis II''; and

(C) by striking ''EM–3'' and inserting ''Artemis III''; and

(2) in subsection (f)(3), by striking ''EM–3'' and inserting ''Artemis III''.

(b) Section 432(b) of the National Aeronautics and Space Administration Authorization Act of 2017 (Public Law 115–10; 51 U.S.C. 20302 note) is amended—

(1) in paragraph (3)(D)—

(A) by striking ''EM–1'' and inserting ''Artemis I''; and

(B) by striking ''EM–2'' and inserting ''Artemis II''; and

(2) in paragraph (4)(C), by striking ''EM–3'' and inserting ''Artemis III''.

TITLE III—SAFETY AND TRANSPARENCY

SEC. 301. CREW TRANSPORTATION SAFETY.

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

(1) ensuring the safety of American astronauts is the top priority of NASA's human spaceflight program;

(2) in efforts to meet deadlines to return humans to the Moon, NASA should take all steps necessary to mitigate any and all risk to crew; and

(3) it is the role of Congress to exercise prudence in the use of taxpayer dollars and ensure

transparency to the taxpayer to the greatest extent possible.

(b) IN GENERAL.—To ensure that NASA's human exploration systems comply with the direction in this Act to have a shared safety standard that is consistent across all elements of the architecture, the Administrator shall—

(1) implement a program to ensure that best practices, lessons learned and other information is shared across all elements of the human exploration program, including public-private partnerships and commercial service procurement;

(2) require that any entity receiving funding for the development or operation of a human spaceflight element or activity make all necessary information available to NASA and the appropriate government oversight entities, including the NASA Advisory Committee and its subcommittees, the Aerospace Safety Advisory Committee and the relevant committees of Congress; and

(3) produce a public report twice a year detailing progress towards meeting or sustaining the shared safety standards and identifying areas, programs, or services where these standards have not been met or maintained, and the associated corrective action to address these issues.

(c) REPORT.—Within 120 days of enactment, the Administrator shall provide a report to the Committees on the implementation of this direction and how it plans to ensure these comparable safety standards are met throughout the development, test and operation of such systems.

(d) CONGRESSIONAL NOTICE.—

(1) Should any element of human exploration system architecture, whether owned and operated by NASA, developed and operated as a public-private partnership or procured as a commercial service, fails to meet the common safety standards established, Congress shall be notified and receive a report on corrective actions and options available to improve safety and resiliency of such system(s) within 30 days.

TITLE IV—U.S. NATIONAL SECURITY

SEC. 401. CYBERSECURITY.

(a) IN GENERAL.—Section 20301 of title 51, United States Code, is amended by adding at the end the following:

''(c) CYBERSECURITY.—The Administrator shall update and improve the cybersecurity of NASA space assets and supporting infrastructure.''.

(b) SECURITY OPERATIONS CENTER.—

(1) ESTABLISHMENT.—The Administrator shall maintain a Security Operations Center, to identify and respond to cybersecurity threats to NASA information technology systems, including institutional systems and mission systems.

(2) INSPECTOR GENERAL RECOMMENDATIONS.—The Administrator shall implement, to the maximum extent practicable, each of the recommendations contained in the report of the Inspector General of NASA entitled ''Audit of NASA's Security Operations Center'', issued on May 23, 2018.

(c) CYBER THREAT HUNT.—

(1) IN GENERAL.—The Administrator, in coordination with the Secretary of Homeland Security and the heads of other relevant Federal agencies, may implement a cyber threat hunt capability to proactively search NASA information systems for advanced cyber threats that otherwise evade existing security tools.

(2) THREAT-HUNTING PROCESS.—In carrying out paragraph (1), the Administrator shall develop and document a threat-hunting process, including the roles and responsibilities of individuals conducting a cyber threat hunt.

(d) GAO PRIORITY RECOMMENDATIONS.—The Administrator shall implement, to the maximum extent practicable, the recommendations for NASA contained in the report of the Comptroller General of the United States entitled ''Information Security: Agencies Need to Improve Controls over Selected High-Impact Systems'', issued May 18, 2016, including—

(1) re-evaluating security control assessments; and

(2) specifying metrics for the continuous monitoring strategy of the Administration.

SEC. 402. EXEMPTION FROM THE IRAN, NORTH KOREA, AND SYRIA NONPROLIFERATION ACT.

Section 7(1) of the Iran, North Korea, and Syria Nonproliferation Act (Public Law 106–178; 50 U.S.C. 1701 note) is amended, in the undesignated matter following subparagraph (B), by striking ''December 31, 2020'' and inserting ''December 31, 2030''.

SEC. 403. LIMITATION ON COOPERATION WITH THE PEOPLE'S REPUBLIC OF CHINA.

(a) IN GENERAL.—Except as provided by subsection (b), the Administrator, the Director of the Office of Science and Technology Policy, and the Chair of the National Space Council, shall not—

(1) develop, design, plan, promulgate, implement, or execute a bilateral policy, program, order, or contract of any kind to participate, collaborate, or coordinate bilaterally in any manner with—

(A) the Government of the People's Republic of China; or

(B) any company—

(i) owned by the Government of the People's Republic of China; or

(ii) incorporated under the laws of the People's Republic of China; and

(2) host official visitors from the People's Republic of China at a facility belonging to or used by NASA.

(b) WAIVER.—

(1) IN GENERAL.—The Administrator, the Director, or the Chair may waive the limitation under subsection (a) with respect to an activity described in that subsection only if the Administrator, the Director, or the Chair, as applicable, makes a determination that the activity—

(A) does not pose a risk of a transfer of technology, data, or other information with national security or economic security implications

to an entity described in paragraph (1) of such subsection; and

(B) does not involve knowing interactions with officials who have been determined by the United States to have direct involvement with violations of human rights.

(2) CERTIFICATION TO CONGRESS.—Not later than 30 days after the date on which a waiver is granted under paragraph (1), the Administrator, the Director, or the Chair, as applicable, shall submit to the Committee on Commerce, Science, and Transportation and the Committee on Appropriations of the Senate and the Committee on Science, Space, and Technology and the Committee on Appropriations of the House of Representatives a written certification that the activity complies with the requirements in subparagraphs (A) and (B) of that paragraph.

SEC. 404. COUNTERING CHINESE THREATS TO U.S. ACTIVITIES IN SPACE.

(a) FINDINGS.—

(1) The Government of the People's Republic of China maintains, as a national priority, a global program of theft and other misappropriation of intellectual property, and unacceptable technology transfer

requirements, particularly in fields of high technology.

(2) China is taking steps to establish a commanding position in the commercial launch and satellite sectors relying in part on aggressive state-backed financing that market-driven companies cannot match.

(3) China has engaged in an aggressive campaign to dominate sensitive markets such as germanium wafer production, used for nearly all specialized satellite solar panels, allowing China ownership of over 70 percent of global germanium mining, refining, and production.

(4) China has begun focusing on the lunar surface and cislunar space as priorities in its space program, which is indistinguishable from its armed forces.

(b) REPORT.—Not later than 90 days after the date of enactment, the Executive Secretary of the National Space Council shall submit to the appropriate committees of Congress a report that includes:

(1) How China is harming the U.S. commercial space industry's competitiveness and threatening U.S. national security. Specifically, the Executive Secretary shall investigate—

(A) theft of intellectual property through technology transfer requirements or otherwise;

(B) Chinese efforts to seize control over critical elements of the space industry supply chain;

(C) Chinese efforts to seize control over space industry companies, sister companies with shared leadership, or supply chain; and

(D) U.S. cybersecurity weaknesses.

(2) Current steps the United States is taking to protect its domestic space industry from Chinese influence.

(3) Recommendations to Congress on legislative action necessary to address Chinese threats to the U.S. domestic commercial launch and satellite industries and improve U.S. efforts to counter threats to U.S. activities in space.

(4) Recommendations on how the U.S. Government can best utilize existing Federal entities to investigate and act against potentially harmful Chinese investment into the U.S. commercial space industry, and how the U.S. Government can bolster domestic investment in critical U.S. space industry technologies.

SEC. 405. CONSIDERATION OF ISSUES RELATED TO CONTRACTING WITH ENTITIES RECEIVING ASSISTANCE FROM OR AFFILIATED WITH THE PEOPLE'S REPUBLIC OF CHINA.

In considering any response to a request for a proposal, request for information, broad area announcement, or any other form of request or solicitation, and in considering or undertaking any negotiation or conclusion of any contract, agreement, or other transaction with any commercial or non-commercial entity, the Administrator shall, in consultation with appropriate Federal departments and agencies, take into account the implications of any benefit received by such commercial or non-commercial entity (or any other commercial or non-commercial entity related through ownership, control, or other affiliation to such entity) as a result of a significant loan or other financial assistance provided by—

(1) any governmental organization of the People's Republic of China; or

(2) any other entity that is—

(A) majority owned or controlled by, or otherwise affiliated with, any governmental organization of the People's Republic of China; or

(B) organized under, or otherwise subject to, the laws of the People's Republic of China.

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