



Department of Defense

---

Report to Congressional Defense Committees

---

## **Final Report on Organizational and Management Structure for the National Security Space Components of the Department of Defense**

August 9, 2018

The estimated cost of this report for the Department of Defense is approximately \$219,000 in Fiscal Year 2018. This includes \$11,000 in expenses and \$207,000 in DoD labor.

Generated on August 8, 2018 RefID: F-99E2A58

***SEC. 1601. SPACE ACQUISITION AND MANAGEMENT AND OVERSIGHT.***

***(c) REVIEW OF STRUCTURE.—***

*(1) REVIEW.—The Deputy Secretary of Defense shall conduct a review and identify a recommended organizational and management structure for the national security space components of the Department of Defense, including the Air Force Space Command, that implements the organizational policy guidance expressed in this section and the amendments made by this section.*

*(2) INTERIM REPORT.—Not later than March 1, 2018, the Deputy Secretary of Defense shall submit to the congressional defense committees an interim report on the review and recommended organizational and management structure for the national security space components of the Department of Defense, including the Air Force Space Command, under paragraph (1).*

*(3) FINAL REPORT.—Not later than August 1, 2018, the Deputy Secretary of Defense shall submit to the congressional defense committees a final report on the review and recommended organizational and management structure for the national security space components of the Department of Defense, including the Air Force Space Command, under paragraph (1), including—*

- (A) a proposed implementation plan for how the Deputy Secretary would implement the recommendations;*
- (B) recommendations for revisions to appointments and qualifications, duties and powers, and precedent in the Department;*
- (C) recommendations for such legislative and administrative action, including conforming and other amendments to law, as the Deputy Secretary considers appropriate to implement the plan; and*
- (D) any other matters that the Deputy Secretary considers appropriate.*

*(4) PROHIBITION ON DELEGATION.—The Deputy Secretary of Defense may not delegate the authority to carry out this subsection.*

## **REPORT REQUIREMENT**

*Pursuant to Section 1601(c) of the National Defense Authorization Act (NDAA) for Fiscal Year 2018 (FY 2018), Public Law 115-91, this report follows the interim report submitted to the congressional defense committees on March 1, 2018, and provides results of a review of the organizational and management structure for the national security space components of the Department of Defense (DoD).*

## **INTRODUCTION**

Space is integral to the U.S. way of life, our national security, and modern warfare. Although U.S. space systems have historically maintained a technological advantage over those of potential adversaries, those potential adversaries are now actively developing ways to deny our use of space in a crisis. It is imperative that the United States adapts its policies, doctrine, and capabilities to protect our interests. Towards that end, the Department of Defense will marshal spaces resources into a Space Force. The Space Force will protect our economy through deterrence of malicious activities, ensure our space systems meet national security requirements, and provide vital capabilities to joint and coalition forces across the spectrum of conflict.

Presidential leadership, congressional support, and Department of Defense focus have set the environment for dramatic improvement of our national space capabilities. The President has articulated a compelling vision for a Space Force that protects the U.S. economy and way of life.

In his remarks at a meeting of the National Space Council on June 18, 2018, the President directed “the Department of Defense and Pentagon to immediately begin the process necessary to establish a Space Force as the sixth branch of the Armed Forces” that is separate from and equal to other branches. The Department of Defense will take immediate steps to implement the President’s direction where authorities exist and seek legislation from Congress to realize the President’s vision.

The President’s *National Security Strategy* and the *National Strategy for Space* highlight that space is a strategic domain and the United States must maintain peace through strength in space. The *National Strategy for Space* outlines four pillars for a unified approach to secure U.S. space leadership:

- Transform to more resilient space architectures,
- Strengthen deterrence and warfighting options,
- Improve foundational capabilities, structure, and processes, and
- Foster conducive domestic and international environments for space development.

Congress has also made its intent and support clear, providing direction and significant funding to enhance national space capabilities.

Establishing a sixth branch of the Armed Forces requires Congressional action. This report outlines immediate steps by the Department of Defense to protect U.S. vital interests in space, including:

- Accelerate space technology and anchor development initiatives to the modernization priorities outlined in the *National Defense Strategy*,
- Establish a Space Development Agency, a joint organization charged with rapidly developing and fielding next-generation capabilities,
- Establish a Space Operations Force of career space experts who are trained, promoted and retained as space warfighting professionals and who form a space community of engineers, scientists, intelligence experts, operators, strategists and more,
- Establish an affordable and efficient operating structure with accountable civilian oversight to provide service and support functions for the Space Force,
- Establish a new U.S. Space Command to improve and evolve space warfighting, including integrating innovative force designs, concepts of operation, doctrines, tactics, techniques and procedures.

## THE THREAT

The United States faces rapidly growing threats to our space capabilities. China and Russia, our strategic competitors, are explicitly pursuing space warfighting capabilities to neutralize U.S. space capabilities during a time of conflict. Other potential adversaries are also pursuing counter-space capabilities such as jamming, dazzling, and cyber-attacks. In a May 11, 2017 Statement for the Record for the Senate Select Committee on Intelligence, the Director of National Intelligence provided the following assessment of adversary space capabilities and intentions:

“Russia and China perceive a need to offset any US military advantage derived from military, civil, or commercial space systems and are increasingly considering attacks against satellite systems as part of their future warfare doctrine. Both will continue to pursue a full range of anti-satellite (ASAT) weapons as a means to reduce US military effectiveness.

“Some new Russian and Chinese ASAT weapons, including destructive systems, will probably complete development in the next several years. ... Both countries are advancing directed energy weapons technologies for the purpose of fielding ASAT systems ... [and] continue to conduct sophisticated on-orbit satellite activities such as rendezvous and proximity operations, which are likely intended to test dual-use technologies with inherent counterspace functionality.

“The global threat of electronic warfare (EW) attacks against space systems will expand in the coming years in both number and types of weapons. Development will very likely focus on jamming capabilities against dedicated military satellite communications (SATCOM), Synthetic Aperture Radar (SAR) imaging satellites, and enhanced capabilities against Global

Navigation Satellite Systems (GNSS), such as the US Global Positioning System (GPS). Blending of EW and cyber-attack capabilities will likely expand in pursuit of sophisticated means to deny and degrade information networks.”

## STRATEGIC CONTEXT

The Department of Defense has two broad objectives in space:

- Protect U.S. vital interests in space – ensure unfettered access to, and freedom to operate in space, in order to advance America’s security, economic prosperity, and scientific knowledge; and
- Deploy next-generation capabilities to support the warfighter.

The *National Defense Strategy* focuses on space as a warfighting domain and a modernization priority. Space capabilities are foundational to other critical DoD modernization efforts including:

- Nuclear forces,
- Cyberspace,
- Command, control, communications, computers and intelligence, surveillance, and reconnaissance (C4ISR),
- Missile defense,
- Joint lethality in contested environments,
- Forward force maneuver and posture resilience,
- Advanced autonomous systems, and
- Resilient and agile logistics.

Furthermore, new space capabilities will unlock innovative operational concepts as the Department anticipates the implications of new technology on the battlefield and enables Dynamic Force Employment to increase U.S. flexibility and complicate adversary planning.

## DOD SPACE VISION

DoD will usher in a new age of space technology and field new multi-domain systems in order to deter and if necessary degrade, deny, disrupt, destroy, and manipulate adversary capabilities to protect U.S. interests, assets, and way of life. This new age will unlock growth in the U.S. industrial base, expand the commercial space economy, and strengthen cooperation with our allies and partners.

To accomplish these goals, the Department will harness a blend of commercial and government technology, rapid prototyping, experimentation, collaboration with key allies and partners, and enhanced government-commercial relationships.

Department capability development efforts will focus on:

- Persistent global surveillance for advanced missile targeting,
- Indications, warning, targeting and tracking for defense against advanced missile threats,
- Alternate positioning, navigation, and timing (PNT) for a GPS-denied environment,
- Global and near-real time space situational awareness,
- Development of deterrent capability,
- Responsive, resilient, common ground-based space support infrastructure (e.g., ground stations and launch capability),
- Cross-domain, networked, node-independent battle management command, control, and communications (BMC3), including nuclear command, control, and communications (NC3), and
- Highly-scaled, low-latency, persistent, artificial intelligence-enabled global surveillance.

## SPACE FORCE

President Trump directed the establishment of a Space Force to better protect U.S. vital interests in space. Like the other military branches, the Space Force will organize, train, and equip forces to protect national security interests in the physical domain of space. The Space Force will accelerate and unify the Department's space efforts and enable the delivery of next-generation space capabilities faster than potential adversaries can evolve. The Space Force will grow the world's most capable national security space workforce. These efforts set the foundation for growth, mission expansion, and service structure to meet man, train, and equip responsibilities.

### Change

Establishing the Space Force will be multi-dimensional and phased. In this first phase, using existing authorities, the Department of Defense will establish several of the component parts of the Space Force. The second phase requires Congress to combine these components into the sixth branch of the Armed Forces. The Department of Defense is immediately pursuing four components:

- Space Development Agency – capabilities development and fielding,
- Space Operations Force – developing space leaders and joint space warfighters,
- Services and Support – leadership and support structures, and
- Space Command – developing Space Force warfighting operations to protect U.S. national interests.

First, DoD will establish a Space Development Agency to develop and field space capabilities at speed and scale. The Air Force has already begun to transform its Space and Missile Center (SMC). The Department will accelerate and extend this transformation to all services by creating a joint Space Development Agency.

Second, the Department will develop the Space Operations Force to support the Combatant Commands. These joint space warfighters will provide space expertise to combatant commanders and the Space Development Agency, and surge expertise in time of crisis to ensure that space capabilities are leveraged effectively in conflict.

Third, the Department will create the governance, services, and support functions of the Space Force. Many of these will require changes to U.S. law. The Department will build a legislative proposal for Congressional consideration as a part of the Fiscal Year 2020 budget cycle.

Fourth, the Department will create a U.S. Space Command, led by a four star general or flag officer, to lead the use of space assets in warfighting and accelerate integration of space capabilities into other warfighting forces. U.S. Space Command will be responsible for directing the employment of the Space Force.

#### *Priorities*

The Department is focused on aligning existing capabilities and accelerating new warfighting capability. The Department will:

- Ensure unfettered access to, and freedom to operate in space,
- Improve space support to Combatant Commands,
- Center on speed and urgency, including scalability and development of breakthroughs,
- Accelerate capacity and capability,
- Leverage DoD-enterprise support and service functions such as recruiting, facilities management, and medical rather than establishing redundant ones,
- Consolidate existing authorities for DOD space activities, and
- Minimize duplication of effort and eliminate bureaucratic inefficiencies.

#### *Timing*

Outlined below are steps toward the Space Force that are within the Department's current authorities and will be taken in the coming months. A legislative proposal for the authorities necessary to fully establish the Space Force as the sixth branch of the Armed Forces will be submitted with the President's Budget for FY 2020 to support Congressional consideration in the FY 2020 National Defense Authorization Act.

## **SPACE DEVELOPMENT AGENCY**

History demonstrates that strong technical competence and leadership, concentration of resources, and abeyance of bureaucracy produce exceptional results. Examples include General Bernard Schriever's development of the intercontinental ballistic missile (ICBM), Admiral Hyman Rickover's development of the Navy's nuclear enterprise, the development of missile defense through the Strategic Defense Initiative Organization (SDIO) and then the Missile Defense Agency (MDA), and more recent models like the Joint IED Defeat Organization (JIEDDO).

### *Change*

To achieve a similar breakthrough, the Department will:

- Identify opportunities to move from dependence on a few independent assets to a proliferated architecture enabled by lower-cost commercial space technology and access,
- Shift from an acquisition organization and mindset to a development organization focused on experimentation, prototyping, and accelerated fielding, and
- Change from a matrixed and overlapping structure to a concentrated and decoupled structure to generate speed.

The Air Force Rapid Capabilities Office (AFRCO) provides a model for the thinking, execution style, reporting structure, and innovation required for creating warfighting dominance. Similarly, the DoD Strategic Capabilities Office (SCO) has delivered exceptional results in leveraging existing DoD technologies to rapidly field new capabilities. The Department will create a Space Development Agency with similar style and intent to achieve the above described change.

Some existing space acquisition programs may remain in current service organizations, which should aggressively pursue improved performance, while the Space Development Agency develops and fields the capabilities outlined in the DoD Space Vision. Resources will shift from service space acquisition organizations to the Space Development Agency as soon as practicable.

### *Priorities*

In establishing the Space Development Agency, the priorities are:

- Bold breakthroughs designed to obsolesce our competitors,
- Technology maturation and systems engineering,
- Lean engineering, manufacturing, and support,
- Industrial base expansion,
- Streamlined development and acquisition process, and
- Increased acquisition cooperation with the National Reconnaissance Office.

The DoD Space vision is a family-of-systems. These systems must be engineered for simplified growth, ease of integration and test, and continuous modernization. This will rely heavily on engineering re-use, modularity, and spiraled functionality. Based on the evolution of capability, the Space Development Agency will deploy a production system that has increasing volume, standardization, and speed. The commercial space industry will have a greater role as commercial and government entities “move toward the center” on requirements, regulation, and compliance.

#### Timing

Today the Air Force Space and Missile Systems Center (SMC) executes 85 percent of the Department’s military space procurement budget, delivering missile warning; positioning, navigation, and timing; satellite communications; space situational awareness; and other vital national security space capabilities.

In anticipation of major restructuring, the SMC conducted a year-long, comprehensive assessment and redesign of its organization and processes. This assessment yielded a change to the enterprise called “SMC 2.0”. SMC 2.0 drives innovation, speed, and affordability. It focuses investment in game-changing technologies, simplifies decision making and leverages commercial partnerships in concert with rapid prototyping and experimentation. SMC 2.0 is the start.

The formation of the Space Development Agency is predicated on the synergistic integration of the current space development enterprise. Next steps include:

- Budget and program segmentation and overhead allocations (led by Comptroller and the Director, Cost Assessment and Program Evaluation),
- Streamline current operations to focus on execution (led by a senior SMC leader),
- Ensure oversight, integration, and fielding of classified space capabilities (led by SMC), and
- Identify synergy between Title 10/Title 50 organizations (led by the Under Secretary of Defense for Policy).

DoD leadership will establish the Space Development Agency and will identify the governance, structure, location, skills, and talent-management required. The end state of the Space Development Agency will be developed in partnership with the Military Services and the intelligence community and report to an accountable civilian.

## **SPACE OPERATIONS FORCE**

Today all five Military branches possess space expertise, but this space cadre is a small percentage of the total force. Historically, the Department has grown capability such as Special Forces, cyber, or medical, through identification, targeted support, training, and career development.

### Change

To grow the needed joint warfighting expertise, the Department will establish the Space Operations Force. Similar to Special Operations Forces personnel provided by all Military Services, the Space Operations Force will be composed of the space personnel from all Military Services but developed and managed as one community. The Space Operations Force will provide the human capital needed to develop, field, and integrate space capabilities into multi-domain warfighting.

The Space Operations Force will:

- Include the space personnel from all Military Services, including Guard, Reserve, and civilians,
- Create a clear career track for the space community containing all relevant space specialties including operations, intelligence, engineering, science, acquisition, cyber, etc., and
- Be overseen by U.S. Space Command with civilian oversight from the Office of the Secretary of Defense, while personnel remain in the Services, until the establishment of the Space Force.

### Priorities

The Space Operations Force will:

- Develop the world's best space operations, intelligence, engineering, science, acquisition, cyber personnel and present them to COCOMs. Be prepared to deploy teams of space experts to U.S. European Command and U.S. Indo-Pacific Command no later than summer of 2019,
- Scale over time to support continuous rotational presence at combatant commands,
- Be prepared to surge expertise forward in time of crisis,
- Grow the number and quality of space-rated personnel to meet the warfighting needs of U.S. Space Command and other combatant commands, and
- Develop standards that DoD personnel must meet to be Space Operations Force members.

### Timing

Work on the Space Operations Force begins immediately and will leverage existing work of the services:

- U.S. Space Command, under accountable civilian oversight, will be responsible for developing the Space Operations Force,
- DoD will integrate space capabilities and requirements into all required senior military leadership courses,

- DoD may recommend any necessary additional authorities, systems, or designations to enable oversight similar to U.S. Special Operations Command of Special Forces personnel, and
- DoD will establish human capital development processes, including updates to the curricula of all service academies, a joint school house, and identifying additional education strategies, to ensure a robust supply of joint space warfighters.

## SERVICES AND SUPPORT

Transition and timing to a sixth branch is paced by scaling and effectiveness of the Space Defense Agency and Space Operations Forces. To ensure a rapid and seamless transition, conditions and provisions must be identified and set in place.

In addition to warfighting, acquisition, and personnel, there are support functions that each of the existing Military Services provide with some variation. These capabilities include:

- Recruiting,
- Legal,
- Financial management,
- Logistics,
- Medical, and
- Human resources.

### Change

As a part of the Department's legislative proposal for the Space Force, the sixth branch of the Armed Forces, the Department will outline how to provide these services and support.

### Priorities

Services and support functions of the Space Force will:

- Have accountable civilian leadership,
- Enable the Space Force to be a lean, warfighting organization,
- Not add significant or costly headquarters or support personnel, and

### Timing

Revising title 10 of U.S. Code to establish service and support functions and leadership authorities of the Space Force as the sixth branch of the Armed Forces will be the focus of the legislative proposal submitted by the Department in early 2019.

## **U.S. SPACE COMMAND**

Like other military services, the Space Force will be an organize, train, and equip (OTE) organization responsible for national security interests in the physical domain of space. The President recognizes that additional changes beyond OTE are needed to improve and evolve the Department of Defense's space warfighting components. To achieve this, the Department of Defense will elevate and enhance its space warfighting activities. The innovations that occurred between World War I and World War II created many of the key technologies and capabilities, such as the aircraft carrier, that enabled U.S. and Allied victory in World War II. The leadership of the new U.S. Space Command will provide that spirit of innovation and experimentation combining warfighters and technical expertise. The *National Defense Strategy* identified the importance of “being strategically predictable, but operationally unpredictable” and fostering a competitive mindset in order to “out-think, out-maneuver, out-partner, and out-innovate” potential adversaries.

### Change

To further accelerate warfighting capability, the Department recommends creating a new U.S. Space Command to become a unified combatant command. U.S. Space Command will be responsible for preparing for and deterring conflict in space and leading U.S. forces in that fight if it should happen.

U.S. Space Command will:

- Lead U.S. warfighting activities in space and establish unity of command for operational space forces,
- Integrate space planning and operations across military campaigns and contingency plans,
- Simplify the command structure by aligning operational forces to the commander responsible for joint space warfighting,
- Develop space doctrine, concepts of operation and space tactics, techniques and procedures (TTPs),
- Establish enterprise space standards to be adopted by the Military Services, ensuring interoperability of the joint force, and
- Utilize commercial practices and digitization to streamline the footprint and automate labor-intensive operations.

### Priorities

U.S. Space Command priorities will include:

- Designing and executing a full range of joint space training and exercises, with focused support to the Asia Pacific Security Initiative and the European Deterrence Initiative,
- Ensuring modernization meets the requirements of the *National Defense Strategy*,

- Providing space expertise to other combatant commands and strengthening partnerships with our allies,
- Monitoring development, training, and management of personnel in the Space Operations Force, and
- Operating a flat and lean headquarters focused on joint warfighting.

#### Timing

The Department will recommend that the President revise the Unified Command Plan to create the new U.S. Space Command by the end of 2018 and evaluate the need for any additional personnel, responsibilities and authorities. Initially the Department will recommend that the Air Force Space Command commander be dual-hatted as commander of the unified command. Subsequent commanders will be single-hatted.

The Department will provide combatant commanders with continuous joint space expertise. These space personnel will allow commanders the ability to use space capabilities to deter and respond to escalating conflict. The Department will examine U.S. Special Operations Command (USSOCOM) and U.S. Cyber Command (USCYBERCOM) to develop a lean, flat structure for U.S. Space Command.

U.S. Space Command will deliver increased space expertise to other combatant commands:

- Teams of experienced space operators will staff each combatant command to educate senior leaders on space contributions to deterrence and warfighting.
- U.S. Space Command will expand the capacity to forward deploy space expertise on a surge basis to enhance effectiveness in times of crisis.

## **WHOLE OF GOVERNMENT SYNERGY**

The National Space Council, under the leadership of the Vice President, and the National Security Council will continue to integrate and ensure a whole-of-government approach to achieving the President's vision. Although most of the national security space enterprise resides within the Department of Defense, as the Space Force is established and grows whole of government considerations include:

- Improved integration with other space organizations across the intelligence community, particularly shared organizations including the National Reconnaissance Office and National Geospatial-Intelligence Agency,
- Coordination with other U.S. Government departments and agencies that have space missions, including the Federal Aviation Administration, the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, and the Department of Commerce.

## **LEADERSHIP / GOVERNANCE**

The Department will immediately implement the actions in this report that fall under the authority of the Secretary of Defense. To ensure rapid implementation of these efforts, the follow-on actions will be addressed by a governance committee led by the Deputy Secretary of Defense and including: the Chairman of the Joint Chiefs of Staff, the Secretary of the Air Force, the Secretary of the Army, the Secretary of the Navy, the Under Secretary of Defense for Research and Engineering, the Under Secretary of Defense for Acquisition and Sustainment, the relevant combatant commander (first USSTRATCOM and then U.S. Space Command), the Under Secretary of Defense for Personnel and Readiness, and the Under Secretary of Defense for Policy. As work progresses, these leaders will also engage with DoD stakeholders including Military Service leadership and interagency partners to ensure the final Space Force is well integrated with the whole of government. This governance committee will ensure civilian oversight of the process and a clear proposal for civilian oversight in the final legislative proposal.

These senior leaders will be responsible for the following:

- Establishing accountable civilian oversight for the Space Force,
- An operating model and reporting structure of the Space Development Agency,
- Establishment of U.S. Space Command,
- Identifying and consolidating current space entities to establish the Space Force components,
- Developing the leadership structure and identifying the leadership candidates,
- A legislative proposal for the required authorities for the Space Force, and
- Identifying the budget structure that includes transitions to a Space Development Agency and U.S. Space Command.

## **BUDGET**

The President's Fiscal Year 2020 budget will be sent to Congress in February 2019. The Department will submit a legislative proposal for the Space Force as the sixth branch of the Armed Forces and identify the budget elements that will move under the Space Force once it is fully established. Additionally, any costs associated with the establishment of the Space Force will be outlined.

## **CONCLUSION**

Leadership and critical alignment within the Executive Branch and the Legislative Branch provide a window of time to drive significant change in the space enterprise and establish a new Space Force with a generational leap forward in capability.

The Space Force will follow the *National Defense Strategy* to accelerate new capabilities. This will grow the commercial space industry and protect U.S. vital interests.

The pace of change will be governed by technology – not held back by organization. The new Space Development Agency will scale the skills, mindset, and approach of DoD innovative organizations like the Strategic Capabilities Office and the Air Force Rapid Capabilities Office to develop capabilities at speed, and marry commercial technology and industry with government development. The new U.S. Space Command will merge this new technology with warfighters dedicated to innovating, experimenting and evolving the Department’s warfighting concepts. The Space Development Agency will first integrate with the Space Operations Force and eventually with service support functions and authorities to become the Space Force.

The Space Force will unlock our potential and lead to outcomes never before thought possible.