SYM-AM-19-169

# PROCEEDINGS
## OF THE
# SIXTEENTH ANNUAL
# ACQUISITION RESEARCH SYMPOSIUM

## THURSDAY SESSIONS
## VOLUME II

**Acquisition Research:**
**Creating Synergy for Informed Change**

**May 8–9, 2019**

**Published: April 30, 2019**


Prepared for the Naval Postgraduate School, Monterey, CA 93943.

ACQUISITION RESEARCH PROGRAM
GRADUATE SCHOOL OF BUSINESS & PUBLIC POLICY
NAVAL POSTGRADUATE SCHOOL

The research presented in this report was supported by the Acquisition Research Program of the Graduate School of Business & Public Policy at the Naval Postgraduate School.

To request defense acquisition research, to become a research sponsor, or to print additional copies of reports, please contact any of the staff listed on the Acquisition Research Program website (www.acquisitionresearch.net).


ACQUISITION RESEARCH PROGRAM
GRADUATE SCHOOL OF BUSINESS & PUBLIC POLICY
NAVAL POSTGRADUATE SCHOOL

# Issues With Access to Acquisition Information in the Department of Defense: Considerations for Managing Program Data in the Emerging Acquisition Environment

**Jeffrey A. Drezner**—is a Senior Policy Researcher at RAND. He has over 34 years of professional experience conducting policy analysis on a wide range of issues, including planning and program management, analyses of cost and schedule outcomes in complex system development programs, aerospace industrial policy, and defense acquisition policy and reform. His research continues to emphasize mixed qualitative and quantitative approaches to analyze issues associated with technology development, organizational behavior, and program management. Drezner received his PhD in political science from Claremont Graduate University. [zner@rand.org]

**Megan McKernan**—is a Senior Defense Researcher at RAND. She has more than 14 years of experience conducting DoD acquisition analyses. She is co-leading research examining DoD acquisition data management. She has also conducted other defense acquisition analyses: prototyping; IT acquisition; Industrial Base considerations; tailoring the acquisition process; program manager tenure; and root causes of Nunn-McCurdy unit cost breaches. She uses a variety of methods in conducting research including case studies, interviews, and literature reviews. She holds an MA in international trade and investment policy from The George Washington University and a BA in economics from William Smith College. [mckernan@rand.org]

**Jerry M. Sollinger**—other co-contributors from RAND.

## Abstract

Acquisition data lay the foundation for decision-making, management, insight, and oversight of the Department of Defense's acquisition program portfolio. Recent statutory changes to organizational structures, as well as to roles, responsibilities, and authorities, have introduced new challenges and opportunities for the collection, storage, and use of acquisition information. This research identifies and describes some of the issues and challenges related to managing acquisition program information in this emerging acquisition environment and suggests options for addressing these challenges and opportunities.

## Introduction

Acquisition data lay the foundation for decision-making, program management, insight, and oversight of the Department of Defense's (DoD's) acquisition program portfolio. Recent statutory changes to organizational structures, as well as to roles, responsibilities, and authorities (RRAs), have introduced new challenges and opportunities for the collection, storage, and use of acquisition information. These changes—which we collectively refer to as the emerging acquisition environment—may have an impact on acquisition program data governance and management, and what data are needed for acquisition program information in support of program management, analysis, and oversight.

## Research Objective and Approach

The objective of this research was to identify and concisely describe some of the issues and challenges associated with managing acquisition program information in the emerging acquisition environment. The intent was to provide timely information to inform some of the policy design and implementation decisions the DoD must make in response to recent changes.

Piscopo, P. F., Ahmed, H. F., Bronson, P. F., Hallion, R. P., Hong, J. S., Lewis, M. J., & Wu, L. (2016). 2015 Hypersonic T&E investment planning study Phase II final report (IDA Paper P-5313). Alexandria, VA: Institute for Defense Analyses. Draft, not authorized for further distribution.

Piscopo, P. F., Marren, D. E., & Dunn, S. C. (2018). A value-based justification process for aerospace RDT&E capability investments. In Proceedings of American Institute of Aeronautics and Astronautics Science and Technology Forum. https://doi.org/10.2514/6.2018-0388

Test Resource Management Center. (2015). Report on the ability of the U.S. test and evaluation infrastructure to effectively and efficiently mature hypersonic technologies for defense systems development and plan for proposed improvements and modernization. Washington, DC: Office of the Secretary of Defense, TRMC.

## Acknowledgments

The authors acknowledge and thank the DoD Test Resource Management Center for its sponsorship and financial support of the research efforts presented herein. In addition, we acknowledge and thank Dr. John Hong, Ms. Hiba Ahmed, and Ms. Linda Wu from IDA, as well as the myriad of SMEs from the Arnold Engineering Development Complex and other government organizations, for their substantial and significant technical efforts and contributions in the development and application of this capability-based valuation approach.

Our approach consisted of three main steps. First, the study team identified and described recent changes to DoD acquisition RRAs. This step was fundamentally descriptive in nature and was accomplished by reviewing relevant legislation and acquisition policy changes, and by interviewing DoD leadership in charge of developing policy to guide or implement the changes. Second, the study team identified a set of specific challenges for acquisition data that may arise from the changes in RRAs. The topics were chosen with approval of the sponsor but were informed by six earlier studies on Issues With Access to Acquisition Data and Information in the Department of Defense (Riposo et al., 2015; McKernan et al., 2016, 2017, 2018; unpublished 2018 and 2019 research by Jeffrey A. Drezner, Megan McKernan, Badreddine Ahtchi, Austin Lewis, and Douglas Shontz, Ken Munson, Devon Hill, Jaime Hastings, Geoffrey McGovern, Marek Posard, and Jerry Sollinger). Several topics were ultimately selected:

- General data governance and management issues associated with the emerging acquisition environment;
- Specific data challenges associated with the implementation of the Middle Tier of Acquisition for Rapid Prototyping and Rapid Fielding; and
- Implications of termination of the Selected Acquisition Report (SAR).

Third, the study team identified implications, potential opportunities, and risks for acquisition data for each of the identified topics, as well as general guidelines to consider when strategically managing data. Implications were developed on the basis of published best practices for data management and an understanding of how those practices are currently implemented in the DoD acquisition system. Where possible, the study team also identified how current DoD policies and practices may need to change to become consistent with the emerging and future acquisition environment (in terms of roles, responsibilities, and structure) and identified options for mitigating the challenges.

## Key Scoping Assumptions

Recent changes in acquisition RRAs prompted a question about what acquisition data are required for the Under Secretary of Defense for Acquisition and Sustainment (USD[A&S]) to execute its evolving acquisition responsibilities. Ultimately, acquisition program data requirements are a decision for USD(A&S) that depends on how USD(A&S) intends to use acquisition program data (i.e., the "use cases") and on the financial costs and potential managerial and administrative burdens the DoD is willing to accept to collect, manage, store, share, and govern acquisition program data and information relative to the benefits of having the data. This research did not address this basic question, which bears on broader questions of acquisition policy; instead, we assume that USD(A&S) will continue to need acquisition program data to support a broad set of use cases. These use cases include the following:

- Statutory and regulatory reporting
- Tracking program cost, schedule, and performance outcomes against an established baseline
- Providing program insight and oversight to anticipate, understand, and mitigate the factors affecting adverse cost, schedule, and performance outcomes
- Conducting portfolio analyses, including both traditional (i.e., by service or weapon system type) and new analyses (i.e., mission-focused capabilities and kill-chains)

- Understanding the performance of the overall acquisition system, or any specific pathway within that system (e.g., traditional, tailorable DoD Instruction [DoDI] 5000.02; middle tier) to inform improvements in policy and process design and implementation

This assumption scopes our analysis, since ultimately USD(A&S) may decide that some of these use cases (or their specific instantiations) are no longer needed in the new environment, or that the costs and potential burdens associated with collecting, managing, storing, sharing, and governing acquisition program data cannot be justified given their benefits. Analyses of such trade-offs are left for future work.

The topics listed above address only a few of the challenges associated with acquisition program data governance and management due to the recent Office of the Secretary of Defense (OSD) reorganization, change in the milestone decision authority (MDA) for major acquisition programs, and other changes in RRAs. They represent a sample of challenges the DoD will need to confront in the emerging acquisition environment. This paper presents a summary of these challenges and opportunities.

## Summary of Recent Changes to Acquisition Roles, Responsibilities, and Authorities

The Fiscal Year (FY) 2016 and FY 2017 National Defense Authorization Acts (NDAAs) included changes in the roles, responsibilities, and organizational structure of service and OSD organizations managing and overseeing acquisition programs. Section 825 of the FY 2016 NDAA delegated decision-making to the service acquisition executives (SAEs) for new major defense acquisition programs (MDAPs); the SAE is now the default milestone decision authority (MDA) for new MDAPs, and the service chiefs have an increased role in acquisition decision-making, including requirements and program management decisions.

Section 901 of the FY 2017 NDAA changed the structure of acquisition organizations within OSD. Beginning in February 2018, the USD(Acquisition, Technology, & Logistics) was dissolved, and two new under secretariats were created: Acquisition and Sustainment (A&S) and Research and Engineering (R&E). In addition, a chief management officer (CMO) position was established in OSD and given responsibility for

> establishing policies on, and supervising, all business operations of the Department, including business transformation, business planning and processes, performance management, and business information technology management and improvement activities and programs, including the allocation of resources for business operations, and unifying business management efforts across the Department. (National Defense Authorization Act for Fiscal Year 2017)

Some overlap in acquisition program information management may now exist within the DoD among these three positions—USD(A&S), USD(R&E), and CMO—and their accompanying organizations.

Congress also directed the DoD to reemphasize the use of prototyping and reduce acquisition timelines. Section 804 of the FY 2016 NDAA directs the creation of a "middle tier of acquisition for rapid prototyping and rapid fielding," and Section 806 of the FY 2017 NDAA establishes additional processes and reporting on prototyping within the services. In the FY 2018 NDAA, Congress repealed the submission of a SAR for each major acquisition program to Congress, effective December 31, 2021.

At the time of this writing (March 2019), the services and OSD have implemented these structural changes but are still working through some policy and implementation details (DoD, 2017). One area that will be affected by these policy and implementation decisions is that of acquisition program data and other associated acquisition information. Such information is currently generated, collected, stored, accessed, and used by a wide range of organizations in the Services, OSD, and external organizations (e.g., Congress, academic researchers, and federally funded research and development centers [FFRDCs]). Implementing these changes in policy, organizational roles, responsibilities, and structure will necessarily impact the generation, collection, storage, and use of acquisition data. In particular, the changes may obfuscate the authoritative source of specific data, disrupt collection, and limit access and use. As responsibilities move to the Services, their staff may need to develop new or expanded capabilities, particularly in terms of oversight and portfolio management.

## General Data Governance and Management Issues Associated With the Emerging Acquisition Environment

As with any large complex organization, the DoD faces challenges related to data access and management. Prior to the current reorganization and statutory changes, the challenges affecting acquisition information included complex security policies regulating information systems; cultural and technical barriers to accessing and sharing information; and lack of awareness of the breadth and depth of information available to DoD leaders and staff. A rich set of information is available to support acquisition insight, analysis, and decision-making, but the full extent to which this information is used remains unknown. In addition, no common data environment exists for all acquisition information, and there is no agreement on all data needs and definitions across the DoD: Both issues result from decentralized governance and management. While most of the underlying data used for program management and oversight/insight are similar across OSD and the services (at least for Acquisition Category [ACAT] I programs), specific metrics and uses differ. For example, all organizations use program cost, schedule, and performance data measured against a baseline; however, OSD tracks only those schedule events contained in the baseline, while the Services tend to provide that information as well as a more complete and integrated picture of schedule. Finally, introducing changes to rules regarding controlled unclassified information (CUI) will further complicate management, sharing, and use of acquisition information.

Key questions senior acquisition leaders need to consider include the following:

- What information does OSD and the Fourth Estate need and why? In particular, what does USD(A&S) need to execute the USD's statutory responsibility to advise the SAEs on acquisition decisions, to inform policy-making, to inform the Secretary of Defense and Deputy Secretary of Defense for program status and portfolio analyses, and to report to Congress?
- Is it possible to have decentralized program execution and oversight while maintaining OSD insight on policy effects, institutional performance, and key program status and outcomes?
- How will portfolio performance be monitored and improved in this decentralized structure, especially with respect to integrated mission and kill-chain capabilities?
- How can data and insight improve the execution of programs?
- What data capabilities will be lost if some information flows stop?
- What information is no longer needed (or of low value)?

- What critical new information is needed?
- Can and should acquisition program data be standardized across the DoD enterprise and across different services and types of programs? Which data?
- What are the military departments doing with their information flows as their organizations change?
- What costs and burdens are associated with collecting, managing, storing, sharing, and governing acquisition program data?

To address these challenges, USD(A&S) could begin by creating a strategic management plan for acquisition information that identifies what acquisition program information is needed by whom to accomplish enterprise-wide objectives without overburdening the military departments. Creating this plan will require elaborating on the acquisition data use cases. Given such a strategic management plan, USD(A&S) and the military department leadership could then work together to standardize a core set of data elements, data definitions, authoritative sources, and management approaches. This effort would facilitate information sharing and understanding; align data governance and management across organizations, use cases, and program types; and be an important substantive step toward a common acquisition data framework. This effort could start with the existing data governance and management framework that has enabled standardized data reporting for ACAT I programs over the last several decades.

## Specific Data Challenges Associated With the Implementation of the Middle Tier Acquisition Pathway

The new Middle Tier acquisition pathway illustrates many of the challenges just described. The Middle Tier pathway—consisting of both rapid fielding and rapid prototyping—is an alternative acquisition process intended to accelerate the delivery of capabilities to the warfighter. It provides a blanket waiver to both the traditional acquisition (DoD Directive 5000.01) and requirements (Joint Capabilities Integration and Development System) processes. Implementation of the Middle Tier pathway requires program data to inform both programmatic and policy decisions. Interim guidance from the USD(A&S) provided parameters regarding information requirements for the Middle Tier (USD[A&S], 2018a, p. 3; USD[A&S], 2018b; USD[A&S], 2019). It also identified an initial set of core information that should be collected regarding these efforts (at a minimum) and discussed a data-driven collaborative policy-making process that will draw on lessons learned from the initial implementation. The Navy and the Air Force released guidance in April 2018, with the Air Force following up with additional detailed guidance in June 2018 (Assistant Secretary of the Navy [Research, Development and Acquisition], 2018, pp. 1–3; Assistant Secretary of the Air Force for Acquisition, Technology and Logistics, 2018; Assistant Secretary of the Air Force [Acquisition, Technology & Logistics], 2018, pp. 7–8; Assistant Secretary of the Army for Acquisition, Logistics and Technology, 2018). One major similarity between the Navy and Air Force guidance is the emphasis on tailoring current statutory and regulatory information requirements and seeking waivers as needed to minimize information requirements and help maintain schedule, making tailoring a key tool that program managers will need to use. Service guidance suggests that tailoring should be driven by the unique characteristics of the Middle Tier efforts and by the decisions being made by the milestone decision authority.

Middle Tier acquisition will need to address and resolve many of the challenges that have faced traditional acquisition processes in the past. These challenges include the following:

- Determining exactly what data are reported for a middle tier "program," at what frequency, and how. While the USD(A&S) and service guidance memoranda address this issue, they do not resolve it.
- The service guidance memoranda reflect a lack of standardization across organizations in terms of what should be reported, relying instead on tailoring data reporting to reflect the characteristics of each program. No guidance is provided on how to tailor or how to determine what is appropriate for a given middle tier activity.
- The objective of the Middle Tier pathway is speed. There is a risk that the process could become overburdened by reporting requirements, slowing it down.

The Middle Tier acquisition pathway also illustrates how the existing data infrastructure (information systems, data collection conventions, common data definitions) can support and adapt to new acquisition authorities and processes. While adjustments and refinements of Middle Tier data collection will occur as experience is gained with the new processes, the existing IT infrastructure and data environment in OSD and the services could be adapted to support the information needs of the Middle Tier pathway, while maintaining some degree of alignment and consistency across the traditional acquisition pathways and across organizations.

## Implications of Termination of the Selected Acquisition Report (SAR) to Congress

The submission of a SAR for each major acquisition program to Congress was repealed by the FY2018 National Defense Authorization Act (NDAA), effective December 31, 2021. While this change was part of Congress' broader effort to ease the DoD's reporting burden, the change creates an opportunity for the DoD to review and propose a revised reporting structure that satisfies Congress's need for detailed, transparent performance information but in a way that the DoD finds more efficient and effective. The SAR has been a bedrock of transparency and data on the cost, schedule, and performance of MDAPs for oversight and analysis at the program, portfolio, and policy levels—both immediate and longitudinally. Analyses using SAR data have been useful to improving and informing weapon system acquisition strategies and policymaking in the DoD and Congress for decades. Here we discuss some of the consequences of terminating the SARs.

The SAR has been used for about 50 years to understand and track MDAP cost, schedule, and performance. SARs are important because collectively they provide a structured and relatively consistent mechanism for informing Congress on the performance of major investments, are useful for management and oversight, and are one of the only sources of longitudinal, standardized program information supporting program, portfolio, and process analysis for MDAP investments. The data included in the SAR constitute a starting place for developing common acquisition program data management across all program levels, program types, and components. The data also serve as a source of useful information for the development of acquisition strategies and system life-cycle management processes, as well as independent cost estimates.

If not replaced with another reporting construct that provides consistent longitudinal data across programs, the elimination of this information source by Congress could, in turn, eliminate many of the benefits that have accrued from its use over time. Of particular concern is the potential loss of common data standards and definitions for measuring program performance and a source for cost, schedule, and performance data for independent program milestone assessments and policy analysis. Without these common data standards and definitions (i.e., a common data framework) institutionalized over

decades of SAR creation and submission, the military departments' performance measurements (i.e., definitional standards) may drift over time, leading to reduced transparency and inefficiencies if additional work is required to reconcile disparate data during analysis. Also, the statutory status of the SAR serves an important enforcing function for compliance.

However, opportunities may also exist to improve on the SAR for future reporting constructs while still retaining some of the key data elements. Some data elements of the SAR are useful for information or analytic purposes while others could be improved, streamlined, or eliminated. Below are some example opportunities, core elements, and hidden needs. These examples highlight known uses that further analysis could refine to improve SAR-like reporting to multiple user communities.

Streamlining and integration with other information sources. The DoD could review and integrate sources of similar information to reduce burden and increase efficiency rather than creating pieces solely for the SAR. For example, the SAR's Executive Summary—an authoritative source of program history, status, purpose, and plans—could be sourced from or integrated with other similar sources.

Revision of certain elements. Some elements are known to be either problematic or particularly burdensome with little value, while others are valuable but require significant additional work to prepare. For example, the SAR Cost Variance section is known to have theoretical issues in how cost change types are allocated to statutory bins. However, some of this information has been useful for informing (in part) analysis of trends in cost variance and root cause analyses. The DoD could develop and propose an alternative approach that is less confusing and more informative. Operating and Support (O&S) cost data are valuable to those who are seeking to understand high-level O&S costs, but the data included in the SAR do not provide insight into how these costs, their uncertainties, and changes over time may be due to external factors beyond the control of the acquisition system. One possible improvement might include adding data on elements that drive sustainment costs (e.g., more consistent provision of reliability information and enriched information on maintainability).

Key elements for retention (including some that seem obscure and burdensome). Some elements are useful, but their utility may not be apparent, given the amount of work involved in preparing them. Two examples are provided here. Schedule events—and how well the program is doing against their baseline thresholds and objectives—can be used to help understand program timelines from Milestone B through C. They allow analysts to identify how long acquisition takes (cycle time) and any schedule growth. Unit Costs are used to directly identify whether programs have breached congressionally mandated Nunn-McCurdy cost thresholds and the associated reporting, review, restructuring, or cancellation activities required by law (10 U.S.C. 2433). The SAR record for a program also allows one to identify what baseline is used for a program's reported unit cost growth.

USD(A&S) could take the opportunity presented by Congress to reassess, improve, and streamline the current information contained in the SAR, the structure of the SAR itself, and the process by which this information is reported to Congress and DoD. The SAR itself does not necessarily need to be preserved, but the program data it contains need to continue to be collected and disseminated to both internal DoD and external stakeholders. The core data requirements for a range of use cases—from Congressional reporting to portfolio analysis—are supported by the current set of data elements contained in the SAR.

## Principles for Moving Forward

Based on prior research, we offer the following four guidelines to ensure that requirements and processes associated with Middle Tier program data and other acquisition information are as efficient and effective as possible:

- Let decision-making drive data requirements. Data and information must not be generated for its own sake but must support important decision-making about policy, process, programs, and integrated capability outcomes. As a starting point, USD(A&S) can describe data requirements by specifying important acquisition use cases that must be supported.
- Minimize reporting requirements and costs more generally. Information and documentation requirements should be austere, with minimal data reporting. Historically, successful rapid prototyping and fielding activities have had austere information requirements. Guidance appears to recognize this by emphasizing tailoring.
- Standardize where possible. A common acquisition program data framework should be developed for a core set of program data. The existing data framework reflected in the legacy SAR provides a strong foundation from which to start.
- Capitalize on existing structures. One way to minimize costs and burdens (including ad hoc data calls) is by using existing data frameworks, information systems, and organizations to the maximum extent practical, especially when such data are shared automatically between systems.

## References


Assistant Secretary of the Air Force for Acquisition, Technology, & Logistics. (2018, April 10). Seven steps for incorporating rapid prototyping into acquisition [Memorandum]. Washington, DC: Department of the Air Force.

Assistant Secretary of the Air Force for Acquisition, Technology, & Logistics. (2018, June 13). Air Force guidance memorandum for rapid acquisition activities [Memorandum]. Washington, DC: Department of the Air Force.

Assistant Secretary of the Army for Acquisition, Logistics, & Technology (ASA[ALT]). (2018, September 25). Office of the Assistant Secretary (Acquisition, Logistics, & Technology) of the Army middle-tier acquisition policy [Memorandum]. Washington, DC: Department of the Army.

Assistant Secretary of the Navy (Research, Development and Acquisition). (2018, April 24). Middle tier acquisition and acquisition agility guidance [Memorandum]. Washington, DC: Department of the Navy.

DoD. (2017, August). Report to Congress restructuring the Department of Defense Acquisition, Technology and Logistics Organization and Chief Management Officer Organization, in response to Section 901 of the National Defense Authorization Act for Fiscal Year 2017 (Public Law 114-328). Washington, DC: DoD.

McKernan, M., Moore, N. Y., Connor, K., Chenoweth, M. E., Drezner, J. A., Dryden, J., ... Szafran, A. (2017). Issues with access to acquisition data and information in the Department of Defense: Doing data right in weapon system acquisition (RR-1534-OSD). Santa Monica, CA: RAND Corporation.

McKernan, M., Riposo, J., McGovern, G., Shontz, D., & Ahtchi, B. (2018). Issues with access to acquisition data and information in the Department of Defense:

Considerations for implementing the Controlled Unclassified Information Reform Program (RR-2221-OSD). Santa Monica, CA: RAND Corporation.

McKernan, M., Riposo, J., Drezner, J. A., McGovern, G., Shontz, D., & Grammich, C. (2016). Issues with access to acquisition data and information in the Department of Defense: A closer look at the origins and implementation of controlled unclassified information labels and security policy (RR-1476-OSD). Santa Monica, CA: RAND Corporation.

National Defense Authorization Act for Fiscal Year 2017, Pub. L. No. 114-328, § 901.

Riposo, J., McKernan, M., Drezner, J. A., McGovern, G., Tremblay, D., Kumar, J., & Sollinger, J. (2015). Issues with access to acquisition data and information in the Department of Defense: Policy and practice (RR-880-OSD). Santa Monica, CA: RAND Corporation.

Under Secretary of Defense for Acquisition and Sustainment. (2018a, April 16). Middle tier of acquisition (rapid prototyping/rapid fielding) interim authority and guidance [Memorandum]. Washington, DC: DoD.

Under Secretary of Defense for Acquisition and Sustainment. (2018b, October 9). Middle tier of acquisition (rapid prototyping/rapid fielding) interim guidance [Memorandum]. Washington, DC: DoD.

Under Secretary of Defense for Acquisition and Sustainment. (2019, March 20). Middle tier of acquisition (rapid prototyping/rapid fielding) interim guidance 2 [Memorandum]. Washington, DC: DoD.


ACQUISITION RESEARCH PROGRAM
GRADUATE SCHOOL OF BUSINESS & PUBLIC POLICY
NAVAL POSTGRADUATE SCHOOL
555 DYER ROAD, INGERSOLL HALL
MONTEREY, CA 93943

www.acquisitionresearch.net