ACQUISITION INNOVATION RESEARCH CENTER

Planning, Programming, Budgeting, and Execution (PPBE) Process Research

EXECUTIVE SUMMARY AND REPORT

FEBRUARY 2024

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Commission on Planning, Programming, Budgeting, and Execution (PPBE) Reform
(a legislative advisory committee established under Section 1004 of the National Defense Authorization Act (NDAA) for Fiscal Year 2022, Public Law 117-81, 12/27/2021)

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ACRONYMS AND ABBREVIATIONS

A	Army
AAF	Adaptive Acquisition Framework
AAPML	Army Acquisition Program Master List
ACAT	Acquisition Category
AIRC	Acquisition Innovation Research Center
AIS	Automated Information System
AoS	Acquisition of Services
APUC	Acquisition Procurement Unit Cost
BLI	Budget Line Item
CAE	Component Acquisition Executive
CBDP	Chemical and Biological Defense Program
CCDR	Combatant Commanders
CFR	Code of Federal Regulations
CJCS	Chairman of the Joint Chiefs of Staff
CNGB	Chief, National Guard Bureau
CYBER	United States Cyber Command
DA	Decision Authority
DAE	Defense Acquisition Executive
DAES	Defense Acquisition Executive Summary
DAF	Department of the Air Force
DAMIR	Defense Acquisition Management Information Retrieval
DAS	Defense Acquisition System
DAVE	Defense Acquisition Visibility Environment
DBS	Defense Business System
DCAA	Defense Contract Audit Agency
DCMA	Defense Contract Management Agency
DCSA	Defense Counterintelligence and Security Agency
DHRA	DoD Human Resources Activity
DISA	Defense Information Systems Agency
DLA	Defense Logistics Agency

DoD	Department of Defense
DON	Department of the Navy
DPG	Defense Planning Guidance
DSCA	Defense Security Cooperation Agency
DTRA	Defense Threat Reduction Agency
EMD	Engineering and Manufacturing Development
F	Air Force
FMR	Financial Management Regulation
GAO	Government Accountability Office
JCIDS	Joint Capabilities Integration and Development System
JROC	Joint Requirements Oversight Council
JSPS	Joint Strategic Planning System
MCA	Major Capability Acquisition
MDA	Missile Defense Agency
MDAP	Major Defense Acquisition Program
MTA	Middle Tier of Acquisition
N	Navy
OSD	Office of the Secretary of Defense
PAUC	Program Acquisition Unit Cost
PE	Program Element
PEO	Program Executive Office
PM	Program Manager
PMRT	Air Force Data Access and Program Management Resource Tools
PPBE	Planning, Programming, Budgeting, and Execution
PPBES	Planning, Programming, Budgeting, and Execution System
QDR	Quadrennial Defense Review
RDAIS	Navy ASN(RD&A) Information System
RDT&E	Research, Development, Testing, and Evaluation
SAR	Selected Acquisition Report
SDA	Space Development Agency
SecDef	Secretary of Defense
SOCOM	United States Special Operations Command

SSA	Support for Strategic Analysis
SWP	Software Acquisition Pathway
TJS	The Joint Staff
UCA	Urgent Capability Acquisition
URC	Unit Cost Report
USC	United States Code

EXECUTIVE SUMMARY

Numerous processes have developed around Planning, Programming, Budgeting, and Execution (PPBE) since its introduction in the 1960s. Most of those are directed by policy, while statutes and regulations identify roles and responsibilities for key personnel and organizations. Other processes are simply a matter of practice that has developed over time. Most processes are internal to the Department of Defense (DoD) and could be adjusted to improve flexibility. To assess the possibilities, the Acquisition Innovation Research Center (AIRC) conducted research and analysis on the following process issues:

- 2.1: Assess whether the PPBE process should be the same for programs that breach the Major Defense Acquisition Program (MDAP) threshold (10 USC 4201), Major Systems threshold (10 USC 2302d), and non-major systems, and make recommendations.
- 2.2: In addition to MDAPs, examine how the DoD (includes Military Departments and Agencies) uses acquisition pathways such as the Software Pathway and Middle-Tier Acquisition within the PPBE process and make recommendations.
- 2.3: Analyze the legal foundations that drive PPBE and develop a matrix outlining how PPBE components are directed, whether by statute, regulation, policy, or practice.

Task 2.1. After assessing the different Acquisition Categories utilized by DoD, there is insufficient evidence to suggest that the PPBE process should be different for programs that breach the Major Defense Acquisition Program threshold, Major Systems threshold, and non-major systems. The characteristics identified during this assessment suggest that acquisition categories share similarities and differences *across* categories. Furthermore, programs *within* acquisition categories share similarities and differences. Thus, acquisition categories are likely to be meaningfully correlated. Any difference in PPBE process is expected to result in a similar effect across Acquisition Categories.

Recommendation: An alternate categorization of programs, such as by operational need and/or mission (particularly those likely to experience immediate and difficult to predict needs), is a prime candidate for slight modifications to PPBE. Another potential categorization of programs for slight modifications to PPBE is the type of program such as hardware versus software or varying levels within these types of physical versus non-physical systems. Therefore, agencies within DoD that require significant flexibility due to their operational needs/mission or specific types of systems should minimize the number of Program Elements (PEs) used in the budget request. Such a change will limit the need for reprogramming and maximize flexibility for procurement based on operational need.

Task 2.2. The examination of the use of acquisition pathways by DoD identified meaningful variation across Military Departments and Agencies. Middle Tier of Acquisition (MTA) and Major Capability Acquisition (MCA) are the most utilized pathways across the DoD while the other four acquisition pathways are infrequently used. Acquisition pathway usage is unique to each Military Department and Agency. Nevertheless, MTA and MCA are consistently the most utilized pathways with limited use of the other pathways across most Military Departments and Agencies.

Recommendation: Budget justification documents, particularly for RDT&E, are overly complex, unnecessarily intricate, and lack standardization across and within Military Departments and Agencies. These issues decrease transparency and potentially impede effective oversight and management. The following recommendations can help to improve the justification books.

> *DoD should require acquisition pathways to be explicitly identified in the budget justification books as part of the Acquisition Strategy (Section D of Exhibit R-2a) as well as prescribe the specific components of acquisition, management, and contracting strategies to be provided – such as contract type, and competition type (full and open or sole source).*
>
> *DoD should work to ensure that appropriate detail is presented, when applicable, such that the requested level of detail including milestones, approvals, and events are presented. This recommendation is to ensure conformity to the existing guidance and that consistency across and within Military Departments and Agencies extends to Exhibit R-4a (Schedule Detail).*
>
> *DoD should consider reorganizing the use of the PE and Project structure to better align with the DAS to enhance the ability to track and manage across PPBE and DAS. At present, the program structure used in PPBE is not a simple one to one mapping to the program structure used in DAS. Consistency and conformity will improve communication across government and within different parts of DoD workforce to help enhance oversight and management.*

Task 2.3. The PPBE process serves as a foundational framework for resource allocation within the DoD and individual military branches. The PPBE process is directed by a combination of statutory guidelines from sections of 2 USC, 10 USC, 31 USC, and 50 USC as well as DoD policies, CJCS policies, and Senate and House rules. The primary tasks/activities that constitute the Planning, Budgeting, and Execution phases of PPBE are principally directed by statute. In contrast, the tasks/activities that constitute the Programming phase of PPBE are directed by policy. Identifying the legal and policy framework for specific tasks/activities is of significant importance when recommending PPBE reforms. Reforms aimed at tasks/activities directed by statute will require Congressional action and may be more difficult to modify. Reforms aimed at tasks/activities directed by policy, requiring only DoD action, are conceivably easier to modify.

A summary matrix of the laws, regulations, policies, and Congressional rules undergirding the PPBE process is presented in Table 6, “How is the PPBE Directed?” (p. 32) and two placemats depicting the PPBE process are presented in Figures 2 and 3 (pp. 33-34).

TASK 2.1

Assess whether the Planning, Programming, Budgeting, and Execution (PPBE) process should be the same for programs that breach the Major Defense Acquisition Program (MDAP) threshold (10 USC 4201), Major Systems threshold (10 USC 2302d), and non-major systems, and make recommendations.[1]

BACKGROUND

DoD Major Capability Acquisition programs are categorized into three groups: Acquisition Category I (ACAT I), Acquisition Category II (ACAT II), and Acquisition Category III (ACAT III).[2] ACAT I programs are classified into two sub-categories, ACAT I and ACAT IA, and each of these sub-categories are further divided into ACAT IC and ACAT ID for ACAT I programs and ACAT IAM and ACAT IAC for ACAT IA programs. Acquisition categories provide DoD a system of dividing the large universe of programs into manageable groups based upon the size of the programs. Programs are categorized based upon the total expenditure for Research, Development, Testing, and Evaluation (RDT&E) and/or Procurement.[3] A second principal differentiator is the Milestone Decision Authority. MDAPs have centralized oversight and decision making at the Office of the Secretary of Defense (OSD) level while ACAT II and ACAT III programs have oversight at the Component and Program Executive Office (PEO) level.[4]

PPBE is the DoD's resource allocation process. It is a calendar driven sequence that begins roughly two years prior to budget submission for any given fiscal year. Each distinct phase has its own specific purpose, its own lead within DoD, and its own unique set of outputs.[5] DoD policy dictates that PPBE accomplish five (5) goals enumerated below.[6]

1. Supports the objective to provide the DoD with the most effective mix of forces, equipment, manpower, and support attainable within fiscal constraints.

2. Facilitates the alignment of resources to prioritized capabilities based on an overarching strategy and requires balancing necessary warfighting capabilities with risk, affordability, and effectiveness.

3. Provides mechanisms for making and implementing fiscally sound decisions in support of the national security strategy and national defense strategy.

4. Facilitates execution reviews of past decisions and actions. The reviews shall assess actual execution performance based on goals and strategic objectives. Recommendations from these reviews shall be linked to decisions on future resource allocations.

5. Accepts, as inputs, products of the acquisition and requirements processes outlined in DoDD 5000.01 (Reference (e)), DoDD 8000.01 (Reference (f)), and Chairman of the Joint Chiefs of Staff (CJCS) Instruction 3170.01 (Reference (g)).

METHODOLOGY AND DATA

To complete this assessment, the research team applied a two-step process:

1. Identify characteristics associated with each acquisition category
2. Determine if the acquisition category classification generates a unique set of programs that are heterogenous across categories and homogenous within categories based upon the characteristics identified during Step #1[7]

A priori, it is assumed that the defense acquisition categories will exhibit some similarities as well as some differences. This is due to the fact that categorizing programs based upon breaching an arbitrary dollar threshold will likely generate great variability across and within categories since the program landscape is vast and diverse.[8] Additionally, size is likely to be correlated with only a few factors (or characteristics) thereby resulting in a low probability of generating a unique set of programs being grouped together.[9] Therefore, acquisition categories as presently constructed are likely to be abundantly diverse with significant cross-sectional variation such that any single acquisition category does not adequately capture a truly unique set of programs.

The working hypothesis for this assessment is that the PPBE process should be the same for the different acquisition categories.[10] A rejection of this hypothesis will require that the present acquisition category classifications generate a unique set of programs that are heterogenous across categories and homogenous within categories.[11]

Data on MDAPs is relatively easy to obtain due to the reporting requirements associated with these programs. Cost, schedule, and performance data for MDAPs can be found in the publicly available Selected Acquisition Reports (SAR). Other reports providing data on MDAPs are Unit Cost Reports (URC) and Defense Acquisition Executive Summaries (DAES).[12] Due to the availability and standardization of this data, a relatively large body of research exists on such topics as cost overruns and schedule delays providing even greater insight into the characteristics and performance MDAPs compared to smaller ACAT II and ACAT III programs.

In contrast, data on ACAT II and ACAT III programs is not publicly available through SARs due to differences in reporting requirements. Therefore, no publicly available source of meaningful raw data on ACAT II and ACAT III programs exists. Data is available through Component level databases such as Army Acquisition Program Master List (AAPML); Navy ASN(RD&A) Information System (RDAIS); and Air Force Data Access and Program Management Resource Tools (PMRT). A comprehensive database for all Components is available through the DoD's Defense Acquisition Visibility Environment (DAVE). However, Component level data can be unreliable due to mathematical errors, missing key data elements, data entry errors, misreported cost data, and miscategorized programs.[13] Additional research continued to document incomplete and noncomprehensive data for ACAT II and ACAT III programs as Components were unable to identify the total number of programs within a category; provide cost, schedule, and budget data for all programs; and appropriately classify programs based upon the dollar values for category thresholds.[14]

The raw data in DAVE requires meaningful cleaning and structuring as well as the compilation of numerous files to construct a panel for analysis. As of the submission of this report, a complete and comprehensive panel has not been constructed. Therefore, the research team has relied primarily on other research efforts that included data on the different acquisition categories for this assessment.

The data used to identify acquisition category characteristics span several years. The research has seen no evidence to suggest that more recent data or uniform data across a single year is likely to produce meaningful changes to any of the characteristics identified in this report. Additionally, some research used to populate the characteristics focused exclusively on Air Force data (Table 1).[15] Therefore, certain data points are Component-specific. Nevertheless, the research team has found no evidence that Air Force data utilized in prior research is meaningfully different than DoD-wide data. This is mainly due to the fact that most of the processes are the same/similar for Big A acquisition – Joint Capabilities Integration and Development System (JCIDS), PPBE, and DAS – and the resulting data based upon these processes should be the same/similar with regard to time.

ACQUISITION CATEGORY CHARACTERISTICS

There is at least one prior research effort that provides a preliminary guide to some of the similarities and differences across acquisition categories.[16] This research concluded that ACAT II programs, after entering production, perform at least as well as MDAPs. Furthermore, for the programs reviewed in the study, ACAT II programs and MDAPs share a similar set of factors that contribute to success. Likewise, the factors that create challenges for MDAPs and ACAT II programs are also similar. The one caveat to similar challenges is that the duration, scope, and severity are different such that challenges for MDAPs are more substantial and drastic. Based upon this initial comparison of ACAT II programs and MDAPs, albeit one limited in scope and quantity of programs reviewed, there is scant evidence to suggest significant differences (and thus a unique categorization of programs) across acquisition categories.

Existing research provides a basis from which a more comprehensive and complete picture of the characteristics of the different acquisition categories can be assembled. Table I below provides a compilation of numerous characteristics from a wide array of sources.

Table 1. Characteristics of Acquisition Categories

Characteristic	MDAP	ACAT II	ACAT III
Dollar Threshold (RDT&E/Procurement in FY24 $)	$616M/$3.60B	$236M/1.08B	Below ACAT II threshold
Milestone Decision Authority	DAE or as delegated/ Head of the DoD Component or, if delegated, the CAE	CAE or the individual designated by the CAE	Designated by the CAE
Statutory Reporting Requirements	SAR and UCR	None	None
Percent of DoD Investment Budget (FY23[17],FY19[18])	~1/3 (35.8%, 39%)	~2/3 (64.2%, 61%)	~2/3 (64.2%, 61%)
Total DoD Programs[19]	8.0% (95 out of 1192)	13.6% (162 out of 1192)	71.3% (850 out of 1192)
Distribution Across Components[20,21]	Army – 15 (18%)	Army – 37 (35%)	Army – 258 (36%)
	Navy – 38 (46%)	Navy – 28 (26%)	Navy – 79 (11%)
	Air Force – 27 (33%)	Air Force – 42 (39%)	Air Force – 376 (53%)
	Joint/OSD – 3 (4%)		
Range of Commodity Types[22]	Wide[23]	Wide[24,25]	Wide[26,27]
Quantity Change[28]	77.7%	23%	n/a
Unit Cost (Gross)[29]	-8.2%	-4.4%	n/a
Total Cost (Gross)[30]	50%	8.8%	n/a
Acquisition Procurement Unit Cost Estimated Growth Factor (median)[31]	-2.4%	0.5%	15.7%
Acquisition Procurement Unit Cost Estimated Variance Factor (median)[32]	12.1%	12.1%	27.0%
Program Acquisition Unit Cost Estimated Growth Factor (median)[33]	-1.2%	0.8%	0.2%
Program Acquisition Unit Cost Estimated Variance Factor (median)[34]	14.8%	22.3%	10.4%
Simulated Engineering & Manufacturing Development (EMD) Phase (MS-B to MS-C) (mean)[35]	2310 days	2039 days	1687 days
Simulated Engineering & Manufacturing Development (EMD) Phase (MS-B to MS-C) (standard deviation)[36]	525 days	431 days	464 days
Estimated Funds Available Time Delay (median)[37]	45 days	150 days	150 days
Estimated Time Delay Pre-MS-B/C (median)[38]	120 days	225 days	225 days
Program Reviews[39]	More frequent	Less frequent	Less frequent
Simulated Time to MS-C (mean)[40]	6904 days	3898 days	3335 days
Simulated Time to MS-C (standard deviation)[41]	1584 days	1411 days	1143 days
Simulated (MS-B to MS-C) Time (mean)[42]	3297 days	2363 days	1945 days
Simulated (MS-B to MS-C) Time (standard deviation)[43]	646 days	467 days	484 days

RESULTS

The characteristics identified in Table 1 suggest that acquisition categories share similarities and differences *across* categories and that programs *within* acquisition categories share similarities and differences. Thus, resulting in acquisition categories that are likely to be meaningfully positively correlated. The primary factor that creates similarities *across* acquisition categories and differences *within* acquisition categories is the significant variability of many characteristics. For example, one MDAP may have an acquisition life cycle of 10 years while another MDAP may have an acquisition life cycle of 20 years. Furthermore, one ACAT II program may have an acquisition life cycle of 5 years while another ACAT II program may have an acquisition life cycle of 10 years. Thus, there are differences *within* acquisition categories (10 years versus 20 years or 5 years versus 10 years) but also similarities *across* acquisition categories (10 years versus 10 years). Variability was also observed for APUC, PAUC, EMD Phase Time, Time to Milestone C, and program size. In addition to these characteristics, there is evidence to suggest that variability exists for Milestone Decision Authority, quantity changes, and cost changes as well.

This assessment did not find satisfactory evidence to reject the research hypothesis that that the PPBE process should be the same for the different acquisition categories. The categorization of programs into MDAPs, ACAT II, and ACAT III does not establish independent groups that are heterogenous across categories and homogenous within categories.

One constraint in the present assessment is the inherent limitation with regard to the breadth of available data. There are many characteristics of defense programs not addressed in the table above. This lack of evidence reduces the comprehensiveness of the assessment. Two characteristics of particular note that are not addressed above are schedule delays and technical complexity. Schedule delays are common and well documented for MDAPs.[44] They are "driven by a broad range of factors, including supplier disruptions, quality control deficiencies, and software development delays."[45] Identifying the extent to which ACAT II and ACAT III programs experience schedule slippage and the reasons associated with such delays would be of value to this assessment. Additionally, there is a belief "that MDAPs are fundamentally more complex than ACAT II programs and so more likely to experience cost overruns and slippage during development, production, and modernizations."[46] A better understanding of the extent to which technical complexity varies across acquisition categories and its influence on cost, schedule, and performance would also be a valuable addition to this assessment. Additional types of complexity such as budget structure complexity would also enhance this assessment.

The lack of significant qualitative data is another limitation of the present assessment. The addition of qualitative data would without question improve upon the more quantitative focus of the present assessment. Similar to the limitations identified above, the research team does not believe the addition of more qualitative date will change the conclusions but the inclusion of more qualitative data would certainly provide a more robust analysis.

RECOMMENDATION

An alternate categorization of programs, such as by operational need and/or mission (particularly those likely to experience immediate and difficult to predict needs), is a prime candidate for slight modifications to PPBE. Another potential categorization of programs for slight modifications to PPBE is the type of program such as hardware versus software or varying levels within these types of physical versus non-physical systems. Therefore, agencies within DoD that require significant flexibility due to their operational needs/mission should minimize the number of Program Elements (PEs) used in the budget request to allow for a broad range of potential uses of funds, and thus generating limited need for reprogramming and maximizing flexibility when operational need and/or mission create a need for such increased flexibility.

TASK 2.2

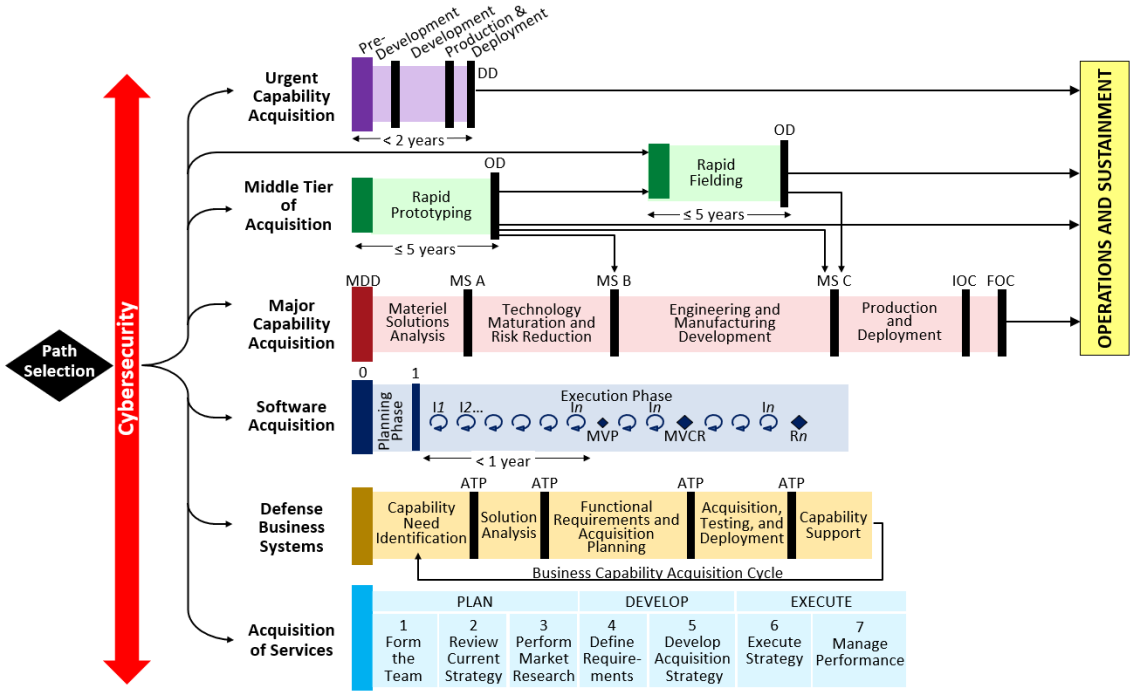
In addition to MDAPs, examine how the DoD (includes Military Departments and Agencies) uses acquisition pathways such as the Software Pathway and Middle-Tier Acquisition within the PPBE process and make recommendations.

BACKGROUND

Acquisition pathways are a set of "processes, reviews, documents, and metrics" that are utilized by Program Managers (PMs) when developing an acquisition strategy based upon "the character and risk of the capability being acquired."[47] These pathways are a major component of the DAS that incorporate advanced acquisition methods to increase the DoD's potential to take advantage of commercial innovation.[48] DoD currently employs the Adaptive Acquisition Framework (AAF) which includes six (6) pathways:

1. Urgent Capability Acquisition (UCA)[49]
2. Middle Tier of Acquisition (MTA)[50]
3. Major Capability Acquisition (MCA)[51]
4. Software Acquisition (SWP)[52]
5. Defense Business Systems (DBS) Acquisition[53]
6. Defense Acquisition of Services (AoS)[54]

Figure 1. DoD Adaptive Acquisition Framework[55]



METHODOLOGY AND DATA

To examine how DoD uses acquisition pathways, it is necessary to obtain data on the extent to which each pathway is being utilized by each Military Department and Agency. The research team utilized the publicly available budget justification books for FY24 to hand collect data on the acquisition pathways.

As noted above, acquisition pathways inform the acquisition strategy. DoD Financial Management Regulations (FMR) require a description of the acquisition strategy to be included in the budget justification books as Section D of the R-2A (RDT&E Budget Item Justification - Project) for Budget Activities 4, 5, 7, and 8.[56] Therefore, Section D of the R-2A provides the best publicly available data source for information on acquisition pathway usage across DoD. Since acquisition strategies are provided in the justification books at the Project level, Projects are utilized as the unit of observation for this examination.

Projects often contain sub-projects, multiple programs, and/or multiple products/components. Therefore, a single Project can have multiple acquisition pathways associated with it but generally these components of a Project utilize the same acquisition pathway. Therefore, Projects as an aggregate unit of observation can still yield valuable information about acquisition pathways. Because the research team chose to focus on budget request dollars instead of the quantity of acquisition pathways, a more granular unit of observation is not required for the metric utilized in this examination.

Acquisition pathways are not consistently identified in the budget justification documents. In some cases, the research team had to infer the pathway from the acquisition strategy description and/or the R-4A (RDT&E Schedule Detail). To keep false positives to a minimum, inferences and decisions about acquisition pathways were highly conservative. Thus, the number of Projects for which an acquisition pathway is not identified is relatively high resulting in certain acquisition pathways, primarily Major Capability Acquisition, being underrepresented.

There is a lack of standardization across Military Departments and Agencies, as well as within Military Departments and Agencies. What specific information is provided in Section D of the R-2A varies quite significantly throughout the budget justification books. This is also true for the R-4A. The lack of standardization and consistency within the budget justification books limited the ability of the research team to capture a more comprehensive data set on acquisition pathways.

The research team started with the DoD R-1 Excel file available through the DoD Comptroller. The R-1 file provides the FY budget request for each Program Element (PE)/Budget Line Item (BLI). The PEs were reduced into their respective Projects with use of the budget justification books. The research team then collected two additional data points from the budget justification books and added them to the R-1 data - (1) the FY24 budget request for each Project and (2) the acquisition pathway for each Project, if available and/or identifiable. For Projects in which data was not available and/or identifiable, Projects were classified as “not identified” (NI). It is important to note that only one acquisition pathway was associated with each Project for simplicity. In a small number of cases, a single Project utilized multiple acquisition pathways (primarily MTA with Software Acquisition). Such occurrences were infrequent. Nevertheless, this choice of simplicity does result in Software Acquisition being slightly underrepresented in this examination.

Based upon the data collected, the research team calculated the total FY24 budget request for acquisition pathways across each organization and divided this number by the total FY24 budget request for each organization. This resulted in the percentage that each acquisition pathway accounted for the total FY24 budget request for each organization. The research team chose to focus on the percentage of FY24 budget request dollars associated with each acquisition pathway because the size, in dollar terms, of the use of an acquisition pathway is a more appropriate measure than a measure focused on quantity.

The following metric provides sigma notation for the percentage calculation used in this examination:

$$\frac{\sum_i^n R_{ij}}{\sum_i^n R_i}$$

Where R is the FY24 budget request, i is the Project; j the acquisition pathway.

RESULTS

The budget justification books decompose DoD into 18 "organizations" in addition to a "classified" category for BA 4, 5, 7, and 8 under RDT&E for FY24. These organizations represent the DoD Military Departments and Agencies requested for this examination. The 18 organizations observed are as follows:

1. Army (A)
2. Chemical and Biological Defense Program (CBDP)
3. United States Cyber Command (CYBER)
4. Defense Contract Audit Agency (DCAA)
5. Defense Contract Management Agency (DCMA)
6. Defense Counterintelligence and Security Agency (DCSA)
7. DoD Human Resources Activity (DHRA)
8. Defense Information Systems Agency (DISA)
9. Defense Logistics Agency (DLA)
10. Defense Security Cooperation Agency (DSCA)
11. Defense Threat Reduction Agency (DTRA)
12. Air Force (F)
13. Missile Defense Agency (MDA)
14. Navy (N)
15. Office of the Secretary of Defense (OSD)
16. Space Development Agency (SDA)
17. United States Special Operations Command (SOCOM)
18. The Joint Staff (TJS)

DoD requested $117,986,722,000 in funding under RDT&E for BA 4, 5, 7, and 8 in the FY24 budget request (Table 2). The request included $33,362,969,000 under classified PEs leaving $84,624,053,000 available for this examination. DoD utilized 743 PEs, but 67 PEs had a request of $0 leaving 676 PEs for this examination. There are roughly 1.77 Projects per PE resulting in a total of 1198 Projects across DoD.

Table 2. Counts of PEs and Projects with FY24 Budget Request for all DoD Organizations

	Program Elements	PEs with FY24 Request	Projects	Projects with FY24 Request	FY24 Request ($)
A	147	134	318	260	$ 11,221,011,000
CBDP	3	3	31	11	$ 780,325,000
CYBER	7	7	11	11	$ 1,056,991,000
DCAA	1	1	1	1	$ 2,156,000
DCMA	1	1	1	1	$ 6,953,000
DCSA	7	4	7	4	$ 49,882,000
DHRA	1	1	2	2	$ 9,292,000
DISA	13	9	15	10	$ 149,867,000
DLA	4	3	4	3	$ 37,783,000
DSCA	1	1	1	1	$ 8,503,000
DTRA	4	3	4	3	$ 32,058,000
F	263	233	385	319	$ 35,438,729,000
MDA	29	26	79	74	$ 8,653,335,000
N	200	193	460	417	$ 21,057,082,000
OSD	40	37	65	51	$ 5,065,296,000
SDA	1	0	3	0	$ -
SOCOM	12	11	27	25	$ 1,016,393,000
TJS	2	2	5	5	$ 38,397,000
Classified	7	7	n/a	n/a	$ 33,362,669,000
Total	743	676	1419	1198	$117,986,722,000

Table 3 provides the distribution of acquisition pathways across the different military departments and agencies. Across DoD as a whole, this examination identified acquisition pathways for 40.32% of the budget request (for BA 4, 5, 7, and 8 in RDT&E) in FY24. A significant portion of the 59.68% not identified was the result of the absence of an identified acquisition strategy in the budget justification books. Two primary reasons exist for this lack of acquisition strategy: (1) Projects that are non-acquisition programs and (2) Special Access Programs for which information is reported in an annual report to Congress in accordance with Title 10 USC Section 119(a)(1).

For 10 DoD Agencies, no acquisition pathway was identified for any of the Projects under that Agency. The 10 are as follows: CBDP[57], DCAA, DCMA, DCSA, DHRA, DISA, DSCA, MDA, OSD, and TJS. Such a result was not unexpected as non-acquisition programs make up a significant amount of the funding associated with certain Agencies due to their nature and mission. In contrast, acquisition pathways were identified to varying degrees for 7 Components/Agencies. The 7 are as follows: CYBER, DTRA, SOCOM, DLA, Army, Navy, and Air Force. The PE for SDA requested $0 for FY24 and was not included in this examination.

DoD relies heavily upon MTA and MCA as 17.65% of the FY24 budget request was associated with MTA while 21.19% was associated with MCA.[58] MTA is a fairly new acquisition pathway but is one that PMs and Milestone Decision Authorities (MDA)/ Decision Authorities (DA) seem to be fully embracing. SWP is the third most utilized pathway accounting for 0.86% across DoD. UCA and DBS were utilized quite sparingly across DoD as a whole at only 0.15% and 0.47%, respectively. In the case of AoS, the research team did not identify a single instance of its usage.

UCA was utilized by only 2 Military Departments, Army and Navy. Both departments utilized this pathway on a very small scale, 0.33% and 0.44%, respectively. This low utilization is likely the result of UCA being constrained to classified projects.

MTA was utilized by 4 Military Departments and Agencies. Army and SOCOM both utilized this pathway extensively at 40.62% and 36.69%, respectively. Air Force was also a significant user of MTA with just under 23.27%. At only 8.37%, Navy did not utilize MTA nearly as much as Army and Air Force. This significant difference between the three major branches of the military may simply be the result of a difference in weapon systems being developed by the different Services but this rather large difference in usage is worthy of further exploration.

MCA was utilized by 5 Military Departments and Agencies. Air Force utilized this pathway to the greatest extent at greater than 32.58%. Navy, SOCOM, Army, and CYBER all utilized MCA but to a lesser extent ranging from a high of 20.87% (Navy) to a low of 10.88% (CYBER). MCA is certainly underrepresented in this examination, but, Army's limited use of MCA when compared to Air Force and Navy is worthy of further exploration.

SWP was utilized by 6 Military Departments and Agencies. DTRA utilized this pathway to the greatest extent at 29.06%. CYBER had the second highest usage at 9.06%. Army, Air Force, and SOCOM also utilized SWP but rather minimally at only 1.04%, 1.17%, 0.95%, respectively. Navy utilized SWP as well but with the lowest usage by far at 0.38%. The limited use of SWP for Army, Navy, and Air Force is rather surprising considering the significant role software plays in modern weapons systems.

DBS was utilized by 3 Military Departments and Agencies. DLA utilized DBS to the greatest extent at 86.36%. Army and Air Force both also utilized this pathway but to a much lesser extent at 1.76% and 0.48%, respectively.

As noted above, the research team did not identify AoS as being utilized for any Project from the budget justification books. The newness of AoS as an acquisition pathway may explain its lack of usage in FY24.

As a robustness check, program level data from DAVE was analyzed as well. The data analyzed was from the Master List of Programs. The robustness check focused on the number of active programs instead of budget dollars. Due to a different unit being measured, actual proportions are different, but the general results were the same. Thus, the observations presented above have been confirmed utilizing two different data sets with two different units of observation. Please note, since data from DAVE is Controlled Unclassified Information (CUI), the actual results of the analysis are not presented in this report.

Table 3. Percentage of FY24 Budget Request Associated with each Acquisition Pathway

	UCA	MTA	MCA	SWP	DBS	AoS	NI
A	0.0031	0.4062	0.1500	0.0104	0.0176	0.0000	0.4127
CBDP	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
CYBER	0.0000	0.0000	0.1088	0.0906	0.0000	0.0000	0.8006
DCAA	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
DCMA	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
DCSA	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
DHRA	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
DISA	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
DLA	0.0000	0.0000	0.0000	0.0000	0.8636	0.0000	0.1364
DSCA	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
DTRA	0.0000	0.0000	0.0000	0.2906	0.0000	0.0000	0.7094
F	0.0000	0.2327	0.3258	0.0117	0.0048	0.0000	0.4250
MDA	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
N	0.0044	0.0837	0.2087	0.0038	0.0000	0.0000	0.6993
OSD	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
SDA	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SOCOM	0.0000	0.3669	0.1865	0.0095	0.0000	0.0000	0.4370
TJS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
DoD	0.0015	0.1765	0.2119	0.0086	0.0047	0.0000	0.5968

RECOMMENDATION

Budget justification documents, particularly for RDT&E, are overly complex, convoluted, and lack standardization across and within Military Departments and Agencies. These issues decrease transparency and potentially impede effective oversight and management.

DoD FMR provides guidance on the Acquisition Strategy (Section D) of Exhibit R-2a.[59] Unfortunately, the guidance is rather vague and not particularly prescriptive. FMR states, "An explanation of acquisition, management, and contracting strategies must be provided for each project in the Remarks section." This opaque guidance sets the stage for significant variation as to the depth and detail provided for acquisition, management, and contracting strategies within and across the Military Departments and Agencies. To lessen the resulting differences, *DoD should require acquisition pathways to be explicitly identified in the budget justification books as part of the Acquisition Strategy (Section D of Exhibit R-2a) as well as prescribe the specific components of acquisition, management, and contracting strategies to be provided – such as contract type, and competition type (full and open or sole source).*

DoD FMR also provides guidance on the Schedule Profile of Exhibit R-4 and the Schedule Detail of Exhibit R-4a.[60] FMR states, "Schedule Profile, provide[s] a schematic display (in image file format: TIF, JPEG, GIF, BMP, or PNG) of major program milestones that reflect engineering milestones, acquisition approvals, test and evaluation events, and other key milestones for the program events." Unfortunately, many PEs and Projects do not conform to this guidance and lack any significant milestones, approvals, and/or events. Therefore, *DoD should work to ensure that appropriate detail is presented, when applicable, such that the requested level of detail including milestones, approvals, and events is presented. This recommendation is to ensure conformity to the existing guidance and consistency across and within Military Departments and Agencies extends to Exhibit R-4a (Schedule Detail).*

Lastly, *DoD should consider reorganizing the use of the PE and Project structure to better align with the DAS to enhance the ability to track and manage across PPBE and DAS. At present, the program structure used in PPBE is not a simple one-to-one mapping to the program structure used in DAS. Consistency and conformity will improve communication across government and within different parts of DoD workforce to help enhance oversight and management.* One hypothetical reorganization/overhaul is to house each DAS Program within a single PE/BLI, albeit, this would likely require BA consolidation as well as the discontinuation of color of monies. Such a construction would correct the disaggregation that occurs between Programming and Budgeting when programs are pulled apart to accommodate a budget structure that does not mirror the program structure. A PE/BLI can then be further subdivided by Projects. Under such a construction, each Project could represent a single contract within a DAS Program and allow for enhanced tracking and oversight at a rather granular level across programming, budgeting, and the DAS.

FURTHER RESEARCH NEEDED

There is reason to believe that the entire package of budget justification documents does not provide a simple and straightforward approach to help Appropriators accomplish their mission of allocating a limited pot of money with rigorous stewardship. A new approach might be warranted. Such an approach might involve a simple risk/reward determination based upon two simple numeric figures with a third metric to account for the interconnectedness of line items. With an objective methodology resulting in a set of simple numerical figures, Appropriators could easily identify risk/reward tradeoffs across the entire DoD budget without the need for subjective determinations based upon tens of thousands of pages of disjointed and convoluted text and numbers.

An approach such as this would be similar to the risk and reward calculations that help drive decision making in an investment portfolio. A rudimentary example of such metrics is provided below. In order to develop a comprehensive methodology for this concept, including outlining who within DoD would be responsible for each component of the process and how each metric would be objectively calculated, requires additional time and resources. Should such further exploration be of interest to the Commission, development of a system to improve decision making on such a significant subject is an ideal follow-on project.

Risk metric – a number between 0 and 1 representing the probability of success, defined as deliverables at original cost and on original schedule, for each line item. The higher this number the less risky the appropriation.

Reward metric – a number between 0 and 1 representing the potential impact each line item has on achieving military preparedness and superiority. The higher this number the greater the reward for the appropriation. A simple way to calculate such a reward metric would be to use a percentile distribution of all line items such that the 99th percentile (thus a 0.99) identified the most impactful of all line items.

Correlation metric – a number between 0 and 1 representing the interconnectedness of line items (i.e., a cut to a single line item can have significant impact on other line items and this needs to be accounted for when making decisions). This is important to prevent line items from being potentially cut with little consideration given to their impact across the budget as a whole.

TASK 2.3

Analyze the legal foundations that drive PPBE and develop a matrix outlining how PPBE components are directed, whether by statute, regulation, policy, or practice.

BACKGROUND

The PPBE process was started in 1961 by Defense Secretary Robert S. McNamara and was called the Planning, Programming, and Budgeting System (PPBS). PPBS was renamed to PPBE in 2003 to emphasize the importance of improvements to how the DoD managed the execution of Congressional funds. PPBE has evolved since its initial implementation over 60 years ago. Therefore, it is important to try and determine how PPBE is directed, whether by statute, regulation, policy, or practice. A better understanding of how PPBE is directed will help improve the potential effectiveness and help mitigate risks associated with targeted PPBE reforms.

METHODOLOGY

In order to identify the legal foundations that drive PPBE, the research team first developed a list of primary tasks/activities associated with each phase of the PPBE process. Primary tasks/activities were principally derived from a review of DoD educational documents such as Introduction to Defense Acquisition Management by Bradford Brown; information contained on the DAU website; and personal experience from research staff having been directly involved in the PPBE process. The research team then developed a list of roughly 60 keywords/phrases associated with the tasks/activities identified during the first step. Lastly, the research team conducted a keyword search of the United States Code (USC) utilizing the keywords/phrases developed during the second step.

In order to develop a matrix outlining how PPBE components are directed, whether by statute, regulation, policy, or practice, the research team utilized the same keywords/phrases list developed to analyze the legal foundations and applied these terms in a keyword search of the Code of Federal Regulations (CFR) and DoD Issuances as well as DoD Financial Management Regulations. The research team also searched Service level publishing repositories to collect Service level PPBE guidance. Furthermore, the research team conducted a data call to obtain additional Service level PPBE guidance documents. As of the submission of this report, the research team has not received any documents from the data call.

RESULTS

The research team identified 37 primary tasks/activities with a phase breakdown of 8 for Planning; 9 for Programming; 13 for Budgeting; and 7 for Execution. Of these 37, the research team was able to associate 27 with specific guidance in the US Code. Thus, just under ¾ of the primary tasks/activities identified for this study are directed by statute.

Statutory guidance for tasks/activities that comprise the PPBE process can be found in Title 2 (The Congress), Title 10 (Armed Forces), Title 31 (Money and Finance), and Title 50 (War and National Defense). Table 4 provides a breakdown of tasks/activities across the phases of PPBE by Title of the US Code. The following observations result from this breakdown:

- The vast majority of tasks/activities identified under Planning, Budgeting, and Execution are directed by statute
- The vast majority of tasks/activities identified under Programming are not directed by statute
- Title 10 and Title 31 provide direction for the majority of tasks/activities identified for this study
- Tasks/activities for any one phase of PPBE generally encompass multiple titles of the US Code as all phases have tasks/activities with guidance from more than one title of the US Code
- Planning tasks/activities are primarily directed by Title 10
- Budgeting tasks/activities are primarily directed by Title 2 and Title 10
- Execution tasks/activities are primarily directed by Title 31

Table 4. Breakdown of Tasks/Activities Across PPBE Phase by Title of US Code

	Planning	Programming	Budgeting	Execution	Total
Panel A: Quantity Identified					
Total	8	9	13	7	37
Panel B: Quantity Directed by Statute					
Title 2	0	0	5	0	5
Title 10	6	2	4	1	13
Title 31	1	1	2	4	8
Title 50	1	0	0	0	1
Total	8	3	11	5	27
Panel C: Percentage Directed by Statute					
Title 2	0.00	0.00	0.38	0.00	0.14
Title 10	0.75	0.22	0.31	0.14	0.35
Title 31	0.13	0.11	0.15	0.57	0.22
Title 50	0.13	0.00	0.00	0.00	0.03
Total	1.00	0.33	0.85	0.71	0.73

Additional sections of 10 USC have been proposed as relating to PPBE. The research team did not include these as part of the analysis above because they do not directly guide the primary tasks/activities of the PPBE process identified for this study. Nevertheless, to be as comprehensive as possible, these additional sections of 10 USC are provided below in Table 5.

Table 5. Additional Statues Related to PPBE[61]

10 U.S.C. §129a:	General policy for total force management. This law states in part that "the Secretaries of the military departments and the heads of the Defense Agencies shall have overall responsibility for the requirements determination, planning, programming, and budgeting for such policies and procedures."
10 U.S.C. §134: Under Secretary of Defense for Policy.	This law states in part that, among other responsibilities, the Under Secretary of Defense for Policy shall be responsible and have overall direction and supervision for "the development of the Defense Planning Guidance that guides the formulation of program and budget requests by the military departments and other elements of the Department."
10 U.S.C. §135: Under Secretary of Defense (Comptroller).	This law states in part that, among other responsibilities, the Under Secretary of Defense (Comptroller) shall advise and assist the Secretary of Defense "in supervising and directing the preparation of budget estimates of the Department of Defense."
10 U.S.C. §139a: Director of Cost Assessment and Program Evaluation.	This law states that the Director of Cost Assessment and Program Evaluation in the Office of the Secretary of Defense is the principal official within the senior management of DOD for, among other matters, "analysis and advice on matters relating to the planning and programming phases of the Planning, Programming, Budgeting and Execution system, and the preparation of materials and guidance for such system, as directed by the Secretary of Defense, working in coordination with the Under Secretary of Defense (Comptroller)."
10 U.S.C. §151: Joint Chiefs composition, functions.	This law governs how members of the Joint Chiefs, other than the Chairman, should submit advice or opinions to Congress or the President.
10 U.S.C. §167b note: Assignment of Certain Budget Control Responsibilities to Commander of United States Cyber Command.	This law, included as a statutory note in Title 10, requires the Commander of U.S. Cyber Command to "be responsible for directly controlling and managing the planning, programming, budgeting, and execution of resources to train, equip, operate, and sustain the Cyber Mission Forces."
10 U.S.C. §229 note: Prioritization of funds for equipment readiness and strategic capability.	This law, included as a statutory note in Title 10, requires the Secretary of Defense to "take such steps as may be necessary through the planning, programming, budgeting, and execution systems of the Department of Defense" to prioritize funds for equipment readiness and strategic capability.

10 U.S.C. §1071 note: Health care management demonstration program.	This law, included as a statutory note in Title 10, directs the Secretary of Defense to carry out a demonstration program on health care management to "explore opportunities for improving the planning, programming, budgeting systems, and management of the Department of Defense health care system."
10 U.S.C. §2222 note: Standardized business process rules for Military Intelligence Program.	This law, included as a statutory note in Title 10, requires the Chief Management Officer to coordinate with the Under Secretary of Defense (Comptroller) and Under Secretary of Defense for Intelligence [now the Under Secretary of Defense for Intelligence and Security] to "develop and implement standardized business process rules for the planning, programming, budgeting, and execution process for the Military Intelligence Program."
10 U.S.C. Chap. 223 note: Trusted defense systems.	This law, included as a statutory note in Title 10, requires the Secretary of Defense to "identify the appropriate lead person, and supporting elements, within the Department of Defense for the development of an integrated strategy for managing risk in the supply chain for covered acquisition programs," and for that lead person to develop a risk-management strategy that, among other matters, provides guidance "for the planning, programming, budgeting, and execution process in order to ensure that covered acquisition programs have the necessary resources to implement all appropriate elements of the strategy."
10 U.S.C. §4403: Requirements relating to availability of major system interfaces and support for modular open system approach.	This law states in part that the secretary of each military department shall, among other matters, "ensure that necessary planning, programming, and budgeting resources are provided to specify, identify, develop, and sustain the modular open system approach, associated major system interfaces, systems integration, and any additional program activities necessary to sustain innovation and interoperability."
10 U.S.C. §4506: Procurement of services: data analysis and requirements validation.	This law requires that the Secretary of Defense, acting through the Under Secretary of Defense (Comptroller) and Director of Cost Assessment and Program Evaluation, ensure that "appropriate and sufficiently detailed data are collected and analyzed to support the validation of requirements for services contracts and inform the planning, programming, budgeting, and execution process of the Department of Defense."
10 U.S.C. §4811 note: National security innovation partnerships.	This law, included as a statutory note in Title 10, requires the Secretary of Defense to report to the congressional defense committees an implementation plan for an activity to establish national security innovation partnerships with academic institutions, private-sector firms in defense and commercial sectors, and other entities, including plans for "integration of the activity into the programming, planning, budgeting, and execution process of the Department of Defense."

10 U.S.C. §7724: Executive Director.	This law states in part that the executive director of the Army National Military Cemeteries is responsible in part for "overseeing the programming, planning, budgeting, and execution of funds authorized and appropriated for the Cemeteries."
10 U.S.C. §4201: Major defense acquisition programs.	This law provides detailed definitions and exceptions for Major Defense Acquisition Programs (MDAPS)

In addition to the analysis above, the research task required the development of a matrix outlining how PPBE components are directed, whether by statute, regulation, or policy. Table 6 provides the requested matrix. The associated policy documents included in the matrix are summarized below.

As a supplement to the matrix, a process placemat (Figure 2 and Figure 3) is provided below that visualizes the PPBE process for a single fiscal year.

DOD POLICY

The DoD has specific policy documents that lay out the mechanics of how each organization within DoD executes the PPBE process in specific and measurable ways.

DoDI 5000.02 (Published January 23, 2020; June 8, 2022): Operation of the Adaptive Acquisition Framework. This regulation sets forth policy and procedures for managing acquisition programs in line with 10 U.S.C. It delineates acquisition management roles, defines duties of primary acquisition officials, highlights features of acquisition pathways, and revamps defense acquisition guidance to enhance its efficiency and introduces the Adaptive Acquisition Framework.

DoDI 5000.85 (Published August 6, 2020; Change 1 November 4, 2021): Major Capability Acquisition. This regulation sets the policy and outlines procedures for the acquisition of major capability acquisition programs, including MDAPs, ACAT I programs, ACAT II major systems, and specific automated information systems (AIS).

CJCSI 3100.01E (Published May 21, 2021): Joint Strategic Planning System. This instruction provides policy and direction from the Chairman of the Joint Chiefs of Staff (CJCS) on the execution of the Joint Strategic Planning System (JSPS). The JSPS is the method by which the Chairman fulfills statutory responsibilities under Title 10, U.S. Code, maintains a global perspective, leverages strategic opportunities, translates strategy into outcomes, and develops military advice for the Secretary of Defense (SecDef) and the President.

CJCSI 5123.01I (Published October 30, 2021): Charter of the Joint Requirements Oversight Council (JROC) and the Implementation of the Joint Capabilities Integration and Development System. This instruction implements the Joint Requirements Oversight Council (JROC) as a statutory council to the Chairman of the Joint Chiefs of Staff (CJCS), and delineates the roles and responsibilities of the JROC, its subordinate boards, and other organizations. This instruction also implements the Joint Capabilities Integration and Development System (JCIDS) and outlines interactions with other departmental processes.

CJCSI 8501.01B (Published August 21, 2012: Current as of December 15, 2021): Chairman of the Joint Chiefs of Staff, Combatant Commanders, Chief, National Guard Bureau, and Joint Staff Participation in the Planning, Programming, Budgeting, and Execution Process. This instruction describes participation by the Chairman of the Joint Chiefs of Staff (CJCS), the Commanders of the Combatant Commands (CCDRs), the Chief, National Guard Bureau (CNGB), and the Joint Staff (JS) in the DoD Planning, Programming, Budgeting and Execution (PPBE) process.

DODD 7045.14 (Published January 25, 2013; Change 1 August 29, 2017): The Planning, Programming, Budgeting, and Execution (PPBE) Process. This regulation notes that PPBE shall serve as the annual resource allocation process for DoD. Force development guidance, program guidance, and budget guidance are the principal guides used in this process. Programs and budgets shall be formulated annually. The budget shall cover 1 year, and the program shall encompass an additional 4 years. It adds that the PPBE process aims to provide the DoD with the optimal combination of forces, equipment, manpower, and support within budgetary limits. It aligns resources with prioritized capabilities based on strategy, balancing warfighting capabilities with risk, cost, and effectiveness, and offers mechanisms to make and implement financially informed decisions aligned with national security and defense strategies. The process also includes execution reviews to assess past actions and guide future resource allocations, taking into account inputs from various acquisition and requirement processes.

DODD 8260.05 (Published July 7, 2011): Support for Strategic Analysis (SSA). This regulation assigns responsibilities for SSA activities and provides guidance to DoD senior leadership on strategy and planning, programming, budgeting, and execution system (PPBES) matters, including force sizing, shaping, and capability development.

DoD 7000.14-R: Department of Defense Financial Management Regulation. This regulation provides guidelines for the management of Defense-wide appropriations and administrative control systems within the DoD. It covers the delegation of authority, statutory duties of DoD officials, detailed processes for fund allocation, and the obligations and expenditures associated with these funds. Additionally, it addresses record-keeping, financial management systems, and the importance of annual evaluations.

MILITARY SERVICE SPECIFIC POLICIES

Each military branch has their own specific policy documents that lay out the mechanics of how that branch executes the PPBE process. While each branch also has a variety of other regulations, pamphlets, directives, instructions, orders, and policy directives that play various roles in each service's acquisition process, there are three main documents that lay out how the major military departments (Army, Navy, and Air Force) implement the PPBE process.

Army Regulation 1–1 (Published May 23, 2016): This document establishes the Army's guidance for PPBE. It aims to secure the necessary fiscal and human resources for the Army's missions and to optimize the mix of forces, equipment, and support for combatant commands. It details responsibilities at all levels of the Army from the Under Secretary down to the field commander level. It provides a review of the PPBE process at the DoD level, gives guidance on governance and oversight of the program within the Army, and describes each specific phase of the PPBE process in detail (with an entire chapter of the regulation devoted to each phase).

SECNAV Instruction 7000.30 (Published August 26, 2021): This document establishes the Department of the Navy's (DON) guidance for PPBE. It notes that the PPBE process is the DON annual resource allocation method, integrating guidance from higher authorities like the President's National Security Strategic Guidance and the Secretary of Defense's various strategies. The process formulates annual programs and budgets, with the budget covering one year and the program spanning an additional four years. Like its Army counterpart, this document details responsibilities at all levels of the DON and details how service members at all levels of the department will plan and executive PPBE.

Air Force Policy Directive 90-6 (Published June 26, 2019): This document establishes the Department of the Air Force (DAF) guidance for PPBE. Much like its sister service counterparts, the Air Force document provides details on policy and roles and responsibilities, although it does so much more succinctly than either the Army or Navy regulations.

Table 6. How is PPBE Directed? (The PPBE Matrix)

Phase	Task/Activity	Statutory	Regulatory	OSD and JS Policy	Senate and House Rules
Planning	Chairman's Risk Assessment (CRA)	10 USC 153(b)(3)(B)		CJCSI 8501.01B [Enclosure A(1)(c)(7)]	
Planning	Chairman's Program Recommendation (CPR)	10 USC 153(a)(7)(A)		DoDD 7045.14 [Enclosure 2(10)(a)]; CJCSI 8501.01B [Enclosure A(1)(c)(5)	
Planning	National Military Strategy (NMS)	10 USC 153(b)(3)(A); 10 USC 153(b)(4)		CJCSI 8501.01B [Enclosure A(1)(a)(1)]	
Planning	National Security Strategy (NSS)	50 USC 3043(a)			
Planning	National Defense Strategy (NDS)	10 USC 113(g)(1)			
Planning	OMB Fiscal Guidance	31 USC 503(a)(2)		OMB Circular A-11	
Planning	Integrated Priority Lists (IPL)	10 USC 153(c)		CJCSI 8501.01 [Enclosure 2(b)(2)]	
Planning	Defense Planning Guidance (DPG)	10 USC 113(g)(2)		DoDD 7045.14 [Enclosure 2(2)(b)] and [Enclosure 4(1)(b)]	
Programming	Program Objective Memorandum (POM)			DoD 7000.14-R Volume 2A, Chapter 1 and Chapter 3	
Programming	Program Review			DoDD 7045.14 [Enclosure 2(3)(b)] and [Enclosure 4(2)(a)(2)	
Programming	Chairman's Program Assessment (CPA)	10 USC 153(a)(4)		DoDD 7045.14 [Enclosure 2(10)(a)]; CJCSI 8501.01B [Enclosure A(1)(c)(6)	
Programming	Issue Papers			CJCSI 8501.01B [Enclosure A(1)(c)(3)]; [Enclosure A(2)(b)(1)]; [Enclosure A(3)(b)(3)]; [Enclosure A(4)(a)(5)]	
Programming	Program Resource Manager's Group (PRMG)			DoDD 7045.14 (4)(b)(1)	
Programming	Deputy's Management Action Group (DMAG)			DoDD 7045.14 (4)(b)(1)	
Programming	OMB Pass-Back	31 USC 503(c)(4)		OMB Circular A-11	
Programming	Program Decisions		CFR 48 FAR/DFAR	DoDD 7045.14 [Enclosure 2(3)(a)(3)] and [Enclosure 4(2)(a)(2)]	
Programming	FYPD Update	10 USC 221(a)-(e); 10 USC 222(a)-(c)		DoDD 7045.14 [Enclosure 2(3)(a)(4)] and [Enclosure 4(2)(d)]	
Budgeting	Budget Estimate Submission (BES)	10 USC 2203		Dod 7000.14-R Volume 2A, Chapter 1 and Volume 2B, Chapter 5; DoDD 7045.14 [Enclosure 4(2)(b)(1)]	
Budgeting	Program Budget Review	10 USC 192(b)		DoDD 7045.14 [Enclosure 2(1)(a)] and [Enclosure 4(2)(b)(2)	
Budgeting	Budget Decision			DoDD 7045.14 [Enclosure 2(1)(c)] and [Enclosure 4(2)(b)(2)	
Budgeting	FYDP Update	10 USC 221(a)-(e); 10 USC 222(a)-(c)		DoDD 7045.14 [Enclosure 2(3)(a)(4)] and [Enclosure 4(2)(d)]	
Budgeting	Budget Submission to OMB	31 USC 1104(e)		DoD 7000.14-R Volumne 2A, Chapter 1; DoDD 7045.14 [Enclosure 2(1)(d)]; OMB Circular A-11	
Budgeting	President's Budget Request	31 USC 1105(a)			
Budgeting	Unfunded Priority List	10 USC 222(a)-(e)			
Budgeting	302(a) and 302(b)	2 USC 632(a) and 2 USC 633(a)-(b)			
Budgeting	Hearings and Staffer Days			DoDD 7045.14 [Enclosure 2(1)(e)]	Senate Rule XXVI; House Jefferson Manual XI and XIII
Budgeting	Marks and Deliberations	2 USC 636(a)-(d)			Senate Rule XXVI; House Jefferson Manual XI
Budgeting	Conference	2 USC 636(a)-(d)			Senate Rule XXVIII & XXVI; House Jefferson Manual XLVI, XLIV, XLV
Budgeting	NDAA	2 USC 639(a)			
Budgeting	Appropriations	2 USC 639(a)			House Rule X; Senate Rules XXV and XVI
Execution	Apportionment	31 USC 1512(b) and 31 USC 1513(c)		DoD 7000.14-R Volume 3, Chapter 2; OMB Circular A-11	
Execution	Midyear Review			OMB Circular A-11	
Execution	Transfer of Funds/Reprogramming	10 USC 2214(a)-(d)		DoD 7000.14-R Volume 3, Chapter 2	
Execution	Closeout			OMB Circular A-11	
Execution	Expired status for appropriations	31 USC 1553(a)		DoD 7000.14-R Volume 6A, Chapter 4	
Execution	Appropriation closed/canceled	31 USC 1552(a)-(b)		DoD 7000.14-R Volume 6A, Chapter 4	
Execution	Outstanding obligation adjustment	31 USC 1553(b)		DoD 7000.14-R Volume 6A, Chapter 4	

Figure 2. PPBE Process Placemat Version #1

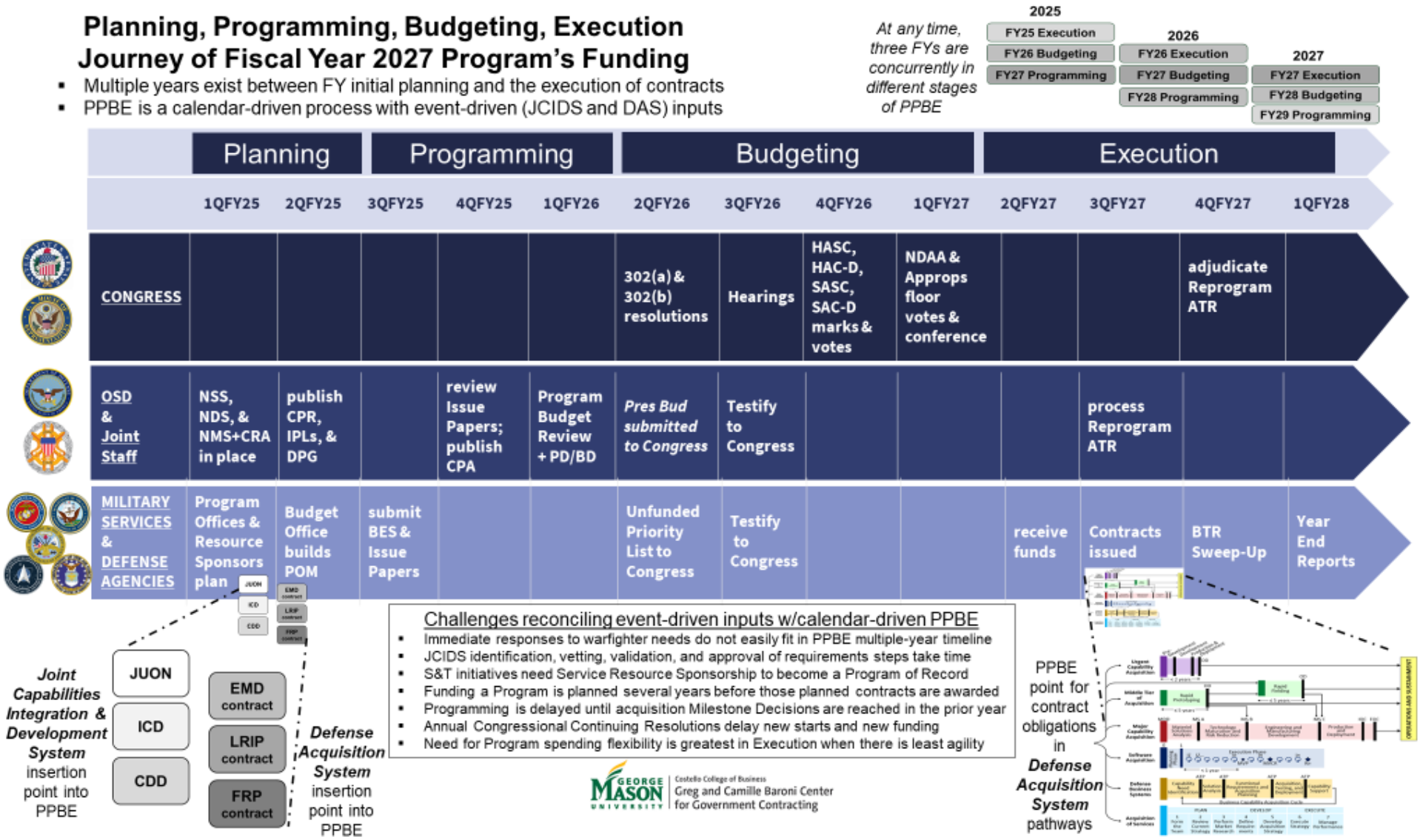
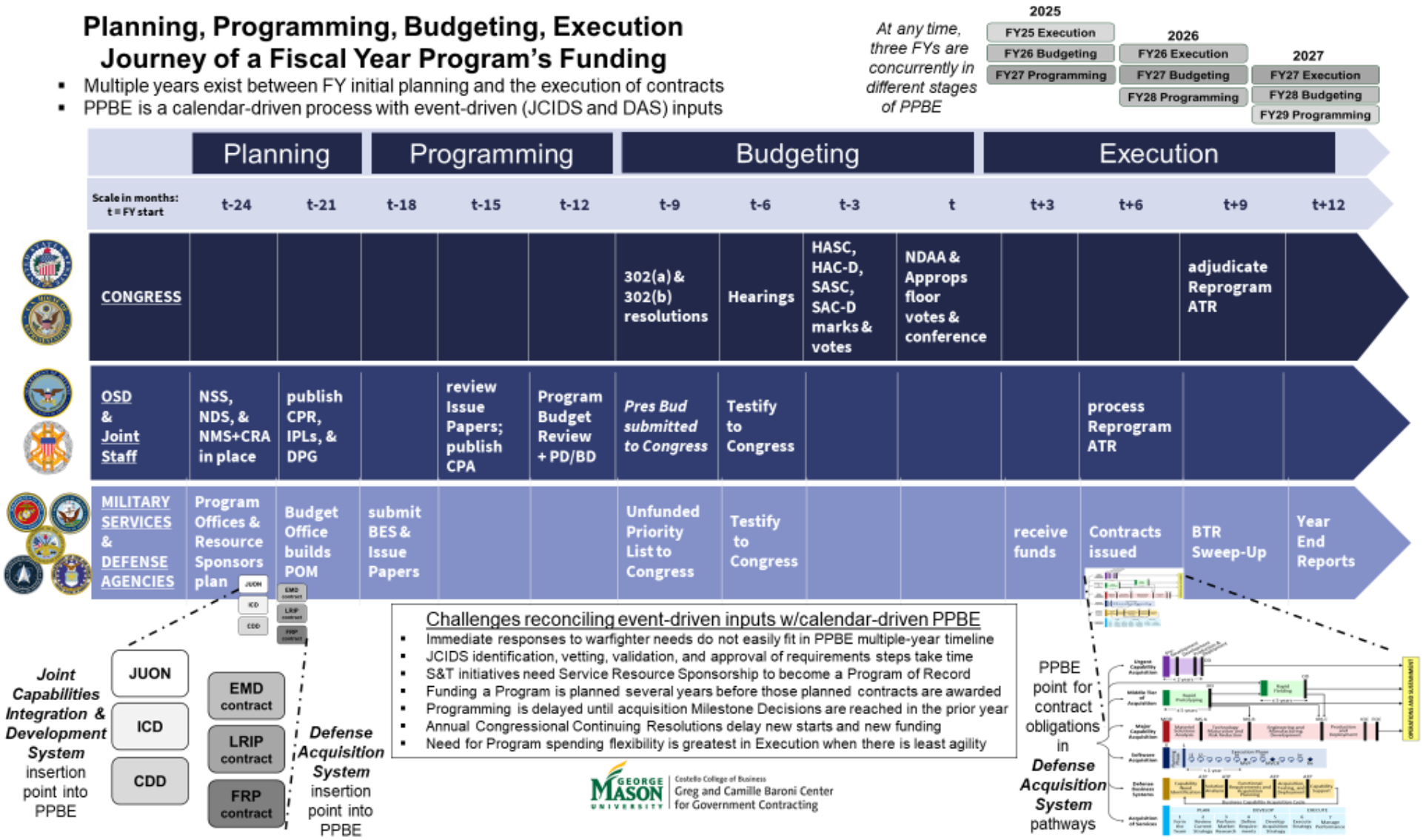


Figure 3. PPBE Process Placemat Version #2



[1] ACAT IC and ACAT ID programs breach 10 USC 4201 threshold; ACAT II programs breach 10 USC 2302d threshold; and ACAT III programs encompass the remaining programs that do not breach 10 USC 2302d.

[2] Navy (and Marine) and Army utilize an ACAT IV category that is a branch level policy categorization as DoD policy only categorizes programs into ACAT I, ACAT II, and ACAT III.

[3] Please see Table I on pg. 44 of DoDI 5000.02 for a comprehensive breakdown of the different acquisition categories, reason for ACAT designation, and decision authority.

[4] Please see Table II on pgs. 47-58 of DoDI 5000.02 for milestone and phase information requirements for each acquisition category

[5] Please see Table I on pgs. 7-8 of (McGarry, 2022) for descriptions, lead actors, and outputs for the four phases of PPBE

[6] DoD Directive 7045.14

[7] The assessment conducted through Step #2 is based upon the following logic. Assume a population is divided into two categories (A and B). A modification or change (denoted as Z) is to be applied to only one category in order to generate an expected improvement as measured by X. Applying Z to A, and only to A, to improve X, is only logical if applying Z to B does not improve X. Thus, A and B must exhibit no correlation or very little correlation (ideally negative correlation). If A and B are correlated, then applying Z to improve X will result in a similar effect on both. Thus, logically negating the idea that Z should only be applied to a single category.

[8] The size of programs within an acquisition category can vary across a large range of values (i.e., greater than 100% from largest to smallest). As an example, for MDAPs, programs can range from as little as ~$100M per year to over $10B per year in appropriations.

[9] One example of a factor that is possibly correlated with size is complexity. (Drezner, J.A., J.M. Jarvaise, R.W. Hess, P.G. Hough, and D. Norton. 1993. "An Analysis of Weapon System Cost Growth." RAND Corporation) suggests this as empirically valid but only with regard to MDAPs and subsequent research by (2013. "Chapter Title: Oversight of ACAT II Programs." In Management Perspectives Pertaining to Root Cause Analyses of Nunn-McCurdy Breaches, Volume 4, by MarMark V. Arena, Irv Blickstein, Abby Doll, Jeffrey A. Drezner, James G. Kallimani, Jennifer Kavanagh, Daniel F. McCaffrey, et al. RAND Corporation.) finds less support for this claim. Arguably the most commonly assumed factor to be correlated with size is risk. How risk is defined is likely to drive any such relationship and there is little evidence to suggest such a relationship.

[10] This is equivalent to assuming the traditional null-hypothesis associated with statistical testing.

[11] As an example: if all emerging technology programs are classified as ACAT III and ACAT III does not include other technology types (or these other technology types constitute only a very small percentage of the category), then PPBE may in fact need to be different for ACAT III (assuming PPBE is ill-suited as a resource allocation process for emerging technology).

[12] Please see Table 5 on pgs. 64-65 of DoDI 5000.02 for recurring program reports for each acquisition category.

[13] Sullivan, Mike. 2015. *Defense Acquisitions Better Approach to Account for Number, Cost, and Performance of Non Major Programs*. Washington: United States Government Accountability Office.

[14] U.S. Department of Defense Inspector General. 2019. "Audit of the Service Acquisition Executives' Management of Defense Acquisition Category 2 and 3 Programs."

[15] Wirthlin, Joseph Robert. 2009. "Identifying Enterprise Leverage Points in Defense Acquisition Program Performance." PhD Dissertation; Sutherlin, Jason W. 2014. "Improving the Enterprise Requirements and Acquisition Model's Developmental Test and Evaluation Process Fidelity." Master Thesis.; Colombi, John M., J. Robert Wirthlin, and Teresa Wu. 2014. "Enterprise Requirements and Acquisition Model (ERAM) Analysis ." Acquisition Research Program Sponsored Report Series. 87.; Bonenfant, Benjamin, J. 2019. "An Analysis of Estimate Variance in Program Office Estimates." Master Thesis.

[16] (Arena, et al. 2013)

[17] (United States Government Accountability Office 2023)

[18] (U.S. Department of Defense Inspector General 2019)

[19] (Arena, et al. 2013)

[20] Data for MDAPs is from United States Government Accountability Office. 2023. "Weapon Systems Annual Assessment."

[21] Data for ACAT II and ACAT III is from (U.S. Department of Defense Inspector General 2019)

[22] Commodity types include aircraft, ships, missiles and munitions, submarines, helicopters, ground vehicles, C4I, sensors, radars, and satellites

[23] (United States Government Accountability Office 2023)

[24] "A wide assortment of equipment, munitions, vehicles, and weapons needed by combat forces" are procured under ACAT II and ACAT III programs - (United States Government Accountability Office 2023)

[25] Review of programs identified in (U.S. Department of Defense Inspector General 2019) indicates that ACAT II and ACAT III programs provide a wide array of products/services such as munitions, radars, sensors, modifications, etc.

[26] Please see Endnote 38

[27] Please see Endnote 39

[28] (Arena, et al. 2013)

[29] (Arena, et al. 2013)

[30] (Arena, et al. 2013)

[31] (Bonenfant 2019)

[32] (Bonenfant 2019)

[33] (Bonenfant 2019)

[34] (Bonenfant 2019)

[35] (Wirthlin 2009)

[36] (Wirthlin 2009)

[37] (Wirthlin 2009)

[38] (Wirthlin 2009)

[39] (Wirthlin 2009)

[40] (Colombi, Wirthlin and Wu 2014)

[41] (Colombi, Wirthlin and Wu 2014)

[42] (Sutherlin 2014)

[43] (Sutherlin 2014)

[44] (United States Government Accountability Office 2023)

[45] (United States Government Accountability Office 2023)

[46] (Arena, et al. 2013)

[47] DoDI 5000.02

[48] Please see the DoD 5000 Series for more information on the DAS

[49] Please see DoDI 5000.81 for a detailed description of the Urgent Capability Acquisition pathway

[50] Please see DoDI 5000.80 for a detailed description of the Middle Tier of Acquisition pathway

[51] Please see DoDI 5000.85 for a detailed description of the Major Capability Acquisition pathway

[52] Please see DoDI 5000.87 for a detailed description of the Software Acquisition pathway

[53] Please see DoDI 5000.75 for a detailed description of the Defense Business System Acquisition pathway

[54] Please see DoDI 5000.74 for a detailed description of the Defense Acquisition of Services pathway

[55] DoDI 5000.02

[56] Section D is not required for BA 1, 2, 3, and 6

[57] Unlike the other 9 Agencies for which no acquisition pathway data is identified, CBDP does provide the acquisition pathway for a decent number of Projects but due to the significant number of sub-projects/programs within a single Project, the research team could not fairly attribute a single acquisition pathway to the Projects and thus chose to not associate an acquisition pathway with any of the Projects for CBDP.

[58] A large portion of the unidentified part of the FY24 budget request is likely associated with MCA. Therefore, MCA is without question the most utilized acquisition pathway in terms of dollars.

[59] DoD FMR, Volume 2B, Chapter 5, pg. 5-18

[60] DoD FMR, Volume 2B, Chapter 5, pg. 5-26

[61] The material in this table is a modified version of the same table from CRS Report # R47178