

Implementing the National Security Space Strategy

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The US approach to implementing its national space policy will determine its future course in space. Will our nation act as a collaborative partner that leads by example? Or will we try to move forward unilaterally in space? What steps should the United States take today to ensure security in space for the future? Gen C. Robert Kehler, the commander of US Strategic Command, provides his perspective on the implementation of the National Security Space Strategy as a means to promote international cooperation, establish norms, and provide mission assurance for space-delivered assets vital to US leadership.

LEADERSHIP HAS BEEN a defining hallmark of the US space effort since the beginning of the Space Age. From John F. Kennedy's bold challenge to put a man on the moon by the end of the 1960s, to our military's unprecedented use of space-based capabilities, to the evolution of the global positioning system (GPS) as a free global utility, the United States has aspired to—and attained—a leadership position in space, deriving significant benefits across the spectrum of scientific, military, commercial, and civil activities.

Our dependence on space has never been greater, yet our nation faces a new global security environment and strategic turning point that, if not addressed, will challenge our continued leadership and place increased stress on our ability to preserve the benefits we have come to rely on from our space capabilities. Many of the challenges are obvious: an austere fiscal environment where we will likely be expected to do more with less; a congested space environment where more than 20,000 man-made orbital objects are increasing the demand for better situational awareness; a contested security environment where freedom of operations and access will

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be far from guaranteed; and a competitive international environment where our space industrial base—still the best in the world—will have to innovate and adapt to produce the capabilities we need in the future. Still other challenges may not be as obvious; therefore, we must also become more agile, flexible, ready, and technologically advanced to prepare for the possibility of strategic and operational surprise.

The reason for our concern is clear. Space capabilities offer the United States and its allies unprecedented advantages in national decision making, military operations, homeland security, economic strength, and scientific discovery. Space systems provide unfettered global access and are vital to monitoring strategic and military developments as well as supporting treaty monitoring and arms control verification. Space systems are also essential to our nation's ability to respond to natural and man-made disasters and to monitor environmental status and trends. When combined with other capabilities, space systems allow joint forces to see the battlefield with clarity, navigate with accuracy, strike with precision, communicate with certainty, and operate with assurance.¹

Preserving the national security advantages we derive from space is critical to modern military operations and our future success and remains a key objective of the United States. The Department of Defense (DoD) recently reaffirmed this imperative. In his new strategic guidance, Secretary of Defense Leon Panetta emphasized the need to operate effectively “in cyberspace, space, and across all domains.”² Similarly, the new guidance stresses the United States' intent both to “work with domestic and international allies and partners and invest in advanced capabilities to defend its networks, operational capability, and resiliency in cyberspace and space” and to continue to lead global efforts to “assure access to and use of the global commons” (including space).³

US Strategic Command (USSTRATCOM) is one of the key organizations charged with preserving these advantages in the face of the changing strategic environment, and we are using the *National Security Space Strategy (NSSS)* as our guide. Although USSTRATCOM is not assigned a specific geographic area of responsibility (AOR), our scope of responsibility stretches from beneath the sea's surface (where our strategic ballistic missile submarines operate) to 22,000 miles above the earth's surface. USSTRATCOM's diverse responsibilities in space include:

- Planning and conducting military space operations
- Advocating for space capabilities

- Representing US military space interests internationally
- Assisting human spaceflight operations
- Providing warning and assessment of any attacks on space assets, and
- Conducting space situational awareness operations that benefit the US public and private sectors, human spaceflight, and—as appropriate—commercial and foreign space entities.

These critical responsibilities are more important than ever given the significance of space to our globally networked approach to deterrence and warfare. Future conflicts will, of necessity, be multidomain in nature and require more than one command's actions. Capabilities like space, which assure so many mission-critical capabilities, are powerful force multipliers. Space is essential to, and a great strength of, an interdependent joint force, assuring key missions and expanding the benefits derived from limited resources.

The Changing Strategic Environment and Space

The Space Age began in the context of the Cold War. Yet despite tensions that characterized their relations throughout the early days of the Space Age, the United States and the Soviet Union, in a surprisingly cooperative manner, signed the 1967 Outer Space Treaty. All parties to this treaty agreed outer space would be free for access, exploration, and use by all states; celestial bodies in space would be free from national appropriation or military bases, fortifications, exercises, and testing; that states would refrain from placing in orbit around the earth nuclear or other weapons of mass destruction.⁴ These principles continue to serve as the foundation for our approach to the space domain.

Access to space and space capabilities during most of the Cold War, however, was limited to states with the technological and economic means to get there—namely, the two Cold War superpowers. The United States deliberately turned to space to meet some of the most difficult and unique security problems of the Cold War. As a result, it produced space capabilities that yielded unprecedented strategic advantages. Space provided a “global perspective” to allow the United States “access to large areas of the Earth's surface,” especially those areas denied to conventional terrestrial capabilities and forces.⁵ In particular, space capabilities afforded US decision makers with access to information, including force status and overall battlespace awareness, at a rate which most other states could not (and in

most cases cannot yet) achieve. Along with assured command and control, these capabilities ensured senior US leaders maintained a decision-making advantage over potential adversaries. Space also provided the primary means to warn of nuclear ballistic missile attack, monitor treaties, and connect the president to the nuclear retaliatory forces.

By the start of the twenty-first century, the de facto monopoly the United States and one other superpower shared disappeared. Advances in technology and commercial growth reduced the cost for nation-states and nonstate actors to gain access to space and space capabilities. Indeed, the *National Security Space Strategy* notes, “There are approximately 60 nations and government consortia that own and operate satellites in addition to numerous commercial and academic satellite operators.”⁶

However, at the same time technological advances allowed friend and foe alike to develop capabilities to derive their own benefits and advantages from space, potential adversaries became keenly aware of the advantages space provided for the United States. The world watched as military operations like Desert Shield/Desert Storm demonstrated the value of “strategic” space for operational and tactical use, and they became equally aware that America’s reliance on space may also be a vulnerability to exploit. As a result, some seek to exploit a perceived overreliance by the United States on space by developing capabilities to prevent access to and use of space capabilities in order to deny or limit our overall military, economic, and technological advantage.⁷

As states continue to pursue benefits from space to enhance and secure their national interests, competition will only intensify,⁸ and the United States may find it more difficult to guarantee its access to and use of space capabilities. Unless we act, this may adversely affect our ability to secure our national security interests and maintain our economic, military, and technological leadership advantage. The *National Space Policy (NSP)* and the *National Security Space Strategy* outline objectives that are intended to ensure the United States continues to realize the significant national security benefits of space.

The National Space Policy and the National Security Space Strategy

The *National Space Policy*, released by President Obama on 28 June 2010, establishes the goals that the United States will pursue in its national space

programs. They are “energize competitive domestic industries; expand international cooperation; strengthen stability in space; increase assurance and resilience of mission-essential functions; pursue human and robotic initiatives; and improve space-based Earth and solar observation.”⁹ The integrating fiber woven throughout the *NSP* is that the United States should “help to assure the use of space for all responsible parties.”¹⁰

Building on the *NSP*, in January 2011, the secretary of defense and the director of national intelligence (DNI) promulgated the *National Security Space Strategy*, which “seeks to maintain and enhance the national security benefits” resulting from US actions and capabilities in space. To achieve the tasks assigned by the *NSP*, the *NSSS* established specific objectives to “strengthen safety, stability, and security in space; maintain and enhance the strategic national security advantages afforded to the United States by space; and energize the space industrial base that supports U.S. national security.”¹¹

The Five Pillars of the NSSS

The *National Security Space Strategy* provides the roadmap for implementing US space policy and achieving our objectives in space. It consists of five core principles, or pillars, which prescribe the framework within which USSTRATCOM and others will act:

1. Promote the Responsible, Peaceful, and Safe Use of Space

The first pillar of the *NSSS* calls for the United States to “lead in the enhancement of security, stability, and responsible behavior in space” and to develop transparency and confidence-building measures that will “encourage responsible actions in, and the peaceful use of, space.”¹² As outlined in the *NSP*, specific actions include domestic and international measures to promote safe and responsible operations in space; improved information collection and sharing for space object collision avoidance; protection of critical space systems and supporting infrastructures, with special attention to the critical interdependence of space and information systems; and strengthening measures to mitigate orbital debris.¹³

Central to this pillar is the opportunity to begin the necessary dialogue among international space-faring participants on the development of a foundational set of standards, norms of behavior, and best practices designed to promote the safe and responsible use of space. Defining responsible behavior could, over time, discourage destabilizing acts that threaten

the overall safety, stability, security, and sustainability of the space environment. USSTRATCOM is actively engaged with the Office of the Secretary of Defense and the Joint Staff to examine and propose a variety of measures that could strengthen international stability and security as well as increase the safety and sustainability of space operations.

2. Provide Improved US Space Capabilities

The second pillar of the *NSSS* calls for the United States to improve its capabilities in space and energize our space industrial base. Indeed, a stable, responsive, and innovative national industrial base is at the core of the new DoD strategic guidance and, combined with continued investment in science and technology and human capital, is vital to assuring continued US leadership in space. A strong industrial base and supporting workforce is also one of our best insurance policies against surprise or other “shocks” in the strategic, operational, economic, and technological spheres mentioned in the new defense strategy.¹⁴ But problems exist.

Since the Space Age began, we have rarely been so reliant on so few industrial suppliers. Many firms struggle to remain competitive as demand for highly specialized components and existing export controls reduce their customers to a niche government market.

Nevertheless, long-term, uninterrupted capability from space requires a capable industrial base dedicated to protection, resilience, augmentation, and reconstitution of assets in space, supported by timely design and development, cost-effective acquisition, and the ability to assure high-confidence space access. Any discussion of resiliency must also include consideration of new architectural approaches that leverage partnership opportunities with commercial entities and allies, and that use the full range of space and nonspace methods to deliver capabilities. Leased payloads, ride sharing, distributed capabilities, and new partnerships are among the means we need to pursue.

However, our resources are finite, and in the current fiscal environment, budgetary pressures are likely to constrain our operating and acquisition plans for some time. Accordingly, USSTRATCOM is working with our service components to ensure our requirements are realistic and achievable and that our actions fully reflect a culture of savings and efficiency that delivers essential services in support of military operations, serves as a force multiplier for global power projection, and maintains our technological

edge. We are also working to help bring stability to our requirements, budgets, and programmatic approaches.

3. Partnering with Responsible Nations, International Organizations, and Commercial Firms

The third pillar calls for increased engagement and partnering with other space-faring nations, appropriate international organizations, and commercial actors. USSTRATCOM is actively committed to this pillar and is already engaging with many partners, having signed more than 29 agreements with commercial entities to share selected situational awareness information. We recently received the authority to negotiate similar agreements with non-US governmental agencies and intergovernmental organizations and stand ready to work with responsible space actors by sharing and exchanging safety of spaceflight information.

USSTRATCOM is also actively seeking additional partners, especially those with whom there has been little if any previous engagement. We already partner and engage with long-standing friends and allies like Australia, Canada, and the United Kingdom, as well as other NATO allies. And we are undertaking greater efforts to sustain those traditional partnerships while we seek new opportunities with potential partners in Europe, Asia Pacific, Latin America, South America, the Middle East, and Africa.

4. Prevent and Deter Aggression against US Space Infrastructure

USSTRATCOM's grand challenge is to protect and assure US space capabilities for joint use and other national security purposes—defined in the fourth pillar as preventing and deterring aggression against US space infrastructure. Space defense demands full understanding of the operating environment so we can recognize indications and warnings and operate effectively to protect our assets, provide resilience, and if challenged, employ alternatives as needed. This pillar includes operations to acquire and maintain an understanding of the location, activities, ownership, and intent of objects in the space operational area and to provide warning and assessment of attack in, from, and through space.

Space situational awareness (SSA) enables all of our operational activities. An important means to add capability and capacity to SSA would be to expand partnerships and increase international cooperation. To this end we are looking to transition the Joint Space Operations Center (JSpOC) in California into a Combined Space Operations Center (CSpOC).

Initially, in full collaboration with our closest partners, such a step would enable us to leverage our individual strengths and, consistent with national policies, provide a framework and environment that could help address common space security needs. Further, such a transition would be consistent with the mandate of the *NSSS* to “build coalitions of like-minded space-faring nations.”¹⁵ This partnership would allow us to act in a coordinated manner, synchronize our efforts, and, together with those partners, promote responsible behavior in space to ensure the long-term sustainability of space.

5. Prepare to Defeat Attacks and Operate in a Degraded Environment

The final pillar of the *NSSS* calls for the United States to prepare to defeat attacks in space and operate in a degraded environment. This approach is generally based on “mission assurance” concepts and includes activities to deliver mission-essential space capabilities to US and coalition forces and to assure mission success via alternate architectures and means, as appropriate, through all conditions of conflict and stress.

Mission assurance involves the need to defend and protect critical US, allied, and partner space capabilities, to include enhancing the resiliency of critical space systems, improving the use of alternative means and domains to assure the mission, and demonstrating the ability to operate through a stressed environment if and when capabilities are degraded.

Beyond awareness in space we need robust, resilient architectures—both space-based constellations and terrestrial assets—to ensure today’s essential space-based services are available to accomplish the mission.

Finally, to enhance deterrence we have committed ourselves to preparing our forces to “fight through” any possible degradations or disruptions to our space capabilities. Through regular global and tabletop exercises, we are improving our operational concepts and tactics, techniques, and procedures to enhance both protection and resiliency. We also leverage commercial, civil, and partner capabilities to support our military operational needs and ensure we fully appreciate and understand the interdependencies between military operations and those capabilities. And, as stated by the *NSSS*, “The U.S. will retain the right and capabilities to respond in self-defense, should deterrence fail.”¹⁶ A US response may include actions in other domains.

Conclusion

The space domain continues to grow more congested, contested, and competitive at the same time as nations rely increasingly on space and space-based capabilities for critical civil and national security activities. Space mission assurance—including access to and use of all space capabilities—is essential to current and future US and allied civil life, economic strength, and military activities. Assuring continued US and allied access to and use of space demands a broader strategic approach that protects our critical capabilities, leverages our partners, and promotes safe and responsible use of the domain.

As it has been throughout the space age, leadership remains the key to our success. Active US leadership requires a whole-of-government approach that integrates all elements of national power, from technological prowess and industrial capacity to alliance building and diplomatic engagement. USSTRATCOM is taking concrete steps to contribute to that leadership, and we look forward to continuing this role as we assure our vital space missions. 

Notes

1. *National Security Space Strategy*, unclassified summary (Washington: DoD, January 2011), i.
2. Secretary of Defense Leon Panetta, letter, 5 January 2012.
3. *Sustaining U.S. Global Leadership: Priorities for 21st-Century Defense* (Washington: The White House, January 2011), 3.
4. *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, 27 January 1967, 18 U.S.T. 2410, T.I.A.S. No. 6347, 610 U.N.T.S. 205 (entry into force, 10 October 1967).
5. Martin E. B. France and Jerry Jon Sellers, “Real Constraints on Spacepower,” in *Toward a Theory of Spacepower: Selected Essays*, eds. Charles D. Lutes, Peter L. Hays, Vincent A. Manzo, Lisa M. Yambrick, and M. Elaine Bunn (Washington: National Defense University Press, 2011), 57–58.
6. *National Security Space Strategy*, 3.
7. *Ibid.*
8. Robert L. Pfaltzgraff Jr., “International Relations Theory and Spacepower,” in *Toward a Theory of Spacepower*, 40–41.
9. *National Space Policy of the United States of America* (Washington: The White House, 28 June 2010), xx.
10. *Ibid.*
11. *National Security Space Strategy*, 4.
12. *National Space Policy*, x.
13. *Ibid.*
14. *Sustaining U.S. Global Leadership*, 7.
15. *National Security Space Strategy*, 9.
16. *Ibid.*, 10.