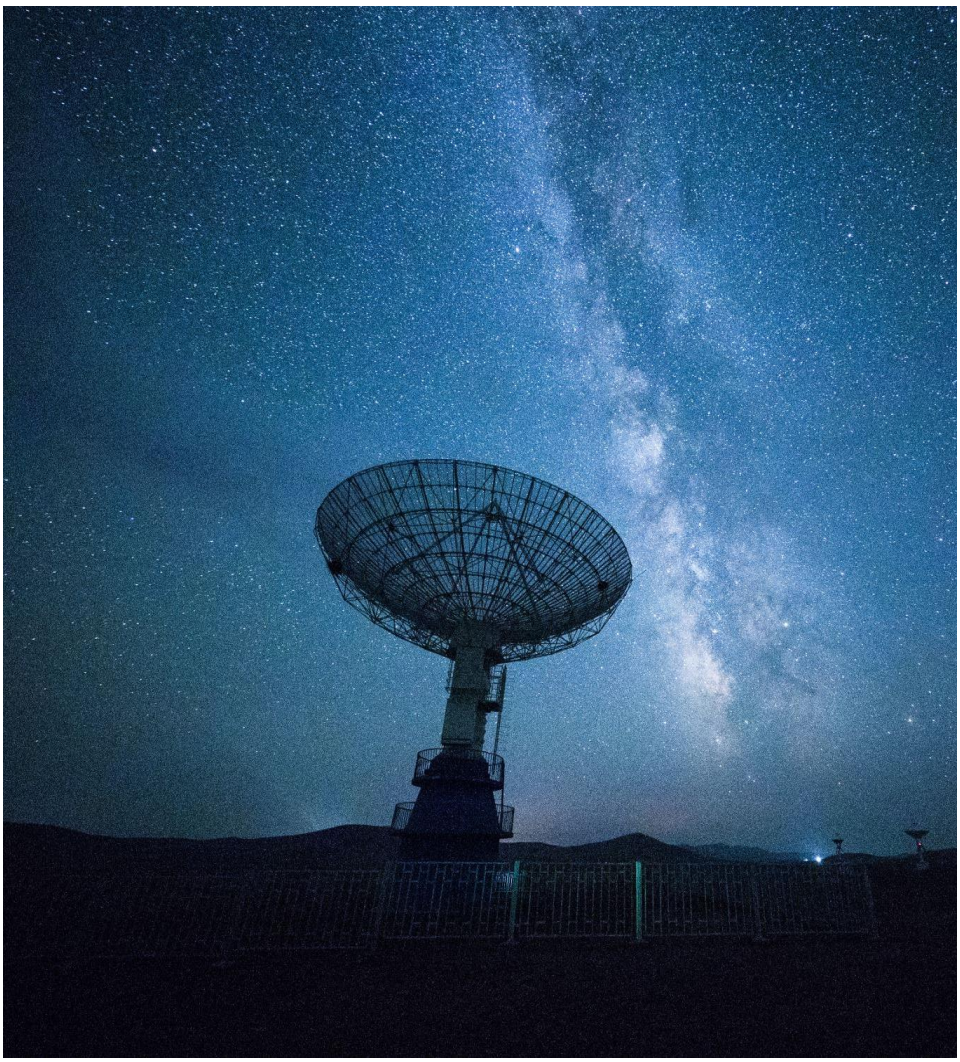


Space Titans Clash

Europe is caught in a structural tug-of-war to preserve strategic autonomy and industrial competitiveness, while avoiding unnecessary dependence on either Beijing or Washington.

China uses international space cooperation as a strategic instrument to expand influence, bind partners into their technical ecosystems, and advantage its industrial base and military-civil fusion strategy.

The U.S. wants to gain space dominance and retain military flexibility, which competitors and adversaries may frame as American extraterrestrial exceptionalism as policy.

TAKING A LEADERSHIP ROLE IN GOVERNING THE ORBITAL COMMONS BENEFITS THE FUTURE SPACE ECONOMY

MITIGATING RISKS AND PROSPERING IN A RAPIDLY EVOLVING, COMMERCIALIZED SPACE ECONOMY REQUIRES RESOLVING LONG-STANDING GOVERNANCE GAPS.

JOHN RODMAN

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MULTINATIONAL GOVERNANCE BENEFITS THE SPACE ECONOMY

The threat environment, the orbital commons, and the consequences of counterspace escalation are structurally global. Counterspace capabilities are proliferating globally, and escalation dynamics are inherently multinational, making the orbital environment a shared commons that no single nation can stabilize alone. International cooperation in crisis management may become increasingly difficult as other nations expand their efforts. International, cooperative planning can strengthen deterrence, distribute resilience, constrain adversary behavior, and reduce the risk of catastrophic miscalculation.

A potential complication for all nations in creating protocols for resilience and deterrence in space is the increased risk from a disproportionate level of commercial entities. The U.S. favors integrating commercial assets and production into our national space programs, but this creates communication, coordination, and reconstitution vulnerabilities China and Europe models minimize. The U.S. percentage of space assets under direct government control is much less than China and Europe, possibly allowing competitors to develop mechanisms that provide better response to a space-related crisis as well as develop sovereign reconstitution capacities. If the U.S. continues its policy of heavy reliance on commercially owned assets, systems, and technology, greater contingency planning will be needed to manage any transition from space awareness to crisis management to conflict in space.

Aligning U.S. national space and counterspace planning with international efforts may increase U.S. resilience and deterrence and be an important factor in escalation management, which directly effects the investment risk and expected returns in the growing space economy. The proliferation of counterspace capabilities, critical commercial mega-constellations, and orbital congestion complicate an operating environment where determining adversarial actions and actors was always challenging. In the future, the U.S. will be even more limited in its ability to minimize global congestion and debris risks, effect international commercial norms, shape allies and partners space programs, and establish crisis response channels if solutions are not developed now. Creating complimentary national and international planning for a Complex Space Operating Environment (CSOE) requires the U.S. to lead on:

- **Roles and Responsibilities of Space Organizations and Policy:** Increased integration and a coalition of willing international partners to foster cooperation, common solutions, bridging commercial and state capabilities, and fostering an environment that unleashes a global space economy. Clarity and transparency will be essential to protect systems and for crisis response.

- **International Safe Space Preservation Priorities:** Concrete steps to preserve the space operating environment as a safe, fair, and reusable resource for generations with agreements, discussions, and initiatives that avoid making autonomy and offensive operations the priority. There is progress on Space Situational Awareness (SSA) but limits to discerning the intent of damaging space events.

- **National and International Space Defense Parameters:** Crisis communication, situational awareness, counterspace response mechanisms based on common norms and transparent operating parameters will be essential for creating a resilient space environment to defend, deter, and overcome adversarial actions that seek to deny the common use of space should be separate.

- **Commercial Integration into Command and Control:** In normal, crisis, and conflict operating environments the direction and management of space assets must be clear and in place prior to any event, whether accidental or intentional. Space investment dominated by commercial tech industries may create unaccountable downstream connections with hard to govern systemic risks.

THE SPACE DOMAIN TODAY

The United States sees space as a strategic competition with China and wants Europe to align with it on norms, standards, and architecture for communications and defense. Although Europe is seen as an important market and partner, engagement is selective, trans-actional, and sometimes unbending. The U.S. wants to retain military flexibility by building into agreements extraterrestrial exceptionalism.

China's approach to *multinational* space planning is fundamentally different from the U.S. model. Beijing does not pursue "shared governance" or "collective resilience." Instead, it uses international space cooperation as a strategic instrument to expand influence, bind partners into Chinese technical ecosystems, and reshape global norms in ways that advantage China's industrial base and military-civil fusion strategy.

Europe is caught in a structural tug-of-war between U.S. and Chinese space initiatives—but not in a simplistic "choose one side" way. Europe is trying to preserve **strategic autonomy**, maintain **industrial competitiveness**, and avoid **over-dependence** on either Washington or Beijing. The result is a balancing act: aligning with the U.S. on security, cooperating selectively with China on civil space, and building independent European capabilities to avoid being a junior partner.

STRATEGIC IMPLICATIONS

For the U.S.

- Needs Europe as a security partner but fears EU drift toward China in civil/commercial domains.
- Must compete with China without alienating Europe.

For China

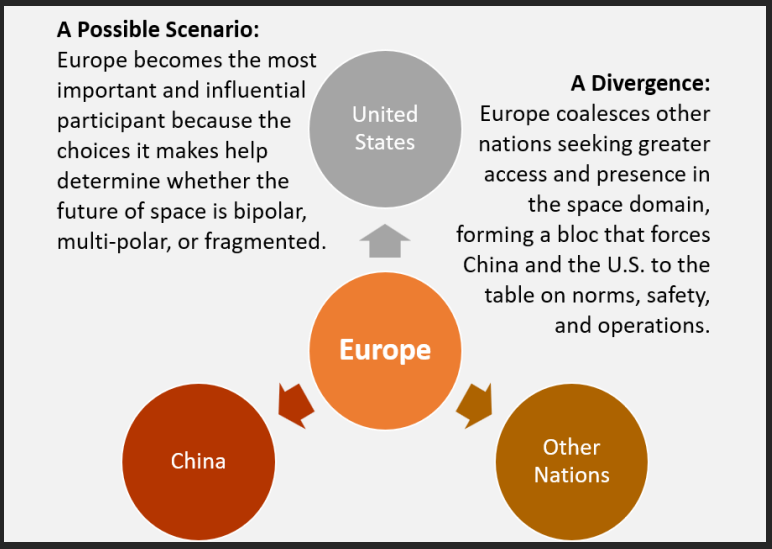
- Sees Europe as a gateway to legitimacy and markets.
- Uses scientific cooperation to soften geopolitical divides.

For Europe

- Must balance security with economic interests.
- Must accelerate sovereign capabilities to avoid dependency.
- Must navigate governance tensions without being sidelined.

ORBITAL COMMONS' ISSUES

- Distributed resilience: Allied constellations complicate U.S. adversary targeting
- Shared SSA: Better attribution and faster crisis response through U.S. & allies' efforts
- Norms & signaling: Collective pressure on adversaries if aligned among like-minded
- Debris mitigation: Multilateral tracking and constraints on destructive ASATs critical
- Commercial protection: Unified stance on targeting rules of non-military space assets



TRENDS NECESSITATING A U.S. LEAD ON SHARED PLANNING

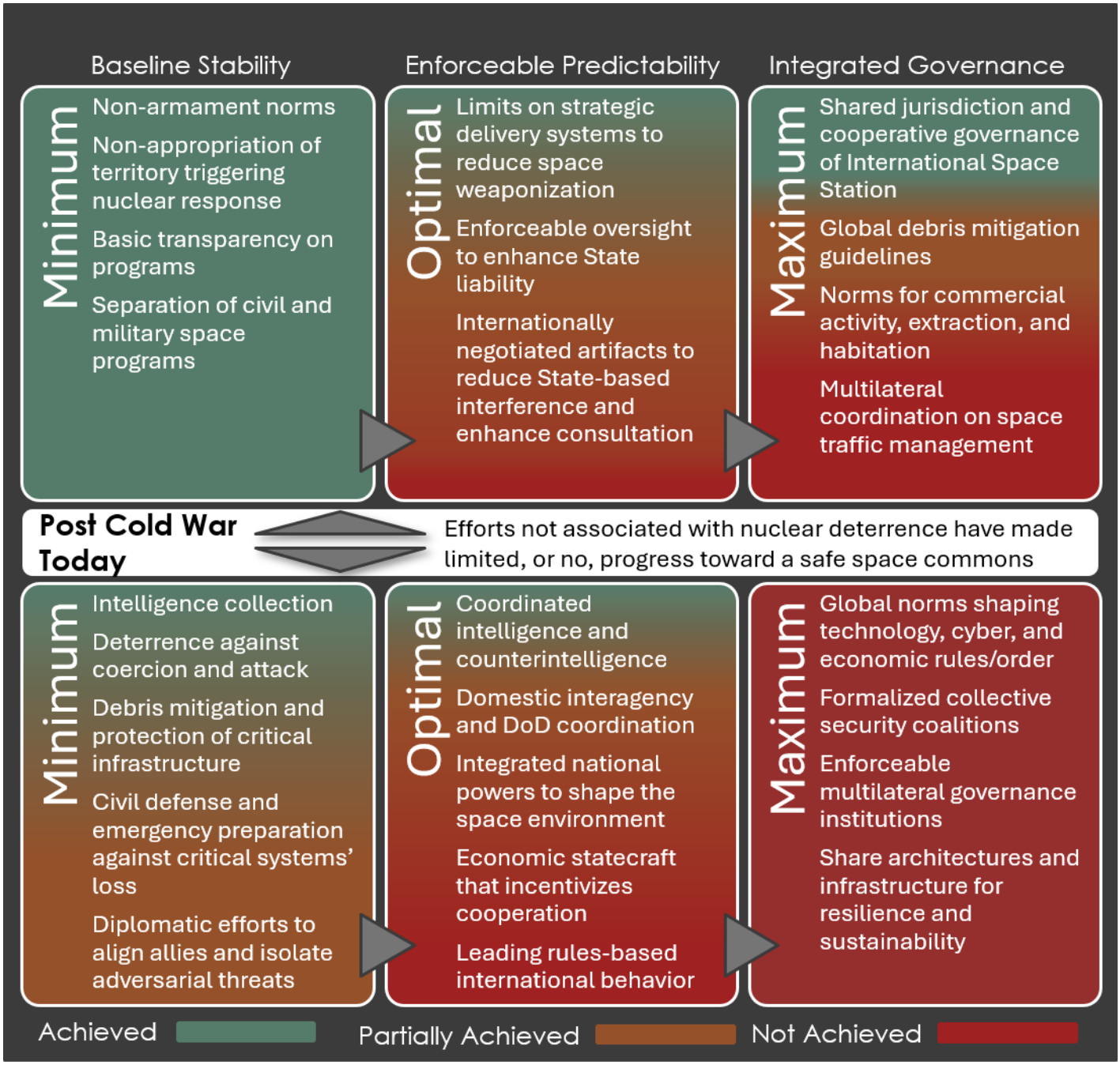
Space is a contested, interconnected battlespace. U.S. national planning for this is necessary but insufficient. International planning multiplies resilience, strengthens deterrence, stabilizes escalation dynamics, and protects commercial infrastructure. The United States gains more influence—not less—by shaping a coalition-based space security architecture. The U.S. is partially effective but not yet strategically integrated in coordinating space architectures and systems with international partners. There are persistent structural gaps including: unclear roles, inconsistent vision, interoperability shortfalls, and a "say do gap" between rhetoric and execution. These gaps may only widen as the trends below pick up their pace, spread to more nations, and become increasingly critical to other nations.

The future of space is a more competitive, congested, and contested set of operating environments.	Decreasing costs in satellite bus and subsystems, space launch innovations, and decreasing payload sizes with increased payload capability will contribute to an explosive use of space for commercial, government, and military requirements.
	The number of individual countries and organizations funding, launching, and maintaining space systems will increase rapidly, with regional coordination and oversight organizations possibly developing in Africa, Asia, the Middle East, and Latin/South America.
	Space-based extraction, manufacturing, and construction will make rapid advances that benefit economies, place more humans in space, and possibly increase the use of robotics in space for many human tasks.
These trends require joint solutions aided by U.S. and international alignment on a range of space strategies.	As space exploration and habitat development evolve, novel methods of providing for human sustenance and power generation will be developed that support the economic expansion and human space travel for industry, research, and possibly tourism.
	Space-derived information will be additive on the already exponentially overwhelming amount of data, including PNT, protection of critical data collection space-based assets, and human presence in orbit, on the moon, and possibly beyond.
	Space will be come an increasingly important part of the U.S. continuity of operations across all areas of national security (critical infrastructure, defense, economy, supply chain) and will require space norms, rules, and laws that are uniform and agreed upon by all participants.
	Cislunar and lunar operations will grow with China and the U.S. being the primary competitors in this mission space. Critical points for communication, navigation, resupply may be contested and at times under extreme stress or risk.

These trends are forcing nations to rapidly build sovereign capabilities or seek out quick "off-the-shelf" technology. In the absence of sufficient multinational, shared planning to address the above challenges a more competitive and adversarial environment is emerging for the orbital commons, international space economies, and space exploration. Traditional allies and emerging potential partners are building or expanding their space programs, while traditional U.S. adversaries seek means to exploit any gaps in Space Situational Awareness (SSA), complicate maintaining an operational picture, and obscure any transition to a more contentious space environment. This environment could make crisis response ineffectual if interoperability, organizational collaboration, and roles or responsibilities are not fully ironed out before a crisis. When you add in the high dependency of the U.S. on a semi or under-controlled commercial sector for its speed of innovation and deployment, any misalignment with international partners could contribute to a lack of checks and balances in managing contested space.

KEY U.S. DECISIONS REMAIN: THE SCALE OF SPACE GOVERNANCE

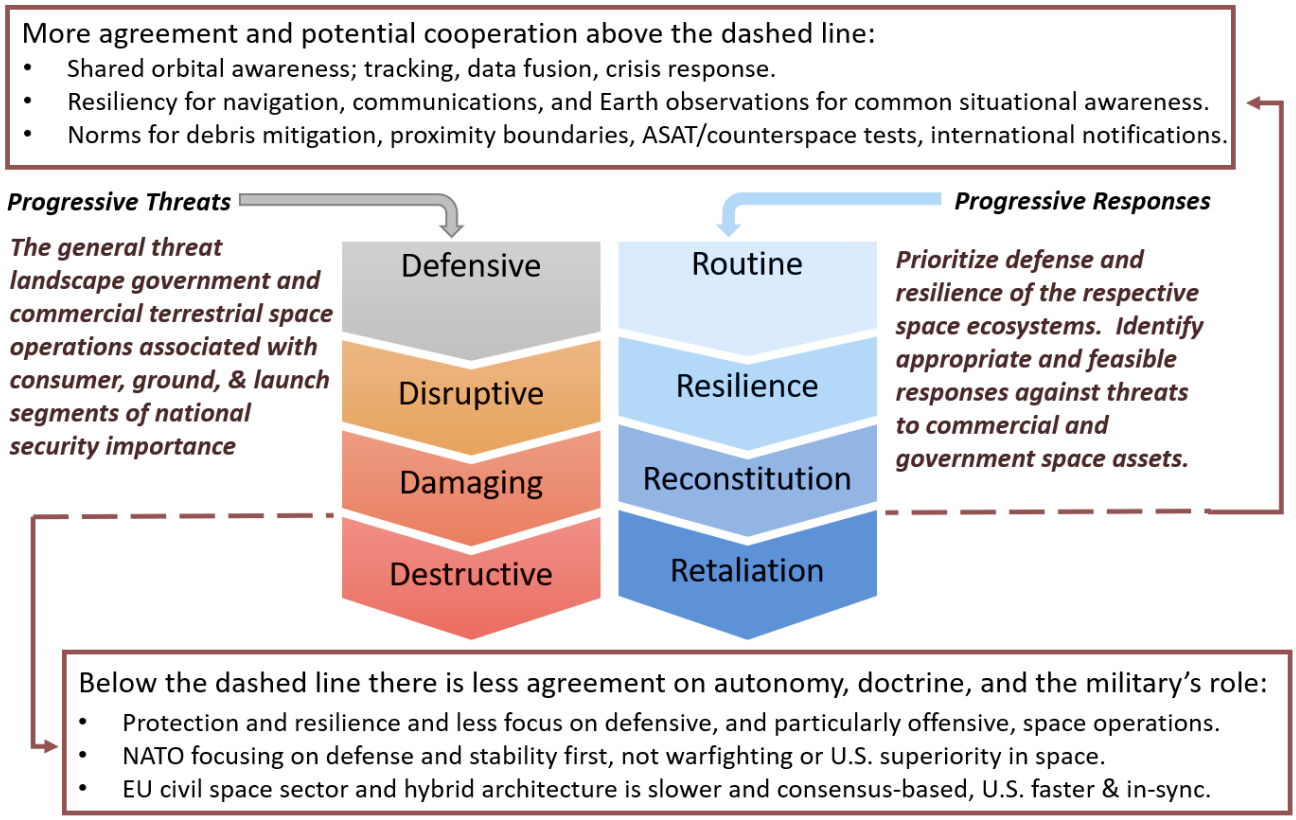
In the Cold War, various debates, negotiations, and treaties determined what were the irreducible requirements for national and international security regarding nuclear weapons. The corollary is what is the common, basic security for space-based operations which allow states to maintain basic stability today. The U.S. has not clearly defined and negotiated its official position and role with respect to minimal parameters for basic stability, optimal parameters that require enforceable cooperation, and the maximum parameters for building an integrated governance system for the space commons. Safety and stability in this shared operating domain require a similar focus and level of international engagement as the U.S. efforts to manage and control nuclear weapons proliferation in the past.



CAN THE UNITED STATES AND EUROPE AGREE TO DISAGREE?

There is considerable friction between the U.S. and European strategic goals in space, which need to be bridged if that partnership is going to be successful. At the core, it is the difference between a space ecosystem (production to launch to sustainment) that anticipates space will be a warfighting domain or one envisioning space as a global commons. The difference is deterring potential adversaries and malicious activities through space capabilities and response dominance or deterring them through norms, transparency, and governance. One sees space dominance as the solution; the other sees the pursuit of space dominance as possibly impeding collective resilience and governance.

U.S. Space Force Doctrine has been summarized as a global mission to defend U.S. interests from 100 km to infinity, including offensive space operations. Whereas NATO, their natural counterpart in Europe, sees the mission as protecting access and assets from the Arctic to the Mediterranean. Both may agree on the need for hybrid commercial and government systems, but how and the speed at which that can be approached is very different. The speed at which Europe and the U.S. are investing in space capabilities, in addition to the U.S. existing capability and infrastructure advantage, could force Europe to make tough partnering choices. Front and center are the space and counterspace initiatives associated with the U.S. Golden Dome program. Already NATO has adopted some of U.S. Space Command's operational organization, but that overlay may not align with pan-European capabilities, investments, partnerships (civil/military/international), or political postures. Europe could get pulled into U.S. priorities unintentionally, but they are aware of this and are searching for the balancing point.

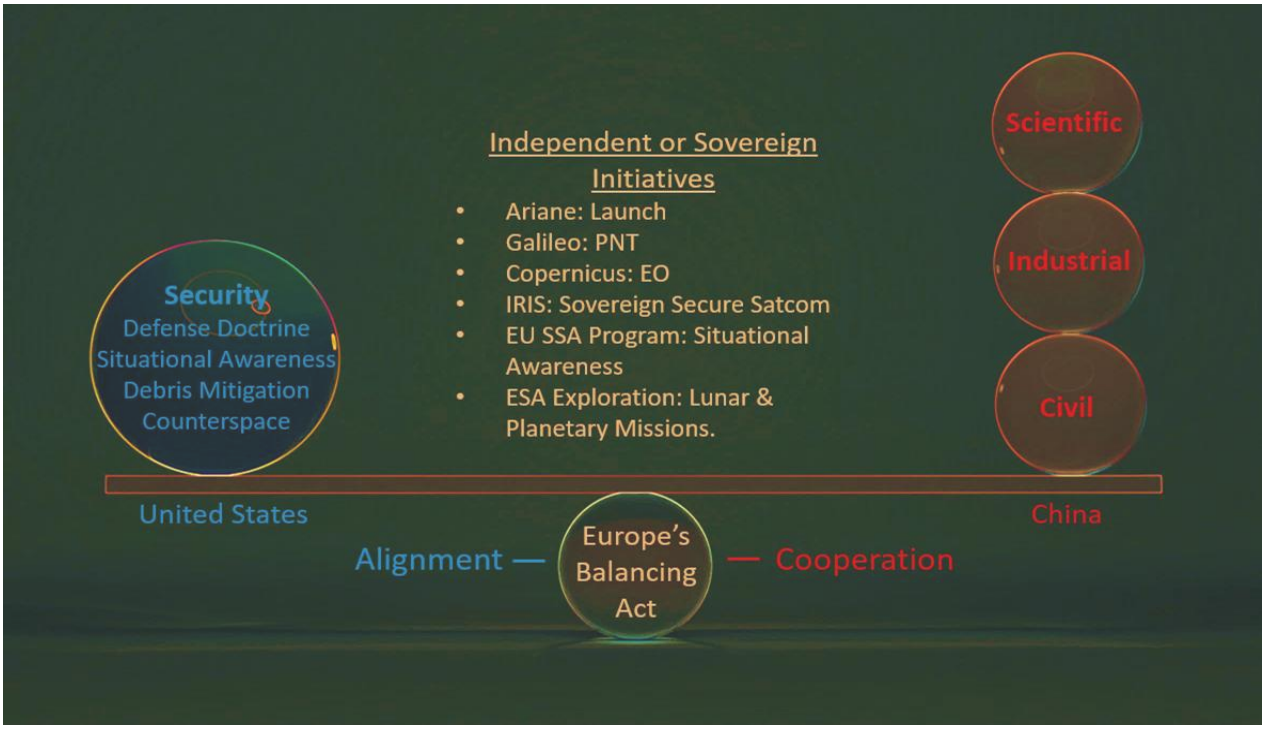


CHINA: EUROPE'S OTHER SPACE "TUG-OF-WAR" PLAYER

China's approach to multinational space planning is fundamentally different from the U.S. model. Beijing does not pursue "shared governance" or "collective resilience." Instead, it uses international space cooperation as an instrument to expand influence, bind partners into Chinese technical ecosystems, and reshape global norms in ways that advantage China's industrial base and military-civil fusion strategy. Its initiatives are coordinated, well-funded, and explicitly geopolitical. Yes, China's official doctrine characterizes space as a warfighting domain, but it also makes it clear that space can contribute to China's national rejuvenation.

For Europe, cooperation with China on civil, industrial, and scientific initiatives is an attempt to deliberately keep China in non-military sectors. The European Space Agency has cooperated on missions, commercial components and deals, discussions on norms, and scientific research. This relationship complicates but does not preclude U.S. engagement on similar issues should it choose to do so. Such cooperation may help Europe maintain autonomy because it provides access to an alternative launch capacity (even though continental Europe launch capability is improving), advances in technology through scientific collaboration or commercial/market developments and could provide a diplomatic leverage on specific space issues or in support of a multipolar space order.

The space "tug-of-war" soon becomes a delicate balancing act for Europe. Pulled both ways, it needs a counterbalance to these global competitors. That may come with risks. If Europe's commercial and industrial complex tries to satisfy China and the U.S., or scale to counter either, it could fragment their space industrial complex. Europe must maintain security relations with the U.S. while deflecting political pressures from both nations. The one advantage it does have in this balancing act is that each end of the rope is likely to continue being pulled by opposites. If China and the U.S. suddenly become cooperative across the spectrum of future collective space issues, then Europe's bid for autonomy could be drowned as it gets pulled along in the wake of China and U.S. dominance of the space operating environment.



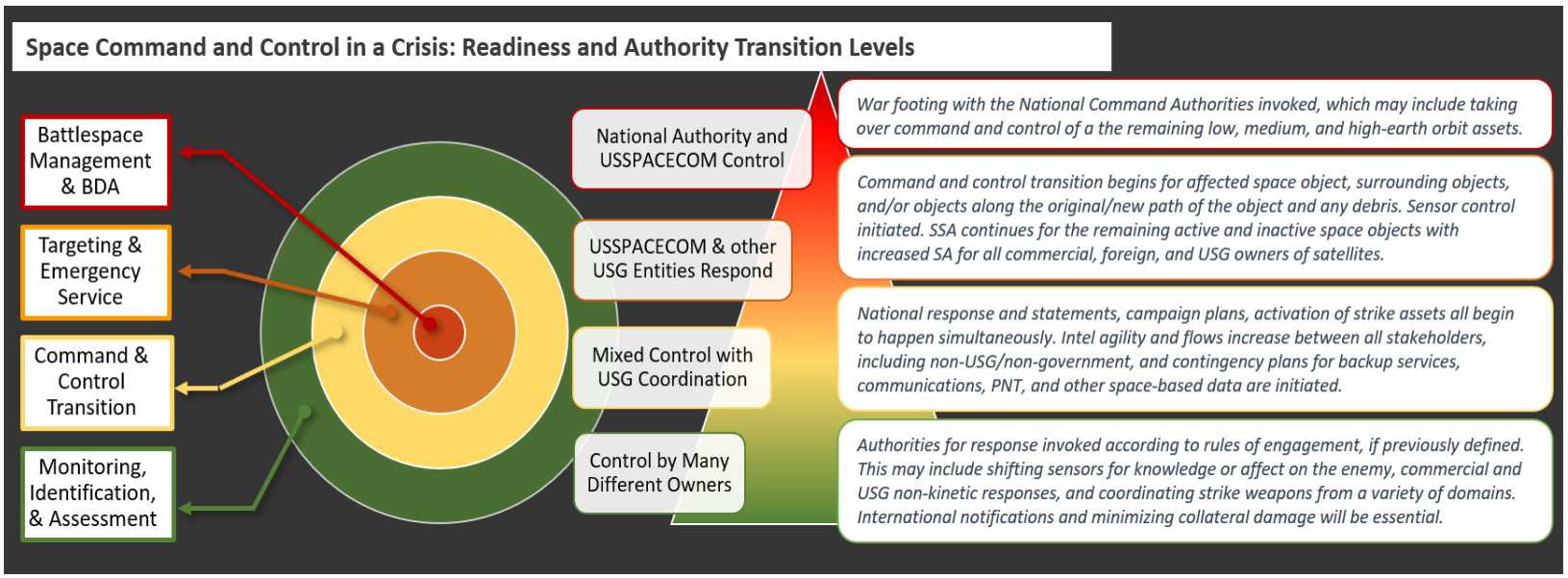
GOVERNANCE AIDS INVESTMENT AND SECURITY THROUGHOUT OPERATIONS

The United States is inconsistent in its vision, communication, and collaboration on a safe orbital commons and space domain. This leads to significant challenges in alignment and integration with prospective allies, slowing progress to the point where those partners must develop their own, or seeking alternative, solutions to U.S. leadership in space. Compounding the effects of fluctuating policy is the ongoing competition and distribution of authorities, roles, and responsibilities for space among multiple U.S. organizations. Nowhere is this more problematic than in a crisis where command and control of civilian-owned space assets may become essential for critical U.S. systems and national security. Despite the creation of U.S. Space Command, in July 2025 the Government Accountability Office reported that foreign government officials are challenged to find the appropriate DOD contact, that DOD has not issued guidance clarifying roles and responsibilities, and this is leading to confusion and inefficiencies for the U.S. and its partners.

European Space Agency

"THE CURRENT ENVIRONMENT DEMANDS BOTH DIVERSIFIED INTERNATIONAL PARTNERSHIPS AND STRENGTHENED AUTONOMOUS CAPABILITIES. ONLY UNDER THESE CONDITIONS CAN EUROPE DECIDE WHEN TO ACT INDEPENDENTLY AND WHEN TO COOPERATE GLOBALLY, PROTECTING OUR INVESTMENTS AND OUR INDUSTRIAL BASE AMID GEOPOLITICAL UNCERTAINTY."
DIRECTOR GENERAL JOSEF ASCHBACHER, MAY 2026

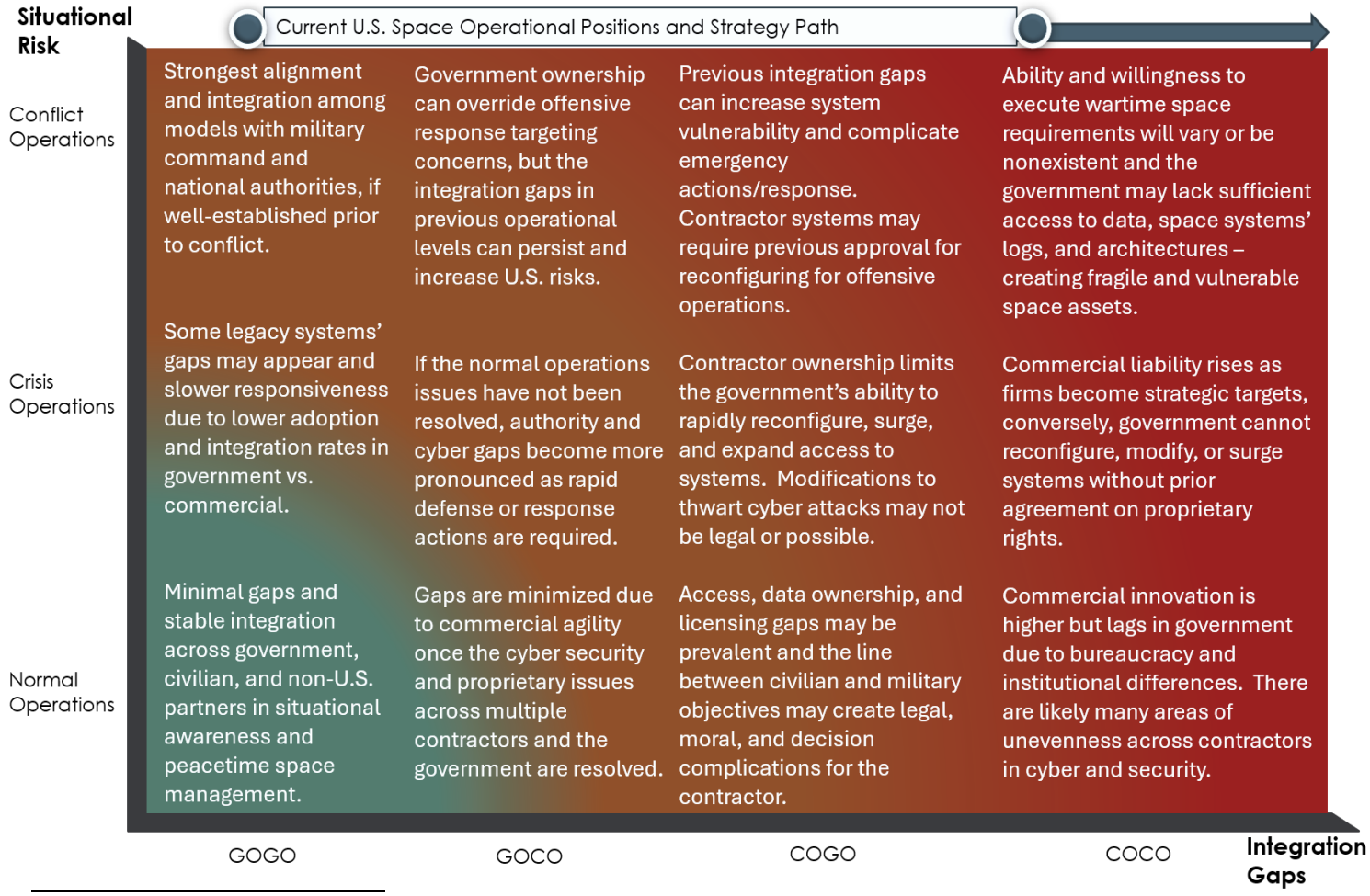
The U.S. Space Force strategy calls for hybrid government, commercial, and allied architectures, a comprehensive planning effort with the appropriate milestones, roadmaps, and accompanying governance artifacts are lacking. In August 2025, the GAO found that DOD was significantly behind in Combined Joint All-Domain Command and Control (CJADC2) planning and this was causing the individual forces to develop space management on their own. The space domain is a common environment where military, commercial, allies, and adversaries operate. This means that the transition from space awareness to space defense becomes a critical transition point that must be prepared for in advance with shared data, situational awareness, and crisis response planning. The first two issues are seeing some progress but crisis response to an emergency is behind. The current strategy and vision of the space environs as a war-fighting domain limit the U.S. and all associated stakeholders to military processes that may lag commercial developments. Without an all-of-nation and international contingency planning process the risk to space operations continuity prevent and remediate.



COMMERCIAL OVER DEPENDENCY CREATES RISK AND VULNERABILITY

The United States leverages commercial entities more throughout the space ecosystem (investment, manufacturing, ground stations & control, launch facilities & vehicles, and satellites) than China and Europe. Exact estimates for China are limited but it is likely private assets in their space program are no more than 10-15%. Europe, through the European Space Agency, maintains a more centralized, state-coordinated space ecosystem that is very evident in its government-owned or funded spacecraft, launch systems, and associated infrastructure.[1] Previous studies on government controlled vs. civilian controlled military systems can be used to infer the impact on space command and control, resilience, and restoration capacity. Four hybrid models currently used by the military and potential space impacts:

- Government-Owned, Government-Operated (GOGO): More common where direct government control is deemed essential for national security (e.g., national space collection systems, or counterspace offensive systems).
- Government-Owned, Contractor-Operated (GOCO): Common for infrastructure because it allows for more flexibility and technical expertise, it is cost-efficient, leverages commercial capital markets, and can result in more rapid modernization.
- Contractor-Owned, Government-Operated (COGO): Sometimes used for facilities privately owned and leased by the government or for programs where equipment needs regular replacement.
- Contractor-Owned, Contractor-Operated (COCO): Rapid increase in the use of this model for launch services, commercial SATCOM, and rapid prototyping.



[1] European Space Agency, 2026 Space Economy Report, July 2026.

TRENDS IMPACTING U.S. SECURITY AND SPACE ECONOMY DOMINANCE

The global trend toward diversification and multipolarity in space combined with U.S. efforts to expand our spaceport infrastructure, changes in regulations, and strengthen domestic industry means a greater reliance on domestic commercial providers. If the current gaps in uneven or irreconcilable regulatory processes are not reconciled and the diverging technological advances in the international space ecosystem accelerate the potential for the U.S. to continue its domination of the space economy could be at risk and our national space security become more fragile due to the increasing reliance on commercial participants. The reasoning may seem counterintuitive unless the space ecosystem and the economy supporting it are viewed through the lens of a market shifting from monopoly to competitive.

The trade-space between a rapidly expanding space economic system and security needs framing.

- **Diversification of Space Economy Providers and an Intensified Competition with China:** As other countries expand their domestic space capabilities or form new partnerships, options for launch, platforms, and systems expand. Other nations will seek to reduce the inherent risks of space operations and the high costs. Trust in the providers will be critical, but so will lower launch, maintenance, and production costs. If the U.S. is not a fully participating partner in the global space system or focuses on transactional behavior trust may decline, forcing even more domestic or coalition space infrastructures. When combined with China's lower costs and improving systems the current U.S. dominance in the space economy may be displaced.
- **Governance Gaps May Increase and Amplify U.S. Economic and Security Risks:** Throughout history rapidly expanding markets have created adversarial and predatory behavior domestically and internationally. Insufficient domestic and international governance and regulation means uneven compliance and in space that could lead to U.S. space infrastructure and systems – terrestrial and orbital – exposed to miscalculation, unsafe space behavior or maneuvers, and aggressive actions to either gain competitive advantage by reducing U.S. dominance.
- **Commercialization Paradox of Underregulated Industries and Sectors:** Fewer standards in industry lower the barriers to entry and can result in rapid expansion of participants, but in space regulation and synchronization of systems is critical for everyone's safety. While this increased competition can lead to economic benefits for other sectors, without clear regulation profit-seeking will concentrate power in the space economy in a few leaders, frequent acquisitions and company breakups, and potentially a less stable market framework in the long-run. Fragility and volatility in the supply-side of the space ecosystem is a national risk for critical space assets.

The Interplay of Governance and Market in the Space Economy: Three Scenarios

Worse	Baseline Trend	Better
Regulatory fragmentation continues and results in governance lagging technology, increased infrastructure stresses, volatile investment markets, and possibly future anti-trust backlash against commercial space systems providers.	Commercial space investment continues its rapid expansion with slow, fragmented regulation on orbital congestion, debris management, market concentration, supply-chains, and infrastructure resilience.	Multilateral actions on orbital sustainability and operating standards make progress towards global governance, sustainable growth, and low risk/no risk space operations. The natural surge and retrenchment in new sectors is reduced.
Implications and Pressures Orbital congestion becomes unmanageable, supply chain disruptions increase, and data access is vulnerable in crisis and conflict. This leads to emergency national actions, increased geopolitical tension, and possible antitrust actions.	Implications and Pressures Current oligopolies are bolstered and upstream and downstream markets expand inconsistently. Slow regulatory progress is made on debris mitigation guidelines, orbital traffic management, and fair competition. The space economy continues to expand but may be more fragile due to discontinuities.	Implications and Pressures Regulatory guardrails create fairer competition, upstream and launch market is more stable, and improved data access increases resilience. This sets debris-removal traffic management requirements, which also reduces potential conflict

SPACE COMMONS AND COOPERATION: U.S. GOVERNANCE NEXT STEPS

The U.S. operational space infrastructure contains significant amounts of commercial involvement: broadband constellations, Earth-observation satellites, satellite-TV networks, ground stations, cloud-hosted mission systems, and third-party managed control environments. Multiple studies have placed commercial ownership of space assets in the U.S. between seventy-five to eighty percent of total objects with Europe being much less and China very little. This distribution of government to commercial control is likely to remain in the short run and will affect contingency planning for the orbital commons:

- Allies may begin building sovereign capabilities faster than the USG can integrate with them, increasing the risk of fragmented or coalition or international dependent space architectures.
- Adversarial nations may find opportunities to benefit from gaps in common space situational awareness, operational coordination, and defense – especially the crisis transition zones.
- U.S. commercial constellations, or heavily dependent government assets, may continue to experience gaps in command and control, authorities, roles, and responsibilities in a crisis.

The loss or compromise of commercial satellites or ground systems could cascade across networks. The loss of control over even a fraction of commercial satellites could cause collision risks, signal spoofing, or service hijacking by attackers that exploit stale credentials, misconfigured cloud mission systems, or inadequately maintained ground-station assets. One of US Space Command's 2026 priorities is to improve communication, transparency, and partnership with space capability providers and users. Progress is being made with U.S. commercial providers on data sharing and international partners on space situational awareness. Increased coordination, collaboration, governance with domestic commercial services and systems for space crisis and conflict operations is necessary to overcome likely gaps. Actions for the U.S. to consider include:

- Establishing a unified, measurable, and enforceable command and control framework of commercial, national, and international stakeholders aligned, when required, with CJADC2 so US Space Force can synchronize investments, clarify authorities, accelerate joint data integration, and conduct contingency planning for a space crisis that can have multinational impact.
- Reconciling authorities, roles, and responsibilities for space management or operations in the U.S. (currently involving over a dozen federal entities) to reduce confusion among partners and limit adversaries' opportunities to exploit the gaps and overlaps in the current U.S. structure.
- Creating a formal and enforceable crisis and risk management structure for space that sets priorities and trade-offs for which assets cannot fail, limits and transferability of governance for commercial assets in a crisis, and whether redundancy and resilience should also include state-sovereign backup systems for critical commercial space assets and functions.
- Exploring new governance and management models that include commercial and international inputs and participation without permitting undue influence on either with respect to control and ownership of space-based systems essential to national resilience and security.

Creating these governance structures and associated artifacts has proven difficult. An alternative approach lessens the likelihood and need for crisis and conflict operations in space by taking a lead in developing formal structures for the orbital commons, space economy, and space exploration. The U.S. still plans for an adversarial space environment, but it is not an outcome hastened by our actions.