

Bridging the U.S. Regulatory Gap: Why the FCC Should Authorize Novel Commercial Space Activities

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I. INTRODUCTION

Outer space is dark and seemingly unending. This makes it difficult to really “see” anything in the traditional sense of the word. Without telecommunications, we would be unable to locate or track objects in space, analyze and relay the data space objects gather, and operate many space objects. The role of the Federal Communications Commission (“FCC”) to oversee and regulate communications of non-Federal entities within the United States (“U.S.”)¹ is essential to the U.S. commercial space industry. The FCC’s remit was extended to satellite communications once privatization allowed for private space objects to communicate in space and between Earth and space.² The FCC recently restructured itself by splitting the former International Bureau, which housed the Satellite Division, into two separate parts, the Space Bureau and the Office of International Affairs.³ Because of the authority already granted to the FCC in the Communications Act, the Space Bureau currently authorizes U.S. commercial activities in space, including radio frequency (“RF”) usage and orbital location. However, due to a gap in regulatory framework, the FCC is also either deliberating authorization or already authorizing other aspects of commercial space

1. See *The Communications Act of 1934*, DEP’T OF JUST., BUREAU OF JUST. ASSISTANCE, <https://bja.ojp.gov/program/it/privacy-civil-liberties/authorities/statutes/1288#:~:text=The%20Communications%20Act%20of%201934%20combined%20and%20organized%20federal%20regulation,oversee%20and%20regulate%20these%20industries> [<https://perma.cc/3FV9-66ES>] (last visited Apr. 2, 2024); see also Memorandum of Understanding between the FCC and the Nat’l Telecomms. & Info. Admin. (Aug. 1, 2022) (on file with the FCC), https://www.ntia.gov/sites/default/files/publications/ntia-fcc-spectrum_mou-8.2022.pdf [<https://perma.cc/Y42R-TQ7F>]. See generally *The Communications Act of 1934*, 47 U.S.C. § 151.

2. See *Communications Satellite Act of 1962*, Pub. L. No. 87-624, 76 Stat. 419 (codified as amended at 47 U.S.C. §§ 701-69); see also Amendment of the Commission’s Space Station Licensing Rules and Policies, *Notice of Proposed Rulemaking and First Report and Order*, 17 FCC Rcd 3847, n.3 (2002); see also *Satellite*, FCC, <https://www.fcc.gov/general/satellite#:~:text=The%20Communications%20Act%20requires%20a,space%20stations%20and%20earth%20stations> [<https://perma.cc/L2YM-C93U>] (last visited Apr. 2, 2024).

3. See Establishment of the Space Bureau and the Office of International Affairs and Reorganization of the Consumer and Governmental Affairs Bureau and the Office of the Managing Director, 88 Fed. Reg. 21424, 21424 (Apr. 10, 2023).

missions including lunar activities,⁴ debris mitigation,⁵ and other operations of in-space servicing, manufacturing, and assembly (“ISAM”).⁶

Two separate draft statutory bills were proposed in late 2023 attempting to address this gap in the regulatory framework. The first, proposed by the White House (WH Draft Bill), splits mission authorization between the Department of Transportation (“DOT”) for “in-space transportation” and the Department of Commerce (“DOC”) for “uninhabited space missions.”⁷ The second bill, introduced by Representatives Babin (R-TX) and Lucas (R-OK) (Commercial Space Act of 2023 or “CSA”), grants the DOC power to authorize the operation of a space object via a certification process.⁸

While the need for an evolving authorization and supervision framework is necessary,⁹ both proposed bills overlook the FCC. Why these two bills left out the FCC is likely only known within the political circles of the bills’ respective drafters. But some, mostly Republican pundits and Congresspeople, believe the FCC may be overstepping its boundaries with its ancillary jurisdiction,¹⁰ and maybe they believe ignoring the Commission is the best discipline they can muster. Additionally, the CSA is only currently supported by Republicans,¹¹ many of whom traditionally argue against regulation on the grounds it stifles investment and innovation. The CSA’s

4. See, e.g., *Intuitive Machines*, ICFS File No. SAT-LOA-20210423-00055 (granted Oct. 6, 2023) [hereinafter *Intuitive Machines*]; *Lockheed Martin Corporation*, ICFS File. No. SAT-LOA-20220218-00020 [hereinafter *ParSec Application*]; *Lockheed Martin Corporation*, ICFS File. No. SAT-LOA-20230315-00060 [hereinafter *LM Lunar Space Stations Application*].

5. See, e.g., *Denali 20020*, ICFS File No. SES-STA-20200113-00043 (granted Nov. 17, 2021) (granting special temporary authority to provide TT&C support for Astroscale’s demonstration of rendezvous and proximity operations (RPO), capture, and deorbit of space debris) [hereinafter *Denali*].

6. See, e.g., *Space Logistics LLC*, ICFS File No. SAT-LOA-20170224-00021 (granted in part Dec. 5, 2017) [hereinafter *MEV-1 License*]; *Space Logistics LLC*, ICFS File No. SAT-LOA-20191210-00144 (granted Mar. 20, 2020) [hereinafter *MEV-2 License*]; *SpaceIce*, ELS File. No. 0985-EX-CN-2019 (granted Oct. 8, 2020) [hereinafter *SpaceIce*]; *NanoRacks, LLC*, ELS File Nos. 0022-EX-ST-2021 (granted May 28, 2021), 1328-EX-ST-2021 (granted Nov. 15, 2021) [hereinafter *NanoRacks*]. All of these applications involve various types or applications of ISAM activity. See *MEV-1 License*; *MEV-2 License*; *SpaceIce*; *NanoRacks*.

7. See WHITE HOUSE, AUTHORIZATION AND SUPERVISION OF NOVEL PRIVATE SECTOR SPACE ACTIVITIES ACT, Sect. 1.12, (Nov. 2023) [hereinafter WH DRAFT BILL].

8. See Commercial Space Act of 2023, H.R. 6131, 118th Cong. (2023) [hereinafter CSA].

9. See *infra*, § II(A) (discussing Article VI and its significance in commercial space industry).

10. See, e.g., Press Release, Rep. Earl L. “Buddy” Carter (R-GA), Carter, Clyde Challenge FCC’s “Digital Discrimination” Rule (Jan. 30, 2024) (on file with author), <https://buddycarter.house.gov/news/documentsingle.aspx?DocumentID=11631> [<https://perma.cc/FGU8-FMZ3>]; Letter from Rep. Eddie Bernice Johnson et al., Chairwoman, H. Comm. Sci., Space, & Tech., to Honorable Jessica Rosenworcel, Chairwoman, FCC (Sept. 27, 2022) (on file with the H. Comm. Sci., Space, & Tech.), https://republicans-science.house.gov/_cache/files/f/4/f4208cb4-ee5a-4f59-ab65-0cc7cc0b8209/6F2AFE4C757C5AC039876863E3DF3EBA.2022-09-27-sst-bipartisan-letter-to-fcc-on-orbital-debris-mitigation.pdf [<https://perma.cc/W6PL-8KFD>].

11. See Jeff Foust, *House Science Committee Advances Commercial Space Bill*, SPACE NEWS (Nov. 29, 2023), <https://spacenews.com/house-science-committee-advances-commercial-space-bill/> [<https://perma.cc/5V7J-NWGY>].

Findings and Policy section highlights this anti-regulation sentiment. It is also likely the reason the CSA calls its authorization a “certification” rather than a “license,” rhetorically diverting from the phrase normally used for space mission authorization regulations.¹² Moreover, the FCC’s recent rulemakings on ISAM and orbital debris mitigation (discussed further *infra* Sections II(b) and IV(c)) may be viewed by the CSA drafters as an overreach in regulatory power to which they have no reprisal due to the FCC’s independent nature. The independent nature of the FCC also shields it from much of the executive branch’s whim. Thus, the President’s appointment of the Chairperson may influence the executive branch most over the agency. As such, the White House Draft Bill included the other two commercial space mission authorizing agencies, both of which must honor the White House’s tenor. The FCC’s independent nature is discussed further in Section IV(a). Regardless of why the FCC was left out of the proposals, it should not be overlooked.

Nearly every object launched into space requires communication with it, thus the FCC already analyzes nearly every space object launched into space by a U.S. commercial entity.¹³ With this in mind, the FCC could also certify the mission—if taking the CSA’s certification process into account—via a separate but simple form attached to each license. Although the CSA-style certification would come from the FCC, an applicant would still need to obtain a space situational awareness (“SSA”) assessment for projected trajectories and risks either from the 18th Space Defense Squadron (“SDS”) or, when it is finally operational, the Office of Space Commerce’s (“OSC”) Traffic Coordination System for Space (“TraCSS”).¹⁴ However, requiring the applicant to also gain authorization from the OSC is an unnecessary burden on the applicant, and it is unclear how the OSC would handle increased responsibility considering the OSC’s slow development of TRaCSS.¹⁵

This paper discusses the importance of authorizing and supervising non-governmental space activities, lays out the scope of the current regulatory framework, evaluates the two recently proposed bills, and proposes that both bills overlook the FCC’s preparedness and experience in authorizing and supervising commercial space activities. Ultimately, this paper advocates for the duties of mission authorization and certification to be given to the FCC because (a) it is already prepared to do so; (b) shifting the duty to the FCC would lessen regulatory burdens and costs for the applicant; and (c) the FCC’s ISAM Notice of Proposed Rulemaking (“NPRM”), which is backed by many

12. See, e.g., 14 C.F.R. § 450 (2024) (FAA’s vehicle operator license); 47 C.F.R. § 25 (2024) (FCC’s space station license); 15 C.F.R. § 960 (2024) (NOAA’s private remote sensing license).

13. See Payton Alexander, *The FCC: America’s Other Space Agency*, REASON, Dec. 2022, <https://reason.com/2022/11/15/americas-other-space-agency/> [<https://perma.cc/Z3Z7-KYLQ>].

14. See *Traffic Coordination System for Space (TraCSS)*, NOAA, <https://www.space.commerce.gov/traffic-coordination-system-for-space-tracss/> [<https://perma.cc/46NC-QPR3>] (last visited Apr. 5, 2024); see also *Frequently Asked Questions on Conjunction Risk Assessment*, NASA, <https://www.nasa.gov/cara/frequently-asked-questions/> [<https://perma.cc/E37Y-6HXW>] (last visited Apr. 28, 2024).

15. See Sandra Erwin, *Military-to-civilian space traffic transition nears critical juncture*, SPACE NEWS (July 8, 2024), <https://spaceneews.com/military-to-civilian-space-traffic-transitionnears-critical-juncture/> [<https://perma.cc/X3E2-HKRL>].

in the industry,¹⁶ creates a filler for the gap that can evolve alongside the industry.

II. BACKGROUND AND IMPORTANCE OF COMMERCIAL SPACE MISSION AUTHORIZATION

A. Outer Space Treaty Article VI Overview

The United States has one of the world's most robust regulatory frameworks regarding outer space activities. Even still, a debate has emerged as to whether this framework is sufficient to meet the obligations and responsibilities of the U.S. under Article VI of the Outer Space Treaty of 1967.¹⁷ Article VI places responsibility on the state parties to the treaty for national activities in outer space, regardless of whether those activities are carried out by governmental or non-governmental activities.¹⁸ Significantly, the Article goes on to say, “[t]he activities of non-governmental entities in outer space, including the moon and other celestial bodies, shall require authorization and continuing supervision.”¹⁹

International conventions, or treaties, are among the most powerful sources of international law, as they create international obligations on the state parties that joined them.²⁰ Under the Articles on State Responsibility (“Articles”), a state is responsible for its internationally wrongful acts, which occur when a state breaches one of its international obligations and that breach is attributable to the state.²¹ A breach may be an act or an omission of an act that violates an international obligation.²² Although the Articles are not a

16. See Comments of CONFERS at 2, Facilitating Capabilities for In-space Servicing, Assembly, and Manufacturing, IB 22-271 (Apr. 29, 2024), https://satelliteconfers.org/wp-content/uploads/2024/04/CONFERS-FCC-ISAM-NPRM-Comment-FINAL_04252024.pdf [<https://perma.cc/S2SU-QHDV>]. CONFERS aims to “[d]evelop industry-led recommendations for standards and guide international policies for servicing that contribute to a sustainable, safe, and diverse space economy” through its global membership of industry and government experts in ISAM. See CONFERS, *About CONFERS*, <https://satelliteconfers.org/wp-content/uploads/2024/09/About-CONFERS-Updated-091624-for-Web.pdf> [<https://perma.cc/B2KG-DZVQ>] (last visited Nov. 2, 2024).

17. See 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 OST]; see also Laura Montgomery, *Treaty Enforcement Tensions in H.R. 6131*, GROUND BASED SPACE MATTERS (Nov. 14, 2023), <https://groundbasedspacematters.com/index.php/2023/11/14/treaty-enforcement-tensions-in-h-r-6131/> [<https://perma.cc/T29Z-3ANA>]. See generally Mark J. Sundahl, *Regulating Non-Traditional Space Activities in the United States in the Wake of the Commercial Space Launch Competitiveness Act*, 42 AIR & SPACE L. 29 (2017).

18. See OST, *supra* note 17, at art. VI.

19. *Id.* (emphasis added).

20. See Statute of the International Court of Justice, art. 38(a), June 26, 1945, 33 U.N.T.S. 993 [hereinafter ICJ Statute]; see also *About Treaties*, U.S. SENATE, <https://www.senate.gov/about/powers-procedures/treaties.htm> [<https://perma.cc/E2UN-EA9K>] (last visited Apr. 4, 2024).

21. See Draft Articles on Responsibility of States for Internationally Wrongful Acts with Commentaries, in Rep. of the Int’l L. Comm’n (ILC) on its 53rd Sess., art. 2, ¶ 1, U.N. GAOR, 56th Sess., Supp. No. 10, U.N. Doc. A/56/10 (Nov. 2001) [hereinafter ASR Commentary].

22. *Id.* at art. 12, ¶ 2.

treaty, many of the Articles are considered customary international law,²³ which is also binding on states.²⁴

Unlike in general international law, where the state is only responsible for its governmental activities, in the case of the Outer Space Treaty's Article VI, a state is responsible for the actions of its non-governmental and governmental entities.²⁵ Therefore, the U.S. could be breaching its obligations under the OST if its actions *or omissions* do not require authorization and continuing supervision of space activities.²⁶

For example, most space missions are authorized by any or all of the following: the FCC, the Federal Aviation Administration ("FAA"), and the National Oceanic and Atmospheric Administration ("NOAA"). However, the U.S. does not have a lot of continuing supervision in its regulatory framework besides annual reporting of service and milestone updates.²⁷ Therefore, a commercial orbital habitat may be authorized to operate in Earth's orbit and manufacture new materials. Such a mission would likely be an FCC and FAA authorization. However, perhaps four years later it is discovered that the orbital habitat is manufacturing biological or chemical weapons, which may be considered weapons of mass destruction. In such a scenario, the U.S. would likely be internationally responsible for its omission to continue its supervision of the orbital habitat's manufacturing, or even for authorizing something that was in itself a breach of the OST (the placement of weapons of mass destruction in outer space is prohibited under Article IV of the OST).²⁸ Thus, the U.S., as a state party to the Outer Space Treaty, must have a regulatory framework in place to ensure it is sufficiently authorizing and continuing its supervision of U.S. non-governmental entities' activities.

B. Existing U.S. Commercial Space Authorization Regulatory Framework

The current commercial space authorization regulatory framework is split between the FCC, the FAA, and NOAA. These agencies were tasked to regulate what are known as "traditional" commercial space activities that

23. See JAMES R. CRAWFORD, BROWNLIE'S PRINCIPLES OF PUBLIC INTERNATIONAL LAW 524 (9th ed. 2019).

24. See *id.*; see also ICJ Statute, *supra* note 20, at art. 38(b).

25. See OST, *supra* note 17, at art. VI; see also Sergio Marchisio, Sapienza Univ. of Rome, Inst. For Int'l Legal Stud. CNR, National Jurisdiction for Regulation Space Activities of Governmental and Non-governmental Entities at the U.N./Thailand Workshop on Space Law, at 3 (Nov. 16-19, 2010).

26. See OST, *supra* note 17, at art. VI; see also ASR Commentary, *supra* note 21, at art. 2, ¶ 6 & art. 12.

27. See 47 C.F.R. § 25.171 (2023).

28. See OST, *supra* note 17, at art IV, VI.

were feasible at that time.²⁹ Such traditional activities include spacecraft launch and re-entry (FAA), spectrum usage (FCC), and remote sensing (DOC). The U.S. likely did not consider technology innovations beyond these activities in assigning authority to regulate commercial space activities because of the well-documented risks of stifling innovation by attempting to regulate an activity *ex ante*.³⁰ The U.S. practices this philosophy in many instances, for example, in the moratorium, or “learning period,” on regulating commercial human spaceflight.³¹ Now, however, as technology is moving from conceptual to applicable, “non-traditional” or “novel” space activities must find their way into the regulatory framework. Thus, the next few subsections will consider the current scope of the three regulating agencies’ space mission authorization authority.

1. FCC: Communications Act of 1934 (as amended)

The Communications Act of 1934 established the FCC “[f]or the purpose of regulating interstate and foreign commerce in communication by wire and radio.”³² The Act also applies to any “interstate or foreign transmission of energy by radio, which originates and/or is received within the United States.”³³ Essentially all commercial communications in space and between Earth and space are transmitted through the radio frequency spectrum.³⁴

Through the Communications Act, the FCC also has the authority to determine whether a new technology or service is within the public interest and thus permitted under the Act.³⁵ If a person or entity opposes the proposal of a new technology or service to be permitted under the Act, that person or entity has the burden of demonstrating that such proposal is against the public

29. See Kevin O’Connell et al., *Practical Applications of a Space Mission Authorization Framework*, SPACENEWS (Apr. 11, 2023), <https://spacenews.com/op-ed-practical-applications-of-a-space-mission-authorization-framework/> [<https://perma.cc/G2HN-5PGL>]; Theresa Hitchens, *White House Nears Plan to Assign Regulatory Authorities for “New” Space Activities*, BREAKING DEF. (Feb. 23, 2023), <https://breakingdefense.com/2023/02/white-house-nears-plan-to-assign-regulatory-authorities-for-new-space-activities/> [<https://perma.cc/3MXD-JB4U>]; Marcia Smith, *Companies Agree FAA Best Agency to Regulate Non-traditional Space Activities*, SPACEPOLICYONLINE.COM (Nov. 15, 2017), <https://spacepolicyonline.com/news/companies-agree-faa-best-agency-to-regulate-non-traditional-space-activities/> [<https://perma.cc/49Z9-YQ65>].

30. See generally *Ex-Ante Regulation and Competition in Digital Markets*, ORG. ECON. COOP. & DEV. (Nov. 24, 2021), [https://one.oecd.org/document/DAF/COMP/WD\(2021\)79/en/pdf](https://one.oecd.org/document/DAF/COMP/WD(2021)79/en/pdf) [<https://perma.cc/CV3B-69T4>].

31. RACHEL LINDBERGH, CONG. RSCH. SERV., IF12508, COMMERCIAL HUMAN SPACEFLIGHT SAFETY REGULATIONS 1 (2024), <https://crsreports.congress.gov/product/pdf/IF/IF12508#:~:text=For%20launch%20and%20reentry%20regulations,%2%A7460> [<https://perma.cc/4AKL-PA95>].

32. 47 U.S.C. § 151.

33. 47 U.S.C. § 152.

34. See Brian Weeden, *Radio Frequency Spectrum, Interference and Satellites Fact Sheet*, SECURE WORLD FOUND. (June 25, 2013), https://swfound.org/media/108538/swf_rfi_fact_sheet_2013.pdf [<https://perma.cc/92ST-CDRV>].

35. 47 U.S.C. § 157.

interest.³⁶ These provisions in Title I of the Communications Act, namely 47 U.S.C. §§ 152(a) and 154(i),³⁷ allow the FCC to adopt regulations under what is called “ancillary jurisdiction.”³⁸ The FCC must defend its exercise of ancillary jurisdiction on a case-by-case basis and, based on the two-part test in *American Library Association v. FCC*, the FCC may only exercise ancillary jurisdiction when “(1) the Commission’s general jurisdictional grant under Title I [of the Communications Act] covers the regulated subject and (2) the regulations are reasonably ancillary to the Commission’s effective performance of its statutorily mandated responsibilities.”³⁹ An example of the FCC exercising its ancillary jurisdiction was with cable television, where the Commission had no express statutory mandate to regulate cable, and it eventually decided it could regulate cable because the exercise of that authority would be ancillary to its authority to regulate broadcasting.⁴⁰

The scope of the FCC’s ancillary jurisdiction has been challenged over the past decade,⁴¹ which may play a role in the coming years regarding the Commission’s express authority to regulate commercial space. Nonetheless, the FCC has express authority to license the use of commercial satellites via their radio frequency utilization and orbital location.⁴²

The FCC has also regulated ancillary operations of satellite communications. Beginning in 2000, the FCC began orbital debris mitigation proceedings and ultimately released their first order in 2004, effective in 2005.⁴³ This rule, among other things, required a satellite in geostationary orbit (“GSO”) to provide a statement disclosing the altitude selected for a disposal orbit and required satellites in non-geostationary orbit (“NGSO”) to de-orbit via atmospheric reentry within 25 years of the completion of the satellite’s mission.⁴⁴ In its proceedings for this rulemaking, the Commission sought comment on its statutory authority to regulate space debris, and only one commenter challenged the FCC’s authority to do so but provided no legal analysis as to that challenge.⁴⁵ The Commission thus found it had the authority to regulate space debris because satellite communications are a critical component of radio communications infrastructure and debris is both a byproduct of and safety hazard to satellites, thus it is within the FCC’s

36. *Id.*

37. 47 U.S.C. § 154(i) (stating “[t]he Commission may perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with this Act, as may be necessary in the execution of its functions.”).

38. *United States v. Sw. Cable Co.*, 392 U.S. 157, 178 (1968); *see also* Christopher J. Wright, *The Scope of the FCC’s Ancillary Jurisdiction After the D.C. Circuit’s Net Neutrality Decisions*, 67 FED. COMM. L.J. 19 (2015).

39. *Am. Libr. Ass’n v. FCC*, 406 F.3d 689, 691-692 (D.C. Cir. 2005) [hereinafter *American Library*].

40. STUART MINOR BENJAMIN ET AL., *INTERNET AND TELECOMMUNICATIONS REGULATION* 325-26 (2d ed. 2023).

41. *See Comcast Corp. v. FCC*, 600 F.3d 642, 661 (D.C. Cir. 2010); *see also Verizon v. FCC*, 740 F.3d 623, 635-42 (D.C. Cir. 2014).

42. *See* 47 C.F.R. § 25.101 (2024); *see also* 47 U.S.C. § 303.

43. *See generally* Mitigation of Orbital Debris, *Second Report and Order*, 19 FCC Rcd 11567 (2004) [hereinafter 2004 FCC Order].

44. *Id.* at para. 61.

45. 2004 FCC Order, *supra* note 43, at paras. 8, 13.

ancillary purview.⁴⁶ The Commission defended its exercise of this ancillary jurisdiction by discussing the use of radio waves for satellite operations and the potential effect of increasing orbital debris on cost, asset and human safety, orbital accessibility, and other public interest considerations.⁴⁷

In 2018, the FCC returned to the issue of orbital debris mitigation, noting technical and policy updates to orbital debris mitigation standards, policy, and guidance documents since 2004.⁴⁸ The Commission began new proceedings for various purposes, including shortening the 25-year de-orbit requirement, which was met with broad support from industry stakeholders.⁴⁹ The final Order regarding the de-orbit timeframe, issued in 2022, amended the de-orbit procedures by requiring satellites passing through low earth orbit (“LEO”) in an uncontrolled re-entry to complete disposal “as soon as practicable, and no later than five years after the end of the mission.”⁵⁰

Although there was broad industry support for the initial notion of shortening the 25-year benchmark, this 2022 Order roused questions from members of Congress. Only a few days after the proposed Order’s publication, the bipartisan leadership of the House Committee on Science, Space, and Technology and its Subcommittee on Space and Aeronautics sent a letter to the Commission’s Chairwoman, Jessica Rosenworcel, asking the FCC to delay the vote by the Commissioners on the Order, citing concerns of insufficient statutory authority and potential confusion from conflicting guidance and threatening procedural measures by the Committee under the Congressional Review Act.⁵¹

While this letter may be a warning to the FCC that their ancillary jurisdiction to regulate orbital debris may overextend the test set out in *American Library*,⁵² no action against this rule, from Congress or a private company, has taken place yet. This inaction may be because two signers of this letter, Representatives Babin and Lucas, have now introduced a bill for mission authorization (discussed in-depth *infra*), which denotes the requirement of an orbital debris mitigation plan that may—if the bill is passed—conflict with the FCC’s Orders on time-limited deorbits, depending on the DOC’s interpretation of the bill when drafting its rules.⁵³

46. The FCC worded this logic more abstractly by stating space debris was ancillary because it could affect the use of radio in the public interest and hinder the issuance of radio licenses that serve public convenience, interest, or necessity. *See id.* at para. 14 (citing to 47 U.S.C. §§ 301, 303(g), 307(a)).

47. *Id.*

48. Mitigation of Orbital Debris in the New Space Age, *Second Report and Order*, 37 FCC Rcd 11818, at para. 7 (2022) [hereinafter 2022 FCC Order].

49. *Id.* at para. 9.

50. *Id.* at para. 10.

51. *See* Letter from Rep. Eddie Bernice Johnson et al., Chairwoman, H. Comm. Sci., Space, & Tech., to Honorable Jessica Rosenworcel, Chairwoman, FCC (Sept. 27, 2022), https://republicans-science.house.gov/_cache/files/f/4/f4208cb4-ee5a-4f59-ab65-0cc7cc0b8209/6F2AFE4C757C5AC039876863E3DF3EBA.2022-09-27-sst-bipartisan-letter-to-fcc-on-orbital-debris-mitigation.pdf [<https://perma.cc/52P6-8P24>]; *see also* Jeff Foust, *House Committee Questions FCC Orbital Debris Rule*, SPACENEWS (Sept. 29, 2022), <https://spacenews.com/house-committee-questions-fcc-orbital-debris-rule/> [<https://perma.cc/4NQZ-ZNJT>].

52. *See* Am. Libr. Ass’n, 406 F.3d at 692.

53. *See* CSA, *supra* note 8, at § 80104.

The most recent exercise of the FCC's ancillary jurisdiction, regarding commercial space operations, is the ongoing proceedings to establish a framework for licensing space stations engaged in ISAM.⁵⁴ While not officially an order set for codification yet, the proposed rule likely meets the two-part test from *American Library* considering the safety, efficiency, and technical issues that would emerge if a comprehensive framework were not adopted for licensing ISAM operators' varying spectrum use, changing orbital locations within the FCC's original jurisdiction, and related activities ancillary to the performance of that jurisdiction.⁵⁵ The ISAM NPRM will be discussed further *infra* when evaluating the draft bills. For the purposes of this paper, and without formal challenges to the contrary, it is assumed that the FCC is properly exercising ancillary jurisdiction to regulate orbital debris mitigation and ISAM operations.

2. DOT: Commercial Space Launch Activities Act

In 1984, the Commercial Space Launch Activities Act authorized the DOT to "oversee and coordinate the conduct of commercial launch and reentry operations" by issuing permits and commercial licenses to authorize those operations in a safe manner.⁵⁶ The DOT is also responsible for the development and regulation of space transportation infrastructure.⁵⁷ The DOT entrusted the Office of Commercial Space Transportation ("AST"), which was originally directly under the Office of the Secretary but moved to the FAA in 1995, to facilitate this role in the commercial space industry.⁵⁸

As a brief aside, a noteworthy aspect of the history of the FAA's authority over launch and reentry is the debate that ensued over which agency should lead this oversight.⁵⁹ With the required approvals for the first commercial space launch in 1982 proving to be overly time-consuming, competing bills were introduced in Congress to ease the regulatory burden.⁶⁰ One in the House,⁶¹ which proposed the DOC should be the lead agency, and one in the Senate,⁶² which proposed the FAA be the lead agency. Although there are slight differences in circumstances, we are now seeing history repeat itself with dueling draft legislation representing the agencies' interests in

54. See generally Space Innovation; Facilitating Capabilities for In-Space Servicing, Assembly, and Manufacturing, 89 Fed. Reg. 18875 (Mar. 15, 2024) [hereinafter ISAM NPRM].

55. See *id.* at paras. 15, 18, 26, 34.

56. See 51 U.S.C. § 50901(b)(3); see also Space Launch Activities Act of 1984, Pub. L. No. 98-575, 98 Stat. 3055 (1984) (as amended and re-codified at 51 U.S.C. § 509).

57. See 51 U.S.C. § 511; see also 51 U.S.C. § 50901(b)(4).

58. See *Origins of the Commercial Space Industry*, FAA, https://www.faa.gov/sites/faa.gov/files/about/history/milestones/Commercial_Space_Industry.pdf [https://perma.cc/N8FR-R9YQ] (last visited Apr. 9, 2024). As an aside, the Office of Space Transportation's acronym was "OCST" when it was originally established under the Office of the Secretary of Transportation. *Id.* The acronym was changed to "AST" when the Office of Commercial Space Transportation was transferred to the FAA. *Id.* The author could not find the reason for the new, mismatching acronym.

⁵⁹ See *id.*

60. See *id.*

61. See H.R. 1011, 98th Cong. (1983).

62. See S. 560, 98th Cong. (1983).

gaining mission authorization under their purview, as discussed *infra* at Section III.

Continuing with the FAA’s commercial space regulatory authority, the AST, via the FAA, also conducts “payload reviews” on aspects of payloads not otherwise regulated by the FCC or DOC and payloads not owned or operated by the U.S. government.⁶³ A payload review consists of evaluating the payload to ensure its applicant, owner, or operator has obtained all required licenses and its launch or reentry will not jeopardize U.S. interests.⁶⁴ Upon a favorable determination of a payload review, the FAA issues a “payload determination.”⁶⁵ Although the FAA does not have explicit Congressional authority to conduct payload reviews, the authority arguably comes from the definition of launch, which includes the preparation of a payload for launch,⁶⁶ and the compliance requirements set out in 51 U.S.C. § 50904(b).

The FAA’s authority to regulate launch and reentry activities and conduct payload reviews is also relevant. This includes the FAA’s authority to regulate human space flight.⁶⁷ While the FAA continues to promote “the continuous improvement of the safety of launch vehicles designed to carry humans,”⁶⁸ it has been prohibited from regulating the safety of humans while on board a space vehicle since 2004.⁶⁹ This moratorium was enacted to limit regulatory burdens on the nascent industry and was originally set to expire in 2012, however, after several extensions by Congress, the moratorium is now set to expire on January 1, 2025.⁷⁰ The Commercial Space Act of 2023, the bill introduced by Representatives Babin and Lucas directing the DOC as lead agency for mission authorization, also intends to extend the moratorium to October 1, 2031.⁷¹ As human space flight develops, it plays a role in the discussion on which agency, or agencies, ought to lead the U.S.’s mission authorization for novel space activities, as discussed *infra* at Section III and IV.

63. 14 C.F.R. § 450.43(b) (2024).

64. 14 C.F.R. § 450.43(a) (2024).

65. *Id.*

66. *See* 51 U.S.C. § 50902(7).

67. 51 U.S.C. § 50901(b)(2)(C).

68. *Id.*

69. *See* LINDBERGH, *supra* note 31; *see also Human Space Flight*, FAA (Mar. 27, 2024), https://www.faa.gov/space/human_spaceflight#:~:text=The%20FAA%20also%20performs%20safety,safety%20of%20individuals%20on%20board [<https://perma.cc/M23L-LF9S>].

70. *See* LINDBERGH, *supra* note 31. *See generally* U.S. GOV’T ACCOUNTABILITY OFF., GAO-24-106184, FAA’S OVERSIGHT OF HUMAN SPACEFLIGHT (2024), <https://www.gao.gov/assets/d24/106184.pdf> [<https://perma.cc/L9L8-WCCF>].

71. CSA, *supra* note 8, at Sec. 9(a)(3)(C)(vi); 51 U.S.C. § 50905(c)(9); LINDBERGH, *supra* note 31; Jeff Foust, *FAA Commercial Human Spaceflight Regulatory Learning Period Nears Expiration*, SPACENEWS (Feb. 24, 2024), <https://spacenews.com/faa-commercial-human-spaceflight-regulatory-learning-period-nears-expiration/> [<https://perma.cc/CQ8G-C7X6>]. Another introduced bill, the Space Transformation and Reliability Act, seems to have been introduced solely to extend the moratorium until 2031. *See* H.R. 5617, 118th Cong. (2023), <https://www.congress.gov/bill/118th-congress/house-bill/5617/text> [<https://perma.cc/5G7A-R8YY>].

3. DOC: National and Commercial Space Programs Act

The DOC has been licensing private remote sensing satellites since the Landsat Act of 1984.⁷² The Landsat Act was repealed and replaced by the Land Remote Sensing Act of 1992, which also directed the Commerce Department to create requirements and regulations for the licensing regime of commercial remote sensing satellites.⁷³ The DOC has created regulations for the licensing of private remote sensing satellites despite the Land Remote Sensing Act not being updated since 1992.⁷⁴ DOC delegated remote sensing licensing responsibilities to the National Oceanic and Atmospheric Association (“NOAA”) within the DOC.⁷⁵ NOAA’s National Environmental Satellite, Data, and Information Service (“NESDIS”) was tasked with implementing the licensing regulations and created the Office of Commercial Remote Sensing Regulatory Affairs (“CRSRA”) to do so.⁷⁶

The Office of Space Commerce (“OSC”) is the office within the DOC pushing to have regulatory authority over the U.S.’s authorization for novel space activities.⁷⁷ The history of the OSC over the past ten years has been a whirlwind of reorganizations and restructuring. The OSC had a budget of \$500,000 and a staff of three people in 2016.⁷⁸ For years there was discussion that the OSC should be moved out from under NOAA to report directly to the Office of the Secretary.⁷⁹ In 2021, the Office of Commercial Remote Sensing Regulatory Affairs (“CRSRA”), the office tasked with implementing NOAA’s licensing of private remote sensing satellites, and the OSC, were merged.⁸⁰ However, they both remained under NOAA’s NESDIS.⁸¹ Nonetheless, this merge gave the OSC *de facto* licensing authority and improved its regulatory influence by including the CRSRA’s licensing implementation in its purview. In 2022, the OSC was moved out of NESDIS and into the Office of the Under Secretary, directly reporting to the Assistant Secretary for Earth Observation and Prediction.⁸² For Fiscal Year (“FY”)

72. See Land Remote Sensing Commercialization Act of 1984, Pub. L. No. 98-365, 98 Stat. 451 (1984) (repealed by the Land Remote Sensing Act of 1992) [hereinafter Landsat Act].

73. See Land Remote Sensing Policy Act of 1992, Pub. L. No. 102-555, 106 Stat. 4163 (1992) (as amended and re-codified at 51 U.S.C. § 601); see also 51 U.S.C. §§ 60121, 60124.

74. See 15 C.F.R. § 960 (2024).

75. Off. of Space Com., *Commercial Remote Sensing Regulatory Affairs*, NOAA, <https://www.space.commerce.gov/regulations/commercial-remote-sensing-regulatory-affairs/> [https://perma.cc/6PUN-PZD8] (last visited Apr. 9, 2024).

76. *Id.*

77. See Brian Weeden, *Getting Serious About the Office of Space Commerce*, SPACENEWS (May 10, 2021), <https://spacenews.com/op-ed-getting-serious-about-the-office-of-space-commerce/> [https://perma.cc/BM9S-VFX2].

78. See *id.*

79. See *id.*; see also Marcia Smith, *Office of Space Commerce Wins Bigger Budget in FY2021, But Will Remain in NOAA*, SPACEPOLICYONLINE.COM (Dec. 21, 2020, 4:16 pm ET), <https://spacepolicyonline.com/news/office-of-space-commerce-wins-bigger-budget-in-fy2021-but-will-remain-in-noaa/> [https://perma.cc/SG3K-677W].

80. See Smith, *supra* note 79.

81. *Id.*

82. NOAA BUDGET SUMMARY 2024, 66-67 (2024) https://www.noaa.gov/sites/default/files/2023-05/NOAA_Blue_Book_2024.pdf [https://perma.cc/SUP8-9Z3G].

2024, the OSC was allocated \$65 million, a noticeable change from \$500,000 in 2016.

For FY 2025, the OSC is requesting \$75.6 million, with \$2 million going towards the “necessary staffing for OSC to implement Department of Commerce responsibilities under the U.S. Novel Space Activities Authorization and Supervision Framework” published in December 2023.⁸³ While the National Space Activities Authorization and Supervision Framework (“WH Authorization Framework”) does not provide the DOC any leeway to create regulations beyond its current scope of authority, it directs the Department to co-lead a Private Sector Space Activities Interagency Steering Group with the DOT to:

- Identify government organizations with expertise relevant to private sector space activities across the U.S. Government.
- Discuss strategies to appropriately address issues pertaining to emerging private sector space capabilities that are nascent or in development.
- Lead a process, in consultation with the U.S. private sector, to collate, develop, and promote standards, best practices, and information sharing protocols to address core U.S. Government interests common to novel space activities. These standards, best practices, and protocols will inform the guidance the Secretaries of Commerce and Transportation provide to industry.⁸⁴

The Authorization Framework is not completely clear on its objectives for the OSC specifically, and likely this budget planning by the OSC to implement the Authorization Framework is simply because the Framework directs the DOC to consider the initiatives in the Framework and the Biden Administration’s legislative proposal in their budget planning.⁸⁵

Overarchingly, there are three relevant governmental bodies that regulate the commercial space sector. The FCC regulates satellite communications and the ancillary services necessary to safely and effectively perform their statutorily mandated authorities.⁸⁶ The FAA regulates space launch vehicles’ launch and reentry operations and conducts payload reviews for aspects of payloads otherwise not regulated by the FCC or NOAA.⁸⁷

83. See Off. of Space Com., *FY25 Budget Proposes \$75.6M for Office of Space Commerce*, NOAA (Mar. 12, 2024), <https://www.space.commerce.gov/fy25-budget-proposes-75-6m-for-office-of-space-commerce/> [https://perma.cc/M887-55NP]. See generally WHITE HOUSE, NATIONAL SPACE ACTIVITIES AUTHORIZATION AND SUPERVISION FRAMEWORK (2023), <https://www.whitehouse.gov/wp-content/uploads/2023/12/Novel-Space-Activities-Framework-2023.pdf> [https://perma.cc/SZM6-6CUG] [hereinafter WH AUTHORIZATION FRAMEWORK].

84. See WH Authorization Framework, *supra* note 83, at 5.

85. See *id.* at 7.

86. See, e.g., 47 C.F.R. Part 25 (2024); 47 U.S.C. § 303; *Am. Libr. Ass’n*, 406 F.3d at 692.

87. See 51 U.S.C. § 509; see also 14 C.F.R. § 450.43 (2024).

NOAA regulates the licensing of commercial remote sensing satellites.⁸⁸ However, new technologies are creating potential for novel missions that challenge the current regulatory framework's parameters, including: space mining; optical communication; ISAM; and orbital habitats. These new missions are inevitable but induce uncertainties about how to obtain authorization properly, thus shining a light on the gap in the U.S.'s regulatory regime for commercial space mission authorization.

III. A REGULATORY GAP IN MISSION AUTHORIZATION

A. *The Debate: 2013-2023*

As the so-called “new space race” ramps up, investment in the commercial space industry is causing a boom in innovation and leading the charge for the burgeoning value of the industry.⁸⁹ Some of these technologies are allowing for the conceptualization, experimentation, or even practicality of what are being deemed “novel” or “non-traditional” space activities.⁹⁰ These activities are considered novel or non-traditional and implicate Article VI of the OST “in ways not clearly addressed by the existing licensing frameworks.”⁹¹ In other words, there exists a regulatory gap for these novel activities that does not provide the U.S. “with a straightforward means to fulfill its treaty obligation” under Article VI.⁹²

The Section 108 Report, issued in fulfillment of a reporting requirement in the Commercial Space Launch Competitive Act of 2015 (“SPACE Act”), was the first stab at addressing this regulatory gap,⁹³ which included examples of “unprecedented” space activities that may have aspects of their missions outside the bounds of the current “mission authorization” framework.⁹⁴ “Mission authorization” is the term used in the U.S. to describe the process of authorizing and supervising space activities in accordance with the U.S.'s obligations under Article VI of the OST.⁹⁵ The Section 108 Report laid out

88. See 51 U.S.C. § 601; see also 15 C.F.R. § 960 (2024).

89. See, e.g., Saadia M. Pekkanen, *Governing the New Space Race*, 113 AM. J. INT'L L. UNBOUND 92, 93-94 (2019); Steven González & Loizos Heracleous, *The New Space Race Is Not What You Think*, CAL. MGMT. REV. INSIGHTS (Feb. 27, 2024), <https://cmr.berkeley.edu/2024/02/the-new-space-race-is-not-what-you-think/> [https://perma.cc/BDM5-L5EH] (last visited Oct. 11, 2024); Akash Sriram, *Moon Landing Puts New Space Race Startups in Spotlight*, REUTERS (Feb. 26, 2024), <https://www.reuters.com/technology/space/moon-landing-puts-new-space-race-startups-spotlight-2024-02-26/> [https://perma.cc/ZH3R-8CLX].

90. See, e.g., Sundahl, *supra* note 17; WH Authorization Framework, *supra* note 83.

91. Letter from John P. Holdren, former Director and Assistant to the President, Off. Sci. & Tech. Pol'y, to John Thune, former Chairman, S. Comm. Com., Sci., & Transp. (Apr. 4, 2016), https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/csla_report_4-4-16_final.pdf [https://perma.cc/ZSD5-Q4WX] [hereinafter Section 108 Report].

92. *Id.*; see Sundahl, *supra* note 17, at 30.

93. See Sundahl, *supra* note 17, at 32.

94. Section 108 Report, *supra* note 91.

95. See *id.*; Sundahl, *supra* note 17, at 33; Marcia Smith, *White House Wants DOT in Charge of Commercial Space Mission Authorization*, SPACEPOLICYONLINE.COM (May 2, 2016), <https://spacepolicyonline.com/news/white-house-wants-dot-in-charge-of-commercial-space-mission-authorization/> [https://perma.cc/JJT9-JN2L].

some examples,⁹⁶ which still hold true today, of potential missions that may implicate Article VI concerns including private missions beyond Earth's orbit such as maneuvering payloads and lunar habitats on the Moon or Mars's surface,⁹⁷ ISAM and orbital habitat activities,⁹⁸ and space resource utilization.⁹⁹ As discussed below, some of these activities are closer in development than others. ISAM activities are likely the closest to being considered a market in themselves.

Bringing recognition of this regulatory gap to the forefront of commercial space policy began at the end of 2013 when Bigelow Aerospace sent a letter to the FAA asking if the FAA granted a license for Bigelow's experimental lunar habitat modules, would the FAA ensure non-interference with Bigelow's operations from other licensees?¹⁰⁰ The FAA ruminated on this correspondence for about a year and responded in the affirmative while recognizing there may be insufficiency in the licensing framework and the only true answer would lie with Congress.¹⁰¹ Bigelow purportedly sent the request to see if the FAA would approve a launch of their lunar habitat and whether the FAA would issue future launch licenses that would interfere with their operations.¹⁰² This answer ostensibly ruffled other regulatory agencies who felt this was a power grab or, at least, a lack of consultation.¹⁰³

The SPACE Act of 2015 did not necessarily contemplate the implications of Article VI on mission authorization for novel space activities as a whole.¹⁰⁴ Rather, it intended to enhance private investment in new technology for novel activities, particularly space resource utilization.¹⁰⁵ However, the Section 108 Report, issued as a requirement of the SPACE Act of 2015, seems to have truly ignited the debate as to whether new legislation was needed to expand upon existing statutory authority or even create a new mission authorization framework.

The Section 108 Report had draft statutory language appended to it, proposing to have the FAA oversee and authorize novel space activities.¹⁰⁶ The recommended mission authorization framework would have been

96. Section 108 Report, *supra* note 91.

97. See, e.g., LM Lunar Space Stations Application, *supra* note 4.

98. See, e.g., *MEV-1 License*, *supra* note 6; *MEV-2 license*, *supra* note 6; *SpaceIce*, *supra* note 6; *Nanoracks*, *supra* note 6.

99. See Section 108 Report, *supra* note 91; Jonathan O'Callaghan, *The First Secret Asteroid Mission Won't be the Last*, N.Y. TIMES (Dec. 28, 2023), <https://www.nytimes.com/2023/12/27/science/secret-asteroid-mission-astroforge.html> [<https://perma.cc/SSY9-3LQQ>] (discussing the lack of licensing process for deep space mission).

100. Sundahl, *supra* note 17, at 40; Jeff Foust, *FAA Review a Small Step for Lunar Commercialization Efforts*, SPACENEWS (Feb. 6, 2015), <https://spacenews.com/faa-review-a-small-step-for-lunar-commercialization-efforts/> [<https://perma.cc/TG95-453M>]; Leonard David, *Mining the Moon? Space Property Rights Still Unclear, Experts Say*, SPACE.COM (July 25, 2014), <https://www.space.com/26644-moon-asteroids-resources-space-law.html> [<https://perma.cc/Z436-VNLY>].

101. Sundahl, *supra* note 17, at 40; see Foust, *supra* note 100.

102. David, *supra* note 100.

103. Sundahl, *supra* note 17, at 40-41.

104. See SPACE Act of 2015, Pub. L. No. 114-90, 129 Stat. 704 (2015) (codified at 51 U.S.C. § 513).

105. See *id.* at § IV.

106. See Section 108 Report, *supra* note 91, at Appendix.

modelled on the payload review process of the FAA and have any activity not under any existing regulatory purview reviewed by the FAA on a case-by-case basis for compliance with international obligations.¹⁰⁷

In 2017, Professor Sundahl believed that the majority opinion of space pundits and industry stakeholders was favorable towards the FAA being granted novel space activity authorization.¹⁰⁸ He supported this notion by stating three things the industry supported: (1) central authority to streamline the process; (2) modeling the new process on an already familiar process; and (3) adopting open-minded process that will accommodate any type of mission.¹⁰⁹ While these factors likely still represent the sentiment of industry in how they hope mission authorization framework pans out, there does not seem to be a preference as to which agency is responsible.

Around the same time as the Section 108 draft proposal, Representative Bridenstine, who later became the NASA Administrator, introduced the American Space Renaissance Act (“ASRA”).¹¹⁰ The ASRA generally followed the approach of the Section 108 Report Appendix, referring to the process as “enhanced payload review,” but it went further by instructing the Secretary of Transportation to issue regulations relating to the specifics of how to authorize novel space missions.¹¹¹

Neither of these proposals was incorporated into legislation or proceeded further in the legislative process. This may be due to other members of Congress, namely Representative Babin, who felt legislation instructing further regulations was premature and may compound already long interagency review processes.¹¹² In 2017, in hearings sparked mostly by Representative Babin, space law experts such as Laura Montgomery urged the U.S. not to create new regulations under the notions that Article VI does not forbid private actors from operating in space, and Article VI is not self-executing, meaning there is no “obligation or prohibition on the private sector unless Congress” says there is.¹¹³ For the next six years, Professor Montgomery’s perspective, to refrain from “regulatory drag,”¹¹⁴ essentially won out.

107. Sundahl, *supra* note 17, at 34.

108. *Id.* at 35.

109. *Id.*

110. See H.R. 4945, 114th Cong. (2016) [hereinafter ASRA].

111. *Id.* at § 309; see Sundahl, *supra* note 17, at 36.

112. See Sundahl, *supra* note 17, at 38.

113. *Reopening the American Frontier: Exploring How the Outer Space Treaty Will Impact American Commerce and Settlement in Space, Hearing Before the S. Comm. on Com., Sci. Tech.*, 115th Cong. 2 (2017) (statement of Laura Montgomery, Manager, Space Law Branch, AST), <https://www.commerce.senate.gov/services/files/1a50ea32-d8f1-4ce8-9905-7740502bead3> [<https://perma.cc/AM7Z-HHXX>] [hereinafter *Montgomery Testimony*]. As an aside, a self-executing treaty or provision of a treaty means it is enforceable in domestic courts; the determination of a treaty’s (or its provisions’) self-executing nature has been the topic of U.S. Supreme Court jurisprudence. See U.S. Constitution Annotated, Art. II, § 2, Cl. 2: *Self-Executing and Non-Self-Executing Treaties*, U.S. CONG., https://constitution.congress.gov/browse/essay/artII-S2-C2-1-4/ALDE_00012955/ [<https://perma.cc/V52B-WREK>] (last visited Apr. 28, 2024).

114. *Montgomery Testimony*, *supra* note 113, at 2.

B. *The Debate: 2023-?*

After minimal movement in the legislature but prominent development in the industry, two new draft proposals have emerged since the Obama-era Section 108 proposal and the ASRA. Both draft bills came at the end of 2023, and one is another proposal borne out of White House Councils while the other is an introduced bill from members of a Congressional Committee. This time, however, the bills are not as parallel as with the Section 108 Appendix and the ASRA. Additionally, it appears the time of inaction has passed, as one of the bills' authors is none other than Representative Babin, who lauded restraint from regulation back in 2017.¹¹⁵

The first of these new proposals is the White House Draft Bill (“WH Draft Bill”) Text, which is split into two titles and divides authority between the DOT and the DOC.¹¹⁶ Title I of the WH Draft Bill seeks to amend the FAA’s authority under 51 U.S.C. § 509 by adding an “in-space transportation license” process where the FAA would have authority to license and authorize the operation of a space transportation vehicle.¹¹⁷ This bill creates new definitions that hinder the bill’s efficacy because they seemingly overlap and constrain in ways unlikely to prove more helpful than not. For example, a “space transportation vehicle” is defined as “a vehicle operated to conduct in-space transportation.”¹¹⁸ Then “in-space transportation” is defined as “the conveyance of cargo or goods in outer space, including to or from celestial bodies, other than launch or reentry. In-space transportation does not include the repositioning of active satellites in orbit.”¹¹⁹ The definition’s last sentence is what makes it difficult. What if a space object has a dual function of conveying fuel (a good, making it a space transportation vehicle), while shortly thereafter or simultaneously repositioning a satellite’s orbit? The dual function space object would be conducting in-space transportation and not conducting in-space transportation. This would prove an issue when determining which agencies must grant approval, especially considering Title II of the WH Draft Bill.

Title II of the WH Draft Bill gives the DOC authority to regulate “uninhabited space missions,”¹²⁰ which would seemingly overlap with the proposed FAA authority over in-space transportation. However, the definition of uninhabited space mission includes all uncrewed activities conducted in space by non-governmental entities but excludes activities solely conducting remote sensing by NOAA, solely conducting communications with radiofrequency spectrum and licensed by the FCC, and activities licensed under Chapter 509 (FAA’s authority).¹²¹ In effect, this definition would not require an FAA and a DOC license, because all activities under § 509 are excluded, but would require an FCC and a DOC license because communications may not be the sole conduct.

115. See Sundahl, *supra* note 17, at 37-38.

116. See WH DRAFT BILL, *supra* note 7.

117. *Id.* at 5.

118. *Id.* at 8.

119. *Id.*

120. *Id.* at 13.

121. See *id.* at 12-13.

Regardless of the implications of the WH Draft Bill, it has been largely overshadowed by the comprehensive draft bill—introduced in the same month as the WH Draft Bill—by Representatives Babin and Lucas titled the Commercial Space Act of 2023.¹²² The CSA would create Chapter 801 in Title 51 of the U.S.C. and require a commercial U.S. operator of a space object to hold a certificate issued by the DOC (would be from the OSC) before operating that space object.¹²³ The CSA grandfathered in any FAA, FCC, or NOAA licensees at the time of the CSA’s enactment but requires every space object operator commencing operations after enactment to obtain a certificate, regardless of the operator’s other license obligations.¹²⁴

The CSA’s purposes are important to note, as they are the crux of the reasoning behind the drafter’s intent in the bill. These purposes include increasing transparency and efficiency by enhancing the existing framework, reducing the administrative burden, and ensuring the U.S. remains the world leader in commercial space activities.¹²⁵ These purposes can be summed up by stating the CSA aims to alleviate legal uncertainty, minimize regulatory burdens and costs, and not stifle innovation.¹²⁶

Compared to the WH Draft Bill’s 24 pages, the CSA’s 68 pages are understandably a bit more comprehensive. Some important portions of the CSA are its consolidation of mission types to only require one certificate for multiple operations carried out by a single space object, or multiple space objects that carry out substantially similar operations, or multiple space objects carrying out a single operation.¹²⁷ Additionally, the CSA requires attestations from the applicant that the space object: (1) is not a nuclear weapon or weapon of mass destruction (“WMD”), (2) will not carry a nuclear weapon or WMD, (3) will not be operated as a weapon or used for testing of a weapon on any celestial body, and (4) all information in the application is true.¹²⁸ These attestations are presumed, absent clear and convincing evidence otherwise, to sufficiently address U.S. international obligations pertaining to non-governmental entities under the OST.¹²⁹ Notably, there is no cost for a certification,¹³⁰ and the commercial entity is required to participate in consultation if it is determined the interaction with a U.S. government space object presents a substantial risk.¹³¹

The CSA’s certification process may conflict with the FCC’s longstanding deorbiting regulations by merely requiring the applicant to provide a space debris mitigation plan “describing how the space object will

122. CSA, *supra* note 8; see Jeff Foust, *Why the White House and Congress Can’t See Eye-to-eye on Regulating Commercial Space*, SPACENEWS (Apr. 14, 2024), <https://spacenews.com/why-the-white-house-and-congress-cant-see-eye-to-eye-on-regulating-commercial-space/> [<https://perma.cc/F36D-8484>] (noting the industry has largely “gravitated towards” the CSA).

123. CSA, *supra* note 8, at § 80102.

124. *Id.*

125. *Id.* at Sec. 2.

126. *See id.*

127. *Id.* at § 80102(e).

128. *Id.* at § 80103(a)(3).

129. CSA, *supra* note 8, at § 80103(c)(3)(A).

130. *Id.* at § 80201(c).

131. *Id.* at § 80202.

be operated and disposed of in a manner to mitigate the generation of space debris.”¹³² Oddly, the CSA’s provision does not mention the U.S.-sanctioned and multilateral Inter-Agency Space Debris Coordination Committee’s Space Debris Mitigation Guidelines drafted in 2002 and last updated in 2021.¹³³ Additionally, while this provision, on its own, does not necessarily conflict with the FCC’s space debris mitigation rulemaking, § 80204 prohibits any agency, other than the DOC from:

impos[ing] a requirement with regard to an international obligation of the United States pertaining to a nongovernmental entity of the United States under the Outer Space Treaty relating to the following:

- (1) The operation of a space object certified under chapter 801.
- (2) The carrying out of a space debris mitigation plan of a space object for which a certification was issued under chapter 801.¹³⁴

The CSA’s § 80204 may be interpreted as a preemption to the FCC’s space debris mitigation rules requiring a statement from an applicant outlining how a deorbit plan will be met within five years. Additionally, it may be argued that the FCC’s ISAM NPRM conflicts with this provision considering one of the stated authorities for the creation of the ISAM NPRM is 47 U.S.C. § 303(r), which allows the FCC to make rules and regulations necessary to carry out its statutory authority of international obligations under any radio communications treaty.¹³⁵ Without a clear definition as to what a radio communication treaty is, the OST may be considered a radio communication treaty with its references to studying space communications and minimizing “harmful interference,”¹³⁶ which is a well-known term from the International Telecommunication Commission (“ITU”) Constitution.¹³⁷

Regarding the continuing supervision portion of Article VI, both the WH Draft Bill and the CSA seem to view the requirement as any type of “material change” in the operation of the space object.¹³⁸ The WH Draft Bill also expects updated information “provided on a periodic basis.”¹³⁹

As mentioned previously, these draft bills come at a time when there has been extensive debate over whether and how this regulatory gap should be addressed. It appears the White House has retained its position in granting most of the authorization powers to the FAA, though the Draft Bill does cede some outlying functions to the DOC. However, the structure and wording of

132. *Id.* at § 80103(a)(2)(F).

133. IADC, IADC REPORT ON THE STATUS OF THE SPACE DEBRIS ENVIRONMENT 5 (2023).

134. CSA, *supra* note 8, at § 80204.

135. 47 U.S.C. § 303(r).

136. OST, *supra* note 17, at preamble, art. IX.

137. See Constitution of the International Telecommunication Union annex no. 1003, Dec. 22, 1992, S. Treaty Doc. No. 104-34, 1825 U.N.T.S. 331 [hereinafter ITU Constitution]; see also *Radio Interference*, ITU (Feb. 2021), <https://www.itu.int/en/mediacentre/backgrounders/Pages/radio-interference.aspx> [<https://perma.cc/VEQ8-CE8N>] (defining harmful interference and specifying a main objective of the ITU-R is ensuring interference-free operations of radiocommunications).

138. WH DRAFT BILL, *supra* note 7, at 7, 14; CSA, *supra* note 8, at § 80106.

139. WH DRAFT BILL, *supra* note 7, at 7.

the bill has come under fire by some in Congress who worry about the Draft Bill's convoluted new terms and numerous ambiguities.¹⁴⁰ According to the House Committee on Science, Space, and Technology website, it would appear there is an outpouring of support from industry stakeholders in favor of the CSA.¹⁴¹

Regarding the timing of the CSA, Representative Babin appears to have changed his tune from originally refraining from regulations to fill this gap. It may be that he does not see the DOC certification process as regulatory in nature but rather a blanket protection of industry by essentially presuming any activity to be authorized unless the DOC can provide evidence and justification contrarily.¹⁴² Or it could be that Representative Babin worries a different approach than his may induce issues similar to those seen with NOAA's former remote sensing regulations that disincentivized operation in the U.S. relative to the rest of the world.¹⁴³

Regardless of the reasons to reignite the simultaneous WH and Congressional Committee mission authorization draft bill debate, it is happening. Both proposed bills seek to supplement and transform the current regulatory regime to include novel space activities mission authorization. However, both proposals overlook or ignore the potential to further decrease regulatory burdens by centralizing mission authorization through the FCC's licensing process. Regardless of whether a certification process is beneficial or necessary, the Commission has already shown it is capable and prepared.

IV. USING THE FCC TO FILL THE REGULATORY GAP

The FCC has set itself up for success, with regards to streamlining a new mission authorization process, arguably better than the FAA or the DOC. Even without further legislation, the FCC, compared to the DOC and DOT, has the widest statutory authority because of its judicially-mandated and statutorily authorized ancillary jurisdiction; the most autonomy because of its status as an independent agency; and, with over 50 years of licensing satellites, the most regulatory and licensing experience, particularly of new technologies. This section discusses these comparative claims in depth to make the case for why the FCC should have authorizing authority. All of this should be considered while keeping in mind that the two proposed bills do not mention the FCC in their novel space activities mission authorization plans.

140. See Jeff Foust, *Senators Question White House Mission Authorization Proposal*, SPACENEWS (Dec. 14, 2023), <https://spacenews.com/senators-question-white-house-mission-authorization-proposal/> [https://perma.cc/VR9B-SLAF].

141. See The Commercial Space Act of 2023, H.R. 6131, 118th Cong. (2023) (as introduced in the H. Comm. on Sci., Space & Tech.), <https://science.house.gov/2023/11/the-commercial-space-act-of-2023> [https://perma.cc/E7SB-YXYR].

142. See CSA, *supra* note 8, at § 80103(c)(3).

143. See Licensing of Private Remote Sensing Space Systems, 85 Fed. Reg. 30790, 30790-91 (May 20, 2020) (codified at 15 C.F.R. § 960 (2024)); Jeff Foust, *NOAA Lifts Many Commercial Remote Sensing License Conditions*, SPACENEWS (Aug. 8, 2023), <https://spacenews.com/noaa-lifts-many-commercial-remote-sensing-license-conditions/> [https://perma.cc/3TWD-FHZ3].

This section proposes the FCC be granted authority to authorize—and already is authorizing—ISAM activities; the FAA, already having jurisdiction over human spaceflight once the Learning Period ends, should regulate private human physical presence in space; and a framework on space mining should be deliberated prior to fitting into any immediate framework *ex ante*. This section will consider how the FCC is well-suited for mission authorization, how mission authorization via the FCC is the path of least regulatory burden, and how the FCC’s ISAM NPRM serves as a robust mission authorization framework. While both the CSA and the WH Draft Bill will be referenced, this section will mostly compare the FCC’s readiness to the CSA’s OSC certification process because it appears the CSA is gaining more traction than the WH Draft Bill.

A. *The FCC is Well-Suited for Mission Authorization*

With over 50 years of experience regulating and licensing commercial satellite systems, the FCC is better suited for this familiar mission authorization role.¹⁴⁴ The FAA, while an established regulator, has focused its efforts on launch and reentry and human safety. The OSC was not established with the intention of it being a regulator,¹⁴⁵ but was handed *de facto* regulatory purview when it merged with CSRSA only three years ago.

The DOC and the DOT were tasked in 2018 with streamlining their respective space regulatory responsibilities.¹⁴⁶ The Space Policy Directive-2 (“SPD-2”) directed both agencies to release new rules within a year, but it took each of them at least two years.¹⁴⁷ While the FCC was not directly tasked with streamlining their regulations in the SPD-2, they were already working on doing so.¹⁴⁸ Moreover, the FCC has opened a rulemaking process on how it can further expedite satellite and earth station applications amid the influx of applications that include novel technologies.¹⁴⁹

144. See Establishment of Domestic Communication-Satellite Facilities by Non-Government Entities, *Report and Order*, 22 F.C.C. 2d 86 (1970); ISAM NPRM, *supra* note 54, at 18877.

145. See 51 U.S.C. § 50702(c)-(d).

146. See Space Policy Directive-2, Streamlining Regulations on Commercial Use of Space, 83 Fed. Reg. 24901, 24901-02 (May 30, 2018) [hereinafter SPD-2].

147. *Id.*; see Marcia Smith, *New Remote Sensing Regs Great Improvement, But Devil is in the Details*, SPACEPOLICYONLINE.COM (June, 25, 2020, 9:35 pm ET), <https://spacepolicyonline.com/news/new-remote-sensing-regs-great-improvement-but-devil-is-in-the-details/> [<https://perma.cc/WE5D-GUQX>].

148. Streamlining Licensing Procedures for Small Satellites, 85 Fed. Reg. 43711, 43712 (July 20, 2020) (codified at 47 C.F.R. §§ 1, 25) (noting this rule’s NPRM was released April 17, 2018, over a month before the SPD-2 was issued on May 24, 2018); see, e.g., Jeff Foust, *FAA to Establish Committee to Refine Launch Licensing Regulations*, SPACENEWS (Feb. 23, 2024), <https://spacenews.com/faa-to-establish-committee-to-refine-launch-licensing-regulations/> [<https://perma.cc/6EMX-ZV3L>]; Foust, *supra* note 140; Theresa Hitchens, *Exclusive: Amid National Security Concerns, US Slaps Overhead Time Limits on Satellites*, BREAKING DEF. (Nov. 5, 2021), <https://breakingdefense.com/2021/11/exclusive-amid-national-security-concerns-us-slaps-time-limits-on-overhead-satellites/> [<https://perma.cc/5RJB-V8P2>].

149. Expediting Initial Processing of Satellite and Earth Station Applications, 88 Fed. Reg. 85553, 85554 (Dec. 8, 2023).

The FCC already reviews nearly every commercial U.S. space object launched into space because nearly all space objects need to communicate either in space or between earth and space. Currently, the only commercial space objects it does not necessarily review are those sent without communicative abilities. An example of such was the controversial launch of human remains to the Moon, which would not need communication capabilities after launch.¹⁵⁰

Furthering this notion that the FCC already reviews nearly all space objects' applications, it would continue to do so with the foreseeable novel technologies on the horizon. Lunar communications, optical communications, ISAM operations, and in-space resource utilization ("ISRU") operations will all require an FCC review. While optical communications (i.e., lasers operating outside the radio frequency on the electromagnetic spectrum) are the only technology presently capable of communicating outside the plain language of the Communications Act,¹⁵¹ it would be surprising if the FCC did not extend its ancillary jurisdiction or if Congress did not amend the Communications Act to grant the FCC authority over communications along the whole of the electromagnetic spectrum. As such, the FCC will likely review all foreseeable novel commercial space activities in the U.S., thus it makes sense to also have the FCC "authorize" the operation via a form with some attestations.

Lastly, regarding the FCC's suitability, its status as an independent agency insulates it from partisan influences that may hinder mission authorization. Independent agencies are generally defined as agencies that only allow the President to remove the agencies' heads "for cause."¹⁵² However, a variety of factors in these agencies' enabling statutes create varied forms of independent agencies.¹⁵³ Further, a consequence of self-funded independent agencies is greater autonomy because it takes away a major tool of Congress to reward or punish agencies and leaves the appointment of the Chair as the President's most influential tool.¹⁵⁴

A self-funded budget, however, insulates the FCC from partisan influences. Currently, most outer space policy is bipartisan in nature. It is

150. See *Legal and Ethical Framework*, CELESTIS, <https://www.celestis.com/about/legal-and-ethical-framework/> [https://perma.cc/2KTF-NJD2] (last visited Apr. 12, 2024); *Celestial Services*, ELYSIUM SPACE, <https://elysiumspace.com/#services> [https://perma.cc/7ZGD-KF8S] (last visited Apr. 12, 2024); Jacob Knutson, *First U.S. Moon Lander in Decades Suffers "Critical" Fuel Loss Upon Launch*, AXIOS (Jan. 8, 2024), <https://www.axios.com/2024/01/08/peregrine-moon-lander-launch-human-remains> [https://perma.cc/223Y-FAM3].

151. See Joel Thayer, *Lasering in on the Federal Communications Commission: Can the FCC Regulate Laser Communications?*, 6 INTELL. PROP. BRIEF 99, 102 (2015). See generally Shane M. Walsh et al., *Demonstration of 100 Gbps Coherent Free-space Optical Communications at LEO Tracking Rates*, 12 SCI. REP. 18345 (2022) (showing the capabilities of optical communications and that they operate outside the radiofrequency portion of the electromagnetic spectrum).

152. Kirti Datla & Richard L. Revesz, *Deconstructing Independent Agencies (and Executive Agencies)*, 98 CORNELL L. REV. 769, 772 (2013).

153. *Id.*

154. See Note, *Independence, Congressional Weakness, and the Importance of Appointment: The Impact of Combining Budgetary Autonomy with Removal Protection*, 125 HARV. L. REV. 1822, 1831-36 (2012).

possible that a future space activity or policy may draw a barrier between party lines. If the OSC were granted authority, Congress could cut the office's budget or the President could cut off authorization for that activity or otherwise hinder the policy. The FCC's self-funded budget allows it to maintain autonomy in such an instance, insulating the space industry and economy from potential future partisan rifts.

This autonomy of the FCC may also be a reason they have been cast out of the draft proposals. Both the White House and Congress are vying for control over mission authorization, either directly (executive branch) or fiscally (legislative branch), and likely worry they have no recourse for future decisions should the FCC be granted authority.¹⁵⁵ Nonetheless, the FCC does not have free reign and other operations are in order to retain checks and balances, such as the Congressional Review Act, removing a Chair for cause, or even simply passing legislation.

All these factors, including the Commission's licensing experience, evaluation of nearly all space objects launched, and its insulation from partisan repercussions, makes the FCC well-suited to handle any novel mission authorization responsibilities. The FCC can already complete the certification process the CSA sets out. Moreover, tasking the FCC with the CSA's certification process would likely further reduce the regulatory burden the CSA intends to decrease—and may unintentionally increase.

B. Centralizing Mission Authorization with the FCC Minimizes Regulatory Burden

The CSA seeks to minimize regulatory burdens and costs,¹⁵⁶ but empowering the OSC with mission authorization may actually increase the regulatory burdens and costs on industry applicants. By forcing non-governmental entities to communicate with yet another federal agency, it adds more tasks to their already busy licensing journey and potentially creates more costs depending on how much communication is needed. Instead, centralizing mission authorization within the FCC would streamline the certification process and further minimize regulatory burdens and costs on industry applicants.

The only communication that must occur for non-remote sensing missions between the OSC and the applicant is for a request of SSA data via the OSC's TRaCSS system, once it is operational, to ensure there is no substantial risk of collision. This likely would have to be done prior to applying for an FCC license anyway, as any substantial risk would require an alteration of the technical standards specified in a license application.

Alternatively, to further streamline the process, the FCC and OSC could have an interagency cooperation specifically for the certification process where the OSC provides the SSA dataset to the FCC and the applicant uniformly based on the technical information in the FCC application. The applicant would then only need to communicate with the OSC if they sought

155. See Foust, *supra* note 122 (discussing the competing draft bills and the dislike of any further FCC authority).

156. See CSA, *supra* note 8, at Sec. 2(b)(4).

a different variety of data for a different reason. If there is a substantial risk of collision based on the information provided in the FCC application, the OSC can send the application back to the FCC with either conditions for the certificate or instructions for the applicant to alter their application. The FCC already has a similar interagency process with the National Telecommunications and Information Administration (“NTIA”).¹⁵⁷ All interagency communication channels could be ongoing concurrently, thus adding no additional time to the FCC’s rate of determination.

Centralizing mission authorization depletes the legal uncertainty of novel space activities and reduces the regulatory burdens and costs even more than dispersing mission authorization to the OSC. As such, centralization of mission authorization still fulfills the policy objectives stated in the CSA.¹⁵⁸

C. The Framework Proposed in the ISAM NPRM Authorizes Novel ISAM Activities

Lastly, and most importantly, the FCC’s recent ISAM NPRM can be used as a filler for novel space activities mission authorization, at least in the near-term, and potentially in the long-term. The rationale behind starting a rulemaking process for ISAM operators is similar to that of novel mission authorization. The ISAM Notice of Inquiry (“NOI”), and subsequent NPRM, sought to provide ISAM operators with support for innovation, a clear path to spectrum allocation, and guidance on how licensing of ISAM operations may best suit the industry.¹⁵⁹ The comments on the ISAM NOI indicated ISAM operators were eager for clear guidance towards novel ISAM operations, which the FCC took into account to create a new framework that can be built on as more complex ISAM operations develop.¹⁶⁰ The NPRM recognizes that, while some aspects of ISAM missions may be outside the scope of “communications,” each aspect of a mission implicates communications and is necessary for the FCC to grant market access or license an operation in the public interest.¹⁶¹

The NPRM intends for the framework to apply to all ISAM operators but is based on a case-by-case analysis of each application and is subject to change as the industry develops.¹⁶² The NPRM sets out a definition of ISAM space station as one with a “primary purpose of conducting in-space servicing, assembly, and/or manufacturing activities” and seeks further comment from stakeholders as to whether “primary purpose” should be further defined and how it could be further defined.¹⁶³ The NPRM seeks to create a new section in its Part 25 regulations (§ 25.126) that would aggregate the fulfillment

157. Press Release, FCC, NTIA Establish Spectrum Coordination Initiative (Feb. 15, 2022), <https://docs.fcc.gov/public/attachments/DOC-380302A1.pdf> [<https://perma.cc/789N-V5K9>].

158. See CSA, *supra* note 8, at Sec. 2(b)(1)-(4).

159. See Facilitating Capabilities for In-space Servicing, Assembly, and Manufacturing, *Notice of Inquiry*, 37 FCC Rcd 10022, paras. 1-3 (2022) [hereinafter ISAM NOI].

160. See ISAM NPRM, *supra* note 54, at 18878.

161. See *id.* at 1880, 18882.

162. *Id.* at 18877-18878.

163. *Id.* at 18878.

requirements and enumerate the exemptions applicable to ISAM operators. Two major exemptions proposed are from the traditional NGSO processing round requirements and GSO first-come-first-served requirements to streamline ISAM applications.¹⁶⁴

Some commenters suggested an incentive program to bolster innovation via waived fees for enhanced debris mitigating companies and federally recognized small disadvantaged ISAM business.¹⁶⁵ However, the FCC is unable to accommodate such a program to bolster innovation because it is unable to waive fees for categories of payors and is required under the Communications Act to collect fees.¹⁶⁶ This is the type of scenario where Congress could exercise its legislative power to bolster innovation and space sustainability, both of which are cruxes of the CSA and WH Draft Bill. Rather than pushing the FCC away, Congress could work with them to figure out a way to federally incentivize industry innovation, especially among small, disadvantaged startups. Such legislation would still effectively meet the same policy goals set out in the CSA.

The comprehensiveness and foresight of the ISAM NPRM are important because ISAM likely encompasses a vast majority of the in-market or near-market novel commercial space activities. Of the novel activities listed on the Section 108 Report—lunar and Martian missions, ISAM, orbital habitats, and ISRU—ISAM is likely the closest to being considered a market, with orbital habitats next in line.

Lunar missions have already occurred with no regulatory issues, and any missions to the Moon or Mars that might be outside the current regulatory framework are at least ten years in the future. Similarly, ISRU is still in the extremely early stages of development, with proof of concepts still in the works and some U.S. “mining” companies stating unsubstantiated ambitions for missions that will likely take at least a decade to complete.¹⁶⁷ Orbital habitats, while still developing, are closer to full operation than the others. However, the operation of orbital habitats falls under the purview of ISAM because most orbital habitats proposed will be conducting research, manufacturing, or assembly. With that in mind, the only novel aspect would be the humans on board. As discussed above, regulating human safety in space is already delegated to the FAA, which will likely create a rulemaking process once the moratorium is lifted.

As such, the ISAM NPRM can serve as a foothold and template for novel space activities mission authorization. Once the ISAM rulemaking process is completed and codified, the FCC, or a different agency, could be instructed to start an ISRU rulemaking process or one of the other novel

164. *Id.* at 18879.

165. *See* ISAM NPRM, *supra* note 54, at 18883.

166. *Id.*

167. *See In-Situ Resource Utilisation (ISRU) Demonstration Mission*, ESA (Sept. 1, 2019), <https://exploration.esa.int/web/moon/-/60127-in-situ-resource-utilisation-demonstration-mission> [<https://perma.cc/6QL7-B594>] (a plan to demonstrate, by 2025, that water or oxygen production on the moon is feasible); *AstroForge*, ASTROFORGE, <https://www.astroforge.io/> [<https://perma.cc/F2WJ-YFVQ>] (last visited Apr. 15, 2024) (“We mine asteroids to extract valuable minerals in space at a lower cost and smaller carbon footprint than the current terrestrial mining methods.”).

activities. Although using the ISAM NPRM as a filler for the regulatory gap would continue the patchwork of U.S. commercial space regulations, it would allow the industry and the regulations to innovate and develop organically in unison rather than placing a blanket certification process over every activity, which may unintentionally increase regulatory burdens and costs and cut off the regulatory frameworks of other agencies.

The FCC has already begun authorizing novel space activities because it is the one U.S. commercial space regulator nearly all U.S. commercial companies need to obtain a license. For example, it provided a license to Intuitive Machines for its commercial lunar lander.¹⁶⁸ The FCC has licensed communications for operations of ISAM activities demonstrating rendezvous and proximity operations (“RPO”),¹⁶⁹ life-extension,¹⁷⁰ orbital repositioning,¹⁷¹ manufacturing techniques in microgravity,¹⁷² active debris removal,¹⁷³ and metal cutting.¹⁷⁴ The FCC is also currently deliberating applications for lunar space systems’ services¹⁷⁵ and may see applications for optical communications soon.¹⁷⁶

The FCC could simply implement the certification form described in the CSA and attach it to its license applications and determinations. This would shift the burden of more regulatory communication from the commercial entity to the FCC, which would have a system in place to run the data through the OSC’s TRaCSS. There would be no need for more enforcement in the FCC because the onus would be on the entity to alert them of any material change and substantial fines could be enforced via the FCC’s enforcement bureau. Having the entity alert the agency works because they know the dangers of space and not providing a notice of material change may harm their asset(s) in the long run, thus further enforcement would be unneeded for the FCC to implement the CSA certification process. Lastly, although tangential, the FCC would not need to change its name because its main licensing purpose is to oversee “communications,” albeit with objects in outer space. The “certifications,” if necessary, would be an ancillary task that would likely not be as onerous or laborious as spectrum management because most of the certification determination would be based on the OSC’s SSA data and the FCC’s review process already in place. All this to say, both the CSA and WH Draft Bill overlooked the preparedness and efficiency of the FCC in authorizing novel commercial space activities.

V. CONCLUSION

The debate over whether to implement a new regulatory framework, expand on the existing one, or do nothing to address this regulatory gap has

168. *Intuitive Machines*, *supra* note 4.

169. *MEV-1 License*, *supra* note 6; *MEV-2 License*, *supra* note 6.

170. *MEV-1 License*, *supra* note 6; *MEV-2 License*, *supra* note 6.

171. *MEV-1 License*, *supra* note 6; *MEV-2 License*, *supra* note 6.

172. *See Spacelce*, *supra* note 6.

173. *See Denali*, *supra* note 5.

174. *See NanoRacks*, *supra* note 6.

175. *See LM Lunar Space Stations Application*, *supra* note 4.

176. *See generally* Thayer, *supra* note 151.

been ongoing since the early 2010s. After the influential Section 108 Report and nearly concurrent legislative proposals and hearings, the current framework remains the same. The only differences have come from the FCC's rulemaking processes, which it has started on its own and has considered its statutory authority, industry input, and U.S. policy. We are now seeing two new proposals, one from the White House and one from a legislative Committee. Regardless of their intentions, these bills show a desire by both the White House and members of Congress to ensure non-governmental entities are complying with U.S. obligations under Article VI, and these entities are given legal certainty that they are complying. Whether these proposals gain traction is still to be seen.

The Section 108 Report laid out potential activities that may fall outside the current regulatory framework. But it did not insinuate that all these activities must be addressed immediately or must be addressed in the same manner. The way U.S. mission authorization has been traditionally approached is a piecemeal, patchwork mechanism of interagency cooperation. All four draft statutory proposals (the Section 108 Appendix, ASRA, WH Draft Bill, and CSA) have provided a blanket approach to covering the regulatory gap, without really considering the complexities of the space activities. Continuing in a patchwork approach, while seemingly counter-intuitive, might fit better so long as it is measured to the needs of the time.

The FCC has essentially already filled the most immediate patch needed to be filled via the ISAM NPRM, which will move into a Report and Order to be codified. ISAM operations encompass a large swath of the novel space activities that industry and scholars worry about. With this rulemaking, the FCC fills that gap. The other novel activities can be addressed, if necessary, once their development is closer to market viability.

Although too early to determine how it will pan out in Congress, the CSA seems to have more industry backing than the WH Draft Bill. However, considering the certification process set out in the CSA is not much more than a glorified form with attestations that the company is not—or does not intend to—violate the express provisions of the Outer Space Treaty, there is no need to burden entities with another agency to communicate with when it could just as easily be done by the FCC. If a blanket certification process is desired by the industry for legal certainty, have that certification go through the agency the industry applicants will likely need to apply with anyway: the FCC.

While the intentions of the White House and Representatives Babin and Lucas are commendable, they are complicating a process that already entails complicated technologies. Outer space is free for the exploration and use of all states, which the U.S. has extended to its citizens. The FCC has been a champion for public interest, space technology innovation, regulatory efficiency, and space sustainability for many years. Its suitability and preparedness for mission authorization, especially in light of the ISAM NPRM, makes it the best candidate for authorizing novel space missions, if not for every technology, at least for the most near-market ones.

