DIPLO SPACE · FIELD NOTE 04

Who Owns the Traffic Lane?

There is no air-traffic control for space — only warnings no one is obliged to obey, and a map held by one country's military

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Start here — the plain-English version. On a busy day, air-traffic controllers keep thousands of planes safely apart because one system sees them all and can tell a pilot to change course. Orbit has no such system. There are now more than 15,000 working satellites overhead — two of every three of them flown by a single company — sharing lanes with tens of thousands of dead objects that cannot move. When two are about to pass too close, someone issues a warning, but no one can issue an order: whether to swerve is up to each operator, and the most complete map of what's up there is held by one country's military. The United States is standing up a civil service to share those warnings more widely — and has been careful to call it coordination, not management, because managing traffic implies an authority to give orders that no one actually has. This note explains who watches the orbit, who can and cannot tell a satellite to move, and why 'air-traffic control for space' is a governance gap rather than a system — every figure traced to a public source, no policy position taken.

ABSTRACT More than 15,000 active satellites now share low Earth orbit with tens of thousands of untrackable-to-maneuver dead objects, and one operator flies roughly two-thirds of the active fleet. Yet there is no binding system for keeping them apart: operators receive conjunction warnings and decide for themselves whether to maneuver, and the authoritative catalog of objects is maintained by the U.S. military. This field note translates the emerging response for non-specialist officials. It describes the U.S. civil Traffic Coordination System for Space (TraCSS), which by 2026 screened operators managing a majority of active spacecraft and began onboarding international partners; it explains the deliberate distinction between coordination (sharing warnings) and management (directing traffic), a distinction that marks the exact boundary of current authority; and it shows why coordinating a shared, congested, single-operator-dominated orbit is a space-governance question no national regulator can settle alone. It advocates no remedy; it makes the coordination gap legible.

How to read this note. Section 1 uses the air-traffic-control analogy to frame the gap. Section 2 gives the numbers — how crowded, and how concentrated, the orbit now is. Section 3 explains who holds the map and who can act on it. Section 4 describes the U.S. civil coordination system and the coordination-versus-management line. Section 5 covers the regulatory churn of 2025–26; Section 6 explains why this is a space-governance question; Section 7 poses questions for policymakers. A glossary precedes the references. Every headline figure is sourced to a public primary document; figures marked illustrative depict structure, not measured values.

15,900	2 of 3	>11,125	0
working satellites in orbit	flown by one operator	satellites covered by TraCSS	who can order a satellite to move

1 The analogy that reveals the gap

Air travel is safe at scale because of a bargain most passengers never think about: every aircraft in controlled airspace is visible to one system, and a controller can direct a pilot to change heading or altitude. The pilot must comply. That combination — a shared picture plus the authority to issue binding instructions — is what turns a crowded sky into an orderly one.

Orbit has neither half of that bargain fully in place. The shared picture is partial: the most complete catalog of objects is held by one nation's military, with commercial and allied sensors filling gaps. And the authority is absent: when two satellites are predicted to pass dangerously close, the system that exists issues a warning, but no one can order either operator to move. Whether to spend fuel on an avoidance maneuver — and which of the two should do it — is negotiated, or simply decided unilaterally, operator by operator. 'Air-traffic control for space' is the metaphor everyone reaches for; the reality is closer to a very good weather forecast that no one is obliged to heed.

2 How crowded, and how concentrated

Two numbers define the problem. The first is scale: there are now roughly 15,900 functioning satellites in orbit, part of a tracked catalog of about 45,670 objects.[4,1] The second, and newer, is concentration. Of about 15,919 active satellites in one current catalog, some 10,701 — two of every three — belong to a single operator's constellation, with the next-largest commercial network adding several hundred more.[4] Roughly 313 new satellites were cataloged in a single recent 30-day window.[4] Orbit is not only more crowded than ever; it is more dominated by one actor than ever.

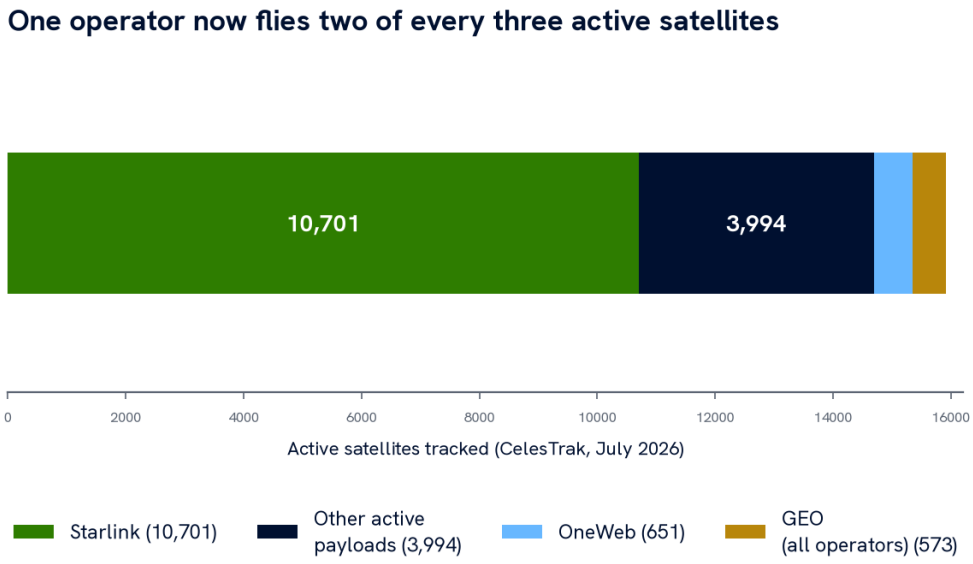

Figure 1. The active-satellite catalog by operator (CelesTrak, July 2026). A single mega-constellation now accounts for about two-thirds of all working satellites — a concentration with no precedent in the history of spaceflight, and a new fact for any coordination regime to absorb.

Concentration cuts two ways for coordination. On one hand, an operator flying thousands of satellites has every incentive to avoid collisions — a cascade would wreck its own network first — and a single operator can coordinate internally with ease. On the other, a regime in which one actor's fleet dominates the shared orbit raises questions of fairness, access, and dependence that no purely technical warning service can answer.

3 The coordination load is exploding

The reason a coordination system is suddenly urgent is that the work it must do is growing far faster than the number of satellites. Every new object multiplies the number of pairs that might collide, so the alert volume rises roughly with the square of the population. The result is a workload that would have been unimaginable a decade ago.

The scale is now industrial. Following a single Starlink satellite anomaly in December 2025, SpaceX reported performing more than 144,000 collision-avoidance maneuvers over the following six months — more, by its own account, than all other operators combined. A single 2021 debris-generating event produced more than 2.5 million individual collision alerts that operators had to triage. Screening at this volume cannot be done by hand; it is done by software, and the question of whose software, using whose catalog, is exactly the coordination problem.[11]

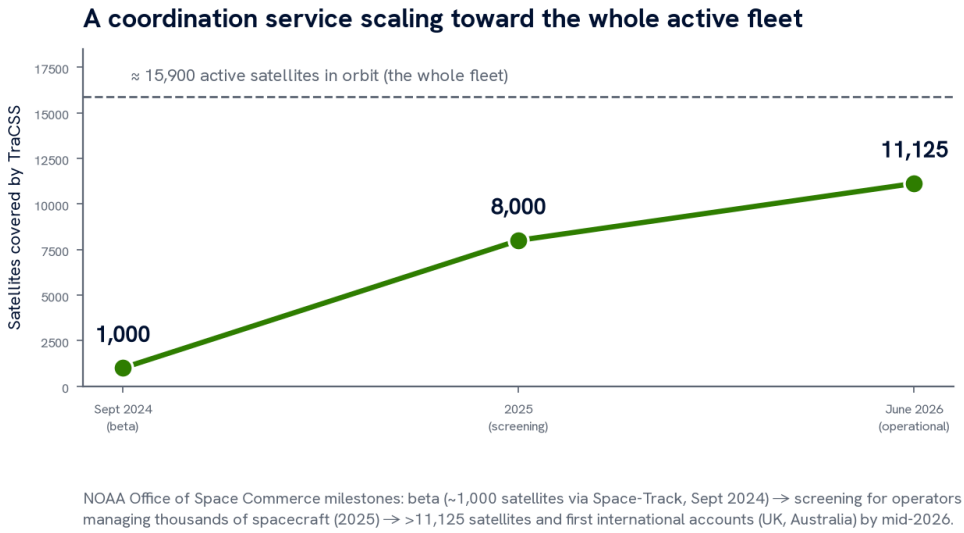

Figure 2. Growth of the U.S. civil TraCSS coordination service, from a roughly 1,000-satellite beta in late 2024 toward the full active fleet (NOAA Office of Space Commerce milestones). The dashed line is the total active population it is scaling to cover.

4 Who holds the map

For decades the authoritative catalog of orbiting objects has been maintained by the U.S. Department of War, which tracks them with a global sensor network and issues the conjunction warnings operators rely on. That arrangement is capable but awkward: a military organization was, by default, providing a safety-of-flight service to the entire world's commercial and civil operators, including potential adversaries. Recognizing the mismatch, U.S. policy in 2018 (Space Policy Directive-3) directed that civil and commercial space-traffic coordination be moved to a civil agency — the Department of Commerce — while the Department of War would continue to maintain the authoritative catalog.[2]

That split is the key to understanding the current system. The catalog — the ground truth of what is where — stays with defense. The civil job is to take that data, add commercial and international inputs, and turn it into warnings and coordination services that any operator can use. Commerce does the coordinating; defense still owns the map.

5 Coordination, not management

The civil system is the Traffic Coordination System for Space, or TraCSS, run by the Commerce Department's Office of Space Commerce. It moved quickly: from a beta covering about a thousand satellites in late 2024 to, by 2026, screening operators that manage a majority of the world's active spacecraft, and beginning to onboard international partners — the United Kingdom and Australia among the first national accounts.[1] By 2026 the service was reported to be coordinating for more than 11,125 satellites — a majority of the roughly 15,900 active spacecraft in orbit.[1]

The most important design choice is in the name. It is a coordination system, not a management system — and that word was chosen deliberately. As the Department's own oversight review noted, 'management' implies an authority to direct, license, or penalize traffic that the coordinating agency does not have and has not sought; adding it would require authorities from Congress that do not currently exist.[3] So TraCSS shares data and issues warnings; it does not, and cannot, order a satellite to move. That is not a flaw in the system — it is an honest statement of where the authority runs out. The service can make the orbit legible; it cannot make it obey.

6 When coordination fails: a real near-miss

The gap between coordination and management is not abstract. In September 2019 the European Space Agency had to fire the thrusters of its Aeolus science satellite to dodge a Starlink satellite the two spacecraft were on a converging path, and — crucially — there was no agreed procedure and no reliable channel for the two operators to coordinate who would move. ESA maneuvered because it decided it could not wait. No rule required either side to act, and no authority could have ordered either one to.[10]

That episode is the whole governance problem in miniature. Both satellites were working. Both operators were responsible. The collision was avoided by a unilateral decision and a good outcome — not by a system. As the number of operators grows and more of them fly thousands of satellites each, 'everyone decides for themselves and hopes the other side is watching' becomes a weaker and weaker guarantee. The near-miss prompted better informal contact between those two operators; it did not create a rule that would cover the next two.

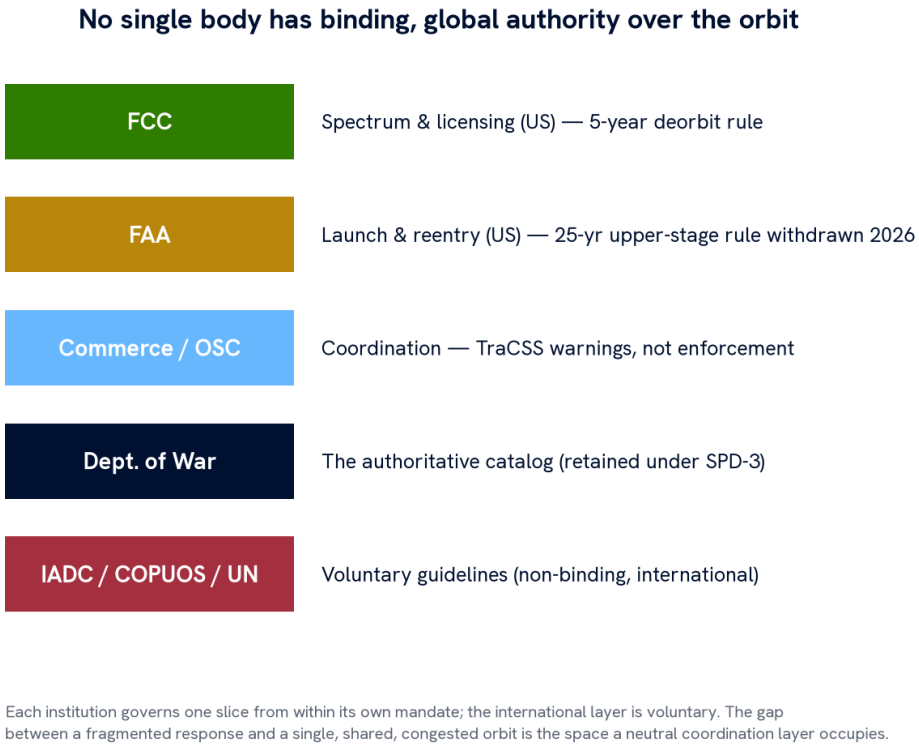

Figure 3. The institutions that touch orbital traffic in the U.S. alone, plus the international layer. Each governs one slice from within its own mandate; the international layer is voluntary. No single body holds binding, global authority over the orbit — which is the gap a neutral coordination layer is built to occupy.

7 A regime in flux

The rules around orbital traffic are being rewritten in real time, and the direction is contested. In December 2025 the Federal Communications Commission opened a proceeding to overhaul and modernize its satellite-licensing process for the mega-constellation era.[5] The same season, the Federal Aviation Administration withdrew a proposed rule that would have required commercial launch upper stages to be removed from orbit within 25 years — a step back from one debris-mitigation requirement even as others — such as the FCC's five-year deorbit rule for low-orbit satellites — remain in force and under debate.[6,8] And the current administration's Executive Order 14369 placed 'space superiority' and spectrum leadership on the agenda, signaling that orbital questions are being framed in strategic as well as safety terms.[7]

Underneath the U.S. activity sits the same thin international layer described in the companion note: a 1967 treaty that assigns liability without a traffic rule, and voluntary UN sustainability guidelines that recommend without binding.[9] The practical effect is that the world's busiest orbits are coordinated by a fast-maturing but authority-limited national service, licensed by national regulators pursuing their own reforms, and governed internationally only by consensus guidance. The system is improving; the authority to match the traffic is not yet there.

8 What binding coordination could look like

Aviation is the natural comparison, because it solved a version of this problem. Global air travel is governed by the International Civil Aviation Organization, a UN body whose standards member states adopt into their own binding law, and by regional air-traffic authorities with the power to assign routes and altitudes. A pilot who ignores an instruction faces real consequences. Nothing of the kind exists for orbit — there is no ICAO for space, no binding right-of-way rule, and no forum with the authority to assign orbital slots and enforce them.[12]

That is the vacancy, and it is not obvious who fills it. A binding regime could be built by treaty (slow, and the major spacefaring states are wary of ceding sovereignty), by a standards body that states adopt into national law (the aviation model), or by the practical gravity of a good-enough coordination service that becomes the de facto standard because everyone chooses to use it. TraCSS is a bet on the third path. Whether a neutral, widely-trusted coordination layer can hold the orbit together without any single state's enforcement power is the open question of the decade — and it is precisely the space a neutral, non-national actor is built to occupy.

9 Why this is a space-governance question

Coordination without authority works only as long as everyone's interests align. Today they largely do — no operator wants a collision. But the structural facts are moving: the orbit is more crowded and more concentrated each year; the authoritative map is a national-security asset shared by grace rather than obligation; and the one binding international instrument predates the problem. A safety-of-flight function for a global commons is being provided by a single nation's civil agency, on data from that nation's military, to operators who answer to many different licensing regimes. That is a remarkable achievement and a fragile arrangement at the same time — and telling those two things apart requires a view that spans the agencies, the operators, and the borders the traffic crosses.

> Four lenses on the traffic lane. The coordination gap reads across every instrument of national power. Diplomacy: a national coordination service is onboarding foreign governments one at a time, in the absence of any binding international traffic regime. Information: the whole system rests on a single authoritative catalog — who holds the map, and who they share it with, is the pivotal fact. Military: that catalog is a defense asset, and the same tracking that prevents collisions underpins counterspace awareness. Economics: one commercial operator now flies two-thirds of the active fleet, concentrating both capability and dependence in the shared orbit. A governance audience needs all four at once — the integrated view no single-instrument institution is built to hold.

10 Questions for policymakers

In the tradition of legislative-reference analysis, this note closes not with recommendations but with the questions a responsible official should be able to answer. They are offered to structure deliberation, not to steer it.

Q1. Does a satellite licensed in your jurisdiction receive conjunction warnings from a coordination service — and if so, whose, and is anyone obliged to act on them?

Q2. Space traffic coordination shares warnings but enforces nothing. Who, if anyone, has the authority to require a maneuver when two operators disagree about who should move?

Q3. One operator now flies roughly two-thirds of all active satellites. How does your framework handle a single actor whose fleet dominates the very orbit everyone must share?

Q4. The authoritative object catalog is held by one country's military. What is your government's access to it, and what is your fallback if that access changed?

Q5. National coordination services are onboarding international partners one at a time. Is your state a participant, a bystander, or building its own — and do those systems talk to each other?

Q6. Licensing, launch, coordination, and the catalog sit in four different agencies in the U.S. alone. In your jurisdiction, is there any single point where the whole traffic picture comes together?

Q7. In the one well-documented operator-to-operator near-miss, a collision was avoided by a unilateral maneuver, not by any agreed procedure. Should there be a binding right-of-way rule for orbit — who writes it, and who adjudicates when two working satellites are on a converging path?

Q8. Aviation is governed globally through the International Civil Aviation Organization, whose standards states adopt into binding national law. Is an 'ICAO for space' the right model — and if a treaty is too slow, can a voluntary coordination service become the de facto standard the way common technical standards often do?

11 Conclusion

There is no air-traffic control for space — only a shared forecast that is getting better and an authority to act on it that does not yet exist. A civil coordination service is maturing fast and reaching across borders; the map it depends on still belongs to a military; the orbit it watches is more crowded and more concentrated every year; and the one binding international rule names fault without setting traffic. The word the system chose for itself — coordination, not management — is the most honest description of the gap. What is missing is not effort or even data, both of which are growing, but an integrated, neutral view that spans the agencies, operators, and states a single orbit forces together. Diplo Space offers that view — and stops there, so the decisions remain with those who must make them.

Glossary of key terms

Space traffic coordination (STC). Sharing tracking data and collision warnings so operators can avoid each other — advisory, not enforced. The term the U.S. civil system deliberately uses.

Space traffic management (STM). The broader idea of actively managing orbital traffic — which implies authority to license, direct, or penalize. No body currently holds that authority globally.

TraCSS. The Traffic Coordination System for Space, the U.S. civil traffic-coordination service run by the Commerce Department's Office of Space Commerce.

SPD-3. Space Policy Directive-3 (2018), which directed the move of civil space-traffic responsibilities from the Department of Defense to the Department of Commerce.

Conjunction warning. An alert that two objects may pass dangerously close, letting an operator decide whether to maneuver.

Mega-constellation. A satellite network of hundreds to thousands of spacecraft operated as one system, such as Starlink or OneWeb.

Post-mission disposal. Removing a satellite from a useful orbit when its mission ends, to reduce collision risk — by deorbit or a disposal orbit.

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7. The White House, Executive Order 14369, Ensuring American Space Superiority, 90 Fed. Reg. 60537 (signed 18 December 2025).
8. Federal Communications Commission, Space Innovation; Mitigation of Orbital Debris in the New Space Age, Second Report and Order, FCC 22-74 (2022); 89 Fed. Reg. 65217 (2024).
9. UN Committee on the Peaceful Uses of Outer Space (COPUOS), Guidelines for the Long-Term Sustainability of Outer Space Activities (2019); Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space (Outer Space Treaty), 1967.
10. European Space Agency, reporting on the September 2019 collision-avoidance maneuver by the Aeolus satellite to avoid a Starlink spacecraft (absence of an agreed operator-to-operator coordination procedure).
11. SpaceX, Starlink safety reporting on autonomous collision-avoidance maneuvers (more than 144,000 maneuvers over a six-month period following a December 2025 satellite anomaly); commercial conjunction-alert volumes.
12. International Civil Aviation Organization (ICAO), Convention on International Civil Aviation (Chicago Convention) and Standards and Recommended Practices — the binding-through-national-adoption model referenced by analogy.

About Diplo Space. Diplo Space is a neutral, nonprofit translation layer for space governance: we turn contested, technical, space-dependent systems into material a non-specialist official can navigate — every claim traced to a public primary source, and no policy position taken. This note applies that method to space traffic coordination: who tracks the orbit, who can act on a collision warning, and why coordinating a shared and crowded orbit is a cross-border governance question. Its companion, The Crowded Orbit, sets out the debris problem that makes coordination urgent.