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LEGAL ARCHITECTURE VS. REALPOLITIK IN NATO MILITARY SPACE ACTIVITIES

Strategic Darwinism and Pragmatism in Future Space Warfare

INTRODUCTION

This chapter examines the widening gap between the formal legal architecture of the governance of space activities and the operational realities of NATO military space activity. It argues that NATO has become increasingly competent at coordinating access to space effects without becoming a sovereign space power in its own right. The Alliance has recognised space as an operational domain, established staff structures, and begun building multinational programmes, such as the Alliance Persistent Surveillance from Space initiative. Yet it still depends heavily on national capabilities, above all those of the United States, and increasingly on commercial providers for communications, intelligence and space domain awareness. That dependence is not merely a budgetary issue. It shapes command relationships, procurement speed, doctrine, escalation management and the political meaning of ‘alliance capability’ itself.¹

The chapter advances three central claims. First, NATO’s space posture is best understood as a coordination and integration model rather than a capability-ownership model. This has advantages in terms of access speed, political flexibility and burden-sharing, but it also leaves the Alliance exposed to asymmetries in ownership, decision-making authority and industrial influence. Second, the legal regime governing space activities remains

¹ NATO 2026a.

foundational but insufficient. The Outer Space Treaty and associated conventions continue to matter, especially on responsibility, liability, registration and the prohibition on weapons of mass destruction in orbit, but they do not provide an operational rulebook for a domain now characterised by dual-use systems, commercial–military fusion, cyber vulnerabilities, jamming, dazzling, rendezvous and proximity operations, and strategic competition below the threshold of declared hostilities. Third, the strategic environment increasingly rewards speed, resilience and integration over procedural purity. In practice, the actors that can move fastest from collection to decision, from warning to tasking, and from commercial access to military effect will dominate.²

The chapter, therefore, frames current developments as a form of strategic Darwinism in orbit. The phrase is not used to celebrate lawlessness, but to describe a competitive ecosystem in which survival favours actors that adapt faster than institutions can codify. NATO cannot solve this challenge simply by repeating that space is important. It must decide whether it will remain a broker of space effects generated elsewhere or evolve toward a more coherent model of allied military space power.³

BLUF AND KEY TAKEAWAYS

NATO is now far beyond the stage at which outer space could be treated as a specialist support function. Space-enabled services are indispensable to modern deterrence, crisis management and multi-domain operations. Communications, precision timing, missile warning, environmental monitoring, position, navigation and timing support, and, increasingly, the fusion of commercial and national imagery all shape the speed and quality of military decisions. Yet NATO's progress is uneven. The Alliance has political recognition, growing organisational maturity, and selected multinational initiatives, but it still lacks the sovereign depth that would

² NATO_{2026b}.

³ NATO ₂₀₂₅.

allow it to fight, sustain and adapt in the space domain without leaning heavily on the strongest Ally and the market.⁴

The most important takeaway is blunt: NATO is a space-dependent alliance, not a fully sovereign space actor. The distinction matters. A sovereign actor owns critical layers of the architecture, sets priorities without dependence on external providers, and can align political authority with operational control at speed. NATO does not yet meet that standard. The second takeaway is that commercial integration is no longer optional. The 2025 NATO Commercial Space Strategy reflected not fashion, but necessity. Commercial firms now provide capacity, revisit rates, niche analytics, radio-frequency sensing and resilient communications at a speed that no traditional alliance bureaucracy can replicate on its own. The third takeaway is that legal and policy language still lags operational reality. NATO can speak about resilience, responsible behaviour and peaceful purposes, but commanders must also think about contested access, interference, deception and denial. Finally, the war in Ukraine, together with U.S. and allied adaptation during 2024–2026, has shown that the decisive issue is not whether space matters, but whether the user can turn dispersed space-enabled data into a timely operational advantage.

For NATO, the policy consequence is clear. Either it accepts a permanent model of structured dependence on the U.S. and commercial systems and optimises around that fact, or it begins building a more sovereign allied layer of persistent surveillance, assured access, protected data pathways and faster procurement. The worst option is strategic ambiguity: talking like a warfighting actor while resourcing only a coordination secretariat.

NATO'S SPACE REALITY: ORGANISATION, ACCESS AND THE PROBLEM OF OWNERSHIP

NATO's contemporary space posture rests on an institutional paradox. On paper, the Alliance has made real progress. It declared space an operational

⁴ NATO 2026c.

domain in 2019. It established a NATO Space Centre at Allied Air Command in Ramstein. It works through the Combined Force Space Component Command⁵ and related structures to improve coordination, planning and awareness. It has also begun to support multinational efforts such as the Alliance Persistent Surveillance from Space programme, which is designed to pull data from a 'virtual constellation' of national and commercial satellites into NATO's intelligence ecosystem. These are meaningful steps. They reflect a serious recognition that the Alliance cannot conduct modern deterrence and defence without integrating space effects into planning and execution.⁶

But the gap between recognition and ownership remains profound. NATO does not field a NATO-owned sovereign Intelligence, Surveillance and Reconnaissance (hereinafter: ISR) constellation comparable to its historical collective ownership model in airborne early warning. It does not control a fully allied military satellite communications architecture independent of national decision chains. It does not own a robust space domain awareness layer capable of supporting alliance decision-making without external dependence. In practical terms, this means NATO's 'space capability' is often an aggregation of access arrangements rather than an inventory of owned systems. Such aggregation can be efficient during peacetime. It is more uncertain in crisis, when commercial availability, national release authorities, and competing operational priorities may not align neatly with alliance timelines.

This matters because capability is not just about hardware. It is about who decides, who prioritises, who can retask, who assumes risk and who absorbs loss. In a high-tempo contingency, the actor that owns the sensors, transport layers, tasking authorities, and analytic pipelines enjoys an advantage over the actor that merely requests access. NATO can mitigate this through standing agreements, pre-negotiated release procedures and persistent multinational integration, but not eliminate it. Indeed, one of the recurring

⁵ Starting from 2026 May, the Combined Force Space Component Command became Space Theatre Component.

⁶ NATO 2026c.

features of alliance military space activity is the mismatch between collective political rhetoric and nationally retained control over decisive assets.

The Alliance Persistence Surveillance from Space (hereinafter: APSS) initiative is strategically important precisely because it acknowledges this reality and tries to manage it. Rather than waiting for an idealised NATO-owned constellation that is politically and financially unlikely in the near term, APSS seeks to network national and commercial systems into a common surveillance architecture. That is intelligent pragmatism. Yet it is also proof of structural dependence. A ‘virtual constellation’ is, by design, a substitute for sovereign ownership. It may be the correct substitute for the current decade, but it remains a substitute.⁷

The same applies to the growing emphasis on commercial space. NATO’s 2025 Commercial Space Strategy explicitly aims to create more coherent and effective relationships with allied industry and to ensure commercial services are available in peace, crisis and conflict. This is a necessary adaptation to the reality that the commercial sector now innovates faster than most ministries and can deliver operationally relevant data at scale. But the more NATO leans on the market, the more it must confront uncomfortable questions. What happens when the market’s risk tolerance diverges from alliance operational requirements? What happens if a key provider becomes the target of political coercion, cyber disruption, or kinetic interference? What happens if legal obligations to shareholders collide with military needs?

For these reasons, NATO’s space reality should be described with precision. It is not weakness, but it is not sovereignty. It is a hybrid model built on national power, commercial dynamism and alliance coordination. Its strength lies in flexibility and breadth of access. Its weakness lies in uneven control. Any serious chapter on NATO military space activity must begin there.

⁷ NATO 2025.

THE UNITED STATES AS THE DE FACTO BACKBONE
OF ALLIANCE MILITARY SPACE POWER

Any honest assessment of NATO space activity must acknowledge the central role of the United States. The United States is not simply the largest contributor. It is the backbone of the alliance's military space power in terms of doctrine, enabling infrastructure, protected communications, national technical means, missile warning, launch industrial base, and the institutional ability to connect space effects to terrestrial operations at scale. This reality is sometimes softened in diplomatic language because alliance politics prefers the idiom of cohesion to the vocabulary of hierarchy. Yet hierarchy exists, and in the space domain, it is impossible to ignore.

The creation and maturation of the U.S. Space Force and the operational role of the U.S. Space Command have accelerated a model of military space activity that NATO inevitably studies, borrows from, and in many ways depends upon. U.S. official statements in 2025 repeatedly stressed that space is a warfighting domain and that resilient command and control, combined with data fusion and rapid integration of commercial capabilities, are essential for future competition and conflict. That framing matters. It moves the debate beyond passive 'use of space' and toward the active organisation of space power for deterrence and warfighting.⁸

For NATO, this produces both reassurance and dependency. Reassurance, because the Alliance benefits from a leading Ally with unmatched scale, mature command structures, and a demonstrated ability to integrate military and commercial systems. Dependency, because NATO's own institutional layers begin to mirror or administratively process U.S.-generated logic without owning the underlying instruments. This is the risk of what might be called derivative warfighting: adopting the language of resilience, contested logistics and integrated C2 while depending on another actor to actually provide the sensors, data transport and operational depth.

There is also a subtler consequence. As U.S. military space institutions move faster, NATO's consensus machinery can appear increasingly slow by

⁸ United States Space Force 2025a.

comparison. The Alliance can endorse strategies, host exercises and establish coordination nodes; however, speed in the space domain is measured in terms of tasking cycles, warning latency, data fusion and procurement adaptation. If U.S. institutions evolve at ‘rocket speed’ while NATO committees evolve at diplomatic speed, the gap between the backbone and the alliance wrapper will widen. That gap is manageable when interests align, and crises remain limited. It becomes more dangerous when priorities diverge geographically or politically.

This is not an argument against U.S. leadership. On the contrary, NATO presently needs it. But it is an argument for analytical clarity. If NATO leaders want a more autonomous European and allied contribution to military space effect generation, they must invest in the layers that currently remain overwhelmingly American: persistent surveillance, scalable commercial contracting mechanisms, robust mission integration, space domain awareness, and protected pathways from space collection to operational users. Without that, ‘allied’ space power will continue to mean access to U.S.-enabled effects under a cooperative political umbrella.

The U.S. role also shapes industrial expectations. American models of commercial integration, bulk contracting, and rapid adoption increasingly define what ‘modern’ space support looks like. NATO’s own Commercial Space Strategy was therefore not emerging in isolation. It was emerging in an ecosystem already transformed by U.S. experience with commercial imagery, proliferated architecture, responsive launch discourse, and cross-domain command integration. NATO can adapt this model, but it cannot wish away the asymmetry at its core.⁹

COMMERCIALISATION, APSS AND THE RISE OF THE HYBRID SPACE ARCHITECTURE

The most important structural shift in recent military space practice is the collapse of the old conceptual divide between ‘government systems’ and

⁹ United States Space Force 2025b.

‘commercial systems’. That divide still exists in procurement categories and security classifications, but operationally, it is fading. Commercial constellations provide imagery, radio-frequency data, analytics, and communications that are directly relevant to military users. Government systems still provide exquisite capabilities, sovereign control and mission assurance, but they increasingly operate within a broader ecosystem in which value comes from hybridisation rather than purity.

NATO’s recent policy evolution reflects this. The Commercial Space Strategy agreed in February 2025 recognises that the Alliance must create enduring relationships with the commercial sector, reduce barriers to access, and ensure continuity of commercial services in peacetime, crisis and conflict. This was not merely a pro-industry gesture. It was an admission that commercial capacity has become integral to deterrence and defence.¹⁰

Alliance Persistence Surveillance from Space (APSS) is the clearest expression of this logic. By building a multinational architecture rather than a single NATO-owned fleet, APSS attempts to exploit both national and commercial strengths. The concept is attractive because it reflects the actual geometry of power inside the Alliance: distributed ownership, uneven budgets, and a desire to avoid the political friction of creating a fully collective military constellation. It also has strong operational logic. A federated architecture can be more resilient than a small centralised fleet if it is well integrated and if release mechanisms are pre-arranged.

Yet hybrid architectures are not inherently stable. They depend on interoperability standards, trusted interfaces, contractual continuity, cyber resilience, and a shared understanding of priority use. They also depend on the willingness of commercial actors to remain in the fight. During a crisis, the same features that make commercial firms attractive – agility, market responsiveness, global customer portfolios – can also become vulnerabilities. Firms may face legal ambiguity, insurance constraints, investor pressure, or direct hostile action. In other words, NATO’s embrace of commercial space increases capability while importing new categories of fragility.

¹⁰ NATO ACT 2025.

This is where the phrase ‘commercial–military fusion’ requires careful use. In the Chinese context, it is often understood as a state-directed strategy. In the NATO context, the equivalent process is looser, more contractual, and more politically decentralised. But the practical effect is similar: military effectiveness increasingly depends on systems that are not exclusively military. This creates benefits in scale and innovation but complications in escalation management. A commercial provider delivering data to Alliance users may, in adversary eyes, become a legitimate target of cyber or electronic attack. The line between civilian and military infrastructure, therefore, becomes operationally thinner even if legally it remains debated.

National Reconnaissance Office¹¹ (hereinafter: NRO) developments during 2025 and early 2026 reinforce this trend from the U.S. side. Official statements highlighted efforts to integrate government and commercial detections through data fusion, automation, AI-enabled object curation, and broader commercial acquisition approaches, including multi-phenomenology remote sensing. These developments are directly relevant to NATO because they reveal the direction of travel for the most capable Ally: not replacing national technical means with commercial services but fusing them into layered intelligence architectures.¹²

For NATO, the lesson is not simply ‘buy more commercial data’. It is ‘design for hybrid resilience’. That means redundancy in providers, common standards, legal frameworks for assured service, integration of commercial outputs into military TCPED chains, and exercises that treat loss of commercial services as a real wartime problem rather than a procurement inconvenience. Hybrid architectures are now the operational baseline. The question is whether NATO will master them on its own terms or merely depend on the fact that others already have.¹³

¹¹ The National Reconnaissance Office is a highly classified U.S. government organisation responsible amongst other missions for Space Based ISR.

¹² National Reconnaissance Office 2025a.

¹³ NCIA 2025.

UKRAINE AND THE OPERATIONAL LESSONS OF SPACE-ENABLED WAR

The war in Ukraine forced a strategic correction in how many Western institutions understand the military value of outer space. Before 2022, it was still possible in some policy circles to speak about space mainly in terms of strategic enablers and high-level national assets. Since then, the reality has become much more concrete. Commercial satellite communications, persistent imagery, rapid geolocation, open-source fusion, and the blending of civil and military data pathways have shown that space is not a distant backdrop. It is woven directly into tactical endurance, operational tempo and strategic narrative competition.

One of the clearest lessons is the centrality of resilient communications. The war showed how space-enabled communications can preserve command continuity under conditions of infrastructure damage and electronic contestation. This did not make terrestrial networks irrelevant, but it demonstrated that resilient distributed access can offset attacks on traditional communications architecture. For NATO planners, the implication is obvious: communications resilience can no longer be treated as a separate support problem. It is a warfighting design issue.¹⁴

A second lesson concerns the speed of ISR exploitation. Commercial imagery providers and associated analytics ecosystems enabled high-frequency observation, rapid public release and operationally meaningful awareness. This mattered not only for targeting and battle damage assessment, but for strategic messaging and coalition cohesion. The ability to document movement, damage and pattern change at speed altered the informational battlespace. In this sense, space-based ISR in the Ukraine war was not just an intelligence function. It was also a political and cognitive instrument.

Third, the conflict highlighted the importance of data fusion. No single sensor class was enough. Value emerged from combining imagery, signals, open-source reporting, environmental data, geolocation and operational context. The decisive actor was not the one with the single best image but

¹⁴ DAVIS 2025.

the one able to convert multi-source inputs into timely decisions. This matters for NATO because alliance structures often struggle with data sharing, releasability, and classification barriers even when raw access exists. A virtual constellation without fast fusion is not an operational advantage; it is just a large backlog.¹⁵

Fourth, the war normalised the idea that space-enabled systems will be contested through non-kinetic means long before any overt anti-satellite strike. Cyber intrusion, jamming, spoofing, and interference proved strategically relevant because they impose friction without necessarily triggering immediate escalation to the level associated with kinetic attacks on orbiting objects. This has two implications. It makes the legal debate harder, because interference may remain ambiguous. And it makes operational resilience more urgent, because the most likely losses in early phases may be degradations rather than spectacular destruction.

Fifth, the conflict illustrated the value of proliferated architectures. A larger, more distributed set of nodes is generally harder to suppress than a small number of exquisite assets. This is one reason Proliferated Low Earth Orbit constellation (hereinafter: pLEO) and Tactical Surveillance, Reconnaissance and Tracking (hereinafter: TacSRT) concepts have gained such traction. Timeliness is no longer a luxury add-on; it is the core requirement. Tactical users increasingly expect strategic sources to feed tactical timelines. That expectation changes the meaning of military utility in space systems.¹⁶

For NATO, the deeper lesson is uncomfortable. The alliance benefited intellectually from the operational proof offered by Ukraine, but it did not own the ecosystem that made much of that proof possible. The models that emerged most clearly were hybrid, commercially enriched and often American-backed. NATO therefore faces a choice: codify these lessons into alliance-wide capability development, procurement reform and doctrine, or remain dependent on ad hoc adaptation every time a crisis forces the issue.¹⁷

¹⁵ NATO 2026c.

¹⁶ National Reconnaissance Office 2025b.

¹⁷ NATO 2026b.

LEGAL ARCHITECTURE: ENDURING
FOUNDATIONS, OPERATIONAL INSUFFICIENCY

International space law still matters. Any serious military analysis that dismisses it entirely is intellectually lazy. The Outer Space Treaty remains foundational in at least four respects relevant to NATO. First, it establishes that outer space is not subject to national appropriation. Second, it prohibits the placement in orbit of nuclear weapons and other weapons of mass destruction. Third, it imposes international responsibility on states for their national activities in outer space, including those carried out by non-governmental entities, subject to authorisation and continuous supervision. Fourth, it establishes a broad due regard framework under which states should avoid harmful interference and consult where appropriate.¹⁸ The Liability Convention and Registration Convention then add important layers regarding damage and the identification of space objects.

These principles still frame responsible behaviour and are not obsolete. The problem is that they are operationally insufficient for the strategic conditions now emerging. The treaty regime was built for an era in which states were the dominant actors, commercial activity was limited, and the most feared space threat was nuclear escalation and its impact on strategic stability. Today's military space competition includes dual-use mega constellations, radio-frequency sensing by private firms, cyber operations against ground segments, rendezvous and proximity operations, on-orbit servicing technologies with counterspace implications, and increasingly the use of commercial and civil assets as part of military kill webs. The law provides broad principles, but not detailed operational rules for this environment.

Article IV of the Outer Space Treaty is the most cited example. It is important, but narrow. It addresses WMD in orbit and military activity on celestial bodies.¹⁹ It does not prohibit many forms of counterspace activity that would be decisive in real conflict, such as cyber intrusion into control systems, jamming, dazzling, co-orbital interference below certain thresholds, or the exploitation of dual-use servicing systems for coercive

¹⁸ Outer Space Treaty, Articles II, IV, VI, IX.

¹⁹ Outer Space Treaty, Article IV.

proximity operations. The Outer Space Treaty does not cover suborbital weapons, such as ASAT weapons. As a result, states and alliances can remain formally committed to the treaty while preparing for or engaging in a wide range of competitive behaviours that materially affect military outcomes.

Article VI is equally important to the NATO–commercial discussion. Because states bear international responsibility for national activities in outer space, the increasing military reliance on commercial providers does not remove the state from the legal equation. On the contrary, it intensifies the problem of state supervision. If a commercial provider supplies data or services integral to military operations, states cannot credibly pretend the activity sits outside strategic accountability. The law recognises responsibility, but enforcement remains weak and interpretation contested.

Article IX, with its due regard language and consultation mechanism, is admirable but limited in a crisis. Consultation is useful when the parties value deconfliction and time exists for diplomacy. It is much less useful as an operational brake during fast-moving conflict, especially where attribution is disputed, or interference is reversible and deniable. The law here reveals its core character: it can shape expectations and support post hoc political judgment, but it rarely constrains urgent military adaptation in real time.

This is why current debates in the United Nations (Conference on Disarmament, PAROS²⁰) on proposals aiming the adoption of a binding treaty (Russia and China) vs. non-binding instruments (the U.K., USA) remain important but does not promise any solution in the near future. The 2024 Group of Governmental Experts work showed that discussion continues and that consensus on at least some practical measures is still possible. But discussion is not deterrence, and process is not enforcement. NATO, therefore, operates in a space legal order that remains normatively relevant yet strategically permissive. That is the essence of the gap between legal architecture and realpolitik.²¹

²⁰ Prevention of an Arms Race in Outer Space.

²¹ UN GGE on PAROS 2024.

WHY LAW ALONE WILL NOT SAVE NATO:
DUAL USE, AMBIGUITY AND ESCALATION

The most serious legal-strategic challenge for NATO is not the absence of law, but the dominance of ambiguity. Space systems are often dual-use by design. A satellite that supports agriculture, disaster response and climate monitoring may also provide militarily relevant imagery or communications. A servicing vehicle may support debris mitigation or inspection, but also present latent counterspace potential. A commercial analytics firm may brief civilian customers while also feeding military users. This ambiguity is not a loophole at the margins. It is now the structural condition of the domain.

For NATO, dual-use ambiguity creates at least three problems. First, it complicates deterrence messaging. It is harder to signal which attacks or interferences would trigger a political response when the affected system serves both civilian and military functions. Second, it complicates escalation control. If an adversary interferes with a commercial platform supporting military operations, the legal status of the act may be debated even while its operational significance is obvious. Third, it complicates procurement and doctrine. Alliances like NATO often prefer neat categories – civilian, military, national, commercial – but the systems that matter increasingly refuse those categories.

This is one reason why the rhetoric of ‘peaceful uses’ can become analytically misleading if handled carelessly. In space law, ‘peaceful’ has never simply meant ‘non-military’. It has generally been interpreted as ‘non-aggressive’, which leaves broad room for military support activities. But in public debate, the term often creates the impression that space can be kept separate from terrestrial power politics through legal reaffirmation alone. That is no longer credible. Space is already embedded in terrestrial military competition. The question is whether institutions can manage that embedding without strategic self-deception.²²

NATO should therefore resist two opposite mistakes. The first is legal romanticism: acting as though broader principles can substitute for

²² EVROUX 2025.

preparation in contested domains. The second is legal nihilism: treating norms as irrelevant because enforcement is weak. Both errors are dangerous. Romanticism underprepares. Nihilism invites reckless escalation and undermines alliance legitimacy. The better position is hard realism anchored in law: recognise the continued value of the legal framework while designing doctrine, procurement and resilience measures for a domain where adversaries will aggressively exploit ambiguity.

This has direct implications for alliance planning. Commercial service continuity clauses, crisis release authorities, thresholds for interference reporting, protocols for attribution support, and common understandings of what constitutes unacceptable disruption all become more important than abstract rhetorical unity. The future of NATO space policy will be shaped less by whether it can recite the legal principles and more by whether it can operationalise them under stress.

STRATEGIC DARWINISM: THE REAL LOGIC OF COMPETITION IN ORBIT

The phrase ‘strategic Darwinism’ is intentionally provocative, but analytically useful. It captures the fact that the space domain now rewards adaptation more than doctrinal elegance. The winners in this environment are not necessarily those with the most impressive declaratory policy, but those that can absorb shocks, integrate commercial innovation, retask sensors quickly, maintain mission assurance under interference, and move information into decisions faster than competitors. Survival and advantage go to the actor best fitted to a turbulent environment.²³

In this sense, today’s military space ecosystem resembles a strategic gold rush. States and firms are racing to secure orbital presence, data advantage, launch resilience, and enduring contractual positions inside government security architectures. The incentives are powerful: first-mover advantage in proliferated architectures, data accumulation effects, and institutional

²³ United States Space Command 2025.

lock-in through services that become too operationally useful to replace. NATO, as an alliance built on consultation, interoperability and political consensus, sits uneasily inside this ecosystem. It needs the outputs of the gold rush but is structurally slower at shaping its direction.²⁴

There is also an intra-alliance dimension to strategic Darwinism. The United States tends to emphasise warfighting integration, command-and-control resilience and rapid commercial adaptation. Many European Allies place greater emphasis on regulation, industrial policy, sovereignty debates and risk management. None of these instincts is irrational. But the mix can produce paralysis when the strategic environment demands acceleration. One camp worries about dependence on the U.S. and commercial actors; another worries that overregulation or excessive deliberation will leave NATO dangerously slow. Both concerns are valid, which is precisely why the Alliance often defaults to lowest-common-denominator language.

Industry has its own logic. Commercial space firms need predictable contracts, manageable liability, stable access to classified interfaces where needed, and rules that do not trap them between national export controls and alliance requirements. Their innovation cycles are faster than military procurement cycles, and they know it. NATO's Commercial Space Strategy implicitly acknowledges this by promising to cut red tape and make engagement easier. But red tape is not just an inconvenience. It is often the bureaucratic expression of unresolved political questions: who is allowed in, under what conditions, carrying what risks, for whose missions?

If NATO fails to answer those questions, strategic Darwinism will continue to surround it rather than flow through it. The Alliance will then behave like a consumer of adaptation rather than a driver of it. That may suffice for some contingencies, but not for long-term deterrence in a domain where perception of speed matters. Competitors watch not only what hardware an alliance possesses, but how quickly it can reorganise that hardware and its supporting contracts under pressure.

The provocative conclusion is that NATO may need to become institutionally less comfortable in order to remain strategically relevant. That does

²⁴ NATO ACT 2025.

not mean abandoning the law or the alliance process. It means accepting that the orbit is not a seminar room. In a contested domain, prudence must include speed, and legitimacy must include the ability to sustain access under attack.²⁵

CAPABILITY GAPS, EUROPEAN LIMITS AND THE ILLUSION OF ALLIANCE SUFFICIENCY

NATO's capability gaps in space are often described in technical language, but their root causes are political, industrial and organisational. The first gap is sovereign persistence. NATO still lacks an owned, alliance-controlled layer of persistent space-based ISR with sufficient depth to reduce reliance on nationally retained assets. APSS improves access, but it does not erase this structural gap. The second gap is decision speed. Even when data exists, alliance mechanisms for release, fusion and operational integration can be slower than the timelines demanded by modern warfighting. The third gap is the assurance of commercial continuity. NATO is becoming more dependent on commercial services without yet possessing a fully mature alliance framework for guaranteed wartime access, substitution and resilience under pressure.²⁶

A fourth gap lies in the ground segment and the human layer. Space capability is too often discussed as satellites alone. In reality, advantage depends on ground architecture, cybersecurity, data standards, mission applications, analysts, legal advisers, planners and trained end users able to exploit products fast. A satellite without an integrated user ecosystem is a prestige object, not a warfighting tool. This point matters especially for smaller Allies seeking sovereign or quasi-sovereign capabilities. A national satellite programme without parallel investment in software, doctrine, training, and dissemination pathways risks producing symbolic sovereignty rather than operational effect.

²⁵ NATO 2026b.

²⁶ NATO 2026d.

European debates about ‘strategic autonomy’ intersect awkwardly with this reality. There is a legitimate political desire in Europe to reduce dependence and strengthen sovereign capacity. Yet budgets, duplication concerns, industrial fragmentation, and varying threat perceptions make rapid consolidation difficult. The result is a recurring pattern: Europe acknowledges the problem, creates selective programmes, and still depends on U.S. backbone functions in the moments that matter most. This does not mean European investment is futile. It means that rhetoric must be disciplined by operational honesty.²⁷

NATO also faces a doctrine gap. It has become easier to say that space is a domain than to explain how alliance commanders should think about the offensive and defensive implications within it. Public NATO language tends to remain cautious, which is politically understandable. Yet a doctrine built entirely around support functions can become detached from the strategic behaviour of adversaries who do not share that caution. Even if NATO avoids provocative declaratory language, it still needs internal concepts for operating when access is degraded, for coordinating responses to interference, and for integrating space denial scenarios into joint planning.

The largest illusion is alliance sufficiency by aggregation. It is tempting to believe that because allies collectively own many relevant assets, NATO as an alliance is therefore sufficiently equipped. This confuses inventory with availability. What matters in a crisis is not the total number of allied sensors in existence, but what can be released, fused, tasked and sustained for a NATO mission at the required speed. Aggregation without assured usability is not sufficient. It is potential energy that may or may not convert into operational work.²⁸

²⁷ United States Space Command 2025b.

²⁸ NATO 2026c.

THE NEXT DECADE: PLEO, TACSRT, AI AND
THE MILITARISATION OF TIMELINESS

The future of alliance military space activity will be shaped less by abstract debates about 'space importance' and more by four concrete trends: proliferated low Earth orbit architectures, tactically responsive surveillance and tracking, artificial intelligence-enabled processing, and the further erosion of the boundary between national and commercial layers.

The first trend is pLEO. Larger proliferated constellations promise resilience through numbers, more frequent revisit, and a lower penalty for the loss of individual nodes. This does not make them invulnerable. It changes the calculus of suppression. Instead of a few exquisite systems whose loss would be dramatic, militaries will increasingly rely on distributed architectures that can degrade gracefully. For NATO, this trend is attractive because it aligns with alliance logic: distributed burden-sharing and layered access. But it will only generate value if data architectures, processing standards, and release mechanisms are equally distributed and mature.²⁹

The second trend is TacSRT. Tactical users increasingly demand strategic collection with tactical latency. That demand is reshaping what counts as relevant space support. In previous eras, strategic intelligence timelines could remain partly detached from frontline decision cycles. That is no longer sufficient. A surveillance system that is technically impressive but too slow to support tactical manoeuvre will be politically harder to justify. This is why timeliness is becoming militarised. Speed itself is now a key operational parameter, not an optional performance enhancer.

The third trend is AI-enabled processing and fusion. Official U.S. Space Force and NRO materials from 2025 stressed data-driven and AI-enabled force development, automated curation, and the integration of government, commercial and tactical detections. The significance for NATO is not fashionable technology language. It is workforce mathematics. The amount of available data is rising faster than the number of highly trained analysts. AI tools will therefore become increasingly necessary for triage, anomaly

²⁹ NATO 2026d.

detection, pattern recognition and prioritisation. The challenge will be to integrate them without creating black box dependence or degrading trust in military analysis.³⁰

The fourth trend is stealth, manoeuvre, and on-orbit competition below the level of open hostilities. As more satellites acquire manoeuvrability and proximity operations become more common, ambiguity will increase. Inspection, servicing, escort, interference, and coercion may blur into one another. NATO will need better space domain awareness, not just to know what exists in orbit, but to interpret behaviour and intent in time to matter. This again reinforces the value of hybrid architectures and commercial augmentation, as well as the need for trusted analytic frameworks.

Taken together, these trends suggest that the next decade will reward those who can connect collection to decision at machine-assisted speed while preserving political control and legal accountability. NATO's challenge is not to copy the U.S. model mechanically, nor to retreat into legal nostalgia, but to build an alliance-appropriate version of resilient, hybrid, data-intensive military space power.³¹

RECOMMENDATIONS: FROM COORDINATION ALLIANCE TO CREDIBLE SPACE ACTOR

A serious recommendations section must begin with realism. NATO is unlikely in the near term to become a classic sovereign space power with large alliance-owned constellations across every mission area. The political and budgetary barriers are too high. But that does not mean the Alliance must accept drift. It can become a more credible military space actor through targeted reforms that reduce vulnerability and improve decision speed.

First, NATO should treat APSS not as a one-off achievement but as the foundation of a broader alliance surveillance architecture. This means expanding participating states where feasible, hardening the data ecosystem around Aquila, improving operational interfaces with JISR processes,

³⁰ United States Space Force 2025a.

³¹ National Reconnaissance Office 2026.

and exercising degraded-mode operations regularly. APSS should be the beginning of alliance space persistence, not a symbolic endpoint.³²

Second, NATO should institutionalise commercial integration in peacetime so that wartime access is not improvised. That requires framework contracts, substitution mechanisms, common security and cyber requirements, and procedures for priority support in a crisis. The Commercial Space Strategy is useful only if translated into acquisition pathways and exercised relationships. A strategy without contracts is a brochure.

Third, the Alliance should reduce release latency. Data that arrives too late is strategically equivalent to data never collected. NATO, therefore, needs standing rules, common formats, and mission-tailored releasability solutions that move the problem upstream instead of forcing ad hoc negotiations during a crisis. This is less glamorous than new satellites, but often more decisive.

Fourth, Allies seeking sovereign national space capabilities should be encouraged to design them for alliance interoperability from the beginning. Small and medium powers can contribute meaningfully if their systems feed common architectures, use compatible standards, and are matched by investment in exploitation and training. Satellites alone do not create alliance value; integrated users do.

Fifth, NATO should develop a more explicit internal doctrine for operating under space degradation. Public messaging can remain measured, but internal planning must assume interference, denial, deception, and rapid service substitution as normal conditions in major conflict. The goal is not to militarise rhetoric for its own sake. It is to stop assuming benign access in a domain no longer benign.

Sixth, the Alliance should deepen links between legal advisers, operators and commercial providers. The pace of operational adaptation in the space domain means legal questions cannot be postponed to ex post review. They must inform procurement, design, contingency planning and escalation management in advance. Hard realism anchored in law requires institutional intimacy between those communities.

³² NATO 2026d.

Finally, NATO should decide what kind of space actor it wants to be by 2030. If the answer is ‘coordinator’, then resources and expectations should be aligned honestly with that role. If the answer is ‘credible military space actor’, then the Alliance must accept that credibility in space requires not just policy statements but persistent architectures, faster acquisition, hybrid resilience and a doctrine built for contested access.³³

CONCLUSION

NATO’s military space journey has reached the point at which polite ambiguity is no longer enough. The Alliance has recognised the domain, established structures, launched important multinational initiatives, and moved toward deeper commercial integration. These are real achievements. But they do not change the underlying strategic fact that NATO still depends on national and commercial actors for many of the capabilities that would decide operational success in a crisis. That dependency is not shameful; it is simply dangerous if misdescribed.

The core argument of this chapter is therefore straightforward. NATO’s challenge is not whether to choose law or power, legality or utility, norms or warfighting. It must do all of them at once. The legal architecture remains indispensable as a source of legitimacy, state responsibility and strategic restraint. But legal architecture alone cannot compensate for slow procurement, fragmented ownership, delayed release, fragile commercial dependencies, or inadequate doctrine for contested access. Realpolitik, in this context, does not mean abandoning principles. It means acknowledging that the space domain is already competitive, already hybrid, and already central to terrestrial military outcomes.³⁴

If NATO does nothing more than celebrate strategy releases and organisational milestones, it will become an alliance that understands space conceptually while depending on others to make space matter operationally. If, however, it builds on APSS, hardens commercial integration, reduces

³³ NATO 2025.

³⁴ NATO 2026b.

release latency, invests in interoperable allied contributions, and prepares seriously for degraded access, it can become something more consequential: not a replica of a nation state space force, but a credible alliance actor capable of converting distributed strengths into military effect.³⁵

The decisive question is therefore not whether NATO “has a space policy”. It does. The decisive question is whether it can turn policy into resilient, timely, and politically usable space power before competitors widen the gap further. In orbit, as in strategy, adaptation favours the prepared.³⁶

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³⁵ NATO 2025.

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