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ACTIVE DEBRIS REMOVAL AND INTERNATIONAL SPACE LAW: CAN STATES REMOVE FOREIGN SPACE OBJECTS WITHOUT CONSENT?

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ABSTRACT

Orbital debris now threatens the long-term use of outer space, and the first agency-led and commercial active debris removal (ADR) missions are moving towards flight. The law on who may remove what has received far less attention than the engineering. This paper asks whether a State, or an operator acting under its authority, may lawfully remove a foreign space object without the consent of the State of registry. It argues that the Outer Space Treaty, read with the Liability, Registration and Rescue instruments, preserves jurisdiction, control and ownership over an object whether or not it still functions, so that consent is the rule under existing law. Necessity and countermeasures are too narrow to support routine removal. The paper proposes a graduated consent framework, built through licensing and soft law, with a limited emergency exception.

Keywords: active debris removal; Outer Space Treaty; jurisdiction and control; State responsibility; necessity; space sustainability.

I. INTRODUCTION

In February 2009 an operational Iridium communications satellite collided with Cosmos 2251, a Russian military communications satellite that had been out of service for over a decade.¹ Nobody could have steered Cosmos 2251 out of the way, because nobody was operating it. In law, however, it was still a Russian space object, and the fragments it produced were the product of the activities of two States.

Kessler and Cour-Palais warned of exactly this dynamic in 1978. In crowded orbital regions, collisions between existing objects can create fragments faster than atmospheric drag removes

¹ NASA Orbital Debris Program Office, *Orbital Debris Quarterly News* (April 2009) vol 13, issue 2.

them, so the population keeps growing even if nothing new is launched.² The European Space Agency's 2026 Space Environment Report states that active removal of existing objects is now required to stop that growth.³ Mitigation rules, which ask operators to avoid creating new debris, remain necessary, but they do nothing about the defunct satellites and spent rocket stages already in orbit.

ADR, the rendezvous with, capture of and disposal of an existing uncooperative object, is the technical answer, and demonstration missions are under way. Astroscale's ADRAS-J inspected a Japanese H-IIA upper stage in 2024, and its follow-on mission, ADRAS-J2, is targeted for launch between 2027 and 2028 to capture that stage.⁴ ESA's ClearSpace-1 is designed to capture and bring down ESA's own PROBA-1 satellite.⁵ The choice of targets is telling. Each mission removes an object belonging to the agency or State that sponsors it, so consent is never in doubt. That will not last. The objects that pose the greatest collision risk are few in number and belong to a small group of launching States, and the owners of some of them may be unwilling or unable to arrange removal themselves.

The paper asks a narrow legal question. May a State, or a private operator acting under its authorisation, remove a foreign space object from orbit without the consent of the State on whose registry the object is carried? The answer decides whether ADR can develop as a lawful practice of protecting the orbital environment, or whether every mission will depend on diplomatic permission.

The paper argues that, as the law stands, consent is required. Article VIII of the Outer Space Treaty preserves the jurisdiction, control and ownership of the State of registry over a space object without regard to whether the object still works.⁶ No treaty provides an exception for debris, and the general defences of necessity and countermeasures are too narrow to carry a removal programme. At the same time, consent cannot be treated as a power to refuse without reason. Article IX requires due regard and good faith consultation, and that shapes how States should handle requests. The paper closes by proposing a graduated framework that can be built

² Donald J Kessler and Burton G Cour-Palais, 'Collision Frequency of Artificial Satellites: The Creation of a Debris Belt' (1978) 83 Journal of Geophysical Research 2637.

³ ESA Space Debris Office, 'ESA Space Environment Report 2026' (ESA, 14 September 2026) <https://www.esa.int/Space_Safety/Space_Debris/ESA_Space_Environment_Report_2026> accessed 5 October 2026.

⁴ Isar Aerospace, 'Isar Aerospace Signs Launch Contract with Astroscale Japan' (Press release, 1 September 2026) <<https://isaraerospace.com/press/isar-aerospace-signs-launch-contract-with-astroscale-japan>> accessed 5 October 2026.

⁵ ESA, 'ClearSpace-1' <https://www.esa.int/Space_Safety/ClearSpace-1> accessed 5 October 2026.

⁶ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (opened for signature 27 January 1967, entered into force 10 October 1967) 610 UNTS 205 (OST).

through licensing and soft law.

The method is doctrinal. The analysis applies the rules of treaty interpretation in the Vienna Convention on the Law of Treaties,⁷ reads the space treaties with the law of State responsibility, and tests the result against International Court of Justice case law. Part II gives the background, Part III examines the legal status of debris, Part IV asks whether consent is required, and Part V considers justifications outside the treaty text. Part VI addresses security, Part VII proposes a framework, and Part VIII concludes.

II. THE ORBITAL DEBRIS PROBLEM AND THE CASE FOR REMOVAL

Space debris has no treaty definition. The working definition, used by the Inter-Agency Space Debris Coordination Committee and reflected in the United Nations mitigation guidelines, covers all man-made objects in Earth orbit or re-entering the atmosphere, including fragments and elements of them, that are non-functional.⁸ The definition is technical. It says nothing about who owns the object, who answers for it, or whether another State may touch it.

The scale of the problem is well documented. ESA's statistics, updated in mid-2026, list about 47,000 objects regularly tracked by surveillance networks and more than 660 break-up, explosion, collision or anomalous fragmentation events. Statistical models put the number of objects between one and ten centimetres at about 1.2 million, and between one millimetre and one centimetre at about 140 million.⁹ Objects in these size ranges are mostly untracked, yet at orbital velocities they can damage or destroy a satellite. Some debris was created deliberately. The destructive anti-satellite tests of China in 2007 and Russia in 2021 each produced large clouds of trackable fragments, and the General Assembly has since called for an end to such tests.¹⁰

Mitigation is the first line of response. The United Nations guidelines of 2007, the IADC guidelines on which they draw, and the Guidelines for the Long-term Sustainability of Outer Space Activities of 2019 ask operators to limit debris released in normal operations, to avoid break-ups and to dispose of spacecraft at the end of their life, commonly within twenty-five

⁷ Vienna Convention on the Law of Treaties (adopted 23 May 1969, entered into force 27 January 1980) 1155 UNTS 331 (VCLT) art 31.

⁸ Inter-Agency Space Debris Coordination Committee, *IADC Space Debris Mitigation Guidelines* (IADC-02-01, Rev 3, 2021); UNGA Res 62/217 (22 December 2007) UN Doc A/RES/62/217.

⁹ ESA Space Debris Office, 'Space Environment Statistics' <<https://sdup.esoc.esa.int/discosweb/statistics/>> accessed 5 October 2026.

¹⁰ UNGA Res 77/41 (7 December 2022) UN Doc A/RES/77/41.

years in low Earth orbit.¹¹ These instruments are voluntary and compliance is uneven. But mitigation speaks to future conduct. It cannot retrieve what is already there.

Modelling by NASA researchers has suggested that removing a small number of the most massive and collision-prone objects each year could stabilise the low Earth orbit population.¹² Those objects are not evenly spread among States. A 2021 study of the fifty most concerning derelict objects in low Earth orbit found a list dominated by rocket bodies, largely of Soviet and Russian origin.¹³ The point is not fault. It is that the objects whose removal would do the most good belong to a few States whose consent cannot be taken for granted.

III. THE LEGAL STATUS OF DEBRIS UNDER THE SPACE TREATIES

A. Debris as 'Space Objects'

The first question is whether debris falls within the treaty regime at all. The Outer Space Treaty refers to 'objects launched into outer space' without defining them. The Liability Convention and the Registration Convention supply a partial definition, under which a space object includes its component parts as well as its launch vehicle and parts thereof.¹⁴¹⁵ Applying the ordinary meaning of these terms in context, as article 31 of the Vienna Convention directs,¹⁶ a defunct satellite is a space object and so is a spent upper stage. So, in principle, is a fragment that is a component part of either. Nothing in the treaties makes the status of an object depend on whether it still functions.

The practical difficulty is attribution. Small fragments cannot always be traced to a source object, and a State cannot exercise jurisdiction over what it cannot identify. For ADR the problem is smaller, because removal missions are likely to target large, catalogued objects whose origin is known.

B. Jurisdiction, Control and Ownership

Article VIII of the Outer Space Treaty is the provision on which the consent question turns. The State of registry retains jurisdiction and control over the object while it is in outer space.

¹¹ Report of the Committee on the Peaceful Uses of Outer Space (2019) UN Doc A/74/20, annex II.

¹² J-C Liou, N L Johnson and N M Hill, 'Controlling the Growth of Future LEO Debris Populations with Active Debris Removal' (2010) 66 Acta Astronautica 645.

¹³ Darren McKnight and others, 'Identifying the 50 Statistically-Most-Concerning Derelict Objects in LEO' (2021) 181 Acta Astronautica 282.

¹⁴ Convention on International Liability for Damage Caused by Space Objects (adopted 29 March 1972, entered into force 1 September 1972) 961 UNTS 187 (LIAB) art I(d).

¹⁵ Convention on Registration of Objects Launched into Outer Space (adopted 12 November 1974, entered into force 15 September 1976) 1023 UNTS 15 (REG) art I(b).

¹⁶ VCLT (n 7) art 31.

Ownership of the object and its component parts is 'not affected by their presence in outer space'. Objects found beyond the limits of the State of registry are to be returned to that State, which must furnish identifying data on request before return.¹⁷ The Rescue Agreement repeats the return obligation for objects found in the territory of other States or on the high seas.¹⁸

Three features of article VIII matter. First, jurisdiction and control are tied to registration, not function. A registered satellite that stopped working decades ago stays on the registry of its State until that State decides otherwise, and the only change of status the Registration Convention records is that an object is no longer in Earth orbit.¹⁹ Second, ownership is expressly preserved. The text contains nothing like the doctrine of abandonment found in domestic property law, under which title may be lost where the owner intends to give it up. Third, the only duty the article places on a State that comes across a foreign object is to return it. The drafters contemplated that States would encounter each other's objects, and they prescribed return, not disposal.

The content of 'jurisdiction and control' is usually understood by analogy with the position of a flag State over its ships. The State of registry holds prescriptive and enforcement authority over the object, and other States may not exercise enforcement jurisdiction over it without consent.²⁰ On the high seas, a ship is subject to the exclusive jurisdiction of its flag State, save in exceptional cases expressly provided for in treaties.²¹ The space treaties contain no comparable express exception for debris. Capturing a foreign satellite, moving it to another orbit or bringing it down is an exercise of physical control over it. If article VIII means anything, it means that this control belongs to the State of registry.

C. Responsibility and Liability

Two further provisions explain why the State of registry keeps a continuing interest in what happens to its objects. Article VI makes States internationally responsible for national activities in outer space, whether carried on by governmental or non-governmental entities, and requires the authorisation and continuing supervision of the latter. Article VII makes the launching State internationally liable for damage caused by its object or its component parts to another State

¹⁷ OST (n 6) art VIII.

¹⁸ Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (opened for signature 22 April 1968, entered into force 3 December 1968) 672 UNTS 119 art 5.

¹⁹ REG (n 15) art IV(3).

²⁰ Bin Cheng, *Studies in International Space Law* (Clarendon Press 1997); Bernhard Schmidt-Tedd and Stephan Mick, 'Article VIII' in Stephan Hobe, Bernhard Schmidt-Tedd and Kai-Uwe Schrogl (eds), *Cologne Commentary on Space Law*, vol 1 (Carl Heymanns Verlag 2009).

²¹ United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3 art 92(1).

party or its nationals.²² The Liability Convention builds on this. The launching State is absolutely liable for damage caused on the surface of the Earth or to aircraft in flight, and liable on the basis of fault for damage caused elsewhere, including in outer space.²³ Canada's claim against the Soviet Union for the crash of Cosmos 954 in 1978 was settled in 1981 for three million Canadian dollars, about half of the sum claimed, and remains the best-known application of the regime.²⁴

Liability does not lapse when a satellite stops working, so the launching State stays exposed while the object remains in orbit. This has a consequence for ADR. A State asked to consent to the removal of its derelict object must weigh the reduction of its long-term exposure against the risks that consent will be read as an admission that the object is debris for which it must answer, that the operation will release fragments, and that it will expose sensitive technology. Withholding consent is not always obstruction. It can be a rational response to a legal position the treaties leave unclear.

IV. IS CONSENT REQUIRED?

A. The Case for a Consent Requirement

The case for consent has textual, structural and practical strands. Textually, article VIII vests jurisdiction and control in the State of registry and preserves ownership without regard to function. Structurally, the freedom of all States to explore and use outer space under article I is a freedom to act in outer space. It is not a licence to exercise control over objects that are subject to another State's jurisdiction. Practically, a rule allowing any State to remove an object it judged to be debris would make article VIII depend on a unilateral assessment by the very State that wishes to act. Debris is defined by non-functionality, which an outside observer cannot verify, and such a rule would invite error and abuse.

Commentators who have addressed the point generally agree that ownership and jurisdiction under article VIII survive the loss of function, and that the consent of the State of registry is a precondition of lawful removal.²⁵ Consent has two layers. Where the object is privately owned, the owner's consent is needed to deal with its property, and the State of registry's consent is needed because of its jurisdiction. Where the object is unregistered, or the registering State no

²² OST (n 6) arts VI and VII.

²³ LIAB (n 14) arts II and III.

²⁴ 'Canada: Claim against the Union of Soviet Socialist Republics for Damage Caused by Soviet Cosmos 954' (1979) 18 ILM 899; 'Protocol on Settlement of Canada's Claim for Damages Caused by "Cosmos 954"' (1981) 20 ILM 689.

²⁵ See eg Peter Stubbe, *State Accountability for Space Debris* (Brill Nijhoff 2017); Francis Lyall and Paul B Larsen, *Space Law: A Treatise* (2nd edn, Routledge 2018); Stephan Hobe, *Space Law* (Nomos 2019).

longer exists, article VIII does not operate neatly, but the launching State remains responsible and liable under articles VI and VII and is the natural counterpart for consultation.

B. The Abandonment Argument

The strongest argument against a consent requirement is that a satellite which no longer works has no value to its owner, and that long neglect amounts to abandonment. The argument is unpersuasive on the present state of the law. In most legal systems abandonment requires a clear intention to relinquish title together with an act that shows it. Silence and neglect are not enough. The treaty text preserves ownership and offers no route to abandonment, and the practice points the other way. States have accepted liability for derelict objects when they caused harm, as Cosmos 954 shows, and the mitigation guidelines treat disposal as a continuing responsibility of the State and operator, which presupposes that responsibility does not end when function does.

The argument has a constructive counterpart. A State of registry is free to declare an object abandoned, to transfer it, or to consent to its removal. Each of these is a consensual outcome. That is why consent, rather than abandonment, is the right starting point for any ADR regime.

C. Article IX and the Limits of Refusal

That consent is required does not mean that refusal is unconstrained. Article IX obliges States parties to conduct their activities in outer space with due regard to the corresponding interests of all other States parties. A State that has reason to believe that a planned activity would cause potentially harmful interference with the activities of others must undertake appropriate international consultations before proceeding, and a State that believes another's activity would cause such interference may request consultations.²⁶

Article IX works in both directions. A State proposing ADR on a foreign object must consult the State of registry, because capture and manoeuvring in close proximity to another State's satellite plainly carry a risk of interference. Conversely, a State that rejects every removal request while doing nothing about a hazardous object in a crowded orbit is difficult to reconcile with the due regard standard. General international law points the same way. A State must not knowingly allow its territory to be used contrary to the rights of other States, and the same logic extends to objects within its jurisdiction. It must also act with due diligence to prevent significant harm to others.²⁷

Two caveats limit this argument. The first is that article IX is a standard of conduct and a

²⁶ OST (n 6) art IX.

²⁷ *Corfu Channel* (United Kingdom v Albania) (Merits) [1949] ICJ Rep 4, 22; *Legality of the Threat or Use of Nuclear Weapons* (Advisory Opinion) [1996] ICJ Rep 226 [29]; *Pulp Mills on the River Uruguay* (Argentina v Uruguay) [2010] ICJ Rep 14 [101].

procedure. It requires consultation and balancing. It does not convert the interests of a threatened State into a right to act. The second is that due diligence is judged against the standards of the time, so for legacy objects launched before any debris guidelines existed, a breach is hard to show. *Corfu Channel* is instructive on both points. The Court held Albania responsible for failing to warn of mines in its waters. It also held that the United Kingdom had violated Albanian sovereignty by sweeping the mines unilaterally, rejecting self-help as a basis for acting within another State's jurisdiction.²⁸ The parallel is close. The hazard can be real, the State with jurisdiction can be at fault, and the intervening State can still be acting unlawfully.

The better view is therefore that existing law requires consent, obliges the State of registry to consider requests and cooperate in good faith, and obliges the proposing State to consult.

V. JUSTIFICATIONS OUTSIDE THE TREATY TEXT

If consent is the rule, the next question is whether general international law supplies exceptions. Necessity and countermeasures are the two relevant circumstances precluding wrongfulness. Both are codified in the International Law Commission's Articles on State Responsibility, which are widely accepted as reflecting custom on these points.²⁹

A. Necessity

Under article 25, a State may invoke necessity to preclude wrongfulness only if the act is the only way to safeguard an essential interest against a grave and imminent peril and does not seriously impair an essential interest of the State towards which the obligation exists. Necessity is unavailable if the obligation excludes it or if the invoking State has contributed to the situation.³⁰ The International Court of Justice has described the defence as exceptional, and the commentary requires that the peril be objectively established, not merely apprehended as possible.³¹

Applied to debris, the first element is easy to satisfy. A State's satellites, a crewed station and, on the Commission's reading, ecological interests can all qualify as essential interests. The remaining elements are harder, because the debris threat is chronic and probabilistic. Most conjunctions carry low collision probabilities and are handled by manoeuvring, and a general

²⁸ *Corfu Channel* (n 27) 34-35.

²⁹ International Law Commission, 'Draft Articles on Responsibility of States for Internationally Wrongful Acts, with Commentaries' (2001) vol II pt 2 Yearbook of the International Law Commission 31 (ARSIWA).

³⁰ ARSIWA (n 29) art 25.

³¹ *Gabčíkovo-Nagymaros Project* (Hungary/Slovakia) [1997] ICJ Rep 7 [51], [54]; ARSIWA (n 29) commentary to art 25, paras 14 and 15.

risk that a derelict object might one day collide with something is a possible peril, which does not suffice. The 'only way' requirement fails wherever the threatened State can move its own satellite or negotiate access.

Necessity could therefore apply only in a narrow case: a specific object on a confirmed collision course with a crewed or critical asset, where no manoeuvre can avoid the collision and removal is the only feasible protective step. Because a removal mission needs years of planning, a situation in which removal is both the only means and a response to an imminent peril is almost impossible to construct. Even then, necessity only precludes wrongfulness. It does not displace the duty to compensate for material loss, which article 27 preserves.³² It cannot support a routine programme of removal.

B. Countermeasures

Countermeasures are acts that would otherwise be unlawful, taken by an injured State against a State responsible for an internationally wrongful act in order to induce it to comply with its obligations. They are subject to proportionality, to reversibility as far as possible, and to prior notice with an offer to negotiate.³³ ADR fits poorly within this structure. There must first be a wrongful act by the target State, and failure to dispose of an object is not clearly wrongful, given the voluntary character of the mitigation guidelines. The measure must aim at inducing compliance, whereas ADR aims at eliminating a hazard. It must permit resumption of compliance as far as possible, yet deorbiting a satellite is irreversible. Finally, only an injured State may take countermeasures, and whether other States may act in the collective interest is disputed.³⁴

C. Custom and Institutional Authorisation

A customary right to remove foreign debris would require consistent State practice accompanied by a belief that such a right exists. There is no such practice. Every mission flown or announced has targeted an object belonging to its sponsor, and no State has asserted a right to act otherwise. A multilateral route is theoretically available: if the Security Council determined under Chapter VII of the Charter that a specific debris threat endangered international peace and security, it could authorise measures.³⁵ That route is too remote to rely on.

³² ARSIWA (n 29) art 27.

³³ ARSIWA (n 29) arts 22, 49, 51 and 52.

³⁴ ARSIWA (n 29) art 54; James Crawford, *State Responsibility: The General Part* (CUP 2013).

³⁵ Charter of the United Nations (adopted 26 June 1945, entered into force 24 October 1945) 1 UNTS XVI.

VI. DUAL-USE TECHNOLOGY AND THE POLITICS OF CONSENT

The legal analysis cannot be separated from its security setting. The technologies behind ADR, namely proximity operations, capture mechanisms and the ability to change another object's orbit, cannot be cleanly distinguished from capabilities that could be used against working satellites. A servicer approaching a foreign object cannot easily show that it is cleaning and not interfering. The State whose object is approached can reasonably regard the manoeuvre as hostile.

The Charter applies in outer space. Article III of the Outer Space Treaty requires activities to be carried on in accordance with international law, including the Charter,³⁶ and the prohibition on the threat or use of force in article 2(4) of the Charter would be engaged if a removal operation were directed at a working military satellite or were reasonably perceived as an attack.³⁷ A rule permitting non-consensual removal on the removing State's own assessment would, in practice, supply a pretext for anti-satellite operations presented as environmental protection.

This is the strongest reason for treating consent as more than a formality. It lets the State of registry confirm the identity of the servicer, the nature of the operation and the status of the target. Any exception to the consent rule has to be designed so that it does not lose that function, which calls for objective criteria, advance notice and transparency about the mission plan.

VII. TOWARDS A WORKABLE FRAMEWORK

An amendment to article VIII is neither likely nor needed. The treaty regime can support a consent-based framework with narrow safeguards. Four elements are proposed.

The first is standing consent through licensing. Under article VI, non-governmental space activities need State authorisation and supervision, and States already attach end-of-life disposal conditions to licences. They could add a condition under which the licensee and the State give advance consent to removal of the object by a qualified servicer if disposal fails or the object becomes uncontrollable, within stated parameters such as time, orbit and method. Standing consent removes the need for negotiation in a crisis and gives operators a reason to design satellites with capture interfaces. It needs licensing practice, not a new treaty.

The second is a notification and consultation procedure, built on article IX, for objects not covered by standing consent. The proposing State would notify the State of registry, or the

³⁶ OST (n 6) art III.

³⁷ Charter (n 35) art 2(4).

launching State if there is no registry entry, share the target, method and timetable, and allow a reasonable period for reply. The State notified would answer in good faith and give reasons for any refusal. There is a parallel in the Nairobi Convention on the Removal of Wrecks, under which an affected State must inform the flag State and the registered owner and allow a reasonable period before it acts.³⁸ Silence should not count as consent, because consent to the exercise of control over a State's object is too weighty to be inferred from inaction. A refusal given without reasons should, however, count when compliance with article IX or a claim of necessity is later assessed.

The third is a narrowly defined emergency procedure, set out as an interpretative statement or guideline within the Committee on the Peaceful Uses of Outer Space, where sustainability guidelines have already been agreed. It would restate the conditions of necessity in terms suited to space: a confirmed and imminent collision with a crewed or critical asset, no feasible avoidance manoeuvre, use of the least intrusive means, immediate notice to the State of registry and the United Nations Office for Outer Space Affairs, and compensation. A statement of this kind would not bind, but it would give States, operators and insurers a common reference and help any State relying on necessity to show that it acted reasonably. Given the limited acceptance of the Moon Agreement, soft law is the realistic instrument.³⁹

The fourth is the allocation of liability and cost. The Liability Convention already places liability for damage caused by the servicer on its launching State, on a fault basis in space. Consent agreements should add a waiver by the State of registry of claims for loss of the removed object itself, in return for compensation for third-party damage and mandatory insurance for the servicer as a licensing condition. Cost remains a barrier. An international fund financed in proportion to each launching State's contribution to the debris population deserves study, although its design lies beyond this paper.

These measures would not eliminate disagreement, but they would turn a binary question into a process in which refusal has to be explained, silence has consequences and emergency action has limits.

³⁸ International Convention on the Removal of Wrecks (adopted 18 May 2007, entered into force 14 April 2015) IMO Doc LEG/CONF.16/19 art 9.

³⁹ Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (adopted 18 December 1979, entered into force 11 July 1984) 1363 UNTS 3.

VIII. CONCLUSION

ADR is moving from demonstration to practice, but the law has not kept pace. This paper has argued that, as the law stands, a State cannot lawfully remove a foreign space object without the consent of the State of registry. Article VIII of the Outer Space Treaty preserves jurisdiction, control and ownership regardless of function, and no instrument creates an exception for debris. The abandonment argument fails because the treaties preserve title. Necessity is confined to emergencies that ADR is unsuited to meet, and the law of countermeasures does not fit the facts.

Consent is not, however, an unlimited power to refuse. Article IX and the general rules on due diligence require States to consult, to take account of the interests of others and to act in good faith. A State that holds a hazardous object in a congested orbit and rejects every proposal to remove it, without reasons, is open to the criticism that it has not shown due regard for others. For legacy objects that criticism may fall short of an internationally wrongful act, but it carries weight in diplomatic practice.

The security dimension explains why consent matters. ADR capabilities cannot be told apart from counterspace capabilities by technology alone, and States will not accept a rule that lets others decide unilaterally that their satellites are debris. A framework with licence-level standing consent, a structured consultation procedure, a narrow emergency exception and clear liability rules would meet both the environmental need and the security concern. It can be developed through national licensing, guidelines and bilateral agreements, without waiting for a treaty that is unlikely to be concluded.

The first non-consensual removal, if it comes, will test every argument made here. The debris population keeps growing while the law remains unsettled, and the cost of delay falls on every State that depends on a usable orbit.