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THE DEFENSE ACQUISITION SYSTEM DIGITAL ACQUISITION POLICY SANDBOX

A TOOL FOR PROVIDING REAL-TIME UNDERSTANDING OF CHANGES TO THE DEFENSE ACQUISITION SYSTEM

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SUMMARY

The Defense Acquisition System (DAS) is facing increasing challenges due to the rapid pace and complexity of recent changes, including statutes, Executive Orders (EOs), and departmental policies. Between January and July 2025 alone, the President signed 176 EOs. Several of these EOs directly impacted Department of Defense (DoD) acquisition policies.[1] These frequent shifts create cascading effects across the DAS hierarchy, affecting policymakers, Program Executive Offices, and individual acquisition programs.

To address these challenges, this paper proposes the development of a Digital Acquisition Policy Sandbox (DAPS). This diagnostic platform would enable stakeholders to assess the impacts of DAS changes in real time. The DAPS would empower policymakers and program offices to effectively navigate change, ensure alignment with acquisition authorities, and minimize program disruptions. It would do so by leveraging artificial intelligence and data analytics.

The DAPS would feature tailored dashboards for different user groups, fostering a unified, data-driven approach to managing DAS changes. This innovative tool has the potential to transform how the DoD responds to current and future policy shifts, equipping stakeholders with the agility and precision needed to thrive in a period of accelerating change.

INTRODUCTION

The U.S. is in an era of strategic competition. The hegemony that America established, and then enjoyed, post WWII is threatened. Powerful nation-state actors remain ambitious and possibly dangerous.

The Department of Defense (DoD) is now at an inflection point. It must rapidly pivot from operating an industrial-age, legacy compliance-driven acquisition system, to flexible and nimble acquisition processes aligned with the digital-age economy. It must do so while grappling with the "Future Shock" that comes with the overwhelming changes brought on by rapid shifts in geopolitics, accelerating technological change,[2] and now, direction from the current administration to rapidly overhaul the entire defense acquisition system (DAS).

Central to this rapid overhaul of the DAS is Executive Order (EO) 14265, signed on April 9, 2025, "Modernizing Defense Acquisitions and Spurring Innovation in the Defense Industrial Base." It is amplified by other recent mandates for change from Congress, the President, and the Secretary of Defense—for example, the March 6, 2025, Secretary of Defense (SecDef) memorandum, "Directing Modern Software Acquisition to Maximize Lethality, June 9, 2025; the *Streamlining Procurement for Effective Execution and Delivery (SPEED)* Act, which came out of the House Armed Services Committee;[3] and the *Fostering Reform and Government Efficiency in Defense Act* (FoRGED Act).[4] It seems likely that all of these efforts will have significant impacts on the FY26 National Defense Authorization Act and beyond. In the meantime, the President signed 176 EOs between January and July 2025, several of which directly or indirectly impact defense acquisition policies.[5] These changes have rippled across the DAS, influencing policymakers, Program Executive Offices, and individual acquisition programs. All of which is to say, the DAS is in an era of rapid and large-scale change, which is likely to continue for the foreseeable future.

Even under a "normal" change cadence, acquisition offices often struggled to adapt to significant changes during critical phases such as acquisition planning or policy rewrites. They often relied on manual processes or ad hoc solutions. For example, if a change to small business set-aside requirements came out as a Contracting Officer (CO) was getting ready to publish a solicitation that included a small business set-aside, then the team had to stop, review the acquisition plan and related documents, talk to their policy and legal teams (who, in turn, often had to wait for guidance themselves), make changes, have some or all of the package re-reviewed/approved, and then get back to publishing the solicitation. These delays often cascaded into delays in other parts of the schedule. Thus, even small changes to statutes, policy, or guidance, often led to compounding delays of weeks or months.

DOD DAPS CONCEPT

The DAPS is envisioned as a data-driven diagnostic platform that enables both policymakers and program offices to assess the impacts of DAS changes in real time. It would serve as a unified tool for stakeholders across the DAS hierarchy, ensuring alignment and minimizing disruptions.

This effort need not start from scratch. Instead, the DAPS team should review applicable existing artificial intelligence (AI) efforts to look for existing capabilities that can be leveraged to quickly build a prototype DAPS capability. For example, a recent paper by MITRE and NDIA identified a wide spectrum of commercial AI capabilities able to provide tools that increase the effectiveness and efficiency of the federal acquisition process.[6]

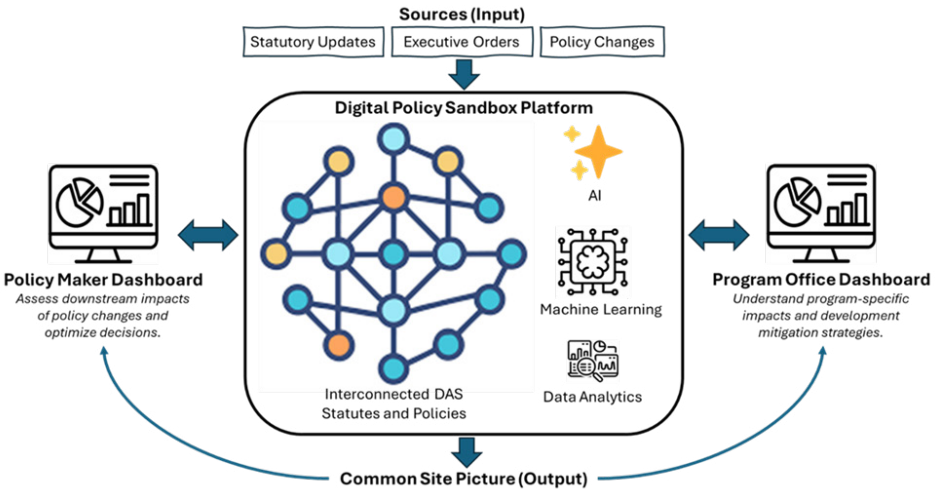

Figure 1. DoD DPS Platform

Figure 1 provides a visual representation of the DAPS concept. The figure illustrates the platform's architecture, highlighting its dual dashboards for policymakers and program offices, the unified data framework, and the AI-driven technology backbone. This conceptual blueprint demonstrates how the sandbox would function and deliver value to stakeholders across the DAS hierarchy.

Building on the elements depicted in Figure 1, the following key features outline the functional components and capabilities that would make the DAPS an essential tool for navigating changes to DAS authorities:

- **Dual Dashboards Feature:** Provides distinct dashboards tailored to the needs of its two primary user groups—Policymakers and Program Offices.
  - Policymaker Dashboard: The acquisition community has officials responsible for the creation, interpretation, and execution of policy in the highest echelons of command (e.g. Service Secretariat's Acquisition Divisions) all the way down to analysts assigned to support individual contracting activities. The policymaker dashboard would allow the acquisition policy community to understand the downstream impacts of changes policymakers want to implement or are tasked with addressing. It would also allow them to understand the upstream changes that would be needed to execute any changes they want to enact. Moreover, it would provide insights into potential unintended consequences, enabling them to make informed decisions that align with broader DAS objectives.
  - Program Office Dashboard: This interface would help program offices assess how specific policy changes impact their programs and, in the process, quickly identify opportunities, challenges, and taskers. For example, program offices could use the DAPS to understand how a new EO or SecDef memorandum impacts a pending acquisition strategy.
- **Unified Data and Common Site Picture features:**
  - The digital sandbox would ensure that all stakeholders operate from the same data sets, and thus, the same set of data-driven insights. This set-up would ensure a common operating picture for any DAPS users. For example, a CO in the field and a headquarters-level acquisition

policymaker would both get the same answer to the same question—even if they were using different tailored dashboards. This unified approach would reduce misalignment, improve communication, and enhance collaboration between policymakers, program offices, and contracting offices

  - Acquisition activities could make data-driven decisions and optimize execution strategies by allowing real-time exploration of trade-offs, dependencies, and impacts across the acquisition ecosystem.

- **Technology Backbone Feature:**
  - AI: AI algorithms would model the impacts of policy changes, predict outcomes, and identify patterns that may not be immediately apparent to human analysts.
  - Machine Learning (ML): Over time, the sandbox would use ML to refine its models and improve accuracy, responsiveness, and predictive capabilities.
  - Data Analytics: Advanced analytics would process large volumes of data to uncover trends, correlations, and insights that inform decision making at all levels of the DAS hierarchy.
- Additional Functionalities in Future Iterations:
  - The DAPS should be architected to allow for the addition of significant functionalities in future iterations and the ability to ensure that certain capabilities can be restricted to specifically authorized users.
  - For example, the rapidly changing geopolitical landscape will only make the use of up-to-date acquisition intelligence more important. Moreover, the full impact of certain policy changes may only be fully understood with the context provided by relevant acquisition intelligence (e.g., new supply chain security requirements). But not every user should be able to see every piece of acquisition intelligence. This capability could require the DAPS to operate across multiple classification levels. Thus, the DAPS could, over time, be built out, and be configured to integrate acquisition intelligence information. Furthermore, it could be set up to ensure that only personnel with specific types of access and a need-to-know could view that information.

HYPOTHETICAL USE CASE EXAMPLE

Let's use the development of an innovative deployable mobile power generation capability that is primarily treated as a hardware effort but also has significant software requirements as an example. This project has complex acquisition planning considerations from the outset. The project team needs to decide how to execute the development requirements and plan for potential follow-on production. It also needs to determine how to select an acquisition pathway, or pathways, that are not only appropriate for the primary hardware effort but also for hybrid acquisition strategies.[7]

After several months of work, they are in the final stages of drafting their acquisition plan. Then, the March 6, 2025, SecDef memorandum, "Directing Modern Software Acquisition to Maximize Lethality" is promulgated. It designates the Software Acquisition Pathway (SWP) as the preferred pathway for all software development components and requires programs (like this one) that are in the planning stage to use the Software Acquisition Pathway for any business and weapons system[8] software development efforts. It directs the use of Commercial Solutions Openings (CSOs) and Other Transactions Agreements (OTAs) as the default solicitation and award approaches. As a result, the project team, in consultation with their servicing legal office, manually reviews a lengthy and complex acquisition plan, determines the applicability of the directive, and maps the impacts of any changes to the rest of the plan.

Then, a few weeks later on April 9, 2025, the EO entitled, "Modernizing Defense Acquisitions and Spurring Innovation in the Defense Industrial Base" is issued. Amongst other things, it requires SecDef to submit plans for maximizing the use of existing authorities to expedite acquisitions, to include a first preference for CSOs and a general preference for OTAs. While not requiring immediate action from program offices, this EO triggers another re-review of the acquisition plan. This time, the team needs to do more than examine any components of the acquisition plan not previously reviewed pursuant to the March 6, 2025, SecDef directive. So, again, they gather the team to manually review, map, and re-wicker their plan.

Several weeks later, on June 9, 2025, the House Armed Services Committee introduces the *Streamlining Procurement for Effective Execution and Delivery (SPEED)* Act.[9] If enacted, this legislation, amongst other things, expands some aspects of OTA participation, creates "Data as a service" authority, and reforms aspects of how Modular Open System Architecture works. Thus, our intrepid program office, once again, quickly rallies the team to manually comb through their documents to determine which aspects of their acquisition plan may be impacted by these changes (particularly if they go into production) and decides whether to modify their acquisition plan.

By this point, much of the team's time and energy for the past few months has gone into multiple manual re-reviews of the acquisition plan and associated program documents. But if the DAPS had been available, it could have drastically reduced the time and effort required to conduct multiple reviews of the acquisition plans and thus allowed reaction to rapid large-scale changes with agility. In particular, the DAPS could have enabled the team to quickly determine the most likely areas impacted by the legal and policy changes, map the dependencies of those areas, model different potential courses of action, and make appropriate adjustments to their acquisition strategy without creating major program delays. It could also help programs manage their relationships with industry during this period of both rapid change and increasing efforts to bring the best of the commercial sector into the defense industrial base.

DEVELOPING INITIAL DAPS CAPABILITY

As discussed above, the need for a DAPS capability is urgent and there are options for how to provide it. The Office of the Undersecretary of Defense for Acquisition and Sustainment (OUSD(A&S)), would be the most logical entity to undertake this effort based on their purview over the entire DAS. However, this project could also be run by several other service-level acquisition activities. Below is a proposed six step process that would allow OUSD(A&S), to rapidly evaluate, develop, resource, and pilot test an initial capability. If desired, this initial capability could then be further developed and fielded to the wider DAS workforce at the conclusion of the pilot:

Step 1: Define Core Functionalities

The first step is to identify the essential features that would provide immediate value to users and a technical approach to developing the required capabilities. These capabilities should include basic policy modeling capabilities to simulate the impacts of policy changes such as those stemming from the aforementioned SecDef SWP directive and EO on reforming the Defense Acquisition System. Additionally, simple data visualization tools should be included to display interdependencies between contracting, funding, timelines, and requirements, allowing users to better understand the cascading effects of statutory and policy changes. In addition, decisions should be made about what metrics to collect to verify successful capability operation. Finally, initial data integration with key DoD systems, such as the Planning, Programming, Budgeting, and Execution databases and acquisition program baselines, would ensure the DAPS capability is grounded in real-world data and provides actionable insights.

Step 2: Engage Stakeholders to Validate Need

Engaging stakeholders is critical to ensuring the DAPS meets operational needs and addresses real-world challenges. OUSD(A&S) should collaborate with policy teams, program offices, and acquisition experts to refine the scope of the desired capabilities and prioritize their development. A Minimum Viable Product will then be developed to demonstrate sufficient capability to validate the need for the platform and obtain additional user feedback. This process would include determining the level of initial data integration identified in Step 1. Stakeholder input would help identify pain points, operational priorities, and technical challenges early in the development process, ensuring the capability developed is both relevant and practical. By involving end users and decision makers from the outset, OUSD(A&S) can build a tool that aligns with their workflows and delivers meaningful insights. In addition, this step would give OUSD(A&S) the opportunity to decide whether it wants to proceed further and, if so, identify funding and transition partners.

Step 3: Rapid Development of Initial Capabilities

Next, the aforementioned information will be used to develop a Minimum Viable Capability Release (MVCR) that can be employed operationally to provide an initial set of critical capabilities. The MVCR should be developed using agile methodologies to enable rapid prototyping and iterative refinement. Development should be broken into short sprints, focused on delivering incremental capabilities such as policy and statute mapping/modeling, visualization tools, and basic data integration. Frequent testing and feedback loops should be incorporated to ensure the MVCR evolves in response to user needs and technical challenges. This approach would allow OUSD(A&S) to quickly deliver an initial functional DAPS capability while maintaining flexibility to adapt to emerging requirements.

Step 4: Launch a Pilot Program

A pilot program would then provide an opportunity to test core functionalities in a real-world environment, gather feedback on usability and accuracy, and identify gaps or areas for improvement. By limiting the initial deployment to a controlled group, OUSD(A&S) can ensure the initial capabilities are refined before scaling it to a broader audience.

Step 5: Continued Refinement/Iteration Based on User Feedback and Metrics

Feedback and metrics from the pilot program should be used to continue evaluating, refining, iterating, and enhancing this initial version of the DAPS. This process should include improving the user experience, expanding functionality (see e.g., "4. Additional Functionalities in Future Iterations," above) and addressing any technical challenges identified during the pilot. Getting feedback from a wider user base will allow OUSD(A&S) to better prioritize features that align with user needs and operational priorities, ensuring follow-on iterations of the DAPS improve its capabilities to deliver actionable insights and support decision making. Iterative refinement based on real-world feedback would ensure the DAPS is both effective and scalable.

Step 6: Further Expand DAPS Capabilities

Once the DAPS is successfully validated and deployed, OUSD(A&S) can take additional steps to expand its capabilities. These steps include integrating advanced analytical models, connecting additional data sources, establishing governance frameworks, and scaling the DAPS across the DoD. As described above, future enhancements could include a variety of additional capabilities, such as accessing acquisition intelligence, incorporating AI-driven insights, supporting additional acquisition pathways, and enabling cross-agency collaboration. By building on the DAPS's success, OUSD(A&S) can ensure it evolves into a comprehensive tool that empowers policymakers and program offices to make data-driven decisions, optimize policies, and deliver mission-critical capabilities at speed and scale.

CONCLUSION

DoD must modernize its approach to policy analysis and decision making to address the challenges posed by rapidly evolving acquisition processes. The Digital Acquisition Policy Sandbox presents a transformative solution to this challenge, offering policymakers and program offices the ability to visualize interdependencies, simulate impacts, and optimize decisions. By focusing first on developing a minimum viable product, the DoD can deliver immediate value through core functionalities such as policy modeling, data visualization, and integration with existing systems. The pilot approach ensures a low-risk, high-impact path to deploy the DAPS, gather user feedback, and refine the tool based on real-world needs. Once validated, the DAPS can be scaled and expanded to include advanced analytics, broader data sources, and cross-agency collaboration. It is recommended that OUSD(A&S) prioritize the development of the DAPS pilot as a next step, ensuring the Department is equipped with the tools necessary to make data-driven decisions and maintain warfighter lethality in a software-defined warfare environment.

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4 See e.g. Senator Roger Wicker's report, "Restoring Freedom's Forge, American Innovation Unleashed"; available at: https://insidedefense.com/sites/insidedefense.com/files/documents/2024/dec/12192024_wicker1.pdf (accessed May 23, 2025).

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7 See the Adaptive Acquisition Framework, available at https://aaf.dau.edu/.

8 "A 'weapons system' is a combination of one or more weapons with all related equipment, materials, services, personnel, and means of delivery and deployment (if applicable) required for self-sufficiency." NIST Computer Resource Center, available at https://csrc.nist.gov/glossary/term/weapons_system#:~:text=JP%201%2D02-,A%20combination%20of%20one%20or%20more%20weapons%20with%20all%20related,)%20required%20for%20self%2Dsufficiency. (accessed on 11 June 2025) (defining "weapons system" based on NIST 800-59 and JP-1).

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