



Department of Defense

Commercial Space Integration Strategy

|
2024





Department of Defense

Commercial Space Integration Strategy

|
2024



SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-1000

Space plays a critical role in American security and prosperity, and it is essential to the Department of Defense. Our men and women in harm's way rely on space-based services every single day to execute their missions. As the Department continues to prioritize the resilience of our national security space architecture in the face of new threats, we owe it to the Joint Force and the American people to leverage all tools available. The rapidly growing commercial space sector, highlighted in the 2022 National Defense Strategy, presents an opportunity for the Department that we cannot overlook.

The 2024 DoD Commercial Space Integration Strategy, the first for the Department, provides my vision for prioritizing and aligning efforts to integrate commercial solutions into our national security space architecture. It outlines the foundational principles, priorities, and approaches to guide the Department in this effort to enhance space mission assurance across the spectrum of conflict.

Realizing this vision is a task for every space stakeholder across the Department. Integrating commercial solutions, as opposed to merely augmenting existing government systems, will require a shift in approach within the Department. Leaders at all levels need to be aware of and work to eliminate the structural, procedural, and cultural barriers to overcoming legacy practices and preconceived notions of how the commercial sector can support national security. Only by proactively integrating commercial solutions can the Department be positioned to leverage them in crisis or conflict.

I am confident that, together, we will seize this moment to support integrated deterrence and contribute to a safe, secure, stable, and sustainable space domain.

A handwritten signature in black ink, appearing to read "L. O. Austin", written in a cursive style.

This page left intentionally blank.

I. INTRODUCTION

The commercial space sector's innovative capabilities, scalable production, and rapid technology refresh rates provide pathways to enhance the resilience of national security space architectures and strengthen deterrence. This *DoD Commercial Space Integration Strategy*, in line with the National Security Strategy and the 2022 National Defense Strategy, seeks to align Department efforts and drive more effective integration of commercial space solutions into national security space architectures. Such integration will help deny adversaries the benefits of attacks against national security space systems and contribute to a safe, secure, stable, and sustainable space domain.

Deeper integration of commercial space solutions represents a conceptual shift away from legacy practices in which the Department has relied on bespoke, DoD-specific capabilities and limited the use of commercial solutions. Given the expansion of the commercial space sector and the proliferation of space capabilities, the Department will benefit by making commercial solutions integral—and not just supplementary—to national security space architectures.

The Department has successfully integrated commercial solutions in other domains for a limited number of mission areas. In the air and maritime domains, the U.S. Government established contractual mechanisms through the Civil Reserve Air Fleet (CRAF) and the Voluntary Intermodal Sealift Agreement (VISA), respectively, to ensure logistics support from commercial operators during crises. The Department should develop mechanisms that similarly enable integration of commercial space in order to build resilience across the full range of space mission areas.

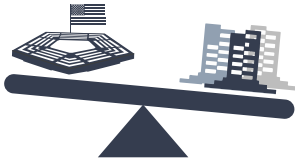
There is inherent risk in commercial space integration. Purchasing commercial solutions instead of designing purpose-built government systems may present trade-offs between the speed of fielding a capability and the security of that system. But the Department also recognizes there is risk in not integrating commercial solutions and in failing to capitalize on the commercial sector's technological innovation and speed. To integrate commercial space solutions, the Department will work with commercial entities to mitigate risk as necessary and accept risk where appropriate.

This strategy identifies four top-level priorities that the Department will pursue to maximize the benefits of integrating commercial space solutions. First, we will ensure access to commercial space solutions across the spectrum of conflict. Second, we will achieve integration prior to crisis. Third, we will establish security conditions that promote integration. Fourth, we will support the development of new commercial space solutions.

For the purposes of this strategy, the “commercial sector” refers to individuals, companies, and organizations that produce solutions for commercial markets, that bear a significant portion of the investment risk and responsibility, that operate in accordance with commercial market incentives for controlling costs and optimizing return on investment, and that have the legal capacity to offer those solutions. “Commercial space solutions” refers to systems, capabilities, or services offered by the commercial sector. “Commercial integration” refers to the incorporation of commercial space solutions into U.S. defense planning, operations, missions, and architectures.

II. PRINCIPLES

The Department will adhere to four foundational principles to guide its decision making to ensure that commercial solutions are integrated into national security space architectures in an effective, sustainable, and strategic manner: balance, interoperability, resilience, and responsible conduct.



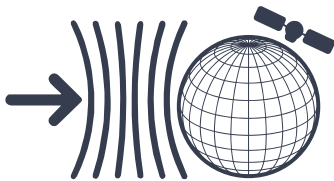
BALANCE

The Department will seek an appropriate balance of government and commercial solutions for each mission area while avoiding overreliance on any single provider or solution.



INTEROPERABILITY

Military standards and procedures should strengthen interoperability between government and commercial solutions without stifling commercial sector innovation, speed, or scale. Wherever appropriate, the Department will consider adopting commercial standards and interfaces for future purpose-built systems to facilitate commercial integration.



RESILIENCE

The Department will prioritize resilience in its national security architectures. Integrating commercial space solutions will strengthen resilience by increasing the number of commercial providers, diversifying supply chains, and expanding the variety and number of solutions the Department can employ. Commercial solutions leveraged by the Department must be resilient themselves, particularly against cyber threats.



RESPONSIBLE CONDUCT

The Department will continue to act in accordance with international norms and standards and its Tenets of Responsible Behavior in Space. As always, the Department will also uphold its longstanding commitment to ethical conduct in working with the commercial sector.

III. PRIORITIES & APPROACHES

The Department will integrate commercial space solutions to enhance space mission assurance across the spectrum of conflict. Integration efforts will promote a resilient space architecture to support the Joint Force across all domains. To maximize the potential benefits of integrating commercial solutions, the Department will pursue four key priorities: (1) Ensure access to commercial space solutions across the spectrum of conflict; (2) Achieve integration of commercial space solutions prior to crisis; (3) Establish security conditions for integration of commercial space solutions; and (4) Support the development of new commercial space solutions for use by the Joint Force.

1. **Ensure Access to Commercial Solutions Across the Spectrum of Conflict:** The Department will have full confidence that commercial solutions will be available when needed. This includes being able to surge commercial capacity to meet military requirements and capability needs across the spectrum of conflict.
 - a. Approach: The Department will use contracts and other agreements as the formal mechanisms to ensure access to commercial solutions across the spectrum of conflict and mission areas. Contracts and other agreements will address the cyber, data, and supply chain security requirements that commercial entities will need to meet to work with the Department. As necessary, contracts will enable prioritization of Department requirements and capability needs over other commercial clients in specific situations.
2. **Achieve Integration Prior to Crisis:** To seamlessly utilize integrated commercial space solutions during crisis and conflict, the Department will integrate solutions during peacetime. This integration of commercial space solutions will extend to planning and training activities and support day-to-day operations. The Department will continue to work with the Intelligence Community, allies, and partners to integrate commercial solutions into shared architectures.
 - a. Approach: The Department will incorporate commercial space solutions into wargames, tabletop exercises, and training exercises to test technology and to develop and hone tactics and concepts. Robust relationships between the Department and commercial entities will facilitate mutual understanding of interests, intent, and solutions. These lines of communication will also help commercial capabilities employ robust cyber, data, and supply chain security measures to mitigate risk and vulnerabilities, follow and bolster norms for space operations, and share information reciprocally with the Department. Regular engagement with the commercial sector will improve the Department's understanding of available commercial solutions and the opportunities for integration.
3. **Establish the Security Conditions to Integrate Commercial Space Solutions:** The Department will promote a safe and secure operational space domain and, as appropriate, mitigate risks to commercial space actors inherent in supporting national security space operations.
 - a. Approach: The Department will leverage a range of tools across all domains to deter aggression against and defeat threats to U.S. national security space interests, including all space segments and, where appropriate, commercial space solutions. In appropriate circumstances, the use of military force to protect and defend commercial assets could be directed. In general, the Department will promote the security of commercial solutions

through three lines of effort: norms and standards, threat information sharing, and financial protection mechanisms.

- i. *Norms and Standards*: The Department will promote norms and standards to foster a safe operating environment for all space actors. Internationally agreed upon norms and standards create a shared understanding of what constitutes responsible behavior and reduce the risk of misperceptions and miscalculations that could lead to crisis and conflict. The Department's Tenets of Responsible Behavior in Space provide a baseline from which to operate and to develop new best practices, norms, and standards for U.S. national security space operations as necessary. The Department will continue to support efforts by the Department of State in multilateral fora to develop and implement best practices, standards, and norms of behavior for the space domain.
 - ii. *Threat Information Sharing*: The Department will advance threat information sharing with the commercial space sector. Timely dissemination of actionable threat information is critical to the commercial sector's ability to increase resilience and mitigate threats, and it is therefore foundational to successful integration of commercial space solutions. Information sharing will include space domain awareness and cybersecurity threat information at multiple classification levels. The Department will work to mitigate barriers including overclassification, clearance processes, and cleared facility access to establish scalable procedures for unclassified communications with the commercial space sector.
 - iii. *Financial Protection*: Commercial entities employing solutions in support of military operations accept risk. Traditional commercial insurance, commercial war-risk insurance, U.S. Government-provided insurance, and indemnification as defined in statute are all possible financial protection tools to mitigate that risk. Definitions of these financial protection tools can be found in Annex A. U.S. government provided insurance is statutorily available for the air and maritime domains but is not yet available for the space domain. The Department will evaluate gaps in protection from commercial insurance providers, the conditions under which U.S. Government-provided insurance would be needed for the space domain, and whether those conditions have been met.
4. **Support the Development of New Commercial Space Solutions for Use by the Joint Force**: Harnessing the speed and innovation of the commercial space sector is not only a function of integrating existing commercial solutions but also ensuring that emerging solutions can be brought to market. The Department will continue to seek out emerging technologies in the commercial space sector that have the potential to support the Joint Force.
- a. **Approach**: The Department will use the full range of available financial, contractual, and policy tools to rapidly field and scale commercial technology, attract private investment and commercial lenders, assist in clearing regulatory hurdles where national security imperatives are present, and ultimately bring new commercial solutions to the warfighter at speed. These efforts will leverage the Department's expertise in critical technologies, capability gaps, and U.S. government research and development efforts. In keeping with the Department's commitment to ethical conduct, the Department will work to protect the intellectual property of integrated commercial solutions.

IV. MISSION AREAS

There are currently 13 mission areas for national security space: Combat Power Projection; Command and Control (C2); Cyberspace Operations; Electromagnetic Warfare (EW); Environmental Monitoring (EM); Intelligence, Surveillance, and Reconnaissance (ISR); Missile Warning (MW); Nuclear Detonation Detection (NUDET); Positioning, Navigation, and Timing (PNT); Space Access, Mobility, and Logistics (SAML); Satellite Communications (SATCOM); Space Domain Awareness (SDA); and Spacecraft Operations. Each mission area is composed of a range of distinct operational and technical functions that must be performed to provide capability to the Joint Force.

The Department will seek to integrate commercial space solutions for all mission areas where these solutions can enhance resilience and add capability without imposing unacceptable risk, while also maintaining U.S. Government responsibility for certain critical national security functions. The integration of commercial space solutions will vary by mission area based on assessments of the functions that must be performed, the commercial solutions available to perform those functions, and the ability of those commercial solutions to meet the appropriate requirements and capability needs for mission assurance.

The Department will adopt three categories for organizing the integration of commercial space solutions into national security space architectures. Mission areas may shift between categories over time as commercial space capabilities mature and military requirements and capability needs evolve. However, nothing about the categorization precludes integrating commercial space solutions as opportunities arise for any mission area. The Department will regularly evaluate the national security space mission areas and their corresponding functions to identify opportunities for commercial space solutions to contribute. Below is a description of each category and the mission areas that currently fall within them.

- ▶ Government Primary Mission Areas: Within this category, a preponderance of functions must be performed by the government, while a select few could be performed by the commercial sector. Government systems supporting these mission areas generally have significant technological and functional differences when compared to commercial sector offerings and contain features that may lack a definitive commercial market. The following mission areas currently fall under the Government Primary category: combat power projection; C2 (to include NC3); EW; NUDET; MW; and PNT.
- ▶ Hybrid Mission Areas: Within this category, some functions must be performed by the government while others could be performed by the commercial sector. The commercial sector is well suited to perform functions within these mission areas, and the Department will integrate a mix of government and commercial owned and operated systems. The following mission areas currently fall under the Hybrid category: cyberspace operations; SATCOM; spacecraft operations; ISR; SDA; and EM.
- ▶ Commercial Primary Mission Areas: Within this category, the preponderance of functions within these mission areas could be performed by the commercial sector, while a limited number of functions must be performed by the government. Commercial space solutions performing functions within these mission areas have demonstrated technological maturity and met the Department's requirements and capability needs for mission assurance. The following mission area currently falls under this category: SAML. Emerging commercially-developed mission areas, such as in-space servicing, assembly, and manufacturing (ISAM), may provide additional opportunities in the future to support the warfighter.

V. CONCLUSION

The Department's ability to integrate commercial space solutions into national security space missions and architectures is critical to enhancing U.S. resilience and strengthening deterrence in the 21st century. This integration will help maintain our technological edge, deny adversaries the benefits of attacks against national security space systems, and contribute to a safe, secure, stable, and sustainable space domain. This DoD Commercial Space Integration Strategy provides strategic guidance to the Department to ensure it can fully seize the available opportunities to work with commercial entities to achieve these ends.

ANNEX A FINANCIAL PROTECTIONS AGAINST RISKS

Current possibilities for financial protection are described below, and have the following meanings solely for this Department of Defense Commercial Space Integration Strategy:

Commercial Insurance: Insurance is a contract, referred to as a policy, in which a policyholder receives financial protection or reimbursement against losses from an insurance company. Space companies primarily receive property and casualty protection through commercial insurance. Space commercial insurance can cover launch, satellite operations, or other liability risk factors for a commercial enterprise. War-risk is typically excluded from coverage.

Commercial War-Risk Insurance: War-risk insurance is coverage provided for losses resulting from events such as war, invasions, insurrections, riots, strikes, and terrorism. War-risk insurance is generally available through a supplemental clause to an existing standard policy or as a separate policy. Supplemental clauses are generally limited in scope.

U.S. Government-Provided Insurance: An arrangement whereby the U.S. Government offers certain levels of insurance, including against war risks, that are typically excluded from coverage on commercial insurance policies or for which commercial coverage is not available on reasonable terms. Such insurance is intended to fill a well understood gap in commercially available insurance. The U.S. Government provides insurance in both air and maritime domains, pursuant to statutory authority. Statutory authority for this coverage does not currently extend to the space domain. New statutory authority would be required to extend war-risk insurance coverage to commercial space entities.

Indemnification: The payment for damages suffered as a result of performance of a contract in support of the Department of Defense pursuant to Public Law 85-804. The damage must be caused by “unusually hazardous or nuclear risks.” Indemnification use is approved on a case-by-case basis and is only compensated to the extent the claim, loss, or damage is not otherwise covered. Within the Department of the Air Force, indemnification has been used mostly with respect to space launch and nuclear activities given the unique risks associated with those activities.

This page left intentionally blank.





U.S. Department *of* Defense