

AMERICAN SPACE SITUATIONAL AWARENESS AND
FRAMEWORK FOR ENTITY MANAGEMENT ACT

DECEMBER 22, 2018.—Ordered to be printed

Mr. SMITH of Texas, from the Committee on Science, Space, and
Technology, submitted the following

R E P O R T

[To accompany H.R. 6226]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science, Space, and Technology, to whom was referred the bill (H.R. 6226) to direct the Secretary of Commerce to provide for civil space situational awareness services and information, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

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The amendment is as follows:
Strike all after the enacting clause and insert the following:

SECTION 1. SHORT TITLE.
This Act may be cited as the “American Space Situational Awareness and Frame-
work for Entity Management Act” or the “American Space SAFE Management Act”.

89–006

SEC. 2. DEFINITIONS.

In this Act:

(1) **APPROPRIATE COMMITTEES OF CONGRESS.**—The term “appropriate committees of Congress” means the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(2) **NASA.**—The term “NASA” means the National Aeronautics and Space Administration.

SEC. 3. NATIONAL CIVIL SPACE SITUATIONAL AWARENESS AND SPACE TRAFFIC MANAGEMENT SCIENCE AND TECHNOLOGY PLAN.

(a) **POLICY.**—It is the policy of the United States to encourage the coordination of public and private sector science and technology activities to improve space situational awareness and space traffic management.

(b) **PLAN.**—Not later than 180 days after the date of enactment of this Act, the Administrator of NASA, in consultation with other Federal departments and agencies, as appropriate, shall develop and submit to the appropriate committees of Congress a national civil space situational awareness and space traffic management science and technology plan.

(c) **PURPOSE.**—The Plan developed under subsection (b) shall carry out the policy set forth under subsection (a) by identifying and prioritizing civil space situational awareness and space traffic management research and development activities in support of the activities to be conducted pursuant to sections 4 and 5.

(d) **CONTENTS.**—The plan developed under subsection (b) shall include recommendations—

(1) to improve coordination among Federal departments and agencies on civil space situational awareness and space traffic management research and development;

(2) to promote and facilitate private investment in civil space situational awareness and space traffic management research and development;

(3) to identify current and project future private investment in civil space situational awareness and space traffic management research and development;

(4) to work proactively with the private sector to avoid competing with, disincentivizing, or otherwise discouraging private sector research and development investment; and

(5) to prioritize Federal Government investments in civil space situational awareness and space traffic management research and development to occur over a 5-year funding period.

(e) **AVAILABILITY.**—The Administrator shall ensure that the plan developed under subsection (b), and any updates to such plan, are made available on a publicly accessible website and published in the Federal Register.

(f) **UPDATED PLAN.**—Every 5 years, the Administrator shall update the plan and submit the updated plan to the appropriate committees of Congress.

(g) **ANNUAL BUDGET.**—In submitting each annual budget request to Congress, the President shall identify activities to implement the plan.

(h) **CENTER FOR CIVIL SPACE SITUATIONAL AWARENESS AND SPACE TRAFFIC MANAGEMENT SCIENCE AND TECHNOLOGY EXCELLENCE.**—

(1) **ESTABLISHMENT.**—The Administrator of NASA shall establish, through a competitive process, a Center for Civil Space Situational Awareness and Space Traffic Management Science and Technology Excellence at a United States academic institution or institutions.

(2) **PURPOSE.**—The purpose of the Center established under paragraph (1), taking into account the plan established in this section, shall be to develop, lead, and promote research that furthers civil space situational awareness, space traffic coordination, and space traffic management.

(3) **FUNDING.**—NASA shall devote not less than \$2,000,000 to carry out this subsection for each of fiscal years 2019 through 2023, subject to the availability of appropriations, to come from amounts made available for NASA. This subsection shall be carried out using funds otherwise appropriated by law after the date of enactment of this Act.

SEC. 4. CIVIL SPACE SITUATIONAL AWARENESS PROGRAM.

(a) **FINDINGS.**—Congress finds that—

(1) commercial activity in space is accelerating and the United States has a growing commercial space market;

(2) the number of launches and satellites in orbit will grow significantly in the near future, increasing the number of objects, satellites, and debris, and the risk of collisions; and

(3) responsible space operations has large implications for the sustainability of space activities, and in turn the prosperity and national security of the United States.

(b) **POLICY.**—It is the policy of the United States to establish and maintain a civil space situational awareness program that provides the public space situational awareness information and services in order to facilitate a safe operational environment. The Program established under subsection (c) shall facilitate and promote opportunities for United States private sector providers of space situational awareness data, information, and services to participate in and contribute to the Program. The Program shall promote broad participation from both domestic and international spacecraft operators.

(c) **ESTABLISHMENT.**—No later than 1 year after the date of enactment of this Act, the Secretary of Commerce shall establish a civil space situational awareness program (in this section, referred to as the “Program”) to provide space situational awareness services and information to, and obtain space situational awareness data and information from, eligible entities described under subsection (f), in accordance with this section.

(d) **CONSULTATION.**—In developing the Program, the Secretary of Commerce shall consult with—

(1) other Federal departments and agencies, as the Secretary considers appropriate; and

(2) the United States private sector and academia.

(e) **TRANSITION PLAN.**—

(1) **IN GENERAL.**—Not later than 6 months after the date of the enactment of this Act, the Secretary of Commerce and the Secretary of Defense, in coordination with relevant Federal agencies, shall jointly submit a transition plan to the appropriate committees of Congress for the transfer to the Department of Commerce of the provision of space situational awareness services and information performed under section 2274 of title 10, United States Code, as of the day before the date of the enactment of this Act.

(2) **CONTENTS.**—The transition plan referred to in paragraph (1) shall—

(A) contain an analysis of how to prevent a gap in the provision of the space situational awareness services and information referred to in such paragraph;

(B) identify the capabilities the Department of Commerce requires to provide such services and information, including—

(i) workforce, facilities, and training;

(ii) the cost of such capabilities; and

(iii) the estimated effective date for such capabilities; and

(C) describe the structure of any partnership with a commercial or international entity or entities in which the Department of Commerce may enter for purposes of providing such services and information.

(f) **ELIGIBLE ENTITIES.**—The Secretary may provide services and information under the Program to, and may obtain data and information from, an entity, including any of the following:

(1) A State.

(2) A political subdivision of a State.

(3) A United States commercial entity.

(4) The government of a foreign country.

(5) A foreign commercial entity.

(g) **USER FEES.**—

(1) **NO FEE FOR BASIC SET.**—In providing space situational awareness services and information under the Program, the Secretary shall provide a basic set of such services and information, as determined by the Secretary, without charging a user fee.

(2) **ADDITIONAL SERVICES AND INFORMATION.**—The Secretary is authorized to charge a reasonable user fee for any additional space situational awareness services and information not provided under paragraph (1).

(3) **STATUTORY CONSTRUCTION.**—Nothing in this subsection shall be construed to preclude private sector entities from charging a user fee for providing space situational awareness services and information.

(h) **QUALITY OF SERVICES AND INFORMATION.**—The Program shall provide space situational awareness services and information that are as good as or better than the services and information provided pursuant to section 2274 of title 10, United States Code, as determined by the Secretary.

(i) **SPACE SITUATIONAL AWARENESS DATA TESTBED.**—In carrying out the Program, the Secretary shall provide for a space situational awareness data testbed to facilitate innovation in the use of space situational awareness data to support space situational awareness services that may be provided by the Federal Government or the

private sector. The testbed shall allow the public to access such space situational awareness data, including United States Government data, as the Secretary considers appropriate. The Secretary shall place conditions on such data in consultation with appropriate Federal departments and agencies to protect United States national security and foreign policy interests.

(j) **PROMOTING PRIVATE SECTOR SOLUTIONS.**—The Secretary shall facilitate and promote opportunities for United States private sector providers of space situational awareness data, information, and services to participate in and contribute to the Program.

(k) **ROLE OF NASA.**—In implementing and carrying out the Program, the Secretary of Commerce may use, on a reimbursable basis and to the greatest extent practicable, NASA's existing infrastructure, workforce, and experience relating to space situational awareness, including conjunction assessments that NASA provides for NASA robotic and crewed operations.

(l) **OTHER FEDERAL AGENCIES.**—In implementing and carrying out the Program, the Secretary of Commerce may leverage existing workforce and experience of other Federal agencies relating to space situational awareness for the training of staff and other needs, as determined by the Secretary.

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

(n) **QUARTERLY BRIEFING.**—The Department of Commerce and NASA shall brief the appropriate committees of Congress quarterly, beginning on the date that is 3 months after the date of enactment of this Act, on the status of, and all progress, changes, and other developments related to, carrying out the Program.

(o) **PROGRAM USERS.**—The Secretary shall, to the maximum extent feasible and as soon as is practicable after the establishment of the Program, engage with and solicit feedback from stakeholders that are contributors to or recipients of space situational awareness services and information under the Program in order to, at a minimum, receive practical information on the effectiveness of the Program and receive recommendations on how to improve the Program.

(p) **STATUTORY CONSTRUCTION.**—Nothing in this section may be construed to modify any other authorities for the Federal Government to provide space situational awareness services and information to the public.

(q) **FUNDING.**—The Secretary shall devote no less than \$20,000,000 to carry out this section for each of fiscal years 2019 through 2023, subject to the availability of appropriations, to come from amounts made available for the Office of the Secretary. This section shall be carried out using funds otherwise appropriated by law after the date of enactment of this Act.

SEC. 5. SPACE TRAFFIC MANAGEMENT FRAMEWORK.

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

(1) The United States has the capability to rapidly develop voluntary civil space traffic coordination guidelines, practices, and standards.

(2) It is in the national interest that the United States leads the world in the development of voluntary civil space traffic coordination guidelines, practices, and standards in cooperation with the private sector in the United States.

(3) The United States should promote the international adoption of such civil space traffic coordination guidelines, practices, and standards developed in the United States.

(4) Establishing voluntary civil space traffic coordination guidelines, practices, and standards is an important first step in developing a comprehensive space traffic management framework.

(b) **POLICY.**—It is the policy of the United States to timely develop voluntary civil space traffic coordination guidelines, practices, and standards to ensure a safe operational environment.

(c) **VOLUNTARY CIVIL SPACE TRAFFIC COORDINATION GUIDELINES, PRACTICES, AND STANDARDS.**—

(1) **IN GENERAL.**—The Secretary of Commerce shall, in consultation with appropriate governmental and nongovernmental entities, promote the development of voluntary civil space traffic coordination guidelines, practices, and standards to ensure a safe operational environment and inform development of a comprehensive space traffic management framework.

(2) **GUIDELINES.**—

(A) **IN GENERAL.**—Not later than 1 year after the date of the enactment of this Act, the Secretary of Commerce shall publish voluntary civil space

traffic coordination guidelines. Such guidelines shall be developed in consultation with other relevant Federal agencies, domestic private entities (including entities in the commercial sector and institutions of higher education (as such term is defined in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001))).

(B) PUBLIC COMMENT.—To facilitate and assure ample opportunity for input from domestic private entities specified in subparagraph (A), during the period in which the development of the guidelines under such subparagraph occurs, the Secretary of Commerce shall allow for a public comment period to identify key issues, trends, and needs that should be addressed during the period of that development.

(C) USE OF GUIDELINES.—Federal agencies operating spacecraft shall, to the extent practicable and taking into account the national security interests of the United States in operating such spacecraft, follow the guidelines issued under subparagraph (A).

(d) PILOT PROGRAM.—

(1) IN GENERAL.—Not later than 18 months after the date of enactment of this Act, the Secretary of Commerce shall establish a civil space traffic coordination pilot program under which the Secretary will, using the guidelines, practices, and standards developed under subsection (c) to the greatest extent practicable, facilitate communication, coordination, negotiation, and resolution among domestic and international civil spacecraft operators (including governmental and private entities operating such spacecraft) for the purposes of improving the safety of spaceflight. The Secretary shall, to the greatest extent practicable, incentivize participation in the pilot program. Nothing in the preceding sentence shall be construed as requiring a private entity to participate in such pilot program.

(2) PUBLIC COMMENT.—Before establishing the pilot program under this subsection, the Secretary of Commerce shall publish information about the program's details in the Federal Register and allow for public comment for a reasonable period that ends before the date of such establishment.

(3) DURATION.—The authority to carry out the pilot program under this subsection shall terminate on the date that is 5 years after the pilot program under paragraph (1) is established.

(4) PILOT PROGRAM PARTICIPANTS.—The Secretary shall, to the maximum extent feasible and as soon as is practicable after the date on which the pilot program is established under paragraph (1), engage with and solicit feedback from pilot program participants, in order to, at minimum, receive practical information on the effectiveness of the pilot program and receive recommendations on how to improve the pilot program.

(5) FUNDING.—The Secretary of Commerce shall devote no less than \$5,000,000 for each of fiscal years 2019 through 2023 to carry out this subsection, subject to the availability of appropriations, to come from amounts made available for the Office of the Secretary. This subsection shall be carried out using funds otherwise appropriated by law after the date of enactment of this Act.

(e) REPORTS.—

(1) SPACE TRAFFIC COORDINATION STANDARDS.—Not later than 180 days after the date of the enactment of this Act, the Secretary of Commerce shall submit to the appropriate committees of Congress a report on the role the Department of Commerce, including the National Institute of Standards and Technology, will have in the development of civil space traffic coordination standards for purposes of promoting innovation and the competitiveness of the United States.

(2) REPORT ON NEXT STEPS FOR SPACE TRAFFIC MANAGEMENT FRAMEWORK.—Beginning not later than 1 year after the date of the enactment of this Act and every 2 years thereafter, the Secretary of Commerce shall submit to the appropriate committees of Congress a report on, for the period covered by the report—

(A) the state of domestic and international civil space traffic management, including voluntary or legally binding guidelines, practices, and standards; and

(B) the Secretary's recommendations on what steps should be taken by the United States to facilitate—

(i) further development and adoption of the guidelines, practices, and standards developed under subsection (c);

(ii) coordination carried out pursuant to subsection (d); and

(iii) development of a comprehensive space traffic management framework.

COMMITTEE STATEMENT AND VIEWS

PURPOSE AND SUMMARY

The purpose of H.R. 6226, the “American Space Situational Awareness and Framework for Entity Management Act,” or the “American Space SAFE Management Act,” is to direct the Secretary of Commerce to provide for civil space situational awareness services and information by establishing a space traffic management framework to ensure a safe operating environment and to promote U.S. leadership in space.

BACKGROUND AND NEED FOR LEGISLATION

The space environment is critical to the interests of the United States. The United States utilizes space for national security, Earth observation, telecommunications (including financial transactions, internet, telephone, data transfer, and television), navigation, scientific and human exploration, and economic development. Therefore, it is in the national interest to ensure the safety of the space environment through coherent and thoughtful space situational awareness (SSA) and space traffic management (STM) policy.

SSA refers to the current and predictive knowledge of the space environment in which operations occur. Effective SSA provides accurate information, giving operators the ability to predict and avoid collisions in space. Having effective SSA is crucial not only because of the possibility of losing a critical space asset but also because of the devastating follow-on effects of an outer space collision. Both accidents and intentional destructive events can produce large quantities of orbital debris that can cause subsequent collisions, threatening space assets for years to come.

The U.S. Department of Defense maintains the world’s most extensive orbital tracking network. As of 2014, their database follows roughly 23,000 objects in space measuring 10 cm in diameter or larger. Currently, objects smaller than 10 cm cannot reliably be tracked because they are too small to follow consistently. Scientists estimate that about 500,000 bits of debris measuring 1 to 10 cm orbit Earth, and that millions smaller than 1 cm may exist. Objects in orbit around Earth travel at an extremely high speed, between 3.1 kilometers per second (7,000 miles per hour) and 7 kilometers per second (15,600 miles per hour), on average. Due to their high velocity, even very small objects can cripple or destroy working spacecraft and endanger astronauts.

Private and public entities are building extensive satellite constellations, with hundreds or even thousands of satellites, increasing the complexity of space activity and potential for disastrous collisions. Maintaining safety in this environment requires a robust SSA framework. The Department of Defense will continue its role in SSA activities by maintaining its catalog of space objects but is eager to transfer SSA information management and services to the appropriate civilian agency, the Department of Commerce. This transition would greatly improve access to SSA data and services in the United States and promote a safer operational environment in space.

STM is the second component of ensuring a safe operational orbital environment. Given the complexity of the outer space environ-

ment, including the activity of public and private entities from over 50 spacefaring nations, establishing safe and predictable behaviors is essential to mitigating risks. This is especially true given the emergence of proximity operations, such as satellite servicing. Establishing policy and best practices framework sets the example for the rest of the world, fostering collaboration while maintaining American leadership.

Effective SSA and STM are vital to safe operations in space, particularly for operators and their spacecraft. Establishing a proactive policy ensures the safety of public and private assets, promotes national security interests, and demonstrates continued American leadership in space.

LEGISLATIVE HISTORY

During the 113th, 114th and 115th Congresses, the House Committee on Science, Space, and Technology held six hearings and three markups relevant to H.R. 6226.

On Wednesday, November 20, 2013, the Subcommittee on Space held a hearing titled, “Commercial Space,” to examine ways in which companies are utilizing federal support and government policies to grow their commercial business in space launch, communications, GPS, remote sensing, weather monitoring, suborbital tourism, scientific research, and human spaceflight. The witnesses discussed policies contained in H.R. 3038, the “Suborbital and Orbital Advancement and Regulatory Streamlining Act,” or “SOARS Act.” The Subcommittee heard testimony from the Honorable Kevin McCarthy, Member and Majority Whip of the U.S. House of Representatives; Ms. Patricia Cooper, President of the Satellite Industry Association; Mr. Stuart Witt, Chief Executive Officer and General Manager of the Mojave Air and Space Port; and Mr. Dennis Tito, Chairman of the Inspiration Mars Foundation.

On Tuesday, February 4, 2014, the Subcommittee on Space held a hearing titled, “Necessary Updates to the Commercial Space Launch Act,” to discuss the growth of the commercial space industry since the passage of the Commercial Space Launch Act (CSLA) of 1984. The CSLA provided authority to the Federal Aviation Administration (FAA) to license launches and indemnify launch providers from third-party claims should an accident occur. The law also provides a framework for the FAA’s regulatory authority. The hearing examined the various changes in the industry and what, if any, accompanying changes to the CSLA may be needed going forward. The Subcommittee heard testimony from Dr. George Nield, Associate Administrator for Commercial Space Transportation at the Federal Aviation Administration; Dr. Alicia Cackley, Director of Financial Markets and Community Investment Team at the Government Accountability Office; and Dr. Henry Hertzfeld, Research Professor of Space Policy and International Affairs at the Elliot School of International Affairs at George Washington University.

On Friday, May 9, 2014, the Subcommittee on Space held a hearing titled, “Space Traffic Management: How to Prevent a Real Life ‘Gravity,’” to explore the roles and responsibilities of the Department of Defense, FAA, and the Federal Communications Commission (FCC) in policing orbital debris, what authorities are currently granted by Congress to federal agencies, and how the coordinate

these activities. The Subcommittee heard testimony from Lt. Gen. John “Jay” Raymond, Commander of the 14th Air Force of the Air Force Space Command, and Commander of the Joint Functional Component Command for Space of the U.S. Strategic Command; Mr. George Zamka, Deputy Associate Administrator of the Office of Commercial Space Transportation at the Federal Aviation Administration; Mr. Robert Nelson, Chief Engineer at the International Bureau of the Federal Communications Commission; Mr. P.J. Blount, Adjunct Professor of Air and Space Law at the University of Mississippi School of Law; and Mr. Brian Weeden, Technical Advisor at the Secure World Foundation.

On Wednesday, May 13, 2015, the Committee met to consider H.R. 2262, the “Spurring Private Aerospace Competitiveness and Entrepreneurship Act of 2015.” H.R. 2262 facilitates a pro-growth environment for the developing commercial space industry by encouraging private sector investment and creating more stable and predictable regulatory conditions. Several reporting requirements were due under this Act regarding licensing of space vehicles. This Act became law on November 25, 2015 (P.L. 114–90).

On Tuesday, April 19, 2016, the Subcommittee on Space held a hearing titled, “The Commercial Space Launch Industry: Small Satellite Opportunities and Challenges,” to examine the current state of the small satellite commercial launch industry. The hearing highlighted the contributions and impacts of the commercial space launch industry, as well as NASA’s Launch Services Program for the acquisition and program management of expendable launch vehicle (ELV) missions. Service providers and small satellite launch vehicles, including the use of reusable vehicles, were also discussed. The Subcommittee heard testimony from Mr. Elliot Pulham, Chief Executive Officer of the Space Foundation; and Mr. Eric Stallmer, President of the Commercial Spaceflight Federation.

On Friday, September 16, 2016, the Committee received from the Department of Transportation the report due pursuant to Section 110 of H.R. 2262, the “U.S. Commercial Space Launch Competitiveness Act,” on the feasibility of processing space situational awareness data and information. The report included findings on the expanded demand for SSA data, and the recommendation that a civil agency should process and release such data.

On Wednesday, March 8, 2017, the Subcommittee on Space held a hearing titled, “Regulating Space: Innovation, Liberty, and International Obligations,” to examine U.S. international obligations in light of new and innovative space activities. The hearing reviewed the authorization and continued supervision of non-governmental activities in space per the Outer Space Treaty. The licensing of launch and re-entry vehicles and sites by the FAA was also discussed. The Subcommittee heard testimony from Ms. Laura Montgomery, Attorney and Sole Proprietor of Ground Based Space Matters, LLC; Dr. Eli Dourado, Senior Research Fellow and Director of the Technology Policy Program at the Mercatus Center at George Mason University; Mr. Doug Loverro, Former Deputy Assistant Secretary of Defense for Space Policy; Mr. Dennis J. Burnett, Adjunct Professor of Law at the University of Nebraska—Lincoln College of Law; and Dr. Henry B. Hogue, Specialist in American National Government at the Congressional Research Service.

On Thursday, June 8, 2017, the Committee met to consider H.R. 2809, the “American Space Commerce Free Enterprise Act of 2017.” H.R. 2809 provides a transparent U.S. authorization and supervision certification process for non-governmental space activities that generates certainty for stakeholders and complies with Outer Space Treaty obligations and national security concerns in the least disruptive way possible. H.R. 2809 also improves the international competitiveness of the U.S. by reforming the burdensome and inefficient space-based remote sensing regulatory system.

On Monday, July 10, 2017, the Committee received from NASA the report due pursuant to Section 839(b)(1) of P.L. 115–10, the “NASA Transition Authorization Act of 2017,” regarding the status of efforts to coordinate with foreign countries within the Inter-Agency Space Debris Coordination Committee (IADC) to mitigate the effects and growth of orbital debris. The report included existing orbital debris mitigation guidelines derived from the 2001 U.S. Government Orbital Debris Mitigation Standard Practices (ODMSP), as well as recent efforts by the Department of Defense to improve its SSA capabilities.

On Monday, August 14, 2017, the Committee received from the Office of Science and Technology Policy (OSTP) the report due pursuant to Section 839(b)(2) of P.L. 115–10, the “NASA Transition Authorization Act of 2017,” regarding the status of an orbital debris mitigation strategy. The report included orbital debris mitigation efforts in the United States and the IADC, as well as NASA’s recent efforts to coordinate with the IADC member agencies to mitigate the effects and growth of orbital debris.

On Friday, October 20, 2017, the Committee received from the Department of Transportation and NASA the report due pursuant to Section 113 of H.R. 2262, the “U.S. Commercial Space Launch Competitiveness Act,” regarding the streamlining of commercial space launch activities. The report included a description of the process for the application and approval of a permit or license, current efforts to coordinate across executive agencies, and recommendations for legislation to improve efficiency in the licensing of space launch activities.

On Friday, June 22, 2018, the Subcommittee on Space of the Committee on Science, Space, and Technology with the Subcommittee on Strategic Forces of the Committee on Armed Services held a hearing titled, “Space Situational Awareness: Whole of Government Perspectives on Roles and Responsibilities.” The hearing assessed and reviewed the roles and responsibilities of the particular departments and agencies that execute SSA missions, the growing role of civil and commercial actors as they impact future SSA missions, and the Administration’s new Space Traffic Management Policy laid out in Space Policy Directive-3 (SPD-3). The Subcommittees heard testimony from the Honorable Wilbur Ross, Secretary of Commerce at the Department of Commerce; the Honorable Jim Bridenstine, Administrator of NASA; and General John Hyten, Commander of U.S. Strategic Command.

On Wednesday, June 27, 2018, the Committee met to consider H.R. 6226, the “American Space SAFE Management Act.”

COMMITTEE VIEWS

The Committee recognizes that there is a need for timely legislative action to address two major policy concerns. First, there is a sense of urgency to relieve the Department of Defense of civil SSA services and information obligations and to improve the existing SSA services and information provided by the government. Second, a proliferation in the number and types of private satellite and spacecraft operations in critical Earth orbits, such as non-geostationary orbits in the low- and medium-Earth orbit regimes, requires the development of an STM framework.

H.R. 6226 addresses these policy concerns by establishing in law an STM framework comprised of three foundations: science and technology; space situational awareness; and space traffic coordination.

Science and Technology

The first foundation is science and technology. Section 3 of H.R. 6226 directs the Administration to establish an SSA science and technology plan. Today, there is no organized effort in the Executive Branch to coordinate and prioritize Federal research and development investments that would improve the state of civil SSA science and technologies. Furthermore, there is no policy to recognize, leverage, and work with U.S. private sector parties conducting independent research and development efforts. H.R. 6226 remedies these deficiencies.

The need for coordinating and improving the research and development efforts of the United States are two-fold. There is a need for basic research to better inform SSA and traffic coordination activities. Examples of basic research that needs to be conducted includes space environment modeling, orbital debris in-situ measurements, an understanding of how materials change in the space environment, and software and associated data analytics. There is also a need for applied research and development to improve spacecraft, SSA activities, and space traffic coordination activities, including hardware to enhance knowledge of spacecraft location and software to enhance analysis of SSA data.

Space Situational Awareness

Pursuant to 10 U.S.C. 2274, the Department of Defense may provide civilian SSA information and services. The Department of Defense has provided such information and services for a decade.

On June 18, 2018, President Trump signed National Space Policy Directive-3. Pursuant to this directive, the Department of Commerce will make space safety data and services available to the public, while the Department of Defense maintains the authoritative catalog of space objects.

On Friday, June 22, 2018, the Subcommittee on Space of the Committee on Science, Space, and Technology with the Subcommittee on Strategic Forces of the Committee on Armed Services held a hearing titled, "Space Situational Awareness: Whole of Government Perspectives on Roles and Responsibilities." At this hearing, General John Hyten, Commander of U.S. Strategic Command, testified that the Department of Defense supports the Department

of Commerce taking over existing Department of Defense responsibilities for civilian SSA information and services.

The Committee agrees with President Trump and General Hyten. The Department of Commerce should be responsible for providing civil SSA information and services. Relieving the Department of Defense of this burden will positively influence the national security equities of the United States.

In carrying out its space situational awareness program, the Department of Commerce will provide a basic service to the public free of user fees. The Committee chooses not to define a “basic service” in statute so that the Secretary of Commerce has the discretion to make that determination to best meet U.S. national interests. The sufficiency of private sector data, service, and information providers to meet both broader U.S. national public interests and the needs of private sector consumers is particularly relevant to the question of the scope of a basic service. The Committee recognizes the importance of facilitating private sector solutions and does not believe SSA data, service, or information is an inherently government function. However, the Committee also recognizes there is uncertainty as to whether a private market can adequately address the needs of space operators or the broader national interest in ensuring a safe operational environment in outer space.

In discussions with the Committee, stakeholders raised the need to have access to underlying SSA data. Stakeholders have reasoned that such access is necessary for several reasons, including calibrating and validating services and information derived from such data, using the data to improve fundamental science and understanding of SSA, and leveraging the data to provide private value-added information and services. The Committee supports, in principle, that certain types of SSA data should be available to certain classes of users subject to appropriate conditions to protect U.S. national security and foreign policy interests, or as appropriate to address proprietary concerns with private sector data providers that contract with the U.S. Government. The SSA testbed is intended to address this deficiency in the existing Department of Defense program.

Space Traffic Coordination and the Development of a Space Traffic Management Framework

Space traffic coordination, on a voluntary basis, is a necessary first step towards the development of a more comprehensive STM framework. There is a need for space operators to develop technical, manufacturing, and operational standards in order to facilitate more effective coordination. The Department of Commerce should work collaboratively with industry to facilitate the development of such standards.

The Committee assessed the historical example of space debris mitigation guidelines and practices developed during the 1980s and 1990s by the U.S. Government. The Committee believes that the U.S. Government should take a leadership role by promulgating U.S. Government civil space traffic coordination guidelines that can be applied on a voluntary basis by the private sector.

SECTION-BY-SECTION

Section 1. Short title

This section establishes the short title of the bill as the “American Space Situational Awareness and Framework for Entity Management Act, or the “American Space SAFE Management Act.”

Section 2. Definitions

This section defines the terms “appropriate committees of Congress” and “NASA.”

Section 3. National Civil Space Situational Awareness and Space Traffic Management Science and Technology plan

This section requires NASA to develop and submit to Congress a national civil SSA and STM science and technology plan within 180 days of enactment; NASA is to update and resubmit the plan every five years. Each annual budget request to Congress is to include activities to implement the plan. Further, this section establishes a Center for Civil Space Situational Awareness and Space Traffic Management Science and Technology Excellence, with authorized appropriations of \$2 million from NASA funds for each of fiscal years 2019 through 2023.

Section 4. Civil Space Situational Awareness program

This section directs the Department of Commerce to establish a civil SSA program within one year of enactment to provide SSA services and information (“Program”). There is to be no user fee for a basic set of such data, and the Secretary has the authority to charge a reasonable fee for additional services and information. The Program includes an SSA data testbed to facilitate innovation and utilization of such data. Private sector access and involvement, as well as leveraging NASA’s resources, are encouraged. The Department of Commerce, with NASA, is to brief Congress on the program quarterly, beginning three months after enactment. The Department of Commerce and the Department of Defense, within six months after enactment, will submit to Congress a transition plan for the transfer of SSA services and information, currently performed by the Department of Defense, to Department of Commerce. The Program is authorized \$20 million in appropriations for each of fiscal years 2019 through 2023.

Section 5. Space Traffic Management framework

This section directs the Department of Commerce to develop voluntary civil space traffic coordination guidelines, practices, and standards within one year of enactment. Such standards will ensure a safe operational environment, facilitate the development of industry standards, maintain U.S. leadership, and promote international adoption of civil space traffic coordination guidelines and practices. This section also establishes a civil space traffic coordination pilot program to facilitate communication, coordination, negotiation, and resolution among domestic and international civil spacecraft operators to improve the safety of spaceflight and operations. The authority to carry out the pilot program will terminate five years after the pilot program is established. The program is authorized \$5 million in appropriations for each of fiscal years 2019

through 2023. A report is due from the Department of Commerce within 180 days of enactment on the role that they, with the National Institute of Standards and Technology, will have facilitating the development of civil space traffic coordination standards. Beginning one year after enactment, and every two years thereafter, the Secretary of Commerce is to submit a report on domestic and international STM frameworks and recommendations to facilitate further development.

EXPLANATION OF AMENDMENTS

A manager's amendment, offered by Chairman Lamar Smith, was approved by voice vote. The amendment directs the Department of Commerce and the Department of Defense, within six months of enactment, to submit to Congress a transition plan for the transfer to Department of Commerce SSA services and information currently performed by the Department of Defense. The amendment also affirms that the Secretary of Commerce may leverage the existing workforce and experience of other Federal agencies relating to SSA for the training of staff and other needs as determined. Further, the amendment directs the Secretary of Commerce to make recommendations to Congress on what steps should be taken to facilitate development of a comprehensive STM framework.

An amendment in the nature of a substitute, offered by Representative Eddie Bernice Johnson, was defeated by a roll call vote of 13–17.

COMMITTEE CONSIDERATION

On June 26, 2018, the Committee met in open session and ordered reported favorably the bill, H.R. 6226, as amended, by voice vote, a quorum being present.

ROLL CALL VOTES

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY - 115th

Full Committee Roll Call

Working Quorum: 13

Reporting Quorum: 20

DATE: June 27, 2018

Bill: H.R. 6226
ROLL CALL NO. 1

AMENDMENT NO. 001

Amendment Sponsor: Rep. Eddie Bernice Johnson (D-TX) DEFEATED

MEMBER	AYE	NO	PRESENT	NOT VOTING
1 Mr. SMITH, <i>Chair</i> – TX		X		
2 Mr. LUCAS – OK **		X		
3 Mr. ROHRBACHER – CA		X		
4 Mr. BROOKS – AL		X		
5 Mr. HULTGREN – IL		X		
6 Mr. POSEY – FL		X		
7 Mr. MASSIE – KY				
8 Mr. WEBER – TX				
9 Mr. KNIGHT – CA		X		
10 Mr. BABIN – TX				
11 Mrs. COMSTOCK – VA				
12 Mr. LOUDERMILK – GA		X		
13 Mr. ABRAHAM – LA				
14 Mr. PALMER – AL		X		
15 Mr. WEBSTER – FL				
16 Mr. BIGGS – AZ		X		
17 Mr. MARSHALL – KS		X		
18 Mr. DUNN – FL		X		
19 Mr. HIGGINS – LA		X		
20 Mr. NORMAN – SC		X		
21 Mrs. LESKO – AZ		X		
22 VACANT				
1 Ms. JOHNSON, <i>Ranking</i> – TX	X			
2 Ms. LOFGREN – CA				
3 Mr. LIPINSKI – IL	X			
4 Ms. BONAMICI – OR	X			
5 Mr. BERA – CA		X		
6 Ms. ESTY – CT	X			
7 Mr. VEASEY – TX	X			
8 Mr. BEYER – VA				
9 Ms. ROSEN – NV	X			
10 Mr. LAMB – PA	X			
11 Mr. MCNERNEY – CA	X			
12 Mr. PERLMUTTER – CO		X		
13 Mr. TONKO – NY	X			
14 Mr. FOSTER – IL	X			
15 Mr. TAKANO – CA	X			
16 Ms. HANABUSA – HI	X			
17 Mr. CRIST – FL	X			
TOTALS	13	17		

** Vice Chair

APPLICATION OF LAW TO THE LEGISLATIVE BRANCH

Section 102(b)(3) of Public Law 104–1 requires a description of the application of this bill to the legislative branch where the bill relates to the terms and conditions of employment or access to public services and accommodations. H.R. 6226 directs the Secretary of Commerce to provide for civil space situational awareness services and information by establishing a space traffic management framework to ensure a safe operating environment and to promote U.S. leadership in space. As such this bill does not relate to employment or access to public services and accommodations.

Legislative branch employees and their families, to the extent that they are otherwise eligible for the benefits provided by this legislation, have equal access to its benefits.

STATEMENT OF OVERSIGHT FINDINGS AND RECOMMENDATIONS OF THE COMMITTEE

In compliance with clause 3(c)(1) of rule XIII and clause (2)(b)(1) of rule X of the Rules of the House of Representatives, the Committee's oversight findings and recommendations are reflected in the descriptive portions of this report.

STATEMENT OF GENERAL PERFORMANCE GOALS AND OBJECTIVES

H.R. 6226, the American Space SAFE Management Act, will ensure a safe operating environment and promote continued U.S. leadership in space.

DUPLICATION OF FEDERAL PROGRAMS

No provision of H.R. 6226 establishes or reauthorizes a program of the Federal Government known to be duplicative of another Federal program, a program that was included in any report from the Government Accountability Office to Congress pursuant to section 21 of Public Law 111–139, or a program related to a program identified in the most recent Catalog of Federal Domestic Assistance.

DISCLOSURE OF DIRECTED RULE MAKINGS

The Committee estimates that enacting H.R. 6226 does not direct the completion of any specific rule makings within the meaning of 5 U.S.C. 551.

FEDERAL ADVISORY COMMITTEE ACT

The Committee finds that the legislation does not establish or authorize the establishment of an advisory committee within the definition of 5 U.S.C. App., Section 5(b).

UNFUNDED MANDATE STATEMENT

Section 423 of the Congressional Budget and Impoundment Control Act (as amended by Section 101(a)(2) of the Unfunded Mandate Reform Act, P.L. 104–4) requires a statement as to whether the provisions of the reported include unfunded mandates. In compliance with this requirement the Committee has received a letter from the Congressional Budget Office included herein.

EARMARK IDENTIFICATION

H.R. 6226 does not include any congressional earmarks, limited tax benefits, or limited tariff benefits as defined in clause 9 of rule XXI.

COMMITTEE ESTIMATE

Clause 3(d)(2) of rule XIII of the Rules of the House of Representatives requires an estimate and a comparison by the Committee of the costs that would be incurred in carrying out H.R. 6226. However, clause 3(d)(3)(B) of that rule provides that this requirement does not apply when the Committee has included in its report a timely submitted cost estimate of the bill prepared by the Director of the Congressional Budget Office under section 402 of the Congressional Budget Act.

BUDGET AUTHORITY AND CONGRESSIONAL BUDGET OFFICE COST
ESTIMATE

With respect to the requirements of clause 3(c)(2) of rule XIII of the Rules of the House of Representatives and section 308(a) of the Congressional Budget Act of 1974 and with respect to requirements of clause (3)(c)(3) of rule XIII of the Rules of the House of Representatives and section 402 of the Congressional Budget Act of 1974, the Committee has received the following cost estimate for H.R. 6226 from the Director of Congressional Budget Office:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, July 20, 2018.

Hon. LAMAR SMITH,
*Chairman, Committee on Science, Space, and Technology,
House of Representatives, Washington, DC.*

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 6226, the American Space Situational Awareness and Framework for Entity Management Act.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contacts are Janani Shankaran, Stephen Rabent, and Sophie Godfrey-McKee.

Sincerely,

MARK P. HADLEY
(For Keith Hall, Director).

Enclosure.

*H.R. 6226—American Space Situational Awareness and Framework
for Entity Management Act*

Summary: H.R. 6226 would direct the National Aeronautics and Space Administration (NASA) and the Department of Commerce (DOC) to implement programs in space situational awareness and traffic management. CBO estimates that implementing H.R. 6226 would cost \$127 million over the 2019–2023 period, assuming appropriation of the authorized amounts.

Enacting H.R. 6226 could affect direct spending; therefore, pay-as-you-go procedures apply. The bill would authorize DOC to

charge user fees, which would be recorded in the budget as reductions in direct spending. How, when, or whether the proposed fees would be collected is unclear; as a result, CBO has no basis to estimate the bill's effect on direct spending. The bill would not affect revenues.

CBO estimates that enacting H.R. 6226 would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2029.

H.R. 6226 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA).

Estimated cost to the Federal Government: The estimated budgetary effect of H.R. 6226 is shown in the following table. The costs of the legislation fall within budget functions 250 (general science, space and technology) and 370 (commerce and housing credit).

	By fiscal year, in millions of dollars—						
	2018	2019	2020	2021	2022	2023	2019–2023
INCREASES IN SPENDING SUBJECT TO APPROPRIATION							
Department of Commerce:							
Authorization Level	0	25	25	25	25	25	125
Estimated Outlays	0	22	24	24	24	24	118
National Aeronautics and Space Administration:							
Authorization Level	0	2	2	2	2	2	10
Estimated Outlays	0	1	2	2	2	2	9
Total:							
Authorization Level	0	27	27	27	27	27	135
Estimated Outlays	0	23	26	26	26	26	127

Basis of estimate: For this estimate, CBO assumes that H.R. 6226 will be enacted near the end of 2018 and that the authorized amounts will be appropriated in each year. Estimated outlays are based on historical spending patterns for the affected activities.

CBO estimates that implementing H.R. 6226 would cost \$127 million over the 2019–2023 period, assuming appropriation of the authorized amounts.

Department of Commerce

H.R. 6226 would direct DOC to establish a program that provides basic space situational awareness information to commercial entities, states, and foreign governments. (The Department of Defense currently operates a similar program.) The bill also would require DOC to establish a pilot program to implement voluntary civil space traffic coordination guidelines.

The bill would authorize the appropriation of \$20 million annually to implement the civil space situational awareness program, and an additional \$5 million annually to develop and implement the pilot program. CBO estimates that implementing those provisions would cost \$118 million over the 2019–2023 period.

National Aeronautics and Space Administration

H.R. 6226 would direct NASA to establish a research center to promote research on civil space situational awareness and traffic management. The bill would authorize the appropriation of \$2 million annually to establish and support this research center. CBO estimates that implementing this provision would cost \$9 million over the 2019–2023 period.

Other Provisions

H.R. 6226 would direct NASA to submit to the Congress a plan for civil space situational awareness and space traffic management. The bill also would require DOC to publish voluntary guidelines for civil space traffic coordination and to submit various reports to the Congress. Based on the costs of similar tasks, CBO estimates that implementing those provisions would cost less than \$500,000.

Pay-As-You-Go considerations: The bill would authorize DOC to charge a user fee for providing certain civil space situational awareness services, beyond a basic set of such services and information. Those user fee collections would be recorded in the budget as reductions in direct spending. CBO has no information on whether or how DOC would collect any user fees, who might pay the fee, or when it would be imposed. Thus, CBO has no basis to estimate the direct spending effects of the bill. The bill would not affect revenues.

Increase in long-term direct spending and deficits: CBO estimates that enacting H.R. 6226 would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2029.

Mandates: H.R. 6226 contains no intergovernmental or private-sector mandates as defined in UMRA.

Estimate prepared by: Federal costs: Janani Shankaran, Stephen Rabent, and Sophie Godfrey-McKee; Mandates: Jon Sperl.

Estimate reviewed by: Kim P. Cawley, Chief, Natural and Physical Resources Cost Estimates Unit; H. Samuel Papenfuss, Deputy Assistant Director for Budget Analysis.

