



# The U.S. Commercial Space Launch Competitiveness Act of 2015: Moving U.S. Space Activities Forward

By Michael Dodge

On November 25, 2015, President Obama signed into law the U.S. Commercial Space Launch Competitiveness Act (CSLCA),<sup>1</sup> leading to a new stage in the U.S. commercial space industry. What began as a series of proposed bills in the U.S. House of Representatives was consolidated into H.R. 2262 and passed by both the House and Senate with an eye toward reinvigorating, and in some ways reinventing, the industry, as well as making needed changes to federal government activities. In an era when private industry is seeking new ways to profit from space activities, and the federal government is learning to rely on commercial space companies to share the burden in providing public goods—like the delivery of materials to the International Space Station and potentially even ferrying astronauts into space—the CSLCA represents the evolving interests of government and industry. The CSLCA also reflects a serious congressional commitment to the expansion of the private space industry in the United States through the modification of existing laws, such as the Commercial Space Launch Act (as amended in 2004), and the establishment of new frameworks to accommodate novel enterprises like resource extraction.

Because the CSLCA is likely to have far-ranging implications for the U.S. space industry, both domestically and internationally, a review of its key provisions is in order. The majority of the CSLCA concerns modifications and additions to title 51 of the U.S. Code, particularly subtitle V (Programs Targeting Commercial Opportunities) and subtitle VII (Access to Space). Structured on its four titles, the following analysis reviews how the CSLCA advances the U.S. space industry in the areas of commercial space launches, commercial remote sensing, the Office of Space Commerce (formerly Commercialization), and, most notably, the exploration and use of space resources.

## Spurring Private Aerospace Competitiveness and Entrepreneurship Act

The first title to the CSLCA, the “Spurring Private Aerospace Competitiveness and Entrepreneurship Act of 2015” or “SPACE Act of 2015,”<sup>2</sup> focuses on changes

to the commercial launch industry in the United States. The SPACE Act updates elements of the Commercial Space Launch Act of 1984 to reflect new realities in the ongoing public-private partnerships defining modern U.S. commercial space launches, as well as updates the probable loss claim methodology that is employed for insurance acquisition purposes during launches. To this end, three attributes of title I deserve attention here: first, Congress has reaffirmed its commitment to enhancing and enabling the development of the commercial space launch industry by requiring a reassessment of insurance requirements for launches; second, Congress has sought to clarify the lines of authority within the federal government for oversight of U.S. commercial space policy; and third, Congress has introduced new language defining government astronauts as NASA-designated, federal government employees, which reflects the realities of government-commercial partnerships in space activities. This latter development is critical because it provides a much-needed boon to NASA and its low Earth orbit missions.

The first provision of the SPACE Act concerns the insurance requirements that underlie every launch governed by the Commercial Space Launch Act. Specifically, the SPACE Act records the “sense of Congress” that it is necessary to update the calculations used in determining the “maximum probable loss from claims” arising under commercial space launch activities.<sup>3</sup> Such calculations have long been required under 51 U.S.C. section 50914, and were intended to provide a pool for compensating third parties who might be injured as a consequence of commercial space launch activities. Because the federal government covers successful third-party claims that exceed the liability insurance required by section 50914,<sup>4</sup> this new language is designed to ensure that the quantities obtained for insurance reflect what might actually be expected to impact the federal government. The reevaluation process is also designed to ensure that private launch providers do not purchase more insurance than necessary. In short, through the SPACE Act, Congress is calling for the reexamination of the insurance requirements, their efficiency, and the calculations used to generate those numbers.<sup>5</sup>

A second major change to the law includes adding indemnification protection to “spaceflight participants,”

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who previously did not benefit from the statutory scheme in the same way as government employees, contractors, and subcontractors.<sup>6</sup> This protection represents a substantial addition to statutory protections that will presumably encourage future participation in commercial space launch activities by spaceflight participants.

The SPACE Act also recognizes a critical deficiency in the current regulatory structure of United States commercial space activities—the country lacks a clear commercial space supervisory authority. The new law partially redresses this issue by directing the secretary of state, the secretary of transportation, the administrator of NASA, and the heads of other “relevant” federal agencies to work with the director of the Office of Science and Technology Policy, the president’s lead science advisor within the executive office of the presidency, to review current and proposed near-term commercial space activities and develop a plan for authorizing and supervising these activities.<sup>7</sup> The goal is to develop a coherent U.S. government approach to commercial space that prioritizes safety, utilizes existing authorities, minimizes burdens to the industry, and promotes this growing sector of the economy. This legislative directive is also in conformity with U.S. obligations under Article VI of the Outer Space Treaty, which requires that “[t]he activities of non-governmental entities in outer space . . . shall require authorization and continuing supervision” by the state party responsible for that entity.<sup>8</sup>

Finally, the SPACE Act addresses the new reality of commercial space: the intermixing of government and private enterprise in human spaceflight. It has been longstanding policy for the federal government to encourage private space companies to participate in space activities, which have been traditionally government-led operations. As indicated in recent statements from NASA, the federal government intends to rely on the private sector for conducting spaceflight activities involving U.S. astronauts.<sup>9</sup> The SPACE Act directly addresses this issue by finding that NASA “has a need to fly government astronauts . . . within commercial launch vehicles.”<sup>10</sup> In turn, this dynamic has exposed the need for a new definition of “government astronauts” that expressly distinguishes such individuals from other crew or spaceflight participants engaged in commercial space activities, while acknowledging that such astronauts may be part of an operation involving a privately owned launch vehicle or reentry vehicle. The SPACE Act fills this legal gap by providing NASA with the authority to designate “government astronauts,” defined as individuals who are carried in space launch vehicles or reentry vehicles in the course of their employment with the federal government, in either a civil or military capacity, or who are international partner astronauts.<sup>11</sup>

In effect, the SPACE Act establishes a unique regime in which separate categories of astronaut actors, with different legal status and protection, can coexist on board a single spacecraft, and conduct a mission

critical to both government and private interests. The legal implications of these “mixed” operations deserve further attention by Congress in subsequent legislation, if for no other reason than to clarify and resolve potential conflicts before they should arise.

### **Commercial Remote Sensing**

The second title to the CSLCA, “Commercial Remote Sensing,” reinforces congressional oversight of the commercial space industry in the form of additional executive branch reports. Through these new reporting requirements, Congress seeks a greater role in ensuring that the United States maintains its leadership in the field of private remote sensing.

Congress has amended subchapter III of 51 U.S.C. chapter 601 to add “annual reports” to the Land Remote Sensing Policy. The secretary of commerce must submit this new report to the Senate Committee on Commerce, Science, and Transportation as well as the House Committee on Science, Space, and Technology.<sup>12</sup> These reports will assist congressional oversight by providing greater visibility on and understanding of the licensing process for private space-based remote sensing systems. For example, the reports must contain information on the number of licenses applied for in the previous calendar year, a list of all of those applications granted, a list of denied applications and the reasons for said denials, and a list of applications that needed more information than initially provided.<sup>13</sup> The new reporting requirements also allow for classified annexes in order to protect sensitive information.

Additionally, no later than one year after the enactment of the CSLCA, the secretary of commerce, along with other “appropriate” heads of federal agencies, must submit findings on the necessary changes to statutes that affect licensing of private remote sensing space systems to the Senate Committee on Commerce, Science, and Transportation and to the House Committee on Science, Space, and Technology.<sup>14</sup> This special report will take into consideration both the continuing U.S. leadership role in private remote sensing as well as national security concerns.<sup>15</sup>

### **Office of Space Commerce**

Title III of the CSLCA—“Office of Space Commerce”—renames and clarifies the role of the office within the Department of Commerce that is responsible for issues concerning commercial activity in space. The first task of this title was to rename the “Office of Space Commercialization” the “Office of Space Commerce.”<sup>16</sup> For consistency, the change from “commercialization” to “commerce” is repeated in several sections of the previous rule. While these changes appear more cosmetic than substantive, Congress took additional action to clarify and strengthen the role and functions of the Office of Space Commerce. For example, the new legislation empowers the Office of Space Commerce to: foster good conditions for the economic growth and

technological advancement of the U.S. space commerce industry; coordinate space commerce issues inside the Department of Commerce; promote U.S. space commerce in negotiations with foreign countries; help grow and advance U.S. geospatial technologies, including by working with interagency groups; and assist the federal government with its ongoing efforts in developing space-based positioning, navigation, and timing (PNT) policy.<sup>17</sup> Congress, however, still left open the question of what exactly are the “good conditions” necessary for promoting the U.S. space commerce industry. It may be that Congress was delegating the responsibility for defining these partially defined goals to the Office of Space Commerce.

### Space Resource Exploration and Utilization Act of 2015

The CSLCA’s title IV—“Space Resource Exploration and Utilization Act of 2015” (SREU Act)—represents a significant shift in space governance by expanding the potential for resource extraction in outer space.<sup>18</sup> The final iteration of the SREU Act represents the end product of years of legislative attempts to create a legal basis for the nascent industry. The successful passage of the SREU Act may be due to its brevity and simplicity, particularly in contrast to two previous bills, the ASTEROIDS Act and H.R. 1508, which provided more detail and covered additional matters.<sup>19</sup> Through H.R. 2262, Congress adopted significant portions of H.R. 1508, with notable changes made to address concerns over definitions, harmful interference in space activities, and sovereignty over materials taken from locations in space.

The reasons for congressional action on space resource extraction, or “space mining” as it is colloquially termed, are myriad. Congress may have desired to empower efforts by space resource corporate entities, such as Planetary Resources or Deep Space Industries, which have a commercial interest in exploring space, to extract economically or scientifically valuable resources from asteroids. The continued growth of these businesses, despite not having conducted mining operations yet, is evidence of their conviction that these space activities will eventually be authorized and recognized by law. The SREU Act gives credence to this belief, and may jumpstart actual operations. Furthermore, the new law is consistent with long-standing U.S. space policy, which includes as a goal the commercialization of space activities—such as Shuttle payloads,<sup>20</sup> remote sensing activity,<sup>21</sup> transport of materiel<sup>22</sup> and personnel to space stations, and more.<sup>23</sup> Indeed, the initial Commercial Space Launch Act of 1984 was designed, in part, to encourage private entities by protecting investments in spacecraft launches and other commercial space activities.<sup>24</sup>

In light of other legislative efforts to increase the U.S. commercial space industry, title IV of the CSLCA represents an important extension of overall U.S.

policy in the field. Nevertheless, Congress removed certain controversial sections of previous bills in order to ensure passage of the law. As a result, the SREU Act arguably leaves unaddressed critical issues and future challenges underlying resource extraction in space. A brief review of the structure and language of the CSLCA is useful in highlighting this issue.

The SREU Act is divided into three sections: “definitions” (section 51301), “commercial exploration and commercial recovery” (section 51302), and “asteroid resource and space resource rights” (section 51303). The SREU Act first defines the scope of the resources subject to extraction and utilization. For example, section 51301 defines an “asteroid resource” as “a space resource found on or within a single asteroid.”<sup>25</sup> “Space resource” is then defined as any nonbiological resource found “in situ” in outer space.<sup>26</sup> Furthermore, and of great potential utility to both federal government efforts and private enterprises in space activities, both water and minerals are included in the concept of space resources.<sup>27</sup> The choice of words here seems deliberate, giving notice that the United States has no intention to claim, or to allow private actors to claim, any lifeforms discovered on other celestial bodies; additionally, by maintaining that the resources contemplated for use and extraction are “in situ” (rather than the asteroid itself), the SREU Act may be countering fears that mining operations would be contrary to the prohibition on appropriation of celestial bodies enshrined in Article II of the Outer Space Treaty.<sup>28</sup>

Next, the SREU Act actively promotes U.S. commercial exploration and commercial recovery in space. Congress directs the president, along with “appropriate” agencies, to encourage the development of, and removal of barriers to, the nascent space resources industry. Section 51302 specifically discourages any governmental barriers to the successful growth of an “economically viable, safe, and stable” space resource industry.<sup>29</sup> The law further instructs the president to facilitate the commercial exploration and recovery of space resources.<sup>30</sup> Taken together, these provisions represent a stronger government role in supporting an industry that has yet to truly “take off” and which has called for government support in the past.

In one of the clearest interstices of the law, however, the SREU Act leaves open the task of identifying which federal agencies are “appropriate” for executing the tasks and objectives set forth by Congress.<sup>31</sup> By not explicitly designating the federal agencies responsible for practical issues such as oversight of on-orbit operations, traffic management as between private and state spacecraft, and authorization for space or asteroid extractions, Congress has effectively delegated the challenge of successful implementation of the SREU Act to the president.<sup>32</sup>

The third and final section of the SREU Act provides an important boost to private space mining interests.

Section 51303 grants new property rights to industry entities that obtain in situ asteroid resources or space resources. The entitlements include the right to own, sell, transport, and use the resources, with the only restriction being that these must be exercised in accordance with “applicable law,” including the “international obligations of the United States.”<sup>33</sup> Even though this section may be short in length, the legislative language has broad implications for commercial operators in space, and provides guidance to counsel that are or will be involved in the evolution of space mining operations.

Even as the SREU Act represents a potential “game changer” for the industry, much remains to be determined before practical operations could commence. For instance, the SREU Act lacks specific guidance in terms of where “United States citizens” (as noted by section 51301(3)) should go to resolve problems that occur in space. On the other hand, the ASTEROIDS Act and H.R. 1508 made significant strides in this direction. H.R. 1508 specifically provided for clear and exclusive jurisdiction of federal district courts for actions arising under the bill and civil actions as a remedy for instances of harmful interference with activities contemplated by the bill.<sup>34</sup> In contrast, the SREU Act does not provide for any such remedy and only provides that the federal government will promote the prevention of harmful interference.<sup>35</sup> The SREU Act does not completely abandon the issue of legal redress for disputes arising from space mining activities: section 51303 notes that the laws of the United States and its international obligations will apply. This provides commercial mining entities with a starting point, if not a clear or definitive jurisdiction, for determining the appropriate forum and method for conflict resolution.

There are additional matters that need to be addressed by subsequent legislation or executive action. As noted above, though the SREU Act encourages the development of a commercial exploration and utilization industry within the United States, it does not make clear which agency or agencies will have authority over such activities. In addition, the federal government may face challenges regarding whether the creation of private property rights in space is within the purview of U.S. law and consistent with U.S. international treaty obligations. With respect to the above, the law directs the president to issue a report to Congress, no later than 180 days after enactment, that specifies: (1) recommendations for the allocation of responsibilities among federal agencies conducting said oversight activities; and (2) the authorities necessary to meet the international obligations of the United States, including authorization and continuing supervision by the federal government of commercial exploration for and commercial recovery of space resources by United States citizens.<sup>36</sup>

Through this mandatory reporting requirement, Congress appears to be acknowledging potential controversies arising under the Outer Space Treaty. More

specifically, the law’s implicit reference to U.S. international treaty obligations may be an attempt to deflect criticism that the SREU Act ignores commitments under Article II of the Outer Space Treaty,<sup>37</sup> which prohibits the extension of sovereignty into space. Indeed, one possible reason that prior legislation, such as the ASTEROIDS Act, stalled is due to the fact that the bills failed to fully address international concerns on this issue.<sup>38</sup>

## Conclusion

The CSLCA makes significant advances in furthering U.S. commercial space industry in four areas: First, the new law updates existing law to promote the growing dynamic of public-private partnerships in U.S. commercial space launches and provide a more cohesive approach to oversight within the federal government. Second, the CSLCA encourages the development of private space-based remote sensing through increased congressional oversight of the federal licensing process. Third, the Act clarifies and strengthens the role and functions of the Office of Space Commerce as the lead policy coordinator at the Commerce Department. Fourth, and most importantly, the CSLCA fosters the space mining industry through the creation of private property rights in relation to the extraction of certain space and asteroid resources.

Even with this progress, the CSLCA leaves open issues for future debate. For example, although the Act puts the United States in a global leadership role vis-à-vis space mining operations, these legal innovations will need to stand up to rigorous analysis under the current international treaty regime governing outer space. In addition, the federal government must implement the CSLCA’s substantial changes to extant law. Input and participation of key stakeholders within government and private industry will be critical to the success of this implementation effort. Mandatory reporting requirements, spread throughout the law, suggest that Congress will be actively engaged in overseeing these developments. In short, the CSLCA is a critical step forward in U.S. commercial space, but it is not the last one.

## Endnotes

1. Pub. L. No. 114-90, 129 Stat. 704.
2. H.R. 2262, 114th Cong. § 101 (2015).
3. *Id.* § 102(a).
4. 51 U.S.C. § 50915(a)(1)(A) (“[T]he Secretary of Transportation shall provide for the payment by the United States Government of a successful claim (including reasonable litigation or settlement expenses) of a third party against a person described in paragraph (3)(A) resulting from an activity carried out under the license issued or transferred under this chapter for death, bodily injury, or property damage or loss resulting from an activity carried out under the license [when a claim] is more than the amount of insurance . . . required under . . . this title.”).

5. H.R. 2262 § 102.

6. *Id.* § 103 (codified at 51 U.S.C. § 50914(a)(4)(E)).

7. *Id.* § 108.

8. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies art. VI, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty]. Arguably, the federal government fulfills its authorization requirements in the form of licensing authorities like the FAA (which licenses the commercial launches); however, identifying a supervisory authority for commercial missions progressing in outer space has proven more challenging.

9. See Press Release 14-256, NASA, NASA Chooses American Companies to Transport U.S. Astronauts to International Space Station (Sept. 16, 2014), <http://www.nasa.gov/press/2014/september/nasa-chooses-american-companies-to-transport-us-astronauts-to-international>.

10. H.R. 2262 § 112(b).

11. *Id.* § 112(c).

12. *Id.* § 201 (codified at 51 U.S.C. § 60126(a)).

13. *Id.* § 201; see also 51 U.S.C. § 60126(a)(1).

14. H.R. 2262 § 202.

15. *Id.*

16. *Id.* § 301(a)(1).

17. *Id.* § 302.

18. *Id.* § 402 (codified at 51 U.S.C. §§ 51301–51303).

19. See Space Resource Exploration and Utilization Act of 2015, H.R. 1508, 114th Cong., 1st Sess.; American Space Technology for Exploring Resource Opportunities in Deep Space Act (ASTEROIDS Act), H.R. 5063, 113th Cong., 2d Sess. (2014).

20. U.S. policy, in the mid-1980s, included using the Shuttle to fly commercial payloads, a goal that changed with the Challenger disaster. See Philip M. Boffey, *Commercial Launching by NASA Ordered Shifted to Private Sector*, N.Y. TIMES, Aug. 16, 1986, <http://www.nytimes.com/1986/08/16/us/commercial-launching-by-nasa-ordered-shifted-to-private-sector.html?pagewanted=all>.

21. See generally 15 C.F.R. pt. 960.

22. Press Release 16-007, NASA, NASA Awards International Space Station Cargo Transport Contracts (Jan. 14, 2016), <http://www.nasa.gov/press-release/>

[nasa-awards-international-space-station-cargo-transport-contracts](http://www.nasa.gov/press-release/).

23. See generally NATIONAL SPACE POLICY OF THE UNITED STATES OF AMERICA (2010), [https://www.whitehouse.gov/sites/default/files/national\\_space\\_policy\\_6-28-10.pdf](https://www.whitehouse.gov/sites/default/files/national_space_policy_6-28-10.pdf).

24. 51 U.S.C. §§ 50901, 50914–50915.

25. H.R. 2262, 114th Cong. § 402 (2015) (codified at 51 U.S.C. § 51301(1)).

26. *Id.* (codified at 51 U.S.C. § 51301(2)(A)).

27. *Id.* (codified at 51 U.S.C. § 51301(2)(B)).

28. Outer Space Treaty, *supra* note 8, at art. II.

29. H.R. 2262 § 402 (codified at 51 U.S.C. § 51302(a)(2)).

30. *Id.* (codified at 51 U.S.C. § 51302(a)(1)).

31. *Id.* (codified at 51 U.S.C. § 51302(b)(2)).

32. For example, section 51302 provides that the president “acting through appropriate Federal agencies” is responsible for implementation of the statutory tasks.

33. H.R. 2262 § 402 (codified at 51 U.S.C. § 51303).

34. H.R. 1508, 114th Cong., 1st Sess. § 2 (2015) (providing in proposed section 51303(c), “Civil Action for Relief from Harmful Interference,” that “[a] United States commercial space resource utilization entity may bring a civil action for appropriate legal or equitable relief, or both, under this chapter for any action by another entity subject to United States jurisdiction causing harmful interference to its operations with respect to an asteroid resource utilization activity in outer space.”).

35. Enabling entities to be free of “harmful interference” is now something the president, along with the appropriate federal agencies, will “promote.” 51 U.S.C. § 51302(a)(3).

36. *Id.* § 51302(b)(1).

37. Outer Space Treaty, *supra* note 8, at art. II.

38. See *Hearing on H.R. 5063 before the Subcomm. on Space of the H. Comm. on Sci., Space & Tech.*, 113th Cong. 6 (2014) (statement of Joanne Irene Gabrynowicz, Professor Emerita, University of Mississippi School of Law) (“The potential political impact of this kind of legislation on the international treaties is likely to be sizeable. Disagreement should be expected as to the meaning of this kind of legislation. . . . The legal status of some of the issues contained in the proposed bill is unclear and the concomitant international politics are highly contentious.”).