

# Plan for a Department of the **SPACE FORCE** Executive Summary



**CNA**



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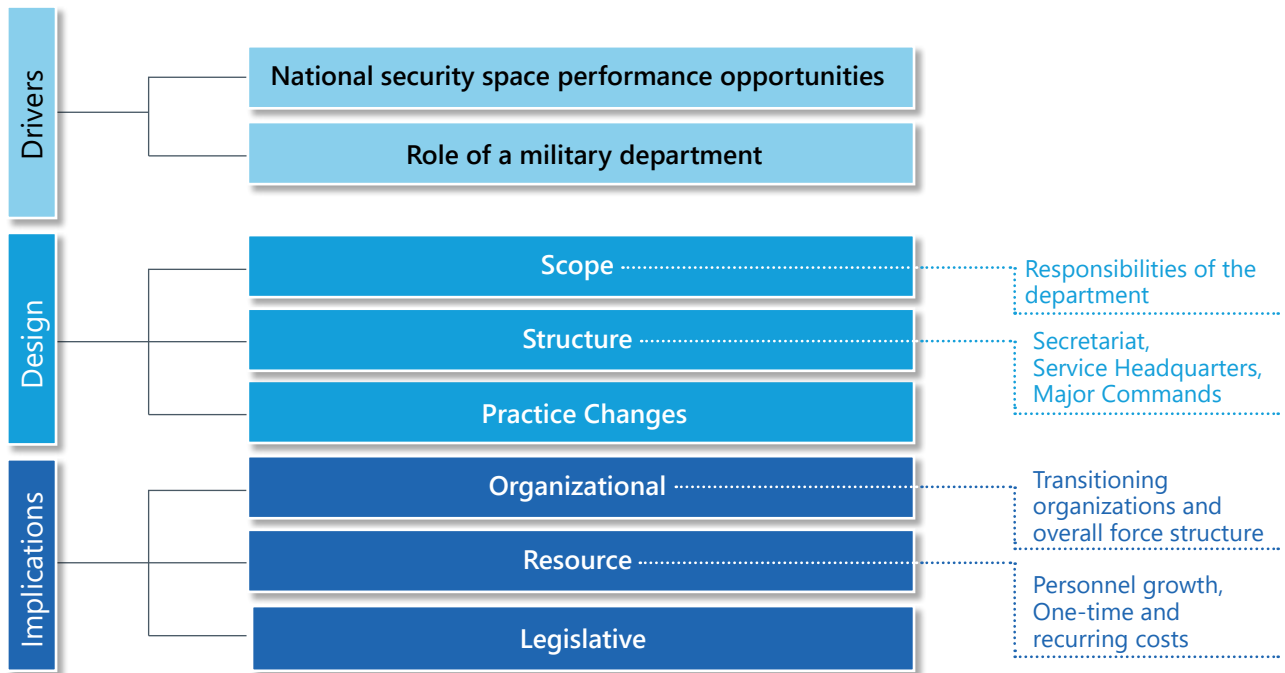
# PLAN FOR A DEPARTMENT OF THE SPACE FORCE

## EXECUTIVE SUMMARY

In response to growing concerns regarding the United States' ability to outpace adversaries in space and to ensure continued space superiority, the U.S. Congress mandated several space-related reviews and studies in the 2018 National Defense Authorization Act (FY18 NDAA) (Public Law 115-91). One of these directed the Deputy Secretary of Defense to contract with a federally funded research and development center (FFRDC) without close ties to the Air Force "to develop a plan to establish a separate military department responsible for the national security space activities of the Department of Defense." The Center for Naval Analyses, the sole FFRDC for the Department of the Navy, was selected to develop this independent plan.

Many models have been offered as potential improvements to the current organization of national security space within the Department of Defense (DOD). By explicit NDAA mandate, we focus exclusively on a plan for a separate military department that can provide performance improvements over the status quo. Our analytical approach includes a traceable and defensible methodology that rests on a foundation of desired outcomes and employs quantifiable performance measurements whenever possible to drive the department's design. However, we cannot definitively know before it is implemented that any design will produce the expected benefits.

### FRAMEWORK FOR THE PLAN



## RESULTS

This report represents our plan for the Department of the Space Force (DSF), in satisfaction of the requirement mandated by §1601(d)(3) of the FY18 NDAA. It details the drivers for creating a Department of the Space Force, our recommendations for the responsibilities and broad structure of the Department, the organizational and resource implications of this design, and the corresponding legislative implementation.

## RESULTS

**SPACE FORCE SCOPE, SIZE, AND TRANSITIONING ORGANIZATIONS**

**W**e recommend that the Department of the Space Force be responsible for typical organize, train, and equip activities (as defined in Title 10 and DOD Directive 5100.01) across all space operations as defined in Joint Publication 3–14. The Department of the Space Force will initially be created from existing DOD organizations. We identify the organizations to the echelon III level that would transfer in whole or in part to the new department: (20) from the United States Air Force (USAF), (4) from the United States Army (USA), (6) from the United States Navy (USN), and (2) from the Office of the Secretary of Defense (OSD). Our proposed set of responsibilities for the DSF also includes the centralized procurement of commercial space products and services (e.g., imagery and satellite communications) currently performed by multiple services and DOD agencies. This leads to a Space Force with a combined active duty military and civilian personnel endstrength of 16,000 to 20,000.

**The responsibility of the new Department also includes space-based reconnaissance activities currently conducted by the National Reconnaissance Office (NRO) and we recommend the transfer of the NRO activities to the new department.** However, as a joint DOD/intelligence community (IC) organization, some equities may not be as effectively addressed within a DSF. The classification level of this study does not provide sufficient insights into IC-specific sources or methods that may not be supportable within a military department. For this reason, we suggest further coordination between OSD and the Office of the Director of National Intelligence (ODNI) to determine any specific activities for exclusion from transfer to the DSF.

**We do not recommend including the development and acquisition of space-based missile warning in the DSF, instead placing this responsibility with the Missile Defense Agency (MDA).** As part of a larger, multi-domain missile defense enterprise, the risk of introducing seams into the complex systems engineering process outweighs the identified benefits of consolidation within the Department.

**Similarly, we do not recommend the inclusion of satellite terminal acquisition within the DSF.**

Unlike satellites and ground stations, terminals are simultaneously elements of other service domains. These typically require considerations for unique operating environments, engineering specifications to operate within larger systems or platforms, or performance standards to align to service operating concepts. Using processes similar to those currently in place for GPS terminals, the DSF would define overarching system interfaces and interoperability requirements, while individual services would procure their own terminals. The DSF would also support alignment of terminal and satellite acquisition by maintaining advocacy for the space major force program (MFP 12), which would include terminals.

**We also do not recommend the inclusion of the civil space organizations, such as the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA) into the DSF.** A significant number of international relationships and collaborations require a civil partner and would be politically infeasible with a military organization. Assessments have documented currently effective coordination between DOD and civil agencies. Thus, any marginal performance improvements are outweighed by the high risk for destroying successful international cooperation, partnerships, and research.

**At its current size, we do not recommend that the DSF take on base and installation, certain personnel support services, or accession responsibilities.** Rather, we recommend tenancy at existing service and joint locations and the use of support services from existing OSD and service organizations. We also recommend Space Force accession from existing service recruiting and entry-level training pipelines. If the DSF grows in the future, these recommendations can be revisited.

## ORGANIZATIONAL STRUCTURE AND PRACTICES

Our proposed organizational structure represents a lean headquarters that eliminates redundancy between civilian and military organizations and combines offices where synergies warrant. It contains unique features—an Office of Industrial Engagement and Policy and a Space Innovation Center—designed to increase the pace of innovation and development. It also includes the acquisition command—the Space Systems Command—within the service chief’s chain of command to better link space acquisition with space operator needs. Finally, it includes deputy chief of staff positions to address current challenges in the development of and advocacy for space and technical experts (S1), space intelligence needs (S2), ties between requirements definition and operations (S3/5/8), and enforced data standards and well-aligned

space and cyber operations (S6). The appropriate elements of this structure are codified in the recommended legislation included in our report.

Additionally, we recommend the DSF make or advocate for changes to typical DOD practices to fully realize the improvement opportunities that the creation of a department and this organizational structure would provide. Many of these, too, are codified in our recommendations for legislation:

**Better develop and sustain Space Force** military and civilian expertise through flexible career progression, eliminating up-or-out promotion requirements, and instituting continuing education opportunities with academia or industry.

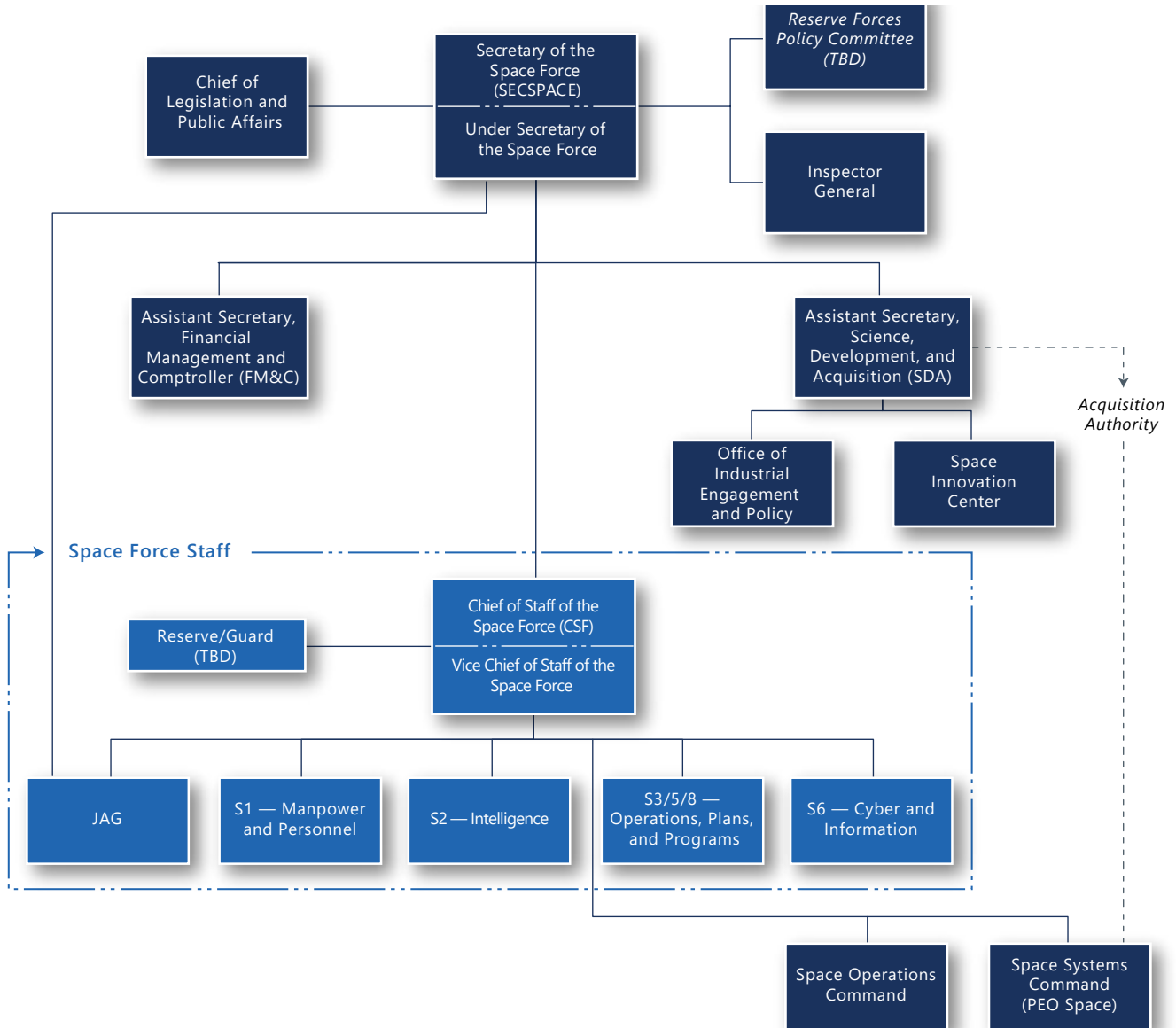
**Employ acquisition processes** that limit the number of reviews and delegate decision authority as low as practicable. Meet the unique needs of space acquisition by increasing reprogramming topline and providing for incremental and multiyear funding.

**Institute longer initial military and civilian leadership tenures** that will allow for the deliberate development of a unique, warfighting-oriented Space Force culture.

## COST

Our cost estimate was calculated in three parts: budget authority (BA) transfers from existing organizations, the cost of additional personnel, and non-recurring costs incurred due to the creation of the DSF. In addition to budgetary transfers from existing organizations, there will be an additional cost of the DSF above baseline—recurring costs for additional personnel and non-recurring transition costs. Because of our lean headquarters design and transfers from existing organizations, we anticipate approximately 475 new billets will be required for the DSF. These will staff the headquarters organizations and support

## ORGANIZATIONAL STRUCTURE



service competency responsibilities at the geographic combatant commands. Non-recurring costs due to DSF creation include information technology (IT) and business systems, repurposing training and education systems, outfitting and rebranding, and the employment of expert advice on change management from private industry consultants. Over 90 percent of the variability in our estimate stems from the assumptions made about whether IT systems will be

reconfigured from existing USAF systems or developed specifically for DSF. Our estimates assume that at this point substantial physical movement of organizations and military construction are not needed. We estimate the total cost above baseline for the DSF at \$0.8 to \$4.6 billion across the future years defense program (FYDP).



## MOTIVATION FOR THE DESIGN

The design we propose in this report is motivated by a clear need for performance improvements in national security space. To ensure a DSF that was positioned to meet the nation's objectives for national security space, we sought to analytically define what the DSF needs to accomplish and how. Our methodology synthesized national security space guidance into three objectives: 1) maintain and sustain mission assurance, 2) conduct space warfighting, and 3) streamline acquisition and support the industrial base. We then compared existing DOD performance with subject matter expert-defined benchmarks for these objectives, and we found opportunities for improved performance that a DSF should achieve.

We also examined U.S. Code Title 10 and DOD requirements, as well as parallel structures in the existing services, to identify essential responsibilities for a military department. These analyses led us to six design imperatives that guided our DSF design.

Every element of our design is justified by, and tied to, the design imperatives and the opportunity for performance improvement they represent. In fact, we believe that the design we present will lead to improved performance in national security space by allowing for the following:

**Faster, more cost-effective acquisition** via space-specific processes and authorities, and better informed requirements.

**Better informed space warfighting** via providing dedicated emphasis and expertise across the development of concepts, doctrine, and plans.

### DSF DESIGN IMPERATIVES

1

Advocate for and foster the development of **space and technical expertise** across DOD.

2

Provide **flexible and agile mechanisms** to develop and employ both legacy systems and new capabilities.

3

Support **coherency in development and acquisition** across space domain enterprises

4

Operate efficiently and with a **lean management and support structure**.

5

Execute **organize, train, and equip** responsibilities for space domain operations.

6

Provide **leadership, functional, and support offices** at the secretariat and headquarters level that align with department responsibilities and counterpart organizations.

## MOTIVATION FOR THE DESIGN

### **More resilient and interoperable space systems**

via defined and enforced interoperability and defensibility standards, opportunities for systems engineering, and more informed decision-making on capability and requirements tradeoffs.

**Better innovation** via pooling personnel and resources and combining multiple means for solutions.

**Opportunities for DOD** to work with contractors providing non-traditional or new space technologies via flexible authorities and processes, industry dialogue, and reduced barriers to entry.

**A stronger industrial base** via an emphasis on opportunities to support global competitiveness and to reduce challenges to contractor viability.

Standing up a new military department is not without risks. Although our design focused on providing the groundwork for improved performance, we acknowledge that each design choice will have consequences—some unanticipated. For instance, DSF reliance on the other services for installation management may mean that its facilities needs are lower priority. Some have also expressed concern that the organizational change required to create the DSF will, for some amount of time, distract DOD from the job of space warfighting—at a time when the need for focus on space warfighting has never been greater. Although our design intends to minimize unnecessary disruption, we concede that some degree of instability in the short term is likely. It is clear from our analysis that there is room for improvement in the performance of national security space objectives. We hope our plan will help leaders better understand one of the options—the creation of a military department—to achieve such improved performance. ■





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