

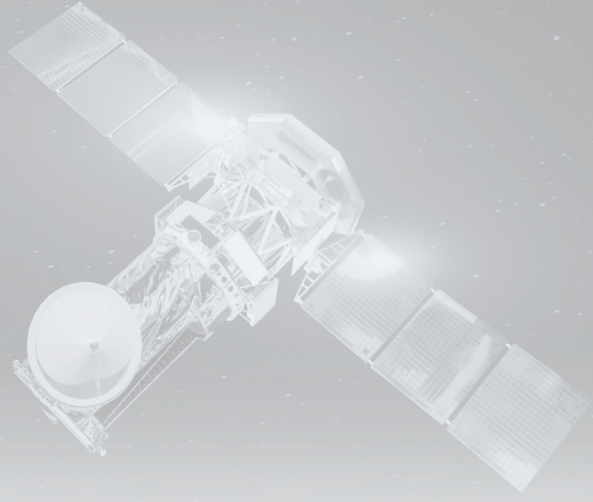


# Addressing Challenges in Defense Acquisition

INSIGHTS FROM RAND RESEARCH



RAND PROJECT AIR FORCE



The Department of the Air Force (DAF) acquisition vision is to “deliver enduring world class capabilities to assure air, space and cyberspace dominance for the nation and our allies.”<sup>1</sup> But achieving this vision is becoming ever more difficult as the threat landscape evolves more rapidly and the military power of U.S. competitors becomes increasingly sophisticated, posing greater operational risk to U.S. forces.

To stay ahead of the threat, the DAF will need to not only maintain current systems but also modernize its air and space forces. Yet the acquisition system continues to face long-standing problems that will challenge modernization goals, such as cost increases, schedule growth, and insufficient flexibility to meet dynamic needs. The DAF is working hard to overcome these challenges, but it is keenly aware of the swift pace of change—in the threat environment, in technology, and in the industrial base—and the agility needed to respond effectively.

Overcoming acquisition challenges will require innovative approaches informed by a deep understanding of the root causes of today’s problems. Research conducted within Project AIR FORCE for the DAF has delved into the causes of enduring problems and offers insights for overcoming them and improving agility within the Defense Acquisition System. This research portfolio also examines acquisition challenges confronted by the newly established U.S. Space Force (USSF) and the critical importance of having a dedicated and empowered acquisition workforce.

#### WHO WE ARE

The mission of Project AIR FORCE is to conduct objective analysis of issues of enduring concern to DAF leaders. Project AIR FORCE addresses these concerns from multiple vantage points, by way of four research programs: Strategy and Doctrine; Force Modernization and Employment; Resource Management (RMP); and Workforce, Development, and Health. This document highlights acquisition research from RMP and across the RAND Corporation.

## AGILE AND RESPONSIVE ACQUISITION

A frequent critique levied against the Defense Acquisition System has been that it is neither responsive enough nor agile enough to help outpace emerging threats. The DAF seeks to address these shortcomings by implementing various acquisition approaches to speed delivery of capabilities to the warfighter. From policy gaming, metrics development, organizational analysis, and other qualitative and quantitative approaches, the following RAND research highlights a variety of innovative approaches for analyzing policy options to better enable agility and responsiveness in defense acquisition.

### Using Metrics to Understand the Performance of the Adaptive Acquisition Framework

2022, RR-A1349-1, [www.rand.org/t/RR1349-1](http://www.rand.org/t/RR1349-1)

### Improving Intelligence Support to the Future Warfighter: Acquisition for the Contested Environment

2021, RR-A537-1, [www.rand.org/t/RR537-1](http://www.rand.org/t/RR537-1)

### Strategies for Acquisition Agility: Approaches for Speeding Delivery of Defense Capabilities

2020, RR-4193-AF, [www.rand.org/t/RR4193](http://www.rand.org/t/RR4193)

### Building a Broader Evidence Base for Defense Acquisition Policymaking

2020, RR-A202-1, [www.rand.org/t/RR202-1](http://www.rand.org/t/RR202-1)

## ENABLING INNOVATION

A critical consideration in positioning the DAF to keep pace with rapid technological change and rapidly growing adversary capabilities is how it enables innovation. Recent RAND work has analyzed challenges and opportunities afforded by factors that foster innovation, such as organizational design, policies and processes, and authorities, which more fully reap the benefits of innovations emerging from industry and other partners.

### Strengthening the Defense Innovation Ecosystem

2023, RR-A1352-1, [www.rand.org/t/RR1352-1](http://www.rand.org/t/RR1352-1)

### Acquiring a Mosaic Force: Issues, Options, and Trade-Offs

2021, RR-A458-3, [www.rand.org/t/RR458-3](http://www.rand.org/t/RR458-3)

### Prototyping Using Other Transactions: Case Studies for the Acquisition Community

2020, RR-4417-AF, [www.rand.org/t/RR4417](http://www.rand.org/t/RR4417)





## WORKING WITH INDUSTRIAL PARTNERS

Acquisition professionals work with industrial partners every day to develop, acquire, and sustain military capabilities. Recent RAND work has highlighted various considerations for the DAF to better anticipate opportunities and risks emerging from the industrial base and facilitate more-effective partnerships.

**Commercial Space Capabilities and Market Overview: The Relationship Between Commercial Space Developments and the U.S. Department of Defense**

2022, [RR-A578-2](#), [www.rand.org/t/RR-A578-2](#)

**Early Predictive Indicators of Contractor Performance: A Data-Analytic Approach**

2022, [RR-A542-1](#), [www.rand.org/t/RR-A542-1](#)

**Managing Intellectual Property Relevant to Operating and Sustaining Major U.S. Air Force Weapon Systems**

2021, [RR-A4252](#), [www.rand.org/t/RR-A4252](#)

**Data Rights Relevant to Weapon Systems in Air Force Special Operations Command**

2021, [RR-4298](#), [www.rand.org/t/RR-4298](#)

## OVERCOMING ENDURING PROBLEMS: COST INCREASES, SCHEDULE GROWTH, UNSUITABLE OPERATIONAL PERFORMANCE, AND SUSTAINMENT STRATEGY

Effective program managers must balance acquisition costs, schedule, and performance to deliver the needed operational capability on time and on budget. This balance is difficult to achieve as program managers consider trade-offs that may ultimately result in cost or schedule overruns and unsuitable operational performance. RAND studies contribute to a broader understanding of how programmatic trends contribute to cost, schedule, and performance issues, which can help program managers make more-informed future decisions.

**Improving Defense Acquisition: Insights from Three Decades of RAND Research**  
2022, RR-A1670-1, [www.rand.org/t/RR1670-1](http://www.rand.org/t/RR1670-1)

**Extreme Cost Growth: Themes from Six U.S. Air Force Major Defense Acquisition Programs**  
2015, RR-630-AF, [www.rand.org/t/RR630](http://www.rand.org/t/RR630)

**Program Characteristics That Contribute to Cost Growth: A Comparison of Air Force Major Defense Acquisition Programs**  
2017, RR-1761-AF, [www.rand.org/t/RR1761](http://www.rand.org/t/RR1761)

**Benchmarking Schedules for Major Defense Acquisition Programs**  
2018, RR-2144-AF, [www.rand.org/t/RR2144](http://www.rand.org/t/RR2144)

**Improving the Technical Requirements Development Process for Weapon Systems: A Systems-Based Approach for Managers**  
2022, RR-A997-1, [www.rand.org/t/RR997-1](http://www.rand.org/t/RR997-1)

**A New Methodology for Conducting Product Support Business Case Analysis (BCA): With Illustrations from the F-22 Product Support BCA**  
2017, RR-1664-AF, [www.rand.org/t/RR1664](http://www.rand.org/t/RR1664)





## DEVELOPING THE ACQUISITION WORKFORCE

The acquisition field needs a workforce that is properly sized, trained, and incentivized to make the smart decisions that flexible acquisition approaches and partnering productively with industry entail. However, the career field faces several obstacles with workforce recruitment, professional development, and retention. The following RAND reports discuss U.S. Air Force (USAF) acquisition workforce needs and challenges that the USAF faces to meet them.

### **Personnel Needs for Department of the Air Force Digital Talent: A Case Study of Software Factories**

2022, RR-A550-1, [www.rand.org/t/RR-A550-1](http://www.rand.org/t/RR-A550-1)

### **Air Force Management of the Defense Acquisition Workforce Development Fund: Opportunities for Improvement**

2016, RR-1486-AF, [www.rand.org/t/RR1486](http://www.rand.org/t/RR1486)

### **Software Acquisition Workforce Initiative for the Department of Defense: Initial Competency Development and Preparation for Validation**

2020, RR-3145-OSD, [www.rand.org/t/RR3145](http://www.rand.org/t/RR3145)

### **Department of Defense Acquisition Workforce Analyses: Update Through Fiscal Year 2021**

2021, RR-A758-2, [www.rand.org/t/RR-A758-2](http://www.rand.org/t/RR-A758-2)

## ACQUISITION FOR A NEW SERVICE: SPACE ACQUISITION

The USSF faces threats from potential adversaries that have demonstrated increasingly effective counterspace capabilities. To outpace these threats, the USSF is pursuing rapid acquisition of warfighting capabilities. Space acquisition presents specific challenges that the USSF has been trying to address in recent years as a separate service. RAND research has examined what capabilities the USSF is and should be acquiring and how to organize its acquisition system, while providing recommendations on how to tailor the Defense Acquisition System to benefit space acquisition goals.

### Ensuring Mission Assurance While Conducting Rapid Space Acquisition

2022, RR-A998-1, [www.rand.org/t/RR998-1](http://www.rand.org/t/RR998-1)

### A Clean Sheet Approach to Space Acquisition in Light of the New Space Force

2021, RR-A541-1, [www.rand.org/t/RR541-1](http://www.rand.org/t/RR541-1)

### Improving Acquisition to Support the Space Enterprise Vision

2020, RR-2626-AF, [www.rand.org/t/RR2626](http://www.rand.org/t/RR2626)

### Improving the Cost Estimation of Space Systems: Past Lessons and Future Recommendations

2008, MG-690-AF, [www.rand.org/t/MG690](http://www.rand.org/t/MG690)

### Acquisition of Space Systems, Volume 7: Past Problems and Future Challenges

2015, MG-1171/7-OSD, [www.rand.org/t/MG1171z7](http://www.rand.org/t/MG1171z7)

## ACQUISITION DATA GOVERNANCE

The current data-abundant environment enables the acquisition community to arm decisionmakers with data to make more-informed acquisition decisions. Yet, in practice, fully exploiting such acquisition data to inform decisionmaking can often be challenging. The following RAND reports describe challenges related to acquisition data and opportunities to improve data governance and management to better meet decision support needs.

### Benchmarking Data Use and Analytics in Large, Complex Private-Sector Organizations: Implications for Department of Defense Acquisition

2020, RR-A225-1, [www.rand.org/t/RR225-1](http://www.rand.org/t/RR225-1)

### Issues with Access to Acquisition Information in the Department of Defense: A Series on Considerations for Managing Program Data in the Emerging Acquisition Environment

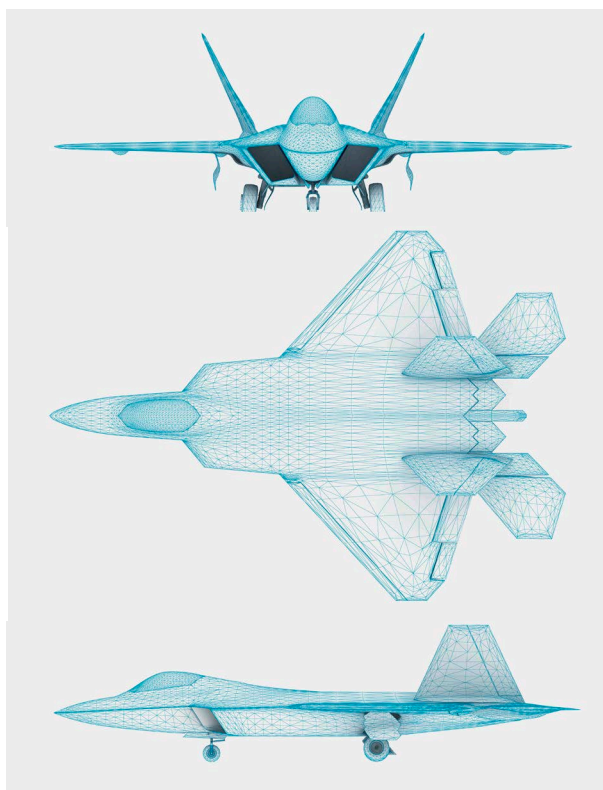
2020, RR-3130-OSD, [www.rand.org/t/RR3130](http://www.rand.org/t/RR3130)

### Assessing the Use of Data Analytics in Department of Defense Acquisition

2019, RB-10085-OSD, [www.rand.org/t/RB10085](http://www.rand.org/t/RB10085)

### Issues with Access to Acquisition Data and Information in the Department of Defense: Doing Data Right in Weapon System Acquisition

2017, RR-1534-OSD, [www.rand.org/t/RR1534](http://www.rand.org/t/RR1534)



# Working with Us

## WHAT WE DELIVER

RAND Project AIR FORCE's (PAF's) studies and analyses are tailored to the needs of the sponsor. Generally, PAF provides

- continuous interaction with PAF subject-matter experts throughout the project
- accessible, timely, and policy-focused reports that address senior leader concerns and recommend courses of action
- descriptive, transparent, and rigorous supporting materials that describe the project's methodology and support the project's conclusions
- as appropriate, additional outreach materials to help socialize the work to other interested stakeholders, such as the DAF, the U.S. Department of Defense, Congress, or the public.

## SPONSOR IDENTIFICATION

All PAF research projects must be sponsored by a USAF general officer (GO) or member of the senior executive service (SES). Most sponsors assign one or more action officers (AOs) to manage the technical and administrative aspects of their PAF projects.

## LINES OF FUNDING

DAF organizations can initiate a PAF research project in two ways:

1. **Centrally Funded** (also referred to as “core projects”). Air Force Studies, Analyses, and Assessments (SAF/SA; formerly HAF/A9) employs a rigorous, iterative, GO/SES voting process to select projects for inclusion in its annual research plan. This process accounts for about 70 percent of the projects that PAF will conduct during a fiscal year. Funding

for these projects is part of a line item in the congressional budget and is awarded through the competitive selection process. Project topics are submitted in January, and the research plan is approved by a steering group consisting of three- and four-star GOs between June and July. Maintaining a balance of projects across the DAF and the four PAF programs is key to this selection process.

2. **Sponsor-Funded** (also referred to as “add-on projects” because they are add-ons to the core research agenda). This process accounts for about 30 percent of the projects that PAF will conduct during a fiscal year. Funding for these projects comes directly from the organization requesting the research and does not require a competitive selection process because the requesting organization is paying for the research (and not competing with others). DAF sponsors may initiate a PAF add-on research project at any time of the year by requesting the work, submitting required documentation, and transmitting organizational funds. Ideas and requests for PAF add-on projects may originate from a variety of circumstances (e.g., continuation of prior PAF work or new challenges). To initiate the process, a sponsor or AO typically contacts the appropriate PAF program director or subject-matter expert. The timeline of add-on projects is flexible.

PAF also supports DAF organizations in many informal ways. To request RAND research reports highlighted here or to discuss pressing DAF challenges, contact the director of PAF's Resource Management Program at [www.rand.org/paf/about/pafmanagement](http://www.rand.org/paf/about/pafmanagement).

NOTES: <sup>1</sup> Air Force Acquisition, “SAF/AQ Mission,” updated, <https://ww3.safaq.hq.af.mil>.

RAND Project AIR FORCE (PAF), a division of the RAND Corporation, is the Department of the Air Force's (DAF's) federally funded research and development center for studies and analyses, supporting both the United States Air Force and the United States Space Force. PAF provides the DAF with independent analyses of policy alternatives affecting the development, employment, combat readiness, and support of current and future air, space, and cyber forces. Research is conducted in four programs: Strategy and Doctrine; Force Modernization and Employment; Resource Management; and Workforce, Development, and Health. The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest. RAND® is a registered trademark. © 2023 RAND Corporation.

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[www.rand.org/t/CPA2580-2](http://www.rand.org/t/CPA2580-2)



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