

FY 2025 DEFENSE SPACE BUDGET: CONTINUED EMPHASIS ON PROLIFERATION UNDER A MORE CONSTRAINED TOP-LINE

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For fiscal year (FY) 2025, the administration requested \$29.6 billion for the Space Force, making up about 3.5 percent of the Department of Defense's total budget request. This is the fifth budget submission since the establishment of the Space Force and, over that period, the service's budget has nearly doubled. This year's request, however, is the first in which the amount fell from the prior year's request. With more limited growth, the presidential budget request reflects trade-offs and priorities for DOD's space activity, including continued emphasis on proliferation and simpler, commercially derived spacecraft.

Introduction

This year's budget cycle has been unusual, with significant consequences for the young U.S. Space Force. On March 11, the administration released its Fiscal Year (FY) 2025 budget submission, the presidential budget request.¹ Nearly two weeks later, on March 23, Congress passed the appropriations, or enacted budget, for FY 2024.² Typically, the passage of the budget for the current year comes before the budget submission for the next year. In fact, this is only the second time in the last 10 years in which the current year's budget passed after the release of the following year's budget request.

As happened to agencies across the government, the eventual Department of Defense (DOD) appropriations for FY 2024 fell below the levels that the administration had

requested. Because the FY 2024 request had included a sizable increase for the U.S. Space Force (15 percent, a higher percentage increase than for any other military service), the constrained top-line in the FY 2024 appropriations meant the Space Force received significantly less than it sought. The FY 2025 request also represents a reduction from the FY 2024 request. Adjusting for inflation, the FY 2025 request would be a 0.3 percent decrease from the FY 2024 appropriations and a 5 percent decrease from the FY 2024 request.* Not adjusting for inflation, the FY 2025 request would be a 2 percent increase from the FY 2024 appropriations and a 2 percent decrease from the FY 2024 request.³ Figure 1 shows the Space Force's budget from FY 2021 through

*The rest of this paper uses "current dollar" figures, which are not adjusted for inflation. See "National Defense Budget Estimates for FY 2025," Office of the Under Secretary of Defense (Comptroller), (April 2024).

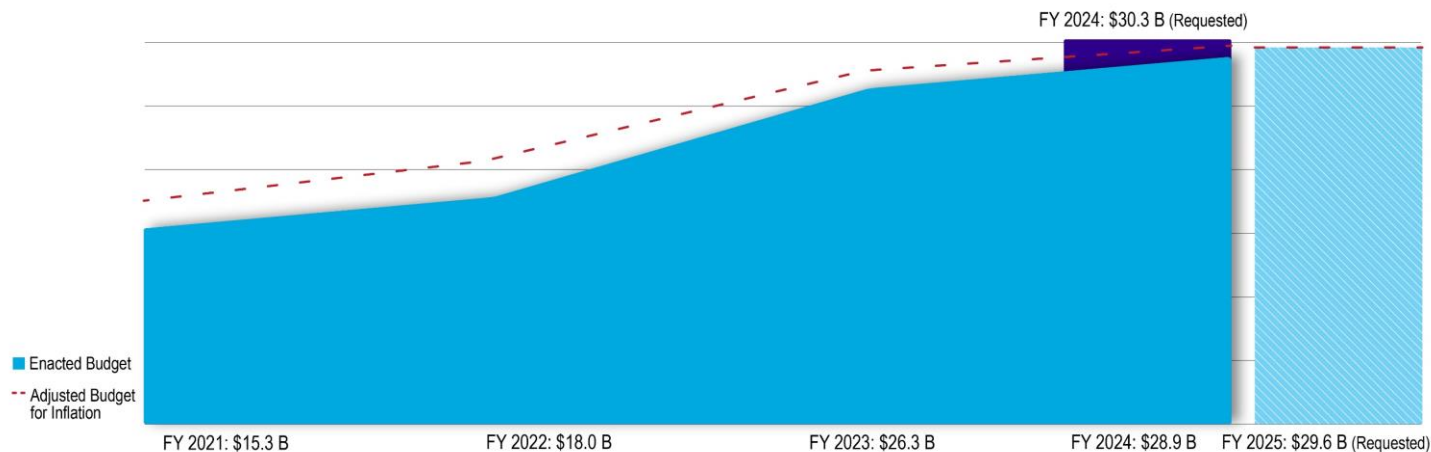


Figure 1: Space Force growth in current and inflation-adjusted dollars, FY 2021 to FY 2025.

FY 2025, including the FY 2024 request, with current dollars and inflation-adjusted dollars.[†]

With more limited growth, the FY 2025 budget submission reflects priorities for defense space activity and trade-off decisions made by DOD. As with recent budget submissions, the request emphasizes the Space Force’s push for more spacecraft at lower orbits. Further, the request contains important changes for satellite communications, including a new budget line for “proliferated sets of lower-complexity satellites.”⁴ Overall, the request reflects a continued focus away from the big, “juicy targets” of the past and greater embrace of simpler satellites and more distributed networks.⁵

Budget at a Glance

The FY 2025 request for the Space Force totals \$29.6 billion, about \$690 million more than the FY 2024 appropriations and about \$620 million less than the FY 2024 request. Figure 2 shows the changes by capability areas. Of these categories, the budget lines related to launch fell the most from the FY 2024 request to the FY 2025 request, about \$590 million. Secretary of the Air Force Frank Kendall explained that one of the

principal reasons the FY 2025 submission decreased was that launches slipped because some of the payloads were not yet ready.⁶ In addition, the budget lines for Space Force’s classified activities dropped \$340 million from the FY 2024 request. The FY 2025 request also includes increases in a few mission areas compared to the FY 2024 request, such as \$260 million more for positioning, navigation, and timing. This increase, which comes from the GPS III follow-on procurement budget line, is more a reflection of a cut in FY 2024 than an increase in FY 2025 because the FY 2024 request deferred the procurement of two GPS III follow-on satellites that are included in the FY 2025 request.

Figure 2 reflects only spending from the Space Force. Although the service controls most of DOD’s space spending, it does not control all of it. In its FY 2025 budget release, DOD notes it is requesting \$33.7 billion toward “vital space capabilities, resilient architectures, and enhanced space command and control,” \$4 billion more than the request for the Space Force.⁷ Discussing the Space Force budget release, Secretary Kendall indicated that some of the Department of the Air Force’s “pass-through” funding will go to the intelligence community, which will “directly contribute to the capabilities of the

[†]In addition to the base appropriations, Congress passed a supplemental appropriations bill, which designates \$4 million for Space Force military personnel and \$8 million for Space Force operations and maintenance to remain available until the end of the calendar year “to respond to the situation in Ukraine and for related expenses.” See: “Making emergency supplemental appropriations for the fiscal year ending September 30, 2024, and for other purposes,” 2024, Public Law 118-500, H.R. 815 (April 24, 2024).

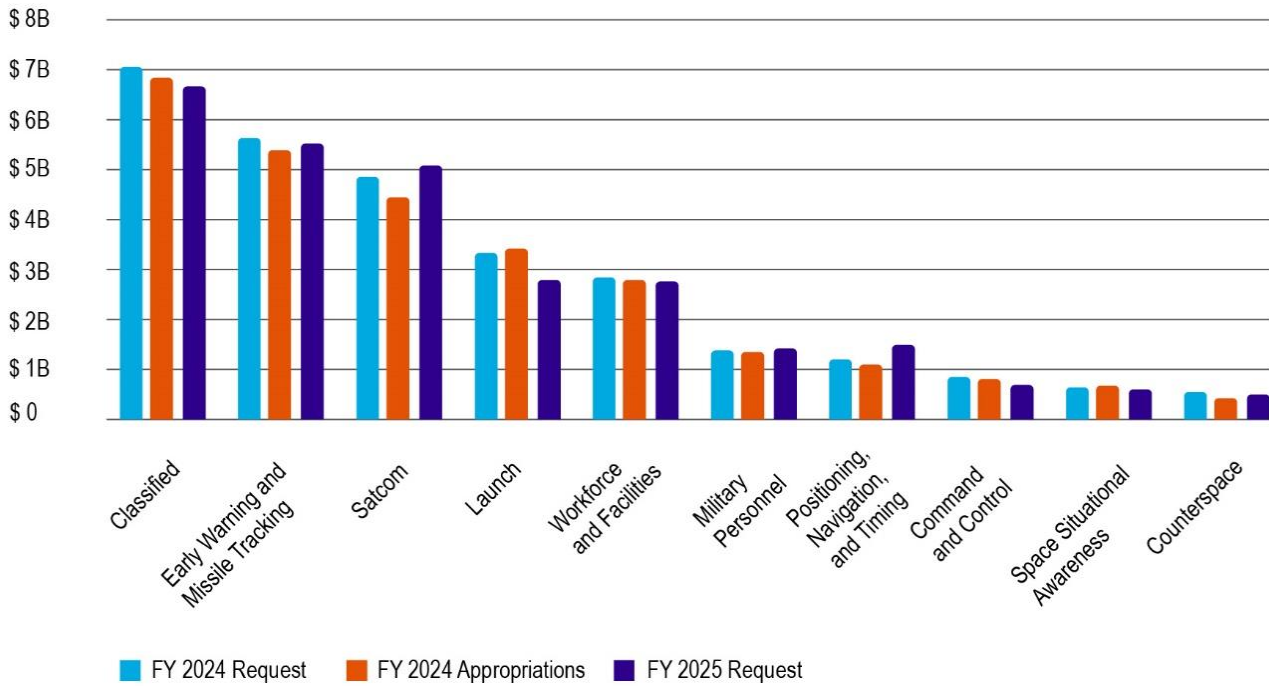


Figure 2: Budget distribution by mission area, across FY 2024 and FY 2025.

Space Force.”⁸ Moreover, other services and defense-wide agencies and organizations also spend money on space. For example, the FY 2025 request includes over \$400 million for Army satellite communications procurement, over \$400 million for support to U.S. Space Command, over \$200 million for Navy satellite communications and terminal procurement, and more than \$300 million collectively for the Defense Advanced Research Project Agency and the Missile Defense Agency for space-focused research and development. Other organizations—including Special Operations Command, Defense Information Systems Agency, and the Defense Innovation Unit—also have funding lines related to defense space activities.

These efforts notwithstanding, since its establishment five years ago, the Space Force has gradually consolidated

defense space activity under its budget. As shown in Figure 3, over one-third of its budget growth has taken the form of transfers from other military services and DOD organizations. For example, in FY 2023, the military personnel costs for the Space Force migrated from the Air Force budget into the Space Force budget. As shown in the figure, most of these transfers were completed by FY 2024.

Space Development Agency and LEO Proliferation

The Space Development Agency, which transferred into the Space Force in FY 2023—by far the biggest transfer into the Space Force—is also one of the headlines for this year’s budget. Charged with developing “layers” of proliferated satellites in low Earth orbit (LEO), the agency

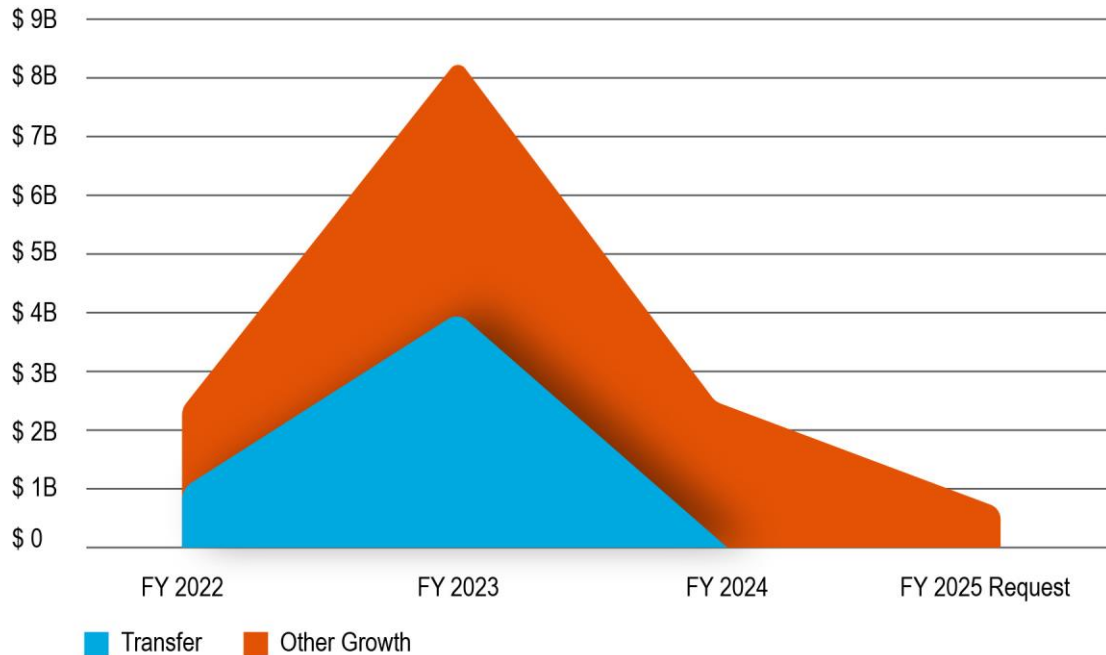


Figure 3: Space Force growth from FY 2022 to FY 2025, divided by transfers and other growth

fares well in both the FY 2024 enacted budget and the FY 2025 request. Although the Space Development Agency is not the only acquisition center pursuing proliferated and less complex satellites, it represents the most extensive and visible effort along these lines.[‡]

Even as the total Space Force budget fell from the FY 2024 request to the FY 2024 appropriations, the budget for the Space Development Agency rose. The FY 2024 enacted budget appropriated \$4.5 billion for the Space Development Agency, about \$200 million more than the FY 2024 request had included. This is the third year in a row Congress has appropriated more money for the agency than the department had requested. Remarks at a budget hearing at the end of April from Representative Ken Calvert—the Chair of the House Appropriations Defense Subcommittee—reflect the congressional support for the agency: “I continue to be impressed with the progress of the Space Development Agency and their rapid development-to-acquisition process. This Committee is willing to give the Space Force resources to take risks and pursue new approaches when warranted, and [the

Space Development Agency] has lived up to its investment so far.”⁹

For projected outyears, the Space Force budget also grew from the FY 2024 request to the FY 2025 request. For this year, the FY 2025 request includes about \$600 million more for the agency than the FY 2024 presidential budget request projected for FY 2025.¹⁰ As shown in Figure 4, the FY 2025 submission includes higher projections than the FY 2024 submission for the Space Development Agency for FY 2026 and FY 2027 but a lower projection for FY 2028.

As laid out in the FY 2025 request, the Space Development Agency is focused on two primary acquisition efforts:

1. The transport layer, a constellation of 300 to 500 data-transport satellites in LEO with optical cross-links that will provide the “space-based connectivity backbone” for Joint All Domain Command and Control, and

[‡]Space Development Agency is one of three acquisition centers for the Space Force, the others being Space Systems Command and the Space Rapid Capabilities Office.

- The tracking layer, a constellation of missile warning and tracking satellites in LEO, which—in concert with a separate medium Earth orbit (MEO) layer—will provide a more “resilient multi-orbit approach to counter advanced missiles, hypersonic glide vehicles, and fractional orbital bombardment threats.”¹¹

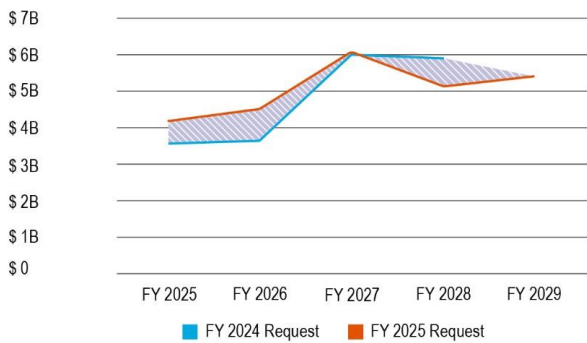


Figure 4: Budget projections for Space Development Agency, from FY 2024 and FY 2025 requests.

Each Space Development Agency-acquired layer will be developed, fielded, and sustained through a series of acquisition programs, called tranches. The FY 2025 request would fund several tranches, in various stages of completion, for each layer. Research, development, testing, and evaluation for these two layers comprise about 85 percent of the Space Development Agency’s budget, with the remaining funding going toward launch and other research efforts, such as beyond-line-of-sight targeting and integration and battle management. Regarding the latter, the budget justification documents say that the Space Development Agency will be deploying a battle management command, control, and communications system that can operate independently of any specific node.¹²

Changes for Military Satellite Communications

The Space Warfighting Analysis Center (SWAC) has played an important role in recent budget submissions. The FY 2023 budget request introduced fundamental changes to the department’s approach toward space-based missile warning, including funding missile warning and tracking satellites in MEO and drastically increasing funding for missile warning and tracking spacecraft in LEO. As noted in the FY 2023 budget justification documents, these changes were in response to recommendations from a SWAC force design.¹³ In the FY 2024 budget request, a SWAC analysis led to “Long Range Kill Chains,” the ground-moving-target-indicator program, which was the biggest new budget line in the submission.¹⁴ In this year’s budget request, the SWAC again drives changes—in this case, for protected satellite communications.

The biggest new budget line in the FY 2025 request is called “Protected Tactical Satcom – Global” (PTS-G), described in the justification documents as an enabling capability of the SWAC Force Design for protected satellite communications.¹⁵ PTS-G “bridges the gap” between the custom-built, more protected “PTS –Resilient (PTS-R)” satellites and capabilities offered by commercial and other military satellite communications services.¹⁶ The request includes about \$250 million for the project. PTS-G will comprise two different types of spacecraft in geostationary Earth orbit (GEO) (one for military Ka band and one for X band) and supporting ground infrastructure. The justification documents note that PTS-G will initially “provide capabilities in select regions” and eventually will “target a solution that can provide worldwide coverage.”¹⁷

Table 1: Biggest New Programs or Projects in Space Force Budget Submissions, FY 2023 to FY 2025

Fiscal Year	Budget Line	Amount
FY 2023 Request	MEO Missile Warning and Tracking	\$140 million
FY 2024 Request	Long-Range Kill Chains	\$240 million
FY 2025 Request	Protected Tactical Satcom—Global	\$250 million

The new capability also reflects the Space Force’s push for proliferation. The budget justification documents characterize the capability as a “moderate degree of assured access communications” using “disaggregated and proliferated sets of lower-complexity satellites.”¹⁸

According to a *SpaceNews* article, Cordell DeLaPena—program executive officer for military communications, positioning, navigation, and timing at the Space Force’s Space Systems Command—differentiated between PTS-R and PTS-G in April 2024, saying that the PTS program “will have a small number of highly specialized satellites designed to provide secure, jam-resistant communications” (PTS-R) and “will also include a larger proliferated network of more affordable, commercially-derived satellites” (PTS-G).¹⁹ The introduction of PTS-G in a budget year in which the request for the Space Force fell for the first time from the prior year’s request reinforces that the department is prioritizing proliferation and simpler space assets. It also shows that the push for proliferation is not limited to lower orbits.

The integration of commercial satellite communications into government networks is another area covered in the budget documents, further reflecting the transition away from larger, more complex custom-built government spacecraft. The interest also fits with DOD’s release of its first ever commercial space integration strategy and Space Force’s release of its commercial space strategy, both in April 2024.²⁰ One of the related budget lines that grew from the FY 2024 appropriations seeks to experiment with a hybrid satcom architecture with DOD, commercial systems, and allied data links (from \$160 million to \$230 million). It funds building and incorporating hybrid terminals to “enable assured communications through both commercial and military satellite constellations in multiple orbital regimes” with the ability to “seamlessly switch between vendors and satellite constellations.”²¹ Currently, to leverage commercial satellite communications capabilities, DOD must acquire commercial terminals limited to a single commercial capability and incorporate them on their platforms. As another example, Space

Force’s “Commercial Satcom Integration” budget line in the FY 2025 request nearly doubled from the FY 2024 appropriations, increasing from \$70 million to \$130 million.²² The budget line “develops, prototypes, and demonstrates the capabilities required to fully leverage [commercial satellite communications]” and creates “an environment that is responsive to Combatant Commanders and other users across the spectrum of conflict.”²³ Among other things, it funds a project partnering with the Luxembourg Ministry of Defense to integrate international commercial satellite communications services. Although these are not large dollar projects; they show increasing attention within DOD for leveraging commercial satellite communications.

Future Changes

In coming years, the Space Force will likely take additional steps toward a more distributed and proliferated approach for defense space capabilities. In February 2024, the Space Systems Command issued a solicitation to industry to design a commercially derived GPS satellite with “an objective to significantly reduce size, weight, power, and cost” and cut production time and time to orbit.²⁴ Two months later, the Air Force announced it had selected the project, characterized as “GPS-light,” as part of a “quick start” initiative, which allows services to accelerate early technology development.²⁵ These developments foreshadow more changes the Space Force will take in the push toward resiliency.

Narrowband satellite communications, which are less susceptible than other forms of satellite communications to bad weather and difficult terrain, is another area being analyzed by SWAC. As reported by *Breaking Defense*, one of the focal areas of SWAC’s analysis is “determining if and how commercial capabilities and emerging technologies can effectively meet warfighter demands.”²⁶ As has happened with other capability areas, SWAC’s assessment could spark further changes.^{§. 27}

[§]Notably, the Mobile User Objective System (MUOS), the DOD program that provides narrowband satellite communications, received about \$210 million less in the FY 2025 request than the FY 2024 request had projected for FY 2025 (cut from \$440 million to \$230 million). The justification documents note that much of this reduction was a realignment to “higher Space Force priorities.”

Conclusion

The FY 2025 budget submission reflects DOD's continued emphasis on the department's transition to a new model for defense space operations. Two years ago, the Space Force request revealed how the service was fundamentally changing its approach for missile warning and tracking. Last year, the budget request introduced a ground-moving target-indicator program, an "integral part" of Joint All-Domain Command and Control, a concept built on distribution, redundancy, and speed. This year's request includes funding for new proliferated networks of communications satellites and increasing attention on commercial satellite communications. As reflected in this year's and past year's budgets, the Space Force is pursuing proliferated and simpler spacecraft, commercially derived assets, and commercially provided services.

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