

THE COST OF SPACE SYSTEM CLASSIFICATION

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Overclassification, contracting professionals' lack of access to contemporary automated information technology systems, and ongoing barriers to entry for small businesses are driving sacrifices to US Space Force system procurement speed, cost, innovation, and international partnerships. By adapting existing regulations, leveraging commercial machine learning, and applying minimal financial resources, the US Space Force can overcome the space acquisition challenges related to overclassification, counterproductive barriers to entry, and antiquated classified systems and regulations.

In order to defend US interests, specific classification levels protect national secrets and associated space program acquisitions. Yet, the restrictive nature of those protections ultimately shapes US Space Force business decisions that can result in the sacrifice of procurement speed, cost, innovation, and partnerships with Allies.

The operational impacts of classification and overclassification are generally well known, as General John E. Hyten, then deputy chairman of the Joint Chiefs of Staff, emphasized in 2020: "You can't deter people if everything you have is in the black."¹ In contrast, the acquisition process runs behind the scenes as a support function and requires advocacy at the original classification authority (OCA) level to ensure the classification impacts on speed, cost, and technical solutions are being equally weighed with the operational need to protect national secrets and certain capabilities. For programs that still require classification, changes to policy, regulation, technology, and government incentives will offer solutions to the issues associated with speed, cost, and access to a broad industry base.

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1. Robert Fahs, "Gen. Hyten Finds Over Classification of Space Information Undermines National Security, Promises Reform," *Transforming Classification* (blog), Public Interest Declassification Board, National Archives and Records Administration (NARA), December 1, 2020, <https://transformingclassification.blogspot.com/2020/12/01/gen-hyten-finds-over-classification-of-space-information-undermines-national-security-promises-reform/>.

Introduction

Specific to the acquisition of space systems—ground, link, and on-orbit segments—a portion of the US Space Force portfolio is subject to a varied degree of classification based on the capability or mission assigned to a given platform. In line with maintaining national security secrets and consistent with Department of Defense practices, it is assumed that the most capable US Space Force systems are currently protected through the highest forms of classification, including Top Secret and Special Access Program (SAP) controls. While the operational need to classify certain military capabilities may be understood by American decisionmakers and the public at large, there is little published evidence that reflects an awareness of the negative impacts from classification on space system acquisitions.

The decision to classify a particular program or capability initially happens at the highest echelons of the government, through the original classification authority of the president, vice president, and their delegated agency heads.² Within DoD space procurement, OCA has been delegated down to eight separate agency heads who have further delegated collateral authorities down across several headquarter components. Space program classification decisions made at the OCA level—from the president to headquarter components—have a direct impact on fiscal accountability and how space systems are acquired.

Space acquisitions are overseen by integrated product teams, consisting of technical experts, requirement owners, financial staff, and contracting professionals. For unclassified acquisitions, the teams procure and sustain space systems with typically few coordination efforts outside of their respective teams.³ Unclassified acquisitions are subject to high levels of congressional scrutiny and face potential termination in the case of cost overruns that violate the Nunn-McCurdy Amendment.⁴

For classified programs, the bureaucratic scope of procurements expands dramatically. Depending on the classification level, the integrated product team must coordinate and seek regular approvals from multiple organizations, including but not limited to the relevant program security office, the Defense Counterintelligence and Security Agency, and the Office of Special Investigations.⁵ With regard to oversight, classified appropriated funds are not subject to the cost controls that impact unclassified portfolios.⁶

2. Exec. Order No. 13526, 75 Fed. Reg. 707 (January 5, 2010).

3. Rob Creekmore, Marie Muscella, and Craig Petrun, *Integrated Project Team (IPT) Start-up Guide* (Bedford, MA: MITRE Corporation, 2008), <https://www.mitre.org/>.

4. Alan Kent Gideon, “An Empirical Examination of Major Department of Defense Acquisition Program Cost Overruns and Its Application to Reference Class Forecasting” (PhD dissertation, George Washington University, 2015).

5. Space Systems Contracting Officer, “Competition in Classified Contracting Survey,” Schriever Space Scholars, Montgomery, AL, December 14, 2022.

6. Gideon, “Empirical Examination,” 14.

In addition, the infrastructure required to meet mandatory National Industrial Security Program requirements creates high barriers to entry for new defense contractors. Depending on the geographic location, construction or modular installation of a sensitive compartmented information facility (SCIF) can cost up to two times the price of standard commercial buildings utilized by the federal government, and that does not account for the cost of approved storage containers, specialized communication equipment, and personnel security clearances.⁷ The National Industrial Security Program certification process is time-intensive, putting new entrants in a position to carry operations and facilities costs for long durations without a guarantee of earning business from the government.⁸ The capital investments coupled with layers of bureaucratic processes that have compounded over decades have created a small pool of capable defense industry contractors; this inherently stifles innovation and nontraditional approaches.

Lacking the organic capability to produce space assets, all US Space Force systems rely on services and supplies that must be procured through the contracting process. Once classification is introduced, every aspect of an acquisition from the initial market research to the final negotiated agreement adds another layer of complexity. Engagement with industry partners becomes process driven and requirement owners are forced to plan for and contend with classified infrastructure designs and requirements.

Since the effects of classification on the space system acquisition process are the result of government regulations and policy, decisionmakers are in a position to make foundational changes through those same mandates. Decisionmakers with OCA authority need to be advised by practitioners who understand the acquisition implications of classifying a program or mission.

Background: Military Contracting

In 1984, lacking a standardized system of procurement throughout the executive branch of government, Congress passed the Competition in Contracting Act (CICA) to establish a fair and transparent contract award process.⁹ The establishment of CICA formed the base of the Federal Acquisition Regulation (FAR), Defense FAR (DFAR), and Air Force FAR (AFFAR), which govern the entirety of the contracting process for the Department of the Air Force.¹⁰

7. Modular Management Group, Inc. (MMG), *GSA Schedule 47QSMD20R0001: GSA Contract GA-07F-0222X, Authorized Federal Supply Schedule Price List* (Fort Worth, TX: MMG, 2022), <https://www.gsaadvantage.gov/>; and Government Accountability Office (GAO), “Federal Real Property, Measuring Actual Office Space Costs Would Provide More Accurate Information,” report to The Honorable Peter DeFazio, US House of Representatives, GAO-20-130 (Washington, DC: GAO, December 10, 2019), <https://www.gao.gov/>.

8. Office of the Under Secretary of Defense for Intelligence and Security, *National Industrial Security Program*, Department of Defense (DoD) Instruction 5220.31 (Washington, DC: DoD, 2023), <https://www.esd.whs.mil/>.

9. Competition in Contracting Act of 1984, H. R. 5184, 98th Cong. (1984), <https://www.congress.gov/>.

10. Competition in Contracting Act, 3.

The FAR and its supplements established a procurement system requiring contracting officers to leverage commercial markets through the use of full and open competition and ensure contract award criteria are concise and not overly restrictive. To do this, unclassified procurements leverage automation through robust solicitation, award, and contract administration web-based platforms. The use of automated systems and regulations that favor competition creates efficiencies in execution that classified contracts struggle to achieve.

To broaden the number of companies that possess national security skill sets and access nontraditional defense contractors, or tech start-ups, the Department of Defense has embraced the use of Other Transaction authorities. Originating from authorities given to the National Aeronautics and Space Administration (NASA) in 1958, OT authorities were granted to the services in 1994 and are a non-FAR-based method of contracting for research, prototypes, and production that leverage economies of scale and reduce the burden of government regulatory overhead.¹¹ Typically, OT authorities are sourced from groups of business consortiums that include companies of all sizes that are allowed to compete for government business just like the FAR-based process.

These authorities level the playing field for new defense contractors in two ways. They lower barriers to entry by avoiding FAR-based statutes/regulations that impose significant costs, and they leverage commercial industry practices such as contracting from system prototype through initial production.

Industry Consolidation

Since 1990, the defense industrial base has undergone a substantial consolidation including among its prime aerospace contractors, shrinking the competitive landscape for the Space Force from 51 to 5, with satellite suppliers being reduced from 8 to 4.¹² The effects of consolidation on the competition can be felt across the entire Department of the Air Force: fixed-wing aircraft suppliers have been reduced from 8 to 3, and 90 percent of all the missiles procured are provided by only three sources.¹³

Several factors have been attributed to the consolidation of the defense industrial base: DoD budget reductions since 1985, low interest rates that increase access to capital, and the time-intensive process of major systems' development.¹⁴ In addition, the technical complexity of space-based acquisitions makes them susceptible to "vendor

11. Kristine Kassekert, "This Is Not Your Father's Oldsmobile or Other Transaction," DAU [Defense Acquisition University], August 14, 2023, <https://www.dau.edu/>; and Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD[A&S]), *Other Transactions Guide*, 2.0 (Washington, DC: DoD, July 2023), app. B, 4–5, <https://www.acq.osd.mil/>.

12. Heidi M. Peters, "Defense Primer: Department of Defense Contractors," In Focus 10600 (Washington, DC: Congressional Research Service [CRS], updated January 17, 2023), <https://crsreports.congress.gov/>.

13. OUSD(A&S), *State of Competition within the Defense Industrial Base* (Washington, DC: DoD, February 2022), <https://media.defense.gov/>.

14. OUSD(A&S), 5.

lock,” or sole-source contracts, as well as issues relating to intellectual property and data rights. Due to infrastructure and personnel clearance requirements, classification further restricts the available pool of businesses to contract with. More broadly, in fiscal year 2021, the Federal Data Procurement System–Next Generation reported a total competition rate of 52 percent across a total of \$375 billion spent on DoD contracts.¹⁵

Role of Contracting Professionals

At its core, the military contracting profession is responsible for procuring services, supplies, and capabilities that cannot be provided by the services organically. Once earned, a purchasing warrant is issued to a DoD contracting officer, giving that person the legal authority to negotiate and create binding agreements (contracts) on behalf of the US government.¹⁶

Aside from the execution of negotiated agreements, contracting professionals lead the operational contract support process. As defined in Joint Publication 4-10, *Operational Contract Support*, this process is focused on the planning and processes that effectively integrate contracted support into military contingency operations.¹⁷ As recent as 2017, during Operation Inherent Resolve, it was estimated the United States had approximately 5,000 active-duty members in Iraq who were supported by contracted personnel at a ratio of seven contractors for every one active-duty member.¹⁸ For the Joint Force, contracted capabilities have become an integral part of all military operations by enabling uniformed members to focus on their warfighting skill sets and the contingency missions at hand.

Within US Space Force space systems acquisitions, the contracting officer is charged to employ the tenets of operational contract support and use their warrant authority to secure technical capabilities at a price that is fair and reasonable to the government. As the business leader of the integrated product team, the contracting officer plays a vital role in crafting the acquisition strategy and serves as the lead integrator between the government and the commercial industry.

Background: Security Classification

In 1940, President Franklin Roosevelt issued the first executive order on the conditions and procedures for the classification of government material.¹⁹ In the years since, additional executive orders, laws, and DoD manuals have been published in an

15. OUSD(A&S), 3.

16. Federal Acquisition Regulation, “1.602-1 Authority,” Acquisition.gov, 2023, <https://www.acquisition.gov/>.

17. Chairman of the Joint Chiefs of Staff (CJCS), *Operational Contract Support*, Joint Publication (JP) 4-10 (Washington, DC: CJCS, March 4, 2019), <https://www.jcs.mil/>.

18. Jeffrey Martini et al., *Operation Inherent Resolve: U.S. Ground Force Contributions* (Santa Monica, CA: RAND Corporation, 2022), <https://doi.org/>.

19. Kevin R. Kosar, *Security Classification Policy and Procedure: E.O. 12958, as Amended* (Washington, DC: CRS, November 3, 2009), <https://apps.dtic.mil/>.

attempt to further clarify and streamline the classification process. The ability to classify government information rests with the president and vice president; however, this original classification authority responsibility may be delegated down to the heads of select federal agencies and limited personnel under their supervision.²⁰

The relevant OCA may classify information at varied levels based on its unauthorized disclosure, potentially causing grave damage, serious damage, or damage to national security (Top Secret, Secret, and Confidential, respectively).²¹ Additional controls like Special Access Program or No Foreign (NOFORN) further compartmentalize and restrict information to smaller groups of personnel. The classification decisions made by the OCA (may) endure for decades and, among other outcomes, ultimately define how space systems are acquired.

Problem of Overclassification

The question of what should be classified and to what level is subjective and often leads to overclassification. Executive Order 13526 states that for information to be classified, it must fall into one of eight categories, such as “vulnerabilities or capabilities of systems relating to national security.”²² In 2003, the National Archives reported that 14 million documents were classified across 3,978 authorized federal officials, resulting in an 8 percent increase from the year before.²³ In addition, it is estimated that 90 percent of those 14 million documents were overclassified in some way.²⁴

Derivative Classification

The sheer volume of classified documents is due in large part to derivative classification authority that allows cleared DoD personnel to generate classified information that is derived from OCA source material and applicable security classification guides/program security guides (SCGs/PSGs) that further detail how information should be handled.²⁵ According to current estimates, the federal government generates millions of classified documents every year through the use of derivative classification authorities.²⁶

20. “Basic Laws and Authorities,” NARA (website), August 15, 2016, <https://www.archives.gov/>.

21. “Basic Laws,” part 2.

22. Office of the Press Secretary, “Executive Order 13526—Classified National Security Information,” press release, White House, December 12, 2011, <https://obamawhitehouse.archives.gov/>.

23. *Too Many Secrets: Overclassification as a Barrier to Critical Information Sharing: Hearing before the Subcommittee on National Security, Emerging Threats and International Relations of the Committee on Government Reform*, 108th Cong. (2004) (Washington, DC: Government Printing Office, 2005), <https://www.govinfo.gov/>.

24. *Too Many Secrets*, 4.

25. Information Security Oversight Office, *Developing and Using Security Classification Guides* (Washington, DC: NARA, October 2018), <https://www.archives.gov/>.

26. A. Martínez and Greg Myre, “Mishandling of Classified Documents Happens More Than You Might Think,” *Morning Edition*, NPR, radio broadcast, transcript and MP3 file, 3:38, January 19, 2023, <https://www.npr.org/>.

Many of the vulnerabilities attributed to the classification system can be linked to the sheer volume of information that is generated and the incentive to overclassify that same information through these derivative authorities. The current number of classified documents retained by agencies in the executive branch is unknown, but it is estimated that a document is marked classified three times every second.²⁷ By the end of the Obama administration, the federal government was spending \$18 billion to protect national security information, the majority of which was in the form of classified documents.²⁸ While the Department of Defense has a formal and informal process to challenge/change classification decisions, some cases can result in a months-long process.²⁹

Dissemination and Storage

Due to the siloed nature of classified IT systems, classified products are often printed and stored or disseminated by hand, ultimately creating a myriad of vulnerabilities for programs and agencies. In fact, the risks involved in the proper handling and storage of classified documents have recently gained global attention through a series of high-profile incidents. The current president, a former president, and a former vice president are all involved in investigations relating to the possible mishandling of classified documents.³⁰

In addition to mishandling, the creation of new classified products increases the risks of unintentional and intentional unauthorized disclosure. Due to the nature of classified information, it only takes a small volume of data to cause grave harm to operations and undermine national credibility. While unauthorized disclosure figures are not generally published by the government, a declassified Central Intelligence Agency document detailed 292 reported unauthorized public disclosures of classified information between 1959 and 1977 that potentially compromised vital sources and intelligence collection means.³¹ In a recent case in April 2023, Airman First Class Jack Teixeira of the Air National Guard was accused of intentionally sharing classified information relating to the supply of lethal aid to Ukraine and the movement of

27. Matthew Connelly, "Is the U.S. Government Designating Too Many Documents as 'Classified?'" interview by Dave Davies, *Fresh Air*, NPR, radio broadcast, summary transcript and MP3 file, 38:15, January 19, 2023, <https://www.npr.org/>.

28. Connelly, 3.

29. GAO, "National Security: DOD and State Have Processes for Formal and Informal Challenges to the Classification of Information," report to the Honorable Christopher S. Murphy, US Senate, GAO 21-294 (Washington, DC: GAO, April 16, 2021), <https://www.gao.gov/>.

30. Meg Kinnard, "A Side-by-Side Look at the Trump, Biden Classified Documents," Associated Press, January 14, 2023, <https://apnews.com/>.

31. Central Intelligence Agency, s. v. "Unauthorized Disclosure of Classified Information," Freedom of Information Act Electronic Reading Room, March 1977, accessed March 11, 2023, <https://www.cia.gov/>.

Ukrainian forces. The intentional disclosure of classified data jeopardizes established foreign partnerships and discourages the cooperation of emerging Allies.³²

In late 2022, the Hudson Institute made a series of classification process reform recommendations. By developing narrow criteria for classification and leveraging artificial intelligence to assist in marking information, the tendency to overclassify as a default will be easier to overcome.³³

Impediments Arising from Classification

A number of classification concerns including overclassification, excessive infrastructure mandates, and lack of autonomous capabilities for classified systems have direct, negative consequences for the Department of Defense and the Space Force in particular, related to operations, acquisitions, and interoperability with foreign partners.

Operations

In 2004, a House of Representatives subcommittee on national security held a hearing on the issue of overclassification.³⁴ The subcommittee cited the espionage challenges during the Cold War from a “monolithic” enemy in the Soviet Union as possibly having driven a need to overclassify information to protect it.³⁵ The committee went on to discuss the findings of the 9/11 Commission Report published that year: “Current security requirements nurture overclassification and excess compartmentalization of information among agencies. Each agency’s incentive structure opposes sharing, with risks—criminal, civil, and internal administrative sanctions—but few rewards for sharing information.”³⁶

Excessive compartmentalization prevents national security practitioners from fully understanding their service capabilities, including critical gaps that demand advocacy. From an operational lens, a lack of cross-sharing between agencies ultimately leads to the development of poor assumptions that can undermine the Joint planning process.

For example, former Secretary of Defense James Mattis’ frustration with the overclassification of products and communication within the department famously led him to create a coffee mug imprinted with the words “YESFORN.”³⁷ Caveats that further compartmentalize classified information, such as NOFORN, prevent the lateral sharing of vital operational information to Allies and partners, many times due to over-

32. Beth Treffeisen and Glenn Thrush, “Airman Pleads Not Guilty to Federal Charges in Leaks Case,” *New York Times*, June 21, 2023, <https://www.nytimes.com/>.

33. Matt Arnold, “Reforming the Classification System: Challenges, Approaches, and Priorities,” *Transforming Classification*, December 8, 2022, <https://transforming-classification.blogs.archives.gov/>.

34. *Too Many Secrets*, 4.

35. *Too Many Secrets*, 2.

36. *Too Many Secrets*, 3.

37. US Marine Corps, “Marine Corp Design and Joint Warfighting,” Commandant Lecture Series, Air Command and Staff College, Maxwell AFB, AL, February 2023.

classification.³⁸ Rapid information-sharing between international partners ultimately forms the base of the Joint planning process that determines the success or failure of coalition forces.

Acquisitions

Consistent with the sentiment of other senior leaders, the first chief of space operations, General John W. Raymond, considered overclassification a major impediment in space systems acquisitions.³⁹ Overclassification restricts how the US Space Force integrates with the commercial space industry from the onset of the requirements development process. Limiting the pool of potential companies to engage with and award contracts to also means limiting the diversity of ideas and unique solutions for technically complex challenges in space.

In addition, the facilities and network systems requirements associated with classified acquisitions present a considerable barrier to entry for nontraditional defense contractors. Small businesses and tech start-ups are forced to weigh opportunity costs and decide if time-consuming and substantial up-front infrastructure investments are worth having only for an opportunity to compete for US Space Force contracts.

Further, due to the stand-alone nature of the IT networks, classified procurements rarely have access to any contract automation systems. The lack of automation increases the likelihood of human error and breaks the link in the electronic award system process—such as from contract signature to the payment system—requiring manual inputs at every step of the process.⁴⁰ In addition, classified procurements are still beholden to the FAR and the principles of CICA to maximize commercial market participation. Classification-related restrictions on the competition often require time-consuming external approvals, and depending on the level of classification, market research may be limited to a small group of preapproved vendors.⁴¹

Communications with potential contractors are tightly controlled through security classification guide requirements, security office personnel, and infrastructure capacity. Limited means of communication—such as secured fax only—and layers of security approval add time to the procurement cycle that must be accounted for.

Foreign Military Sales

Equal to the operational considerations, classifications associated with space systems procurements complicate foreign military sales (FMS) between the United States and its

38. *Too Many Secrets*, 4.

39. Fahs, “Gen. Hyten.”

40. *Procure to Pay (P2P) Standard Operating Procedures (SOP) for Distributing Acceptance Receipt and Electronic Receipt and Processing of Requests for Payment (“Handshake 1”)* (Washington, DC: DoD, June 29, 2021), <https://www.acq.osd.mil/>.

41. DFARSPGI [Defense Federal Acquisition Regulation - Procedures, Guidance, and Information], “PGI 204.402 Safeguarding Classified Information within Industry,” Acquisition.gov, August 17, 2023, <https://www.acquisition.gov/>.

Allies. Under FMS authorities, space capabilities and materials that would traditionally be restricted through Export Administration Regulations or International Traffic in Arms Regulations are permitted to be sold as defense articles for Allied nations.⁴²

In 2021, the US Space Force Space Systems Command created an office of international affairs that reported \$3 billion in current FMS acquisitions across 58 international partnerships in addition to projecting an additional \$5 billion over the next three fiscal years.⁴³ The overclassification of US Space Force space systems restricts communications between the acquisitions teams and international partners at the critical first step of establishing the business case. Complicating the FMS process prevents Allies and partners from filling critical gaps in space-based capabilities and diminishes the Department of Defense's ability to lead in the space domain.

Space Force Classified Contracting

Space Systems Procurement

To assess the current classified contracting process and environment at the execution level, survey questions were sent to contracting officers procuring US Space Force space systems at varied levels of classification. The first half of the questions focused on the competitive landscape and how potential companies are identified through the market research phase. The majority of the responses centered on utilizing existing lists of cleared contracted personnel that were maintained by their respective security office, organizing industry days (limited to cleared personnel), and attending conferences to identify potential contractors.⁴⁴

Citing the restricted nature of their contractor base as a potential reason, nearly 90 percent of their respective portfolios have been contracted to established large businesses. The use of other transaction authorities among the respondents was minimal, and while all of the contracting officers were actively seeking out new entrants to defense contracting, the vast majority of their competitive pools are static and only change as a result of mergers or corporate restructuring.⁴⁵

The second half of the survey focused on contracting tools and competitive practices within organizations. All respondents noted the lack of automation and disparate/antiquated communication networks added time to the procurement process.⁴⁶ Contracts are written on Microsoft Word, financial data is tracked on Microsoft Excel, and in one case it took five weeks for a contractor to receive a request for proposal over

42. "FMS [Foreign Military Sales] FAQs," US Department of Commerce, Bureau of Industry and Security, updated May 12, 2021, <https://www.bis.doc.gov/>.

43. Space Systems Command (SSC), "International Affairs (SSC/IA)," accessed March 5, 2023, <https://www.ssc.spaceforce.mil/>

44. SSC, "Competition."

45. SSC, 2.

46. SSC, 2.

secured fax due to the limitations of the technology and coordination required on the receiving end.

The responses on competitive practices were consistent among the offices: even under classified restrictions, the majority of their contract awards were made through competition. While the frequency of competition was consistent, the final contract price to the government bore the high costs of added security infrastructure and retention of cleared personnel who are becoming difficult to incentivize due to outside telework opportunities, since there is no telework from a SCIF.⁴⁷

Barriers to Entry

To do business with the government on any contract that requires handling or storing classified material, potential contractors are subject to the DoD contract security classification specification, or Form DD-254. The DD-254 is an attachment to a request for proposal—and contract, once awarded—and serves as a certification that all of the applicable criteria of the National Industrial Security Program Operating Manual (NISPOM) have been satisfied.⁴⁸

New entrants to the defense sector require a minimum of an interim DD-254 to compete for or be made aware of classified work, setting up a “wait and see scenario.”⁴⁹ A new entrant must work to satisfy select requirements in the NISPOM to gain an interim status before having access to the request-for-proposal process and fully understanding the government’s needs.⁵⁰ In the event a new entrant with an interim DD-254 status earns business with the government, the DD-254 must be finalized, with all NISPOM requirements met, before the final award of the contract.⁵¹ Meeting the requirements of the NISPOM is time- and capital-intensive, especially for small businesses.

The cost to conduct a Tier 5 security clearance investigation (Top Secret/sensitive compartmented information) is just over \$5,000, and the average processing time takes approximately four months, assuming there are no issues or delays.⁵² Additional SAP clearances require more processing time, putting small businesses in a position to carry tens of thousands of dollars in security clearance-related costs that they would otherwise not have to consider in commercial industry.

The time and capital investments involved in classified infrastructure also impose significant opportunity costs on small businesses. A small container-sized SCIF workspace (320 square feet) can cost as much as \$245,000, and that does not include the cost of secured networking equipment and approved storage containers. Once the

47. SSC, 3.

48. DFARSPGI, “PGI 204.402.”

49. *Part 117 - National Industrial Security Program Operating Manual (NISPOM)*, 85 Fed. Reg. 83312 (December 21, 2020), <https://www.ecfr.gov/>.

50. DFARSPGI, “PGI 204.402.”

51. DFARSPGI, 1.

52. Lindy Kyzer, “How Long Does It Take to Get a Security Clearance? Q4 2022,” ClearanceJobs (website), November 2, 2022, <https://news.clearancejobs.com/>.

SCIF structure and networks are established, the required facility clearance process can take up to five months, assuming no delays.⁵³ In the age of telework and dispersed operations that decrease overhead and operating costs, substantial investments in brick-and-mortar SCIFs could run hundreds of thousands of dollars that would not be a factor in the commercial industry.

Competition and Its Effects on Innovation

Aside from ensuring adequate price competition to find the best business deal for the government, CICA was put in place to encourage better contractor performance. Successful companies in some highly competitive fields will provide superior service while keeping their prices within the market average. In the case of DoD contracted work for research and development requirements, the primary focus is on finding the best technical solution, and price considerations are typically less important. Finding the best technical solutions for complex challenges in the space domain requires a diversity of thought that encompasses a wide field of subject matter experts who may work outside of the established defense industry.

Once space system research and development work is complete through prototyping, the production and sustainment requirements become highly susceptible to vendor lock.⁵⁴ Throughout DoD procurement history, intellectual property or data rights, proprietary technology, and closed architecture design have stifled the competitive process and potential innovations that may follow. For classified requirements that are unable to leverage a program such as the Small Business Innovation Research program—which acts as a seed fund and was established in 1982 to “encourage domestic small businesses to engage in Federal Research/Research and Development with the potential for commercialization”—the issue of vendor lock is far more acute.⁵⁵

If it is assumed that the most highly specialized US Space Force space capabilities are protected through the highest levels of classification, only a finite number of companies will be able to compete to improve upon existing technology or find new approaches. This lack of competition restricts the diversity of solutions that come from sources such as nontraditional defense contractors and provides little incentive for established prime contractors to be innovative and reach beyond sole-source guarantees.

53. Andrea Johns, Jennifer Wagner, and Elizabeth Mudd, “Roadmap to Getting a Facility Clearance” (online presentation, DoD, Office of Small Business Programs and Defense Acquisition University, June 24, 2020), <https://business.defense.gov/>.

54. Virginia L. Wydler, *Gaining Leverage over Vendor Lock to Improve Acquisition Performance and Cost Efficiencies* (McLean, VA: MITRE Corporation, April 2014), <https://www.mitre.org/>.

55. SBIR [Small Business Innovation Research] and STTR [Small Business Technology Transfer], “About,” SBIR.gov, accessed March 9, 2023, <https://www.sbir.gov/>.

Proposed Solutions

Original and Derived Classification Authorities

Since classification and the process of protecting national secrets is a wholly government-owned process, those with original classification authority for their respective agencies hold immense power over information and how it is handled. The eight categories for classification detailed in Executive Order 13526 will not always lead to black-and-white decision-making, forcing an OCA to carefully weigh classification options.⁵⁶ To achieve a comprehensive evaluation, the operational risks and acquisition-related costs must be equally considered.

For acquisition programs or capabilities that must be classified, the OCA should carefully consider the appropriate level of classification and not default to the maximum level of restriction. Through current policy change, security classification guides and program security guides could be written in a way that provides latitude to those with derivative classification authority to account for additional controls after capabilities are better understood once acquisition milestones, such as initial operational capability, are reached.

While the OCA establishes the baseline for classification, as noted previously, those who possess derivative authorities, or all cleared personnel, are responsible for the generation of millions of documents, many of which are overclassified or mislabeled.⁵⁷ Expanded electronic file storage and transmission through secured networks have largely removed the burden of storing/accounting for physical material in a secured container. This has incentivized overclassification when a derivative classifier is in doubt.

Through the use of commercial machine-learning applications, such as Grammarly, that could be adapted for use on stand-alone systems, security classification guides and program security guides could be programmed into the app and could match the content in electronic products against the actual classification criteria. Cleared personnel could be prompted on potential overclassification designations in real time. Within combined and coalition offices, these applications could be adjusted to account for NATO and/or foreign-partner criteria, significantly reducing human error and friction points in data-sharing.

Small Businesses

For all of the new jobs created between 1995 and 2020, small businesses accounted for 12.7 million, or 62 percent, of that total.⁵⁸ In 2019, an estimated 44 percent of US economic activity came from the small business sector, and on average it produced 14

56. Exec. Ord. No. 13526.

57. *Too Many Secrets*, 3.

58. Martin Rowinski, "How Small Businesses Drive the American Economy," *Forbes*, March 25, 2022, <https://www.forbes.com/>.

times more patented technology than large businesses.⁵⁹ For decades, the Department of Defense has leveraged the innovative might of the country through the Small Business Innovation Research program. With the codification of the Other Transaction authorities process in 2015, the US Space Force is positioned to access a tech sector that was assumed to be closed to government contracts in the past.

To maintain a viable defense industry that is cleared to perform classified work, competent small businesses and tech start-ups need to be identified through a classified consortium or a Small Business Innovation Research-equivalent program that can provide seed funds. Secured SharePoint sites that are networked through an intranet between terminals—like SAM.gov, the System for Award Management website—could be used where the government posts unclassified solicitations for contracted work, allowing acquisition professionals to quickly assess company capabilities through the market research process. For technology that cannot be later commercialized due to classification, companies still have the option to pursue follow-on production opportunities with the government through the expanded use of Other Transaction authorities.

The ability to unleash tech startups and emerging small businesses will hinge on financially viable access to sensitive compartmented information facility spaces and secured networks. Keeping highly capable employees on payroll will require small businesses to rapidly compete for and earn contracted work with the government. Through the use and evaluation of small business subcontracting plans and small business participation goals, acquisition teams can encourage large businesses with existing SCIF infrastructure to subcontract with emerging small businesses and start-ups.⁶⁰ Small business subcontracting plans can be prioritized and heavily weighted through the evaluation and source-selection or contract award process, giving prime contractors an incentive to maximize their participation.

Lowering Barriers to Entry

Small businesses and tech start-ups that are new to defense contracting are accustomed to commercial business practices that rely heavily on profit-driven efficiencies and lean operations. The regulatory burden of FAR-based contracting imposes considerable time and capital costs through mandatory compliance clauses and aggressive oversight in the case of cost-type contracts. And the additional layers of bureaucracy imposed through clearance investigations, DD-254s, and the facility clearance process may be the final hurdles that discourage new entrants and turn them back toward an unclassified, unencumbered commercial sector.

The processes specific to classified work must be streamlined in a way that prioritizes critical capabilities and current skill gaps. Like the DD-254 digital reforms made in 2019, paper copy tracking for facility clearances and clearance investigations must

59. “Innovation and Research,” US Senate Committee on Small Business & Entrepreneurship (website), accessed March 9, 2023, <https://www.sbc.senate.gov/>.

60. DoD, *DoD Source Selection Procedures* (Washington, DC: DoD, August 20, 2022), <https://www.dau.edu/>.

be eliminated.⁶¹ In addition, different clearance levels and program associations should be prioritized for processing in accordance with national defense skill shortages and urgent operational needs. If everything is a priority, nothing is a priority, and five-months processing times cannot accelerate change.⁶²

Not to be neglected, the current large business prime contractors that compose the bulk of the classified sector capability must be incentivized to maintain aging SCIF infrastructure and retain competent personnel who can keep security clearances. In a postpandemic world, the flexibility and convenience of telework has become a strongly preferred employment arrangement by potential employees across many professions. The classified industry must stay competitive in an environment where nearly all of the work is accomplished in person.

After seeing some of the existing contracted companies walk away from classified opportunities due to the postpandemic job markets, one of the interviewed space system contracting officers proposed introducing National Defense Authorization Act language that would incentivize existing prime contractors to maintain their SCIFs and cleared status.⁶³ Through possible grant programs and regulatory relief, a large business with decades of experience and vital defense skill sets would be given means to attract and retain talented personnel who would otherwise be drawn to the nondefense commercial sector.

Expanded Tools

The US Space Force acquisitions career field is built on the creation and efficient control of documentation. For those in the contracting profession, digital interfaces and cloud-hosted networks have eliminated the need to ever create or retain paper contracts in just about every setting.

Since 2018, the contracting career field has adopted a significant amount of automation through web-based platforms such as Contracting Information Technology that replaces unsupported software that had been in use since the mid-1990s.⁶⁴ The procurement process requires cross talk through multiple systems that write contracts, request proposals, award contracts, pay vendors, and rate contractor performance, to name a few. Unfortunately, little to no automation or system cross talk exists for classified contracting that is executed on stand-alone systems.

Initiatives such as the DoD Procure to Pay future contracting plan should prioritize the development of Contracting Information Technology-like applications that

61. *Federal Acquisition Regulation: Requirements for DD Form 254, Contract Security Classification Specification*, 84 Fed. Reg. 33201 (July 12, 2019), <https://www.federalregister.gov/>.

62. Charles Q. Brown Jr., *Accelerate Change or Lose* (Washington, DC: Headquarters US Air Force, August 2020), <https://www.af.mil/>.

63. SSC, "Competition," 2.

64. George Sarmiento and Jonathan Owen, "Contracting-Information Technology (CON-IT) at a Glance," Air Force BES [Business and Enterprise Systems], November 17, 2022, <https://www.airforcebes.af.mil/>.

can be used on secured networks.⁶⁵ Increased automation in the contract writing and award process will decrease human error and accelerate procurements by several factors.

Aside from automation in the classified setting, contracting officers must be given new tools to expand their vendor base and boost competition. The current DD-254 process is cumbersome and requires significant up-front investments that must be carried for months before the prospect of earning government work is ever realized. Formal agreements with the government, such as a cooperative research and development agreement (CRADA), allow for work between federal and nonfederal entities on a noncontract basis.⁶⁶

For classified requirements, CRADAs could be leveraged to start the personnel clearance process and could result in collaborations with companies that enable a full understanding of the government's need. Contracting officers should be given CRADA or equivalent program approval authorities to seek out and establish formal ties with potential contractors during the market research phase. Expanding the vendor base will drive innovation and deliver the complex solutions required by the space domain.⁶⁷

Conclusion

In order to protect US national interests, the classification system, derived from presidential authority, will continue to be leveraged to protect national secrets and associated space program acquisitions. Due in large part to the recent media reporting on overclassification, the detrimental operational effects on deterrence, the Joint planning process, and work with Allies and partners are well known. Since the acquisition community works in a supporting role to the warfighter, the level of effort and infrastructure required for classified efforts may not be as visible to the public.

Overclassification and the misuse of derivative authority lead to the sacrifice of procurement speed, cost, innovation, and Allied partnerships. To make a fully informed decision to classify a program or capability, the original classification authority must weigh the operational and acquisition consequence of that decision. Above all else, the classified environment must be transformed and adapted to keep pace within a competitive space domain.

The Department of Defense currently has the means and capability to streamline the classified procurement process and fully harness the diversity of thought in companies across the country. Through the application of commercial machine learning onto classified stand-alone systems, automation can reduce human error and significantly increase the speed of procurements. Through the reform of current security regulations and policy, many of the associated prohibitive costs imposed on companies

65. *Procure to Pay*.

66. US Department of the Interior (DoI), "CRADAs - Cooperative Research & Development Agreements," DoI, March 25, 2021, <https://www.doi.gov/>.

67. DoI.

can be reduced or eliminated. By lowering the barriers to entry for classified work with the government, competition will increase dramatically, ultimately pushing the boundaries of innovation in a technically complex domain. Due diligence and the avoidance of overclassification will strengthen ties with Allies and partners and ensure critical space-based capabilities are delivered on time and on budget.

In the era of strategic competition, Department of the Air Force personnel must be empowered to take risks, and that all starts with the way information is held. Airmen and Guardian acquisition professionals should be incentivized to classify only if absolutely necessary. They should also be empowered to efficiently and effectively prosecute classified space programs on all information that requires classification. **Æ**

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