

119TH CONGRESS }
1st Session

SENATE

{ REPORT
119-65

SITUATIONAL AWARENESS OF FLYING
ELEMENTS IN ORBIT ACT

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND
TRANSPORTATION

ON

S. 428



SEPTEMBER 29, 2025.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED NINETEENTH CONGRESS

FIRST SESSION

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Mr. CRUZ, from the Committee on Commerce, Science, and
Transportation, submitted the following

R E P O R T

[To accompany S. 428]

[Including cost estimate of the Congressional Budget Office]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 428) to promote space situational awareness and space traffic coordination and to modify the functions and leadership of the Office of Space Commerce, and for other purposes, having considered the same, reports favorably thereon with amendments and recommends that the bill, as amended, do pass.

PURPOSE OF THE BILL

The purpose of S. 428 is to promote space situational awareness and space traffic coordination (STC) and to modify the functions and leadership of the Bureau of Space Commerce, and for other purposes.

BACKGROUND AND NEEDS

In recent years, the frequency of commercial space launches and deployment of satellites in Earth's orbit has increased exponentially.¹ The increase of space objects in orbit, including orbital debris, raises concerns over the safety of in-space operations. Given the continued growth of activities in low-Earth orbit (LEO), there is a need to track and monitor in-space objects to prevent damage

¹“U.S. Commercial Space Launches From 1990 to 2023,” Statista, accessed March 7, 2025, <https://www.statista.com/statistics/185464/total-us-commercial-space-launches-since-1990/>.

of critical space hardware and protect astronauts living and working in LEO.

Space situational awareness (SSA) is the identification, characterization, tracking, and predicted movement and behavior of space objects, as well as the understanding of the space operational environment. STC is the planning, assessment, and coordination of activities to enhance the safety, stability, and sustainability of operations in the space environment. The Department of Defense (DOD) currently tracks objects in space using the Space Surveillance Network, publishes a catalog of space objects, and provides safety notifications of potential in-space collisions to satellite operators. However, since 2018, the Federal Government has been transitioning civil and commercial SSA data and service provision responsibilities to the Department of Commerce from DOD.

The Office of Space Commerce (OSC), within the National Oceanic and Atmospheric Administration (NOAA), currently disseminates SSA data to an initial set of users representing about 1,000 operational satellites through its Traffic Coordination System for Space (TraCSS) program.² The TraCSS system's initial capabilities went live September 2024.

The breadth and volume of commercial space activities has grown substantially since OSC was first established by the Secretary of Commerce in 1988 and established in statute by Congress in 1998. As the dissemination of civil and commercial SSA data fully transitions to OSC, the increased responsibilities of the office will be more in line with a stand-alone bureau than an office within NOAA. In addition, pulling OSC out of NOAA will allow both organizations to focus on their respective core missions. Given this, the Committee believes it is appropriate to begin transitioning OSC out of NOAA and into its own bureau.

The SAFE Orbit Act would provide the Secretary of Commerce with new authorities and responsibilities related to SSA and STC by amending chapter 507 of title 51, United States Code. Specifically, the Secretary would be directed to do the following:

- Acquire and disseminate unclassified data, analytics, and services on space activities to prevent collisions and support STC;
- Provide free, basic SSA services to the public, including analytics and conjunction warnings; and
- Prioritize the acquisition of data and services from industry to supplement Government data and avoid direct competition with industry-provided SSA services.

The legislation would also grant the U.S. Government, and entities authorized to act on behalf of the U.S. Government, immunity from lawsuits arising from the provision or receipt of SSA services or information. Additionally, over a period of 5 years, the SAFE Orbit Act would elevate OSC out of NOAA and into a new Bureau of Space Commerce reporting directly to the Secretary of Commerce. A transition plan would be provided to the Committee within 1 year.

²“Traffic Coordination System for Space (TraCSS),” National Oceanic and Atmospheric Administration, Office of Space Commerce, accessed March 7, 2025, <https://www.space.commerce.gov/traffic-coordination-system-for-space-tracss/>.

SUMMARY OF PROVISIONS

S. 428, as reported, would do the following:

- Direct the Assistant Secretary of Commerce for Space Commerce to:
 - Acquire and disseminate unclassified data, analytics, information, and services on space activities to prevent collisions and support STC.
 - Provide unclassified SSA data, analytics, information, and services to the public through an easily accessible web-based interface at no charge.
 - Maintain a public catalogue of SSA data and information to maximize the use of satellite owner and operator data, U.S. Government data, and commercial services, data, analytics, information, services, and platforms.
 - Leverage commercial capabilities to the maximum extent practicable.
 - Facilitate the development of voluntary industry consensus standards to ensure data standardization with satellite owners and operators, commercial service providers, the academic community, and nonprofits.
 - Encourage foreign governments to participate in unclassified data-sharing arrangements for SSA and STC.
 - Protect the proprietary data, information, and systems of firms located in the United States, including by using appropriate infrastructure and cybersecurity measures.
- Grant the U.S. Government and nongovernmental entities acting for the U.S. Government immunity from lawsuits arising from the provision or receipt of SSA services or information.
- Establish an Assistant Secretary of Commerce for Space Commerce as a Senate-confirmed position reporting directly to the Secretary of Commerce.
- Elevate OSC out of NOAA within 5 years to a separate bureau within the Department of Commerce and require the submission of a transition plan to Congress.
- Require the Secretary and Assistant Secretary to submit a staffing plan for OSC to Congress and require notification to Congress of any termination of positions within OSC for any purpose other than performance.

LEGISLATIVE HISTORY

S. 428, the SAFE Orbit Act, was introduced on February 5, 2025, by Senator Cornyn (for himself and Senators Peters, Wicker, Blackburn, Hickenlooper, Kelly, Schmitt, and Luján) and was referred to the Committee on Commerce, Science, and Transportation of the Senate. On March 12, 2025, the Committee met in open Executive Session and, by voice vote, ordered S. 428 to be reported favorably with an amendment.

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S. 3658, the SAFE Orbit Act, was introduced on January 25, 2024, by Senator Cornyn (for himself and Senators Peters, Sinema, Blackburn, Schmitt, Kelly, and Wicker) and was referred to the Committee on Commerce, Science, and Transportation of the Senate. On December 21, 2024, the Committee discharged S. 3658 by

unanimous consent, and that same day, S. 3658 passed the Senate by unanimous consent with an amendment (in the nature of a substitute).

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

S. 428, SAFE Orbit Act			
As ordered reported by the Senate Committee on Commerce, Science, and Transportation on March 12, 2025			
By Fiscal Year, Millions of Dollars	2025	2025-2030	2025-2035
Direct Spending (Outlays)	0	a	a
Revenues	0	a	a
Increase or Decrease (-) in the Deficit	0	a	a
Spending Subject to Appropriation (Outlays)	0	255	not estimated
Increases <i>net direct spending</i> in any of the four consecutive 10-year periods beginning in 2036?	a	Statutory pay-as-you-go procedures apply?	Yes
		Mandate Effects	
		Contains intergovernmental mandate?	Yes, Cannot Determine Costs
Increases <i>on-budget deficits</i> in any of the four consecutive 10-year periods beginning in 2036?	a	Contains private-sector mandate?	Yes, Cannot Determine Costs
a. CBO has no basis on which to estimate any effects on direct spending or revenues.			

S. 428 would direct the Department of Commerce to acquire and disseminate data on space activities and would grant legal immunity to federal and nonfederal entities that gather or provide such information. The bill would rename the Office of Space Commerce (now within the National Oceanic and Atmospheric Administration) as the Bureau of Space Commerce and would require the new bureau to report directly to the Office of the Secretary. The Department of Commerce would be required to plan for and report to the Congress on that transition.

CBO expects that under S. 428, the bureau would acquire and disseminate data on space objects through its Traffic Coordination System for Space, which currently is under development. The bill also would require the bureau to publish an unclassified database of information on space objects and their behavior and provide satellite operators with services that track and monitor objects in space.

In CBO's estimation, the bill would authorize spending subject to appropriation associated with the costs of the data acquisition, dissemination, and reporting requirements. Those amounts, shown in Table 1, fall within budget function 370 (commerce and housing credit).

CBO would consider the cash flows of nonfederal entities acting on behalf of the federal government to be direct spending and reve-

nues; therefore, enacting S. 428 would affect those components of the federal budget. However, CBO has no basis on which to determine the magnitude or direction of those cash flows.

Table 1.—ESTIMATED INCREASES IN SPENDING SUBJECT TO APPROPRIATION UNDER S. 428

	By Fiscal Year, Millions of Dollars					
	2025	2026	2027	2028	2029	2030
Estimated Authorization	0	55	57	59	60	62
Estimated Outlays	0	33	46	56	59	61
						293
						255

Spending subject to appropriation: Lawmakers appropriated \$65 million in 2024 and in 2025 for the Office of Space Commerce. Using information from the department, CBO estimates that about \$55 million was dedicated each year to developing the Traffic Coordination System for Space.

Assuming that a similar amount would be provided in 2026, and adjusting for anticipated inflation, CBO estimates that it would cost \$255 million over the 2026–2030 period to continue to develop and maintain that system. Any related spending would be subject to the availability of appropriated funds.

Direct spending and revenues: Under S. 428, entities acting on behalf of the United States would be immune from any legal action arising from providing or receiving information about or services that facilitate space situational awareness. By providing immunity, the bill would authorize nonfederal entities to use the sovereign powers of the federal government to pursue an activity that is governmental in purpose. Given those criteria, CBO would consider the cash flows of nonfederal entities to be federal cash flows and would classify them in the budget as direct spending or revenues.¹

Because the Traffic Coordination System for Space is not fully operational, CBO cannot determine which nonfederal entities, if any, would act for the federal government under the bill. As a result, CBO cannot determine the magnitude or direction of related cash flows or their effect on the federal budget.

Mandates: S. 428 contains an intergovernmental and private-sector mandate as defined in the Unfunded Mandates Reform Act (UMRA). The bill would grant the federal government (including employees and contractors) immunity from any lawsuit related to gathering or providing information or services regarding objects and activities in space. That provision of the bill would eliminate an existing right of action for any public or private entity that would otherwise seek redress or to recover damages from the federal government for providing those services.

CBO has no basis on which to estimate the number of lawsuits that would be precluded by the bill and cannot predict amounts that would be forgone in damages potentially collected under those actions. Therefore, CBO cannot determine whether the cost of the mandate would exceed the thresholds established in UMRA for intergovernmental and private-sector mandates (\$103 million and \$206 million in 2025, respectively, adjusted annually for inflation).

¹See Congressional Budget Office *How CBO Determines Whether to Classify an Activity as Governmental When Estimating Its Budgetary Effects* (June 2017), www.cbo.gov/publication/52803.

The CBO staff contacts for this estimate are David Hughes (for federal costs) and Grace Watson (formerly of CBO, for mandates). The estimate was reviewed by Christina Hawley Anthony, Deputy Director of Budget Analysis.

PHILLIP L. SWAGEL,
Director, Congressional Budget Office.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

NUMBER OF PERSONS COVERED

S. 428, as reported, would enable dissemination of SSA data to the commercial and civil space community and elevate OSC out of NOAA to a new bureau that would directly report to the Secretary of Commerce. The bill would only impact OSC and persons and entities already covered by the rules and regulations of OSC, and therefore the number of persons covered would be consistent with the current levels of individuals impacted under current law.

ECONOMIC IMPACT

S. 428, as reported, is not expected to have an adverse impact on the Nation's economy.

PRIVACY

S. 428, as reported, would not impact the personal privacy of individuals.

PAPERWORK

The Committee does not anticipate a major increase in paperwork burdens resulting from the passage of this legislation. The bill would require an annual staffing plan for OSC through its transition to a bureau. In addition, the bill would require a report to Congress that sets forth the organization's plans for the transition from office to bureau while maintaining continuity of operations.

CONGRESSIONALLY DIRECTED SPENDING

In compliance with paragraph 4(b) of rule XLIV of the Standing Rules of the Senate, the Committee provides that no provisions contained in the bill, as reported, meet the definition of congressionally directed spending items under the rule.

SECTION-BY-SECTION ANALYSIS

Section 1. Short title.

This section would provide that the bill may be cited as the "Situational Awareness of Flying Elements in Orbit Act" or the "SAFE Orbit Act".

Section 2. Space situational awareness and space traffic coordination.

This section would require the Secretary of Commerce to provide SSA services through the dissemination of unclassified data, analytics, information and services on space activities, facilitated by the Assistant Secretary of Commerce for Space Commerce. This section would authorize the Department of Commerce to promote commercial space capabilities while making basic SSA services available at no cost to satellite operators. This section would provide legal immunity to the Federal Government and those acting on its behalf for any cause of action arising from the provision or receipt of SSA services, regardless of whether such services are provided. The Assistant Secretary would be directed to maintain and publicly provide an up-to-date, unclassified database of space objects and related behavioral data, except where such information is classified or constitutes a trade secret under existing law.

This section would further require the Assistant Secretary to ensure that the Federal Government's provision of SSA services does not compete with commercial products, to the maximum extent practicable. The Department would be required to review its suite of basic SSA services at least once every 3 years to assess whether they remain within scope and are not duplicative of capabilities available in the private sector. This section would also encourage foreign governments to participate in unclassified SSA data sharing arrangements to support international coordination of space traffic management efforts. This section would grant the Secretary of Commerce the authority to enter into contracts, leases, cooperative agreements, or other necessary arrangements. Lastly, this section would define the term "space object".

Section 3. Office of Space Commerce.

This section would elevate and restructure OSC to strengthen its role in civil space traffic coordination and space situational awareness. This section would define the terms "Assistant Secretary", "Bureau", "orbital debris", "Secretary", "space object", "space situational awareness", and "space traffic coordination". It would further direct that, within 5 years, OSC be transitioned into a Bureau of Space Commerce reporting directly to the Secretary of Commerce. This section would replace the current Director with a Senate-confirmed Assistant Secretary of Commerce for Space Commerce and assign the Bureau new responsibilities. It would also require a transition staffing plan, prohibit non-performance-based staff reductions without congressional notice, and would require a transition report to Congress. The Secretary of Commerce would be required to submit a report 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 detailing the transition and continuity of operations plans for OSC from NOAA to a bureau reporting to the Office of the Secretary not later than 1 year after enactment.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

UNITED STATES CODE

* * * * *

**TITLE 5—GOVERNMENT ORGANIZATION
AND EMPLOYEES**

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PART III—EMPLOYEES

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Subpart D—Pay and Allowances

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CHAPTER 53—PAY RATES AND SYSTEMS

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**Subchapter II—Executive Schedule Pay
Rates**

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§ 5315. Positions at level IV

Level IV of the Executive Schedule applies to the following positions, for which the annual rate of basic pay shall be the rate determined with respect to such level under chapter 11 of title 2, as adjusted by section 5318 of this title:

Deputy Administrator of General Services.

Associate Administrator of the National Aeronautics and Space Administration.

Assistant Administrators, Agency for International Development (6).

Regional Assistant Administrators, Agency for International Development (4).

Assistant Secretaries of Agriculture (3).

【Assistant Secretaries of Commerce (11)】 *Assistant Secretaries of Commerce (12).*

* * * * *

TITLE 51—NATIONAL AND COMMERCIAL SPACE PROGRAMS

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Subtitle V—Programs Targeting Commercial Opportunities

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CHAPTER 507—OFFICE OF SPACE COMMERCE

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§ [50701. Definition of Office

[In this chapter, the term “Office” means the Office of Space Commerce established in section 50702 of this title.]

§ 50701. *Definitions*

In this chapter:

(1) *ASSISTANT SECRETARY.*—The term “Assistant Secretary” means the Assistant Secretary of Commerce for Space Commerce.

(2) *BUREAU.*—The term “Bureau” means the Bureau of Space Commerce established under section 50702.

(3) *ORBITAL DEBRIS.*—The term “orbital debris”—

(A) means—

(i) any human-made space object orbiting Earth that—

(I) no longer serves an intended purpose;

(II) has reached the end of its mission; or

(III) is incapable of safe maneuver or operation;

and

(ii) a rocket body and other hardware left in orbit as a result of normal launch and operational activities; and

(B) includes fragmentation debris produced by failure or collision of human-made space objects.

(4) *SECRETARY.*—The term “Secretary” means the Secretary of Commerce.

(5) *SPACE OBJECT.*—The term “space object” means any object launched into space or created in space, robotically or by humans, including the component parts of such an object.

(6) *SPACE SITUATIONAL AWARENESS.*—The term “space situational awareness” means—

(A) the identification, characterization, tracking, and the predicted movement and behavior of space objects and orbital debris; and

(B) the understanding of the space operational environment.

(7) *SPACE TRAFFIC COORDINATION.*—The term “space traffic coordination” means the planning, assessment, and coordina-

tion of activities to enhance the safety, stability, and sustainability of operations in the space environment.

§ 50702. Establishment

(a) **IN GENERAL.**—There is established within the Department of Commerce an Office of Space Commerce, *which, not later than 5 years after the date of the enactment of the SAFE Orbit Act, shall be elevated by the Secretary of Commerce from an office within the National Oceanic and Atmospheric Administration to a bureau reporting directly to the Office of the Secretary of Commerce.*

[(b) **DIRECTOR.**—The Office shall be headed by a Director, who shall be a senior executive and shall be compensated at a level in the Senior Executive Service under section 5382 of title 5 as determined by the Secretary of Commerce.]

(b) **ASSISTANT SECRETARY.**—*The Bureau shall be headed by the Assistant Secretary of Commerce for Space Commerce, who shall—*

(1) be appointed by the President, by and with the advice and consent of the Senate;

(2) report directly to the Secretary of Commerce; and

(3) have a rate of pay that is equal to the rate payable for level IV of the Executive Schedule under section 5315 of title 5.

(c) **FUNCTIONS OF OFFICE.**—The Office shall be the principal unit for the coordination of space-related issues, programs, and initiatives within the Department of Commerce, including—

(1) to foster the conditions for the economic growth and technological advancement of the United States space commerce industry;

(2) to coordinate space commerce policy issues and actions within the Department of Commerce;

(3) to represent the Department of Commerce in the development of United States policies and in negotiations with foreign countries to promote United States space commerce;

(4) to promote the advancement of United States geospatial technologies related to space commerce, in cooperation with relevant interagency working groups[; and];

(5) to provide support to Federal Government organizations working on Space-Based Positioning Navigation, and Timing policy, including the National Coordination Office for Space-Based Position, Navigation, and Timing[.]; and

(6) to perform space situational awareness and space traffic management duties pursuant to the SAFE Orbit Act.

(d) **DUTIES OF [DIRECTOR] ASSISTANT SECRETARY.**—The primary responsibilities of the [Director] Assistant Secretary in carrying out the functions of the Office shall include—

(1) * * *

(2) * * *

(3) * * *

(4) * * *

(5) * * *

(6) * * *

(7) * * *

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