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THE MARKET ACCESS LOOPHOLE: RECONCILING THE FCC’S FIVE-YEAR DEORBIT RULE WITH ARTICLE VIII JURISDICTION AND CONTROL

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Abstract

The proliferation of orbital debris in low Earth orbit (LEO) has prompted domestic regulators to act in the absence of a comprehensive, binding international mitigation regime. In 2022, the United States Federal Communications Commission (FCC) adopted a rule requiring qualifying LEO space stations to be disposed of within five years of the end of their mission. By applying this requirement to non-U.S.-licensed systems seeking domestic market access, the FCC surfaced a profound tension within international space law: the intersection between a State’s authority to condition access to its telecommunications market and the registry State’s jurisdiction and control over its space objects under Article VIII of the Outer Space Treaty. While existing scholarship has largely examined the FCC’s domestic regulatory authority, this article interrogates the international jurisdictional problem presented by such indirect regulation. It argues that neither a formalistic reliance on territorial jurisdiction nor an absolute conception of Article VIII exclusivity provides a satisfactory resolution. Instead, this article proposes a seven-factor “functional-effects framework” to identify when a market-access condition crosses the legal threshold from permissible operational regulation into a substantive prescription concerning a foreign-registered object’s physical disposition. Applying this framework, the article finds that the FCC’s five-year rule occupies the outer boundary of permissible indirect regulation, generating a strong Article VIII objection while recognizing the mitigating significance of effective foreign regulatory oversight.

Keywords: Space Law; Outer Space Treaty; Article VIII; Jurisdiction and Control; Orbital Debris; Federal Communications Commission (FCC); Market Access; Prescriptive Jurisdiction.

I. Introduction

The proliferation of objects in low Earth orbit (LEO) has transformed orbital debris from a theoretical risk into an immediate operational hazard, prompting domestic regulators to assert authority in the absence of a comprehensive, binding international mitigation regime.¹ In 2022, the United States Federal Communications Commission (FCC) adopted a rule requiring qualifying LEO space stations to be disposed of as soon as practicable and no later than five years after the end of mission.² Crucially, the requirement was not limited to domestically licensed operators; the FCC expressly applied it to entities seeking to access the US telecommunications market using non-US-licensed satellite systems.³ By conditioning terrestrial market access upon compliance with an orbital disposal requirement, the FCC has surfaced an unresolved tension within the jurisdictional architecture of international space law. This extension of domestic regulatory requirements to foreign-registered space objects directly implicates Article VIII of the 1967 Outer Space Treaty (OST).⁴ Article VIII provides that the State on whose registry an object launched into outer space is carried “shall retain jurisdiction and control over such object... while in outer space.”⁵ When a non-registry State conditions access to its domestic market upon requirements concerning the physical disposition of a foreign spacecraft, the measure tests the scope of the regulatory authority allocated by that provision. The FCC, however, anchors the requirement not as a direct assertion of jurisdiction over foreign space objects, but strictly as a condition governing access to the US telecommunications market, a domain over which it possesses a legitimate territorial nexus.⁶ The resulting question is therefore not simply whether the FCC has regulated conduct with effects beyond US territory, but whether the formal territorial character of the regulatory mechanism is sufficient to place the measure outside the scope of the jurisdiction and control protected by Article VIII.

Existing scholarship concerning the FCC’s five-year rule has largely focused on domestic administrative-law questions, including the Commission’s statutory authority and its

¹ Committee on the Peaceful Uses of Outer Space, ‘Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space’ (2010) UN Doc ST/SPACE/49.

² Federal Communications Commission, ‘Space Innovation; Mitigation of Orbital Debris in the New Space Age’ (2022) 37 FCC Rcd 11818, 11820 para 3 (FCC 22-74).

³ *ibid* 11826 para 18.

⁴ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (adopted 27 January 1967, entered into force 10 October 1967) 610 UNTS 205 (OST).

⁵ OST (n 4) art VIII.

⁶ Communications Act of 1934, 47 USC §§ 151, 301; 47 CFR § 25.137.

obligations under domestic environmental law.⁷ Other commentary addresses the broader phenomenon of unilateral national regulation in the absence of comprehensive international debris-mitigation standards.⁸ Less developed, however, is the specific jurisdictional problem raised by the FCC's use of market access: whether a regulatory condition formally directed at access to a domestic telecommunications market may nevertheless constitute, in substance, an impermissible functional encroachment upon the registry State's jurisdiction and control over a foreign-registered space object.

This paper therefore asks: When does a State's conditioning of domestic telecommunications market access upon the physical orbital disposal of a foreign space object generate an Article VIII objection, and how should that objection be evaluated?

This paper argues that the FCC's characterisation of its five-year disposal requirement as a domestic licensing condition does not, by itself, determine the measure's compatibility with Article VIII. The relevant inquiry is whether the formal territorial character of a market-access condition can be reconciled with its functional effect upon the physical disposition of a foreign-registered space object. Article VIII should not be understood either as creating absolute regulatory exclusivity for the State of registry, which would sit uneasily with established international practices of radio-frequency coordination,⁹ or as leaving foreign-registered space objects entirely open to indirect unilateral prescription. Instead, the compatibility of market-access conditions affecting foreign space objects must be assessed through a functional-effects framework that balances the regulating State's territorial nexus against the degree of functional compulsion and the measure's substantive relationship to the object's ultimate physical disposition.

The scope of this inquiry is strictly jurisdictional. While Article VI of the OST is relevant insofar as it illuminates the treaty's allocation of regulatory responsibility over national space activities, this paper does not examine the separate question of which State constitutes the "appropriate State" for purposes of authorisation and continuing supervision.¹⁰ Its principal inquiry concerns the allocation and limits of prescriptive jurisdiction under Article VIII.

The paper proceeds as follows. Section II examines the text and structure of Article VIII,

⁷ Brian Weeden and Victoria Samson (eds), *Global Capabilities for US Space Operations* (Secure World Foundation 2021) 45-48; FCC 22-74 (n 2).

⁸ Steven Freeland, 'The Role of International Law in the Management of Space Debris' (2017) 111 AJIL Unbound 108.

⁹ Constitution of the International Telecommunication Union (adopted 22 December 1992, entered into force 1 July 1994) 1825 UNTS 330 (ITU Constitution) art 44.

¹⁰ OST (n 4) art VI; OST (n 4) art VIII.

establishing that while the treaty clearly protects the registry State's jurisdiction and control, it does not expressly resolve whether it excludes the concurrent prescriptive jurisdiction of other States. Section III isolates the FCC's regulatory mechanism, highlighting the disconnect between its formal regulatory object (domestic market access) and the physical conduct required for compliance. Section IV interrogates when a domestic market-access condition functionally becomes orbital regulation, establishing that the Article VIII objection becomes materially stronger when a measure moves beyond operational conditions to determine the post-mission physical disposition of the object itself. Section V proposes a seven-factor functional-effects framework to operationalize this distinction and applies it to the FCC's five-year rule, including the mitigating significance of foreign regulatory oversight. Section VI concludes.

II. What Article VIII Allocates: The Scope of Jurisdiction and Control

To understand whether a domestic market-access condition impermissibly circumvents international space law, it is first necessary to establish the baseline allocation of regulatory authority. Outer space is a non-sovereign domain. Article II of the Outer Space Treaty (OST) expressly prohibits national appropriation by claim of sovereignty, meaning that traditional territorial jurisdiction cannot extend into orbit.¹¹ The treaty addresses the jurisdictional consequences of operating beyond national territory through a system of national registration, principally reflected in Article VIII of the OST and elaborated by the Registration Convention.¹²

A. The Text and Structure of Article VIII

Article VIII serves as the jurisdictional anchor of the Outer Space Treaty. It provides, in relevant part, that a State Party "on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body."¹³

This provision works in tandem with the 1975 Registration Convention, which obligates the launching State to enter the space object into a national registry and to notify the United Nations.¹⁴ By linking the space object to a State of registry, the Convention provides the

¹¹ OST (n 4) art II.

¹² Convention on Registration of Objects Launched into Outer Space (adopted 14 January 1975, entered into force 15 September 1976) 1023 UNTS 15 (Registration Convention).

¹³ OST (n 4) art VIII.

¹⁴ Registration Convention (n 12) art II.

institutional framework through which the jurisdictional relationship contemplated by Article VIII is identified. Crucially, the operative verb in Article VIII is “retain.” The treaty does not state that the registry State acquires jurisdiction upon launch; rather, it indicates that the jurisdictional relationship is maintained while the object is in outer space.

B. The Meaning of “Jurisdiction and Control”

While Article VIII clearly establishes a jurisdictional relationship between the State of registry and the space object, the precise contours of “jurisdiction and control” remain undefined in the treaty text. In international legal doctrine, “jurisdiction” generally refers to a State’s competence to prescribe and enforce rules of law, while “control” implies the practical authority to direct the physical operations of the object and its personnel.¹⁵

Because Article II prohibits the appropriation of outer space, the jurisdiction conferred by Article VIII is strictly personal and object-centric, not spatial.¹⁶ Consequently, Article VIII attaches jurisdiction and control to the registered object rather than to the orbital space that it occupies. The provision therefore establishes a legal relationship between the registry State and the object, but does not by its terms specify the extent to which that relationship excludes jurisdiction exercised by other States.

C. The Prescriptive-Jurisdiction Problem

To isolate the interpretive vacuum within Article VIII, one must distinguish between enforcement jurisdiction and prescriptive (or legislative) jurisdiction.¹⁷ Article VIII clearly gives the State of registry jurisdiction and control over the registered object, and Article VIII also contemplates the return of registered space objects found beyond the limits of the State of registry.¹⁸ This provides a strong basis for distinguishing the registry State’s authority over the object from any prescriptive jurisdiction that another State might claim on the basis of a separate nexus. The distinction is particularly significant where enforcement would involve physical interference with the registered object itself, as such interference would directly implicate the registry State’s jurisdiction and control.

Prescriptive jurisdiction, however, operates differently. The *S.S. Lotus* judgment provides a

¹⁵ Bin Cheng, *Studies in International Space Law* (Clarendon Press 1997) 456-57.

¹⁶ Stephan Hobe, ‘Article VIII’ in Stephan Hobe and others (eds), *Cologne Commentary on Space Law* (vol 1, Carl Heymanns Verlag 2009) 354.

¹⁷ James Crawford, *Brownlie’s Principles of Public International Law* (9th edn, OUP 2019) 440-43.

¹⁸ OST (n 4) art VIII; see also Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (adopted 19 December 1967, entered into force 3 December 1968) 672 UNTS 119 (Rescue Agreement) art 5.

historical starting point for the proposition that restrictions upon State jurisdiction cannot simply be presumed.¹⁹ Modern approaches, however, do not treat *Lotus* as establishing an unrestricted power to prescribe, and instead examine the jurisdictional nexus, such as objective territoriality and other applicable limits of international law.²⁰

If a foreign-registered space object transmits signals into a non-registry State, that State possesses an objective territorial nexus to prescribe rules governing those transmissions. The core unresolved doctrinal question is whether Article VIII modifies these ordinary jurisdictional principles. Does the allocation of “jurisdiction and control” to the registry State create an exclusive prescriptive zone around the spacecraft, or does it merely establish primary authority without extinguishing the concurrent prescriptive jurisdiction of other States?

D. Exclusive versus Non-Exclusive Understandings

This ambiguity gives rise to two competing interpretive models regarding the scope of Article VIII.

Model I: Exclusive Prescriptive Jurisdiction. On this reading, Article VIII allocates primary and exclusive prescriptive authority concerning the spacecraft to the State of registry. Because the space object is a highly integrated technological system operating in a domain beyond sovereign territory, subjecting it to the concurrent prescriptive jurisdiction of multiple States could result in irreconcilable physical commands.

Model II: Concurrent Prescriptive Jurisdiction. Conversely, a non-exclusive reading posits that Article VIII preserves the registry State’s jurisdiction and control without excluding all prescriptive jurisdiction by other States having a sufficient territorial nexus. This possibility is reflected in contemporary space-law scholarship. For example, the *Tallinn Manual 2.0* (Rule 59), while a work of expert commentary rather than binding customary law, notes that a State must respect the registry State’s jurisdiction, but explicitly observes that such jurisdiction might not be exclusive when a space object’s activities produce harmful effects elsewhere.²¹ Under this model, a non-registry State could, subject to the requirements of international law, prescribe rules affecting the foreign object where it can establish a sufficient territorial nexus.

¹⁹ *S.S. Lotus (France v Turkey)* [1927] PCIJ Series A No 10, 18-19.

²⁰ *Restatement (Fourth) of the Foreign Relations Law of the United States* §§ 407-409 (American Law Institute 2018).

²¹ Michael N Schmitt (ed), *Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations* (2nd edn, Cambridge University Press 2017) 277-78.

E. The Unresolved Boundary

Neither the treaty text nor the broader structure of international space law provides an uncomplicated answer to whether the Article VIII allocation categorically excludes other States from prescribing conditions that materially affect the operation or physical disposition of the object.

This unresolved boundary provides the legal setting in which indirect regulatory mechanisms become significant. The FCC's application of orbital-debris requirements to non-US-licensed satellite systems seeking access to the US market provides a concrete instance in which a domestic regulatory condition may have consequences for the conduct of a foreign-registered space object.

III. The FCC's Regulatory Mechanism: Market Access and Orbital Debris

To evaluate whether a domestic market-access condition encroaches upon the jurisdictional allocation of Article VIII, it is necessary to identify precisely what the regulating State is doing. In implementing its orbital-debris framework, the FCC does not claim to act as the State of registry for foreign-licensed spacecraft, nor does it assert prescriptive jurisdiction over outer space as a geographic domain. Instead, the Commission anchors its requirements in its authority over radio communications and its licensing and market-access functions under the Communications Act.

A. The Formal Regulatory Object: Part 25 Market Access

The United States regulates the transmission of radio frequencies within its territory pursuant to the Communications Act of 1934 and international telecommunications frameworks.²² Under Part 25 of the FCC's rules, entities seeking to provide satellite services in the United States using a non-US-licensed space station may obtain authority to operate through a grant of US market access from the Commission.²³

Because the United States represents one of the largest and most critical markets for commercial telecommunications, the grant or denial of Part 25 market access operates as a powerful point of leverage over the commercial viability of multinational satellite constellations. The FCC utilizes this domestic regulatory competence to mandate compliance with operational policies that extend beyond basic radio-frequency coordination.

²² Communications Act of 1934 (n 6) §§ 151, 301.

²³ 47 CFR (n 6) § 25.137.

B. The Evolution of the Five-Year Deorbit Requirement

The FCC's integration of orbital-debris mitigation into its spectrum licensing framework has escalated in stringency in response to the growing density of low Earth orbit (LEO). In its 2020 *Mitigation of Orbital Debris* Order (FCC 20-54), the Commission comprehensively updated its rules, requiring all applicants to submit detailed debris mitigation plans. Crucially, FCC 20-54 affirmed that these requirements apply to non-US-licensed systems seeking US market access, though it permitted foreign operators to satisfy the rule by demonstrating that their debris plans were subject to "direct and effective" regulatory oversight by their national licensing authority.²⁴

In 2022, FCC 22-74 adopted a five-year post-mission disposal requirement for qualifying LEO space stations. For space stations ending their mission in or passing through the LEO region below 2,000 km and relying on uncontrolled atmospheric re-entry for disposal, the rule requires disposal as soon as practicable and no later than five years following the end of the mission.²⁵ The Order defines the "end of mission" trigger based on the spacecraft's physical capabilities, generally when an individual spacecraft can no longer conduct collision-avoidance manoeuvres, or, for spacecraft without such capability, when the primary mission is completed.²⁶

C. Application to Foreign-Licensed Systems

The legal friction between domestic regulation and international space law crystallizes in the FCC's explicit application of this five-year mandate to foreign-registered space objects. In Paragraph 18 of FCC 22-74, the FCC stated unequivocally:

"Consistent with other requirements in part 25 of our rules, this requirement will also apply to entities seeking to access the U.S. market using a non-U.S.-licensed satellite or satellite system."²⁷

During the rulemaking process, foreign operators and other national administrations objected to this reach. Commenters urged the FCC to defer to the licensing administration on grounds of international comity, warning that applying US debris rules to foreign-licensed satellites created the potential for conflicting physical mandates and duplicative regulatory burdens.²⁸

²⁴ Federal Communications Commission, 'Mitigation of Orbital Debris in the New Space Age' (Report and Order and Further Notice of Proposed Rulemaking, 2020) 35 FCC Rcd 4156, 4216-17 para 144 (FCC 20-54).

²⁵ FCC 22-74 (n 2) 11820 para 3.

²⁶ *ibid* 11823-24 paras 12-15.

²⁷ *ibid* 11826 para 18.

²⁸ Telesat Canada, 'Comments of Telesat Canada' (27 June 2022) IB Docket No 22-271, 3-6.

The Commission's response rested on its characterisation of orbital-debris mitigation as sufficiently connected to the communications activities that it licenses and authorizes. The Commission reasoned that the radiocommunications functions it licenses are directly connected to physical spacecraft operations and that orbital debris can impair satellite-system availability, integrity, capability, and spectrum use.²⁹ Rather than purporting to regulate the global conduct of foreign space objects, the Commission treated compliance with its debris-mitigation requirements as a condition attached to authorization or market access in the United States. This framework maintained the precedent of permitting certain non-US-licensed operators to demonstrate that their debris-mitigation plans were subject to direct and effective oversight by another national licensing authority, further framing the rule as a cooperative licensing standard rather than a territorial overreach.³⁰

D. The Disconnect: Formal Object versus Functional Effect

The architecture of the FCC's mechanism thus creates a profound legal asymmetry. Formally, the immediate object of regulation is domestic: the operator's authorization to access the US telecommunications market.

The requirement nevertheless has a consequence beyond the formal object of the FCC's authorization decision: compliance requires the operator to undertake or ensure conduct concerning the post-mission disposition of the relevant space station in outer space. The resulting distinction between the formal regulatory object and the physical conduct required for compliance frames the doctrinal inquiry addressed in the following sections.

IV. When Market Access Becomes Orbital Regulation

The FCC's five-year disposal requirement presents a structural challenge to international space law precisely because its formal legal mechanism conditioning domestic market access is conventionally lawful, while the conduct required for compliance tests the limits of the registry State's Article VIII jurisdiction and control. Resolving this tension requires interrogating the threshold between permissible territorial regulation and impermissible functional prescription.

A. The Territorial-Condition Argument

Under general principles of public international law, a State enjoys broad sovereign

²⁹ FCC 20-54 (n 24) 4161-63 paras 14-17.

³⁰ FCC 20-54 (n 24) 4216-17 para 144; FCC 22-74 (n 2) 11826 para 18.

competence to regulate activities occurring within its territory and to determine the conditions under which foreign entities may access its domestic markets.³¹ In the telecommunications context, a State's jurisdiction to prescribe conditions for spectrum access is firmly established. When a foreign-registered satellite transmits radio frequency signals to earth stations located within the United States, those transmissions produce a direct, intended, and substantial effect within US territory. Consequently, the FCC possesses a valid objective territorial nexus to regulate those transmissions.³² Under this territorial-condition argument, the FCC is not purporting to exercise prescriptive jurisdiction over the foreign space object in outer space; it is exercising prescriptive jurisdiction over the provision of telecommunications services within the United States. If a foreign operator objects to the debris-mitigation conditions attached to that access, it remains free to operate its satellite in outer space without US market authorization. Formally, therefore, the regulation does not conflict with Article VIII because it does not directly regulate the space object itself.

B. The Functional-Effects Objection

The difficulty with relying exclusively on the formal territorial character of the regulation is that it ignores the integrated physical reality of space operations. The FCC's characterization of the measure as a domestic licensing condition cannot, by itself, resolve its compatibility with Article VIII. The relevant question is whether a State may rely upon the domestic form of a regulatory measure to avoid the international-law consequences of the conduct that compliance requires.

If Article VIII protects the registry State's jurisdiction and control over the registered object, the fact that physical consequences are produced through a domestic market-access condition does not, without more, answer whether the measure encroaches upon that allocation.³³ Furthermore, the "due regard" principle enshrined in Article IX of the OST requires States to conduct their activities with respect for the corresponding interests of other States.³⁴ A regulatory architecture that allows non-registry States to dictate orbital physical disposition via market-access conditions risks circumventing the Article VIII allocation, raises the possibility of conflicting regulatory demands, and engages the due-regard interests protected by Article IX.

³¹ James Crawford (n 17) 440-44.

³² Cedric Ryngaert, *Jurisdiction in International Law* (2nd edn, OUP 2015) 75-78.

³³ Austen L Parrish, 'The Effects Test: Extraterritoriality's Fifth Business' (2008) 61 *Vanderbilt Law Review* 1455.

³⁴ OST (n 4) art IX.

C. The Threshold Problem

The tension between these two paradigms reveals that the compatibility of a market-access condition with Article VIII cannot be resolved by a crude binary. Physical effect alone cannot be the threshold for an Article VIII violation. To illustrate this, one must distinguish between different types of regulatory conditions.

Consider a scenario where the FCC conditions US market access on a foreign satellite adhering to strict power-flux density limits. This condition inevitably affects the physical operation of the spacecraft, requiring the operator to configure its onboard transmitters to comply. However, this type of condition is ordinarily understood as falling within the regulating State's legitimate authority over communications services and spectrum use.³⁵

Contrast this with the five-year disposal rule. The disposal requirement does not merely govern the technical characteristics of the transmissions entering the United States; it governs the ultimate post-mission physical disposition of the spacecraft itself. The threshold problem, therefore, is determining when a condition imposed on a service or activity within the regulating State ceases to be merely an operational condition and becomes a substantive prescription concerning the physical disposition of a foreign-registered space object.

D. The Physical Disposition Problem

This distinction touches the core of the OST's jurisdictional architecture. Article VIII deliberately attaches jurisdiction and control to the registered space object, while Article VI addresses the responsibility of States for their national activities in outer space.³⁶ That textual distinction becomes highly significant where a regulatory condition is directed formally at an activity (telecommunications) but requires conduct concerning the physical disposition of a registered object.

When a market-access condition mandates that a foreign operator dispose of its space station within five years of the end of its mission, it determines the required post-mission physical disposition of the registered object. This conduct concerns the physical disposition of the object beyond the regulating State's territory and directly implicates the registry State's continuing jurisdiction and control over the object. While a non-registry State may possess a legitimate territorial interest in preventing orbital debris from damaging the communications networks it licenses, conditioning market access upon the physical disposal of a foreign-registered object pushes indirect regulation to its outer conceptual limit.

³⁵ ITU Constitution (n 9) preamble and art 44.

³⁶ OST (n 24) arts VIII and VI.

It demonstrates that the legality of market-access conditions affecting foreign space objects cannot be determined solely by their formal domestic character. A framework is required to assess when the functional effects of such conditions improperly encroach upon the jurisdiction and control allocated by Article VIII.

V. A Functional-Effects Framework for Market-Access Conditions

Because Article VIII of the Outer Space Treaty does not expressly resolve whether it excludes the concurrent prescriptive jurisdiction of other States, and because physical effect alone is insufficient to render a territorial regulation unlawful, the compatibility of a market-access condition with international space law cannot be determined categorically. Instead, assessing whether a formally territorial condition crosses into an impermissible functional prescription requires a structured inquiry.

This paper proposes a functional-effects framework comprising seven considerations. This framework does not function as a rigid test automatically producing a finding of violation; rather, it determines the strength of the Article VIII objection by weighing the regulating State's territorial nexus against the degree of interference with the registry State's jurisdiction and control.

A. The Seven Considerations

The framework evaluates the legal character of a regulatory condition through the following sequential factors:

- 1. The Formal Regulatory Object:** What is the legal mechanism deployed by the regulating State? A condition formally attached to a domestic licensing regime or market access (e.g., telecommunications authorization) has a stronger initial claim to territorial validity, whereas a measure purporting to directly regulate foreign space activities globally does not.
- 2. The Functional Conduct Required:** What specific actions must the operator undertake to comply with the condition? This examines the practical reality of compliance, stripping away the domestic legal form to identify the substantive demand.
- 3. The Spatial Location of Compliance:** Where does the required conduct principally occur? Conduct occurring within the regulating State's territory or airspace presents minimal Article VIII friction, whereas conduct executed beyond sovereign territory, specifically in outer space heightens the jurisdictional tension.

4. **The Substantive Relationship to the Object:** How closely does the condition affect the physical space object? This is the critical threshold consideration. A condition governing the *services* provided by the object (e.g., transmission frequencies, power limits) implicates operational control. A condition determining the *physical disposition* of the object itself fundamentally engages the core of Article VIII.
5. **The Registry-State Nexus:** Is the object entered on the registry of another State? If so, the object is subject to the jurisdiction and control of that State under Article VIII, making the regulating State's exercise of concurrent authority subject to the need to take that State's corresponding interests into account under Article IX.³⁷
6. **The Regulating State's Territorial Nexus:** What legitimate sovereign interest supports the regulation? A strong, demonstrable nexus, such as protecting domestic spectrum from physical interference by orbital debris provides a robust justification for the condition, whereas a weak or purely extraterritorial policy preference does not.³⁸
7. **The Degree of Functional Compulsion:** How direct is the regulatory incentive? The condition may exert substantial functional pressure where access to the regulating State's market is commercially significant to the operator. The degree of that pressure will depend on the operator's reliance on the market and the availability of economically viable alternatives; market access therefore cannot be treated as legally irrelevant merely because the operator remains formally free to decline it.

Under this framework, a measure possessing a strong territorial nexus, a weak degree of functional compulsion, and only an operational relationship to the spacecraft presents the strongest case for permissibility. Conversely, a measure determining the physical disposition of a foreign-registered object in outer space presents the strongest case for functional encroachment upon the registry State's jurisdiction and control under Article VIII.

B. Application to the FCC's Five-Year Rule

Applying this framework to the FCC's five-year disposal requirement reveals why the measure occupies the outer boundary of permissible indirect regulation and therefore presents the strongest case for applying the framework.

The FCC rule possesses a formally valid regulatory object (Factor 1) and is supported by a demonstrable territorial nexus (Factor 6). The Commission has a legitimate sovereign interest in ensuring that the domestic telecommunications market it licenses is not degraded by orbital

³⁷ OST (n 4) arts VIII and IX.

³⁸ Cedric Ryngaert (n 32) 143-45.

debris that threatens the integrity of RF spectrum and active satellites.³⁹

However, the remaining factors demonstrate a severe friction with Article VIII. The functional conduct required (Factor 2) is the physical disposal of the space station, an act that concerns conduct beyond the regulating State's territory (Factor 3) involving an object over which a foreign State retains jurisdiction and control (Factor 5). Because the United States represents a highly significant market for multinational LEO constellations, the condition exerts substantial functional pressure (Factor 7).

Most critically, the rule crosses the substantive threshold identified in Factor 4. The FCC is not merely conditioning market access upon the operational characteristics of the telecommunications service. It is conditioning market access upon the ultimate physical disposition of the registered object.

C. Foreign Regulatory Oversight as a Limiting Mechanism

The FCC's regulatory framework nevertheless contains a mechanism capable of mitigating, although not necessarily eliminating, the jurisdictional tension identified above. FCC 20-54 permits non-US-licensed operators seeking US market access to demonstrate that their orbital-debris mitigation plans are subject to "direct and effective" regulatory oversight by another national licensing authority.⁴⁰ The mechanism reflects an institutional recognition that orbital-debris regulation need not always be imposed independently by the United States where another national authority exercises effective oversight.

This accommodation, however, should not be characterized as an exemption from the five-year disposal requirement itself. FCC 22-74 expressly provides that the five-year requirement applies to entities seeking US market access using non-US-licensed satellites or satellite systems.⁴¹ The foreign-oversight mechanism therefore mitigates the jurisdictional concern but does not, on the sources examined here, eliminate the application of the disposal requirement. Its significance lies instead in demonstrating that the FCC's regulatory architecture is capable of incorporating the regulatory interests of the State exercising jurisdiction over the foreign space object. That consideration becomes relevant under the functional-effects framework: the existence of effective foreign oversight may reduce the justification for unilateral prescription by the non-registry State, even where the latter retains a legitimate territorial interest in the safety of its communications infrastructure.

³⁹ FCC 22-74 (n 2) 11820 para 2.

⁴⁰ FCC 20-54 (n 24) 4216-17 para 144.

⁴¹ FCC 22-74 (n 2) 11826 para 18.

The resulting question is therefore not whether foreign regulatory oversight automatically immunizes a space object from US regulation, but whether the strength of that oversight should affect the assessment of the Article VIII objection. Where the registry State exercises effective jurisdiction and control over the object's post-mission disposition, a unilateral market-access condition requiring the same physical conduct presents a substantially stronger jurisdictional concern than where no effective regulatory framework exists.

VI. Conclusion

The absence of a comprehensive, binding international regime governing orbital-debris mitigation has created regulatory space that domestic authorities are increasingly seeking to fill. The FCC's five-year disposal requirement represents one of the most assertive attempts to manage the orbital environment unilaterally, utilizing the commercial significance of the US telecommunications market as a regulatory lever. However, applying this domestic condition to foreign-licensed systems exposes a profound structural friction at the heart of international space law: the collision between a State's sovereign right to condition access to its telecommunications market and the registry State's jurisdiction and control over its space objects under Article VIII of the Outer Space Treaty.

As this paper has demonstrated, neither a formalistic reliance on territorial market access nor an absolute assertion of Article VIII exclusivity provides a satisfactory resolution to this tension. The formal domestic character of a regulatory condition cannot completely insulate it from international legal scrutiny if its substantive consequence is to prescribe conduct concerning the physical disposition of a registered object beyond the regulating State's territory. Conversely, the Outer Space Treaty does not immunize foreign-registered space objects from the legitimate territorial regulatory competence of non-registry States, as evidenced by the established international framework governing radio-frequency and associated satellite-orbit coordination.

The Article VIII objection becomes materially stronger not merely when a territorial condition physically affects a foreign spacecraft, but when the condition moves beyond operational regulation and becomes a substantive prescription concerning the object's physical disposition. Applying the functional-effects framework proposed in this paper reveals that the FCC's five-year rule occupies the outer boundary of permissible indirect regulation. By conditioning market access upon the physical disposal of a foreign-registered space object, the rule presents the strongest case for functional encroachment upon the registry State's jurisdiction and control under Article VIII.

Ultimately, the legality of such mechanisms may hinge not on their formal territoriality, but on their capacity to accommodate the competing jurisdictional claims they inevitably trigger. The FCC’s institutional recognition of “direct and effective” foreign regulatory oversight serves as a significant limiting mechanism, demonstrating that unilateral market-access regulation can incorporate the regulatory interests of the registry State where comparable oversight exists. As the density of low Earth orbit increases, reconciling domestic market power with the jurisdictional architecture of the Outer Space Treaty will require exactly this kind of functional balancing, ensuring that the protection of domestic orbital interests does not inadvertently undermine the international allocation of jurisdiction in outer space.

