NPS-AM-24-228

ACQUISITION RESEARCH PROGRAM
SPONSORED REPORT SERIES

A Comparative Analysis of Defense Acquisition Systems: Bridging the Gap Between the U.S. and Germany

June 2024

MAJ Bradden T. Van Noy, USA
CDR Sidney Bjoern Gottwald, German Navy
MAJ Chance A. Yost, USA

Thesis Advisors: Dr. Robert F. Mortlock, Professor
Keith A.Hirschman, Professor

Department of Defense Management

Naval Postgraduate School

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

ACQUISITION RESEARCH PROGRAM
DEPARTMENT OF DEFENSE MANAGEMENT
NAVAL POSTGRADUATE SCHOOL

The research presented in this report was supported by the Acquisition Research Program of the Department of Defense Management at the Naval Postgraduate School.

To request defense acquisition research, to become a research sponsor, or to print additional copies of reports, please contact the Acquisition Research Program (ARP) via email, arp@nps.edu or at 831-656-3793.

Acquisition Research Program
Department of Defense Management
Naval Postgraduate School

ABSTRACT

This comparative analysis examines the U.S. and German military acquisition systems amidst evolving global security challenges. Traditional, lengthy acquisition processes are critiqued for inadequately addressing the swift nature of contemporary military threats. This study identifies strengths and weaknesses in both frameworks, proposing enhancements to improve agility and efficiency.

Both systems demonstrate robustness but also require reform to meet current demands. The U.S. benefits from a pathway allowing rapid procurement, contrasting with Germany's conventional approach, which lacks expedited processes. Recommendations for Germany include modernizing its system to introduce agile procurement pathways, revising existing ones for greater responsiveness, and streamlining oversight to facilitate quicker decision-making. For the U.S., suggestions focus on reducing excessive oversight to increase flexibility, integrating planning and budgeting for efficiency, and promoting user involvement in procurement to meet operational needs.

This study highlights critical areas for improvement in both nations' military acquisition systems and offers targeted recommendations to enhance their responsiveness and efficiency. Adopting these suggestions would better equip both countries to navigate the complexities of the modern security environment, ensuring their military capabilities are effectively aligned with strategic needs.

THIS PAGE INTENTIONALLY LEFT BLANK

NPS-AM-24-228

ACQUISITION RESEARCH PROGRAM
SPONSORED REPORT SERIES

A Comparative Analysis of Defense Acquisition Systems: Bridging the Gap Between the U.S. and Germany

June 2024

MAJ Bradden T. Van Noy, USA
CDR Sidney Bjoern Gottwald, German Navy
MAJ Chance A. Yost, USA

Thesis Advisors: Dr. Robert F. Mortlock, Professor
Keith A.Hirschman, Professor

Department of Defense Management

Naval Postgraduate School

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

ACQUISITION RESEARCH PROGRAM
DEPARTMENT OF DEFENSE MANAGEMENT
NAVAL POSTGRADUATE SCHOOL

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF FIGURES

LIST OF TABLES

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF ACRONYMS AND ABBREVIATIONS

AAF	Adaptive Acquisition Framework
Acq. O&M	Acquisition Operations & Maintenance
ADM	Acquisition Decision Memorandum
APUC	Average Procurement Unit Cost
ARP	Acquisition Research Program
ATP	Authority to Proceed
AoA	Analysis of Alternatives
BAE	British Aerospace Engineering
BDM	Budget Decision Memoranda
BES	Budget Estimate Submission
BMVg	Bundesministerium der Verteidigung (Federal Ministry of Defence)
CDD	Capability Development Document
CJCS	Chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
COTS	Commercial Off-the-Shelf
CPM	Customer Product Management
CPS	Conventional Prompt Strike
CSIS	Center for Strategic & International Studies
DAWIA	Defense Acquisition Workforce Improvement Act
DBS	Defense Business Systems
DPG	Defense Planning Guidance
DPPG	Defense Planning and Programming Guidance
DSG	Defense Strategy Guidance
DSR	Defense Strategy Review
DOD	Department of Defense
DoDD	Department of Defense Directive
DoDIG	Department of Defense Inspector General

EMD	Engineering and Manufacturing Development
FRP	Full Rate Production
FY	Fiscal Year
FYDP	Future Years Defense Program
GAO	Government Accountability Office
GOTS	Government Off-the-Shelf
IBCTs	Infantry Brigade Combat Teams
ICD	Initial Capabilities Document
IG	Inspector General
IPP	Integrated Planning Process
IPT	Integrated Project Team
IVAS	Integrated Visual Augmentation System
JCIDS	Joint Capabilities Integration and Development System
JEON	Joint Emergent Operational Needs
JRAC	Joint Rapid Acquisition Cell
JROC	Joint Requirements Oversight Council
JUON	Joint Urgent Operational Needs
LRIP	Low-Rate Initial Production
MDAP	Major Defense Acquisition Program
MDD	Materiel Development Decision
MILCON	Military Construction
MOE	Measures of Effectiveness
MOP	Measures of Performance
MPF	Mobile Protected Firepower
MSA	Materiel Solution Analysis
MTA	Middle Tier of Acquisition
NDAA	National Defense Authorization Act
NDS	National Defense Strategy
NMS	National Military Strategy

NPS	Naval Postgraduate School
NSS	National Security Strategy
O&S	Operations and Support
OMB	Office of Management and Budget
OSD	Office of the Secretary of Defense
OTA	Other Transaction Authority
P&D	Production and Deployment
PAUC	Program Acquisition Unit Cost
PB	President's Budget
PBD	Program Budget Decision
PDM	Program Decision Memoranda
POM	Program Objective Memorandum
PPBE	Planning, Programming, Budgeting, and Execution
PSS	Product Support Strategy
QDR	Quadrennial Defense Review
R&D	Research and Development
RDT&E	Research, Development, Test & Evaluation
RMD	Resource Management Decision
SECDEF	Secretary of Defense
SOCOM	Special Operations Command
TMRR	Technology Maturation and Risk Reduction
UCA	Urgent Capability Acquisition
USD(A&S)	Undersecretary of Defense for Acquisition and Sustainment
USD(Policy)	Undersecretary of Defense for Policy

THIS PAGE INTENTIONALLY LEFT BLANK

EXECUTIVE SUMMARY

This capstone aims to compare the defense acquisition systems of the United States and Germany, set against the backdrop of evolving global security challenges, such as the ongoing Ukraine conflict that started in 2022. This study scrutinizes both nations' procurement strategies' operational frameworks, efficiencies, and adaptabilities, focusing on their unique approaches to addressing rapid changes in military threats and technological advancements.

Utilizing a multifaceted research methodology, including document and comparative analysis, this project evaluates both systems' approaches to defining requirements, budgeting, and executing program management. The analysis reveals a shared commitment to stakeholder involvement, strategic alignment, and a capability-based approach. However, it also highlights significant differences, particularly in integrating budgeting and planning processes.

A critical examination of the German Integrated Planning Process (IPP) and the U.S. Planning, Programming, Budgeting, and Execution (PPBE) system illuminates similarities in legislative oversight and strategic budget alignment. Yet, it underscores distinct methodologies in the budgeting process, with IPP showcasing a more integrated approach to requirements development compared to the more compartmentalized execution of PPBE and JCIDS activities in the United States.

Further analysis of the U.S. Adaptive Acquisition Framework (AAF) and Germany's Customer Product Management (CPM) reveals contrasting acquisition pathways, reflecting each framework's unique strategy to meet defense procurement needs. The AAF offers a versatile model with multiple pathways and decision points, while CPM prioritizes efficiency, project manager autonomy, and mandatory direct user involvement, highlighting the importance of strategies tailored to operational requirements.

This comprehensive analysis sheds light on the complexities and nuances of the German and U.S. defense acquisition systems, providing a foundation for informed recommendations to enhance both frameworks. The study contributes valuable insights

into optimizing military procurement processes by identifying key differences and proposing targeted improvements. The recommendations presented aim to equip policymakers and defense procurement officials in both nations with strategies to foster a more agile, efficient, and responsive approach to defense acquisitions, ensuring preparedness in the face of contemporary and future security challenges.

I. INTRODUCTION

The shifting dynamics of global geopolitics, particularly highlighted by the ongoing conflict in Ukraine since 2022, have brought to the forefront the imperative to reassess and refine military acquisition systems worldwide. This is a detailed examination and comparison of the United States and Germany's defense acquisition frameworks. With an aim to identify the distinctive features, challenges, and operational efficiencies of each system, this analysis delves into the structural and procedural nuances that define the military procurement strategies of these two nations.

The study also contemplates the impact of recent geopolitical events on the strategic and operational paradigms of defense acquisition. By exploring the comparative strengths and weaknesses, this research endeavors to outline actionable recommendations for both nations, aiming to enhance their defense procurement mechanisms. The ultimate goal is to foster a more agile, responsive, and efficient acquisition process that can better serve the evolving needs of national security in a rapidly changing global context.

A. PURPOSE OF RESEARCH

This capstone's primary purpose is to thoroughly compare and evaluate the military acquisition systems of the United States and Germany. The research scrutinizes the efficiency, agility, and responsiveness of both countries' acquisition frameworks, identifying key differences and potential areas for improvement. Additionally, it explores how recent geopolitical events, especially the conflict in Ukraine, have influenced the perceived need for more flexible and rapid procurement processes in Germany. The overarching objective is to offer insights and recommendations that could enhance the acquisition strategies of both nations, ensuring they are better equipped to meet the challenges of modern defense requirements.

B. PROBLEM STATEMENT

The traditional approaches to military acquisition are often characterized by their lengthy and rigid processes, which can hinder a nation's ability to adapt swiftly to new and

evolving security threats. This issue is not unique to any single country; the United States and Germany face challenges in ensuring their military acquisition systems are efficient and adaptable enough to meet the demands of contemporary warfare and geopolitical dynamics. In Germany, the defense acquisition system particularly struggles with delays and cost overruns, reflecting a broader need for reform that could also benefit the United States. This study aims to address the critical need for more agile and flexible procurement strategies within the German military while also considering the broader implications for improving the acquisition frameworks of both nations. By examining the existing systems, identifying key areas for enhancement, and proposing actionable recommendations, this research seeks to contribute to the development of more responsive and effective military acquisition processes that can meet the challenges of modern defense requirements.

C. RESEARCH QUESTIONS

The three research questions addressed in this thesis are as follows:

(1) What are the key differences between the U.S. and German defense acquisition systems?

(2) What recommendations can be made for both the U.S. and German defense acquisition systems based on their differences?

(3) Has the recent security situation in Ukraine prompted a political realization in Germany that their defense acquisition system needs modernization?

D. SCOPE AND LIMITATIONS

The scope of this research is centered on a comparative analysis of the military acquisition systems in the United States and Germany, aiming to identify areas for improvement and potential strategies for enhancing efficiency, agility, and responsiveness within these frameworks. While the study seeks to draw insights that could inform broader acquisition strategies, it acknowledges certain limitations:

- The research relies primarily on secondary data sources, which may limit the depth of insights compared to what could be achieved with direct input from experts actively engaged in military procurement.

- Given the complexity and breadth of military acquisition processes, the study does not capture every aspect of the procurement systems in both countries, focusing instead on key areas identified as critical for reform.
- The dynamic nature of global security threats and the evolving landscape of defense technology mean that the recommendations provided might need continuous reevaluation to remain relevant and effective.
- Because of significant changes in the German acquisition system, the Literature Review regarding this aspect is limited to the period from 2000 to the present.

By navigating these constraints, the study aims to contribute valuable perspectives on making military acquisition systems more adaptable and capable of meeting the fast-paced demands of modern defense challenges.

E. RESEARCH METHODOLOGIES

This thesis adopts a comprehensive research methodology to explore and understand the military acquisition systems of the United States and Germany, with the aim of identifying strategies for improvement and adaptation.

1. Document Analysis

This research builds its foundation on a thorough review of existing literature, including government documents, official reports, academic studies, and relevant articles. By analyzing these extensive documents, we gain critical insights into the structures, operations, and challenges of the U.S. and German military acquisition systems. This analysis helps us to deeply understand the theoretical underpinnings and operational dynamics of the systems we are reviewing, providing a solid basis for comparison and analysis.

2. Comparative Analysis

A key methodological approach involves systematically comparing the military acquisition systems of the United States and Germany. This comparison aims to uncover

significant differences and similarities, with a special emphasis on aspects such as efficiency, agility, and responsiveness. Through this comparative lens, the research explores potential avenues for enhancing the acquisition frameworks of both countries, drawing on best practices and lessons learned.

3. Theoretical Analysis

The research assesses the broader implications of identified challenges and opportunities within the acquisition systems. This includes evaluating the potential for reforms and innovations that could make these systems more adaptable and effective in meeting the demands of modern military operations.

By integrating these methodologies, the thesis offers a nuanced and comprehensive perspective on military acquisition systems, providing actionable insights and recommendations for their improvement. This approach ensures a balanced and informed analysis grounded in both theory and a broad examination of existing practices.

F. SUMMARY

This capstone project examines and compares the military acquisition systems of the United States and Germany in the context of recent geopolitical changes to identify efficiency, agility, and responsiveness improvements. It begins with a literature review to set the theoretical foundation, followed by a detailed exploration of each country's procurement framework, highlighting historical, regulatory, and operational dimensions. A comparative analysis will then scrutinize differences and similarities, focusing on process efficiencies and systemic challenges. The study concludes with actionable recommendations for both nations, aiming to enhance their military procurement strategies. Utilizing document analysis, comparative methods, and theoretical scrutiny, this research contributes to a deeper understanding of defense acquisition systems, advocating for reforms to address the demands of contemporary security environments.

II. LITERATURE REVIEW

In recent years, there has been a growing interest in the German acquisition system due to the role it plays on the international stage, a focus that has only been heightened by Russia's invasion of Ukraine (Zimmer, 2023).That said, little research or analysis has been done on the state of the German system by itself or by comparing it with the U.S. acquisition systems—an avenue of inquiry that has been pursued in other research on acquisition programs outside the United States. Furthermore, in support of this research, there is no available literature on the implementation of Middle-Tier Acquisition into the German acquisition system.

Before diving into the major themes of the available literature, it is crucial to explain the pivotal decision in our research strategy to focus exclusively on literature published since 2001. This time frame corresponds with a critical juncture in the evolution of the German acquisition system. In 2001, the German government made substantial changes to its acquisition processes, aligning them with the principles outlined in the Customer Product Management (CPM) document (BMVg, n.d.). These changes marked a significant shift in Germany's approach to defense procurement and influenced the trajectory of research in this field (Wenzel, 2014, p. 99). By limiting the review to this time frame, this review aims to provide a comprehensive and up-to-date analysis of the German acquisition system.

Ultimately, this literature review aims to shed light on the current state of the German acquisition system, as well as previous comparisons drawn between the United States and other countries' acquisition systems, and to examine case studies related to U.S. Middle-Tier Acquisition programs. We focus on identifying recurring themes and patterns, and by categorizing and exploring these themes, meaningful conclusions that contribute to a comprehensive understanding of the topic can be drawn.

In keeping with the thematic approach, these three major research areas were further broken down to identify common themes and methodologies as well as strengths and weaknesses of research that contribute to a better understanding of both the U.S. and

German acquisition systems and how Middle-Tier Acquisition can best be implemented into the German system.

This research aims to achieve a comprehensive and in-depth understanding of the present status of the German acquisition system. Investigation into this subject primarily centers on an extensive literature review of available literature on the planning and execution of acquisition processes. Although the available body of literature may be sparse, it nevertheless provides a substantial and robust foundation for comprehending the acquisition methodologies employed by the German government.

Another central component of our research involves comparing the U.S. acquisition system with the acquisition systems of other countries. This approach serves multiple purposes. Firstly, it facilitates understanding how different nations address similar challenges in defense acquisition. Secondly, it highlights variations in methodologies and practices for conducting these comparisons, ultimately allowing for the identification of best practices and areas for improvement. By examining acquisition systems from a global perspective, we can gain valuable insights into the factors contributing to success or failure in defense procurement.

Next, our research involves an in-depth analysis of case studies related to U.S. Middle-Tier Acquisition programs. These case studies provide a micro-level perspective on specific acquisition projects within the United States. By examining these cases, we aim to identify recurring themes, challenges, and strategies for conducting these case studies and how well or poorly U.S. Middle-Tier Acquisition has been employed. This granular analysis complements the broader comparative approach and enables us to draw actionable conclusions for implementing Middle-Tier Acquisition into the German system.

In the subsequent sections of this literature review, we delve into each of these research dimensions, discussing key findings, emerging trends, and noteworthy methodologies. By reviewing research on the German acquisition system, comparing acquisition systems across nations, and analyzing case studies, we aim to contribute to a holistic understanding of the problem that allows for practical recommendations and solutions.

A. GERMAN ACQUISITION SYSTEM

Three primary research methodologies are consistently evident in the scholarly exploration of the German acquisition system: qualitative, historical, and policy analysis. Qualitative analysis, anchored in empirical data, offers an in-depth view of the system's operations (BMVg, 2013, 2023a; Strukturkommision der Bundeswehr, 2010). Historical analysis traces the system's trajectory, shedding light on its development stages and the influencing factors behind its evolution (Böckmann, 2018a; Rühle, 2014; Sebaldt, 2020; Wenzel, 2014). On the other hand, policy analysis delves into the regulations and guidelines that drive the system, clarifying the objectives and values that inform its design and function (Adamowitsch et al., 2012.; Bundesministerium für Wirtschaft und Klimaschutz [BMWK], 2023).

Notably, a gap emerges in the current literature. Only two studies delve comprehensively into the recent iteration of the system, offering actionable recommendations. This focus on the present-day structure and its potential enhancement is rare and differentiates these studies from others in the field. The volume "Streitkräftemanagement. Neue Planungs- und Steuerungsinstrumente in der Bundeswehr" combines political, economic, and administrative science expertise with contributions from authors who have played a key role in developing, shaping, and implementing new planning and control systems in the Bundeswehr. The two studies mentioned are included in this volume. Both chapters provide a detailed insight into the reorientation of the German armaments process in the areas of planning, budgeting, and acquisition.

In the chapter "The New Equipment, Procurement, and Utilization Management of the Bundeswehr" (Wenzel, 2014), the primary focus is on the reorganization of the German acquisition process and the different types of acquisition processes, while the chapter "The Integrated Planning Process in the Bundeswehr" (Rühle, 2014) deals with the new requirements of the Integrated Planning Process (IPP). The IPP in the Bundeswehr is a comprehensive framework that harmonizes various aspects of military planning, including budgeting, capability development, and resource allocation. It aims to align these elements effectively to meet the strategic and operational needs of the Bundeswehr. This process ensures that planning and procurement decisions are made considering the available

resources and operational requirements, facilitating a more cohesive and strategic approach to defense planning.

Several themes frequently recur in this literature. Firstly, the German acquisition system's robust regulatory framework emphasizes its dedication to transparency and efficiency. Equally significant is the literature's portrayal of the system's relationship with industry, suggesting a beneficial partnership that promotes innovation in line with national needs. The importance of international collaborations, particularly in defense sectors, reflects Germany's approach to cooperative ventures and alliances.

Assessing the literature's strengths, its detailed and thorough analysis of the German system stands out, offering readers a comprehensive understanding. However, many studies appear more descriptive, often overlooking the need for practical recommendations. This trend limits the depth of discussion on potential improvements.

Moreover, certain gaps in the literature are apparent. For instance, there needs to be more substantive discussion on the possibility of introducing new acquisition pathways, which could diversify and bolster the system. Another notable gap is the dearth of longitudinal studies spanning the last eight years, leaving a void in understanding the system's performance over this period. Moreover, no comprehensive study exists that deals entirely with the German armament process. On the contrary, all available literature exclusively examines individual aspects of the process, such as the IPP or the processes described in the CPM, thereby neglecting to explore a holistic perspective (Rühle, 2014; Wenzel, 2014).

B. COMPARISONS: U.S. ACQUISITION SYSTEM AND OTHER COUNTRIES

In examining the literature comparing the United States Defense Acquisition System to that of other nations, several research methodologies are consistently apparent: Case study analysis, historical-comparative analysis, and policy analysis. Case study analysis is a qualitative research method involving an in-depth, detailed examination of a specific subject of study and its related contextual conditions (Widner et al., 2022, pp. 3–7). A historical-comparative analysis studies and analyzes historical records and sources to

thoroughly investigate a topic (Mahoney & Thelen, 2015, pp. 3–5). Policy analysis explores the rules and principles shaping the system, elucidating the goals and ethics underlying its structure and operation (Friedman, 2017, pp. 3–6). In this instance, most literature looked at the historical development of acquisition systems and compared trajectories, contexts, and outcomes to provide insight into the similarities and differences.

There is, however, a considerable gap in the current literature for the purposes of this research, as only one study comprehensively compares the U.S. and German acquisition systems (Kausal & Defense Systems Management College, 1999). In this study, the authors comprehensively analyzed the two systems, but it was conducted in 1999. Additionally, only three of the eight studies examined focus on the present-day structure of the U.S. acquisition system compared to other countries. This is significant as substantial reform has occurred since 2016 in the U.S. Defense Acquisition System's structure, operations, and regulations.

Additionally, several key themes consistently emerge in the literature on the comparison of the U.S. acquisition systems and other countries, each underlining unique aspects of the system. First and foremost, the U.S. system is renowned for its comprehensive regulatory framework, designed to ensure transparency and efficiency in procurement and contracting processes. This framework is frequently recognized for balancing bureaucratic oversight with operational agility. Another critical aspect often highlighted in the literature is the dynamic relationship between the U.S. acquisition system and the private industry. This relationship is a cornerstone of innovation, fostering a mutually beneficial partnership that supports and actively drives technological advancements and solutions tailored to meet the evolving needs of national security and public sector demands. Lastly, the literature does not overlook the challenges and hurdles faced by the U.S. acquisition system. It delves into various issues, such as the need for more streamlined processes, adaptation to rapidly changing technology landscapes, and addressing the balance between cost, performance, and speed (Kausal & Markowski, 2000; Lorge, 2018; Marchese & Chan, 2023).

In examining the body of work focused on the U.S. acquisition system, one of their most prominent strengths lies in the in-depth and comprehensive analysis. Many of these

studies meticulously dissect various components of the American framework, including the Defense Acquisition system, requirements process, and resource allocation, providing a multi-faceted understanding of the system's operations and intricacies (Liu, 2021; Marchese & Chan, 2023). However, a notable gap in the literature exists regarding comparing systems in terms of Major Acquisition Pathways.

Ultimately, the literature comparing U.S. acquisition systems to those of other countries provides a wealth of valuable insights using a range of diverse and comprehensive analysis methodologies. This body of work delves into the complexities and nuances of the U.S. systems, as well as the systems of other countries, and covers a wide range of themes. These insights hold significant insight for the purposes of comparing the German acquisition system with that of the United States.

After completing the literature review that establishes an understanding of the theoretical and practical aspects of military acquisition systems, we move on to the background section. Here, we examine how the conflict in Ukraine has influenced German security policy, indicating a significant move away from the "Wandel durch Handel" approach toward a new era, often referred to as "Zeitenwende." Additionally, this section provides an overview of the defense acquisition systems in both the United States and Germany, preparing the groundwork for a detailed comparison of how each country manages defense procurement amidst changing geopolitical dynamics.

III. BACKGROUND

A. IMPACT OF THE UKRAINIAN WAR ON GERMAN SECURITY POLICY: FROM "WANDEL DURCH HANDEL"[1] TO "ZEITENWENDE"

The start of the Ukrainian War in 2022 marked a significant turning point in German security policy. Up to that point, the "Change through trade" concept informed Germany's policy. That concept was deeply rooted in the country's "Ostpolitik" (Eastern Policy), a term that refers to Germany's policy toward Eastern Europe, particularly Russia. The basic idea was that engaging in economic relationships with the Soviet Union (and later Russia) would benefit both nations economically and lead to political change and modernization in Russia. It is based on liberal theories, according to which greater economic integration would reduce the likelihood of war and eventually result in cooperation and policy alignment (Blumenau, 2022, pp. 1906–1907).

In the period from 2001 to 2005, German–Russian considerations even went so far as to create an energy alliance between the EU and Russia and, through these connections, to create a Europe with significant influence on Russia (Rahr, 2007, p. 13). Until 2014, the German federal government's security strategy operated on the principle that peace in Europe could only be attained by cooperating with Russia, not by opposing it (Bieri, 2014, p.3). However, Putin's authoritarian domestic policies and his aspirations regarding neighboring countries were increasingly seen with skepticism (Bieri, 2014, p. 3).

In the years post-2014, Germany's policy toward Russia has remained essentially unchanged, sticking to the concept of "change through trade." The completion of the Nord Stream 2 pipeline epitomizes this approach. Despite geopolitical concerns and strained relations with the United States, Germany continues to prioritize economic ties with Russia, thereby demonstrating its commitment to its longstanding policy. In light of the

[1] "Wandel durch Handel" is a German phrase meaning "change through trade." This concept believes that economic interdependence through increased trade can lead to political and social change, including more open societies and democratic governance. The idea is that as countries trade more with each other, they become economically linked, which can lead to improvements in human rights and political freedoms in more authoritarian regimes. However, the effectiveness of this approach is subject to debate among experts.

comprehensive analysis by Krause (2023), which suggests a lack of meaningful changes in Germany's Russia policy post-2014, it is worth contrasting this view with other perspectives that identify a subtle but significant shift. While Krause argues that Germany maintained its strategy of "change through trade," especially evident in its persistent pursuit of Nord Stream 2 (Krause, 2023, pp. 138–145), some scholars point out a shift initiated in 2014 after the annexation of Crimea. Blumenau (2022), for example, points out that during this period, Germany abandoned its neutral stance and supported sanctions against Russia. This was a departure from softer strategies and caught Moscow by surprise. However, the approach can still be described as a carrot-and-stick policy, with Berlin looking to balance deterrence with a viable relationship with Moscow (Blumenau, 2022, p. 1907). Irrespective of the varying assessments discussed above of the period following 2014 regarding German security and economic policy toward Russia, it must be acknowledged that even after the annexation of Crimea, Germany's fundamental stance toward Russia did not undergo significant change. This can be attributed partly to the advanced state of economic interdependence between the two nations up until that point.

The Ukraine crisis of 2022 shattered the foundation of Germany's longstanding "Ostpolitik" (Eastern Policy) and its core principle of "Wandel durch Handel" (change through trade). Both President Steinmeier and Chancellor Scholz have acknowledged the failure of this policy framework. Steinmeier regretted that Russia could not be incorporated into the European security framework or at least effectively assisted in adopting human rights and democratic principles. (Blumenau, 2022, p. 1908).

> The really sad thing is that we failed in many ways. We failed in the effort to establish a typical European home—Gorbachev's great vision. We failed in the attempt to integrate Russia into a European security architecture; we failed in the attempt to include Russia in the Charter of Paris Path towards democracy and human rights. That is a bitter balance sheet that we are faced with, and this bitter balance sheet also includes the misjudgment that we—and I, too—thought that even a Putin of 2022 would not ultimately bring about the total political, economic, and moral ruin of the country for its imperial dreams or its imperial madness. (Der Bundespräsident, n.d.)

Scholz's "Zeitenwende" (epochal time change) speech further underscored this perspective, pointing to the need for a radical rethink in Germany's Russia policy (Scholz,

2022). While he emphasized that dialogue and diplomacy would continue, the relationship has undeniably entered what could be described as a "long ice age." Thus, the Ukraine crisis compelled Germany to abandon its previous approach, necessitating a less illusionary and more matter-of-fact policy toward Russia, colored by disappointment and distrust (Scholz, 2022b).

Russia's attack on Ukraine and the associated paradigm shift in German security policy culminated in the release of the first German Security Strategy on June 14, 2023 (Auswärtiges Amt, 2023). Although the creation of this strategy had already been decided in the coalition agreement of the ruling parties several months before Russia's attack, the fundamentally new situation in European security strategy, coupled with the Chancellor's announcements regarding a paradigm shift in security policy, places it within a new context and simultaneously garners greater attention (BMVg, 2023c).

The national security strategy puts the Bundeswehr at the center of consideration. The core mission changes from peacekeeping missions to alliance and national defense. The intention here is to maintain the necessary military capabilities and to quickly close identified capability gaps (Auswärtiges Amt, 2023, pp. 30–34).

1. Need for Adaptation in the German Acquisition System

The statements made by the German chancellor in his "Zeitenwende" speech and the national security strategy also logically resulted in demands on the German acquisition process. In addition to the need for more forward-looking conceptual planning and a significant increase in the defense budget, the German acquisition process has been criticized for years. It has been described as bureaucratic, sluggish, and slow, and there is a need for improvement (Deutsche Presseagentur, 2023). This criticism ranges from articles in specialist literature to detailed studies to government documents and laws.

For example, Besch (2023) argues that the military procurement timelines are too long and the processes are too bureaucratic. Even if Germany were to invest a lot of money in its armed forces quickly, availability would still be limited for several years due to this slow process.

According to Matle (2023), several fundamental problems hinder efficiency and cost-effectiveness in the German acquisition system. For instance, there are considerable personnel bottlenecks in BAAINBw, the agency responsible for equipment, IT, and in-service support. This is further complicated by a legal framework that makes acquisition management a drawn-out affair. The bureaucratic structures within the Ministry of Defense exacerbate these issues by requiring extensive and time-consuming test loops at various levels. It is worth mentioning that even the top leadership of the Ministry of Defense acknowledges these inefficiencies as substantial obstacles to the speedy modernization of the Bundeswehr's equipment (Matle, 2023).

Moreover, findings from the study "It's not the money, stupid! Die Hauptprobleme im Beschaffungswesen der Bundeswehr" specifically call out the bureaucratic hurdles and sluggish decision-making in the German procurement system. Such elements contribute to significant added costs in acquiring major weapons systems (Brzoska, n.d., p. 8). These facts underscore the pressing need for a thorough reform of the German acquisition process to address these challenges and improve its operational efficiency.

On July 19, 2022, the Federal Armed Forces Procurement Acceleration Act came into force, aiming to contribute to a faster expansion of the Bundeswehr's capability spectrum through time-limited amendments to procurement law. This objective was to be attained by expediting the procedures for public contracts concerning military goods acquisition (Bundesministerium der Justiz, 2022). Consequently, the modifications within procurement law were designed to further enhance the Bundeswehr's operational readiness (Gleis, 2022).

In addition to this primary goal, the Federal Armed Forces Procurement Acceleration Act encompasses an array of supplementary measures. These include prioritizing market-available solutions, accelerating review processes before procurement chambers and the procurement senate for examining alleged procurement law violations, simplifying European procurement cooperation, and placing greater emphasis on security interests in accordance with procurement procedures (Bundesministerium der Justiz, 2022).

Due to the short implementation period, it remains to be seen whether these measures will yield considerable acceleration in procurement processes (BMVg, 2023a, p. 6). Furthermore, it is yet to be determined if the individual regulations introduced by the Federal Armed Forces Procurement Acceleration Act will withstand scrutiny for compliance with EU law (Gleis, 2022).

2. Zimmer Decree

In addition to the Bundeswehr Procurement Acceleration Act, the realization that the German acquisition system necessitates optimization is also reflected in a decree issued by State Secretary Zimmer from the Ministry of Defense, which primarily focuses on accelerating and adapting the procurement process for military acquisitions (Zimmer, 2023). The decree issued by State Secretary Zimmer from the Ministry of Defense lays down significant changes to overhaul the German military acquisition process. It declares time as the essential element, urging that the material needs of the armed forces be met as rapidly, effectively, and unbureaucratically as possible. The decree serves as a binding directive for all involved in the acquisition procedures, emphasizing immediate acceleration of military procurements. Additionally, it grants managerial levels in the procurement system the autonomy to act independently and responsibly in alignment with these new acceleration mandates. The goal is to circumvent bureaucratic red tape and procedural delays, focusing instead on streamlining operations to achieve expedient results (Zimmer, 2023).

The Bundeswehr Procurement Acceleration Act and the subsequent decree by State Secretary Zimmer in the Ministry of Defense contain several sensible simplifications in procurement. All measures addressed in the legislation and decree are undoubtedly suitable, within their scope, for accelerating the procurement process.

From our perspective, these various proposals do not go far enough, particularly regarding the procurement process itself, as conducted within the framework of the CPM. A revision of the processes within the CPM, aimed at accelerated procurement, is not explicitly listed among the measures mentioned above. However, considering the overall acquisition concept, it appears to be necessary from a current perspective.

B. THE GERMAN ACQUISITION SYSTEM

1. Overview of the German Acquisition System

The purpose of the German military acquisition system is to efficiently and effectively manage the procurement of defense materials and services to ensure the operational readiness and strategic capability of the Bundeswehr. The system is a critical and complex framework, vital for the Bundeswehr's strategic functioning and operational readiness. This intricate system rests on three primary processes: budgeting, planning, and acquisition, each with distinctive roles and interdependent operations. In particular, the budgeting and planning processes are closely intertwined and are processed together as part of the Integrated Planning Process (IPP). Figure 1 presents a generalized overview of the German acquisition system.

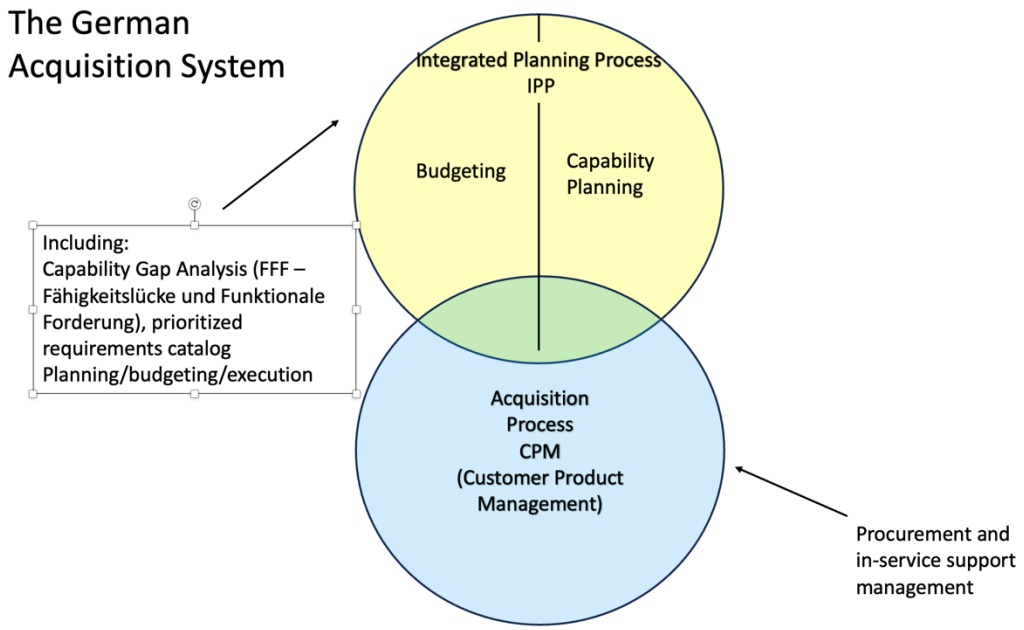

Figure 1. The German Acquisition System

At the heart of the budgeting process lies the Individual Plan 14, a fiscal document ratified by the Bundestag, which delineates the financial resources allocated to the Ministry of Defense. This budgetary framework is instrumental in ensuring that the armed forces

are adequately equipped with the necessary materials to fulfill their Defense mandate. The allocated funds are carefully designed to empower the Bundeswehr across a spectrum of operational intensities such as peacekeeping missions, disaster relief operations, and high-intensity combat situations (BMVg, 2023b, p. 50). Financial needs analysis and resource planning are conducted directly within the Planning Department of the Federal Republic of Germany's Ministry of Defense.

Capability planning in the Bundeswehr is conducted by the Bundeswehr Office for Defense Planning (Planungsamt der Bundeswehr – PlgAbw), which executes a thorough and ongoing matching of the existing (actual) capability profile against the required (target) capability profile. This process accounts for capability gaps that emerge from strategic conceptualization or are identified in the Bundeswehr's current capabilities, while also considering Germany's international obligations, particularly within NATO and the EU, following a "top-down approach." Moreover, there exists the potential for a "bottom-up" approach within the individual branches of the armed forces. Initiatives may be initiated through Innovation Management, Defense Research and Technology, or Non-Technical Scientific Support, or within the context of multinational cooperation. Furthermore, there is also the capacity to address unforeseen urgent operational requirements. This dual-directional planning framework enables the Bundeswehr to align its capabilities with both strategic expectations and emergent practical needs, ensuring the forces are adequately equipped to respond to the current and anticipated defense landscape (Federal Ministry of Defence, 2018, pp. 8–10).

The acquisition process is divided into three distinct phases: analysis, realization, and operation. The analysis phase is further subdivided into Analysis Phase 1 and Analysis Phase 2. All aspects of the German acquisition system, including budgeting, capability planning, and procurement, are integrated throughout the three stages. Figure 2 illustrates the generalized form of the German acquisition process, which, upon modification, is applied to various pathways.

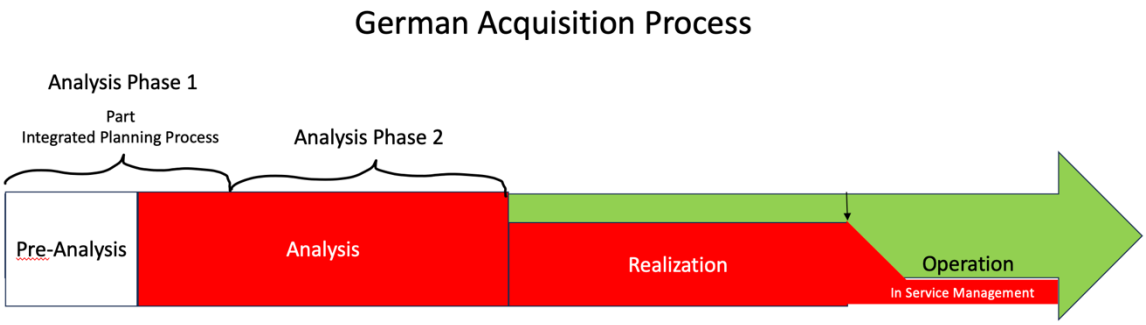

Figure 2. German Acquisition Process. Adapted from Federal Ministry of Defense (2018).

In the following chapters, we delve deeper into the essential components of the German acquisition system, providing detailed insights into each subdomain. The development of these areas is also examined, where relevant, to enhance understanding of the current system.

a. The Implementation of the Integrated Planning Process (Integrierter Planungsprozess)

The determination of the defense budget is ultimately a prerogative of the German Bundestag. Nonetheless, these two areas must be considered in tandem since resource and budget planning within the Ministry of Defense are intricately linked with capability planning within the Bundeswehr Office for Defense Planning. Within the framework of the Integrated Planning Process, budgetary matters are harmonized with capability gaps to ensure a comprehensive and unified approach. This means aligning financial resources with identified operational needs, ensuring that spending is strategically focused on areas where the Bundeswehr lacks critical capabilities. By doing so, the process aims to efficiently allocate funds to enhance overall operational effectiveness, bridging gaps in capabilities with targeted investments that support both current and future mission requirements.

The Integrated Planning Process was inaugurated within the framework of the Dresdner Erlass (Dresden Decree). It serves as a directive that marked a significant

overhaul in the Bundeswehr's approach to strategic defense planning and resource management (BMVg, 2012).

Before the implementation of the Integrated Planning Process, the Bundeswehr's approach to planning was fraught with systemic issues. The traditional planning procedure was characterized by a compartmentalized structure, where each branch of the armed forces operated in silos, often pursuing their individual priorities. This structure led to disjointed and sometimes competing objectives, where a coherent defense strategy was difficult to discern. The chief of defense (Generalinspekteur – GI), despite being the nominal head of planning, faced challenges in enforcing a unified vision, as plans were presented already finalized by the organizational sectors without a preliminary joint capability–oriented discussion. Budgeting, an integral part of planning, was carried out separately, creating a disconnect that further compounded the difficulties. The result was a Bundeswehr plan that often represented the lowest common denominator rather than an optimized defense strategy. The lack of transparency and the misalignment with a holistic perspective of needs led to protracted procurement timelines, spiraling costs, and a planning process that was neither effective nor efficient (Rühle, 2014, pp. 33–35).

The idea of the IPP is to streamline and synchronize all aspects of planning within the German Armed Forces, fostering a strategy where military defense, budget management, and operational control work in tandem. Under the guidance of the chief of defense, who is responsible for the overarching concept of military defense, the IPP strives to harmonize planning efforts across the armed forces, leading to more effective objective attainment and more efficient resource usage (Wissenschaftlicher Dienst, 2014, p. 16).

By bringing together a range of critical processes from long-term visioning and medium-term planning to the hands-on management of capabilities and from the initiation of plans to their detailed budgetary outlay and practical execution, the IPP marks a significant shift from a fragmented and often unclear structure toward a more cohesive and integrated approach. This transformation facilitates early consideration of enhancements or changes to the Bundeswehr's operational capabilities. Moreover, it ensures that these adjustments are in sync with political decisions and adhere to the financial constraints established within the frameworks of NATO and the EU. By doing so, the IPP harmonizes

strategic planning with external commitments and budgetary realities (BMVg, 2013, pp. 40–41).

The ultimate aim of this holistic strategy is to focus the Bundeswehr's efforts on practical and achievable projects. These projects stand up to political, financial, and technological scrutiny and have a high chance of successful implementation. The IPP thereby guarantees that the Bundeswehr's strategic objectives are theoretical ideals and actionable plans that dovetail with Germany's international obligations and fiscal realities (Wissenschaftlicher Dienst, 2014, p. 16).

b. Capability Management as part of the IPP

Capability planning in the Bundeswehr is conducted by the Bundeswehr Office for Defense Planning. This process begins with outlining the desired capability profile, considering both the current capabilities and the envisioned future requirements. It incorporates a blend of top-down and bottom-up approaches, integrating various initiatives and strategies (Federal Ministry of Defence, 2018, pp. 8–9).

The top-down approach aligns capabilities with political mandates, including obligations within NATO and the EU. This effort involves analyzing capability gaps identified through conceptual considerations or detected from the Bundeswehr's capability situation. In contrast, the bottom-up approach considers initiatives from major organizational elements or offices, innovation management insights, Defense research and technology, non-technical scientific support, or multinational cooperation. This approach also includes rapid initiatives for unforeseen urgent operational needs (Federal Ministry of Defence, 2018, p. 8).

As a crucial component of the integrated planning process in the Bundeswehr, the Future Development phase holds particular significance in capability planning. This phase methodically deconstructs political directives and integrates them with the strategic goal system, translating them into concrete intentions for medium-term objectives. These objectives are designed to be realistic and achievable, spread across a 12-year planning horizon and divided into three overlapping stages. This systematic approach ensures comprehensive collaboration among different departments from the beginning,

acknowledging and incorporating financial constraints. This alignment is crucial for tailoring the Bundeswehr's capabilities to meet both national and international requirements, balancing the demands of immediate and future operational readiness with the available resources (Rühle, 2014, p. 39).

Through this comprehensive planning, the Bundeswehr ensures that it focuses only on politically, financially, and technologically viable projects, and, as a result, these projects are likely to be realized. The capability management process then takes these results and integrates them with political and financial conditions, setting national planning goals for capability development. The process not only identifies capability needs but also prioritizes measures for capability maintenance, development, and reduction, ensuring a holistic view of the Bundeswehr's capabilities in all domains (Rühle, 2014, p. 39).

c. Budget Planning as Part of the IPP

Before delving into the intricacies of budget planning within the IPP for the Bundeswehr, it is essential to understand the broader financial framework established by the German government, particularly the distinctions and connections between *Finanzplanung* (financial planning) and *Haushaltsplanung* (budget planning). Finanzplanung provides a medium-term outlook on government finances, setting strategic priorities and financial boundaries for the upcoming 5 years. It encompasses a high-level assessment of anticipated revenues and expenditures, guiding the allocation of resources across different sectors, including defense. In contrast, Haushaltsplanung refers to the annual budgeting process, where specific financial allocations are made based on the strategic framework laid out by Finanzplanung. This yearly process ensures that immediate financial needs align with the government's medium-term financial goals and constraints. Understanding this distinction is crucial as it places the budgeting activities of the Bundeswehr within a larger fiscal policy context, highlighting how strategic financial planning influences the allocation of resources to defense and other national priorities. This framework not only shapes the Bundeswehr's financial planning and management processes but also ensures that its budgeting activities are coherent with the broader economic objectives and fiscal health of the nation (Vierling, 2008, pp. 1–2). The

Bundeswehr Office for Defense Planning, through its integrated planning process, provides fundamental contributions to the budgetary development of the Federal Ministry of Defense.

The process of planning and establishing the defense budget within the German Armed Forces requires a comprehensive and multi-layered process that ensures precise budget allocation and management. The process begins with the "Planning Implementation and Budget Establishment" task, which involves creating the Financial Needs Analysis (Finanzbedarfsanalyse – FBA), developing the Resource Plan (Ressourcenplan – RPl), and executing the budget establishment (Rühle, 2014, p. 40).

The FBA stands as a crucial element in this framework. It thoroughly examines and assesses the Bundeswehr's financial needs within the scope of available resources. This rigorous analysis establishes the groundwork for the Federal Ministry of Defense's contribution to the Federal Government's Budget Decision. The process ensures that financial resources are allocated effectively, aligning with the operational requirements of the Bundeswehr (BMVg, 2019, p. 36).

The planning process progresses to developing the Resource Plan, which builds upon and refines the information gathered from the FBA. In this phase, the plan incorporates new and updated data, carefully distinguishing between these inputs where overlaps occur to ensure clarity and precision. Consequently, the Resource Plan becomes a critical element of the planning process. It is carefully designed to provide a detailed and specific overview for budget registration, aligning with the required budgetary titles and categories. This meticulous crafting of the Resource Plan ensures it comprehensively covers all aspects necessary for an effective and clear budgetary outline. This meticulous planning process, which integrates the inputs from the FBA and the comprehensive structuring of the Resource Plan, ensures that the budget planning is not only aligned with the Bundeswehr's strategic needs but also adheres to the formal and detailed standards necessary for government budgeting processes. Ultimately, the responsibility for this phase transitions to the Department of Budget and Controlling, marking a crucial step in the defense budgeting cycle (Rühle, 2014, p. 41). The defense budget determines the annual spending limits for personnel, equipment, and operations of the Bundeswehr.

Figure 3 illustrates the German Defense budgeting process, starting in December when the Federal Ministry of Defense (BMVg) receives financial guidelines from the Ministry of Finance, leading to a thorough financial needs analysis (Rühle, 2014, p. 41). This analysis, completed by January, lays the groundwork for negotiations between the BMVg and the Ministry of Finance in February to establish preliminary financial parameters (Bundesministerium der Finanzen, 2015, p. 15). By March, these parameters are approved by the Federal Cabinet, allowing the BMVg to draft a detailed budget proposal by April. This proposal is then refined through discussions with the Ministry of Finance and reviewed by the Bundestag's parliamentary factions and the Defense Committee over the following months. In November, the Budget Committee finalizes the recommendations for the defense budget, which is debated and voted on by the Bundestag in November or December. The process is characterized by multiple stages of analysis, negotiation, and parliamentary scrutiny, ensuring that the defense budget meets both strategic military needs and the government's fiscal strategy.

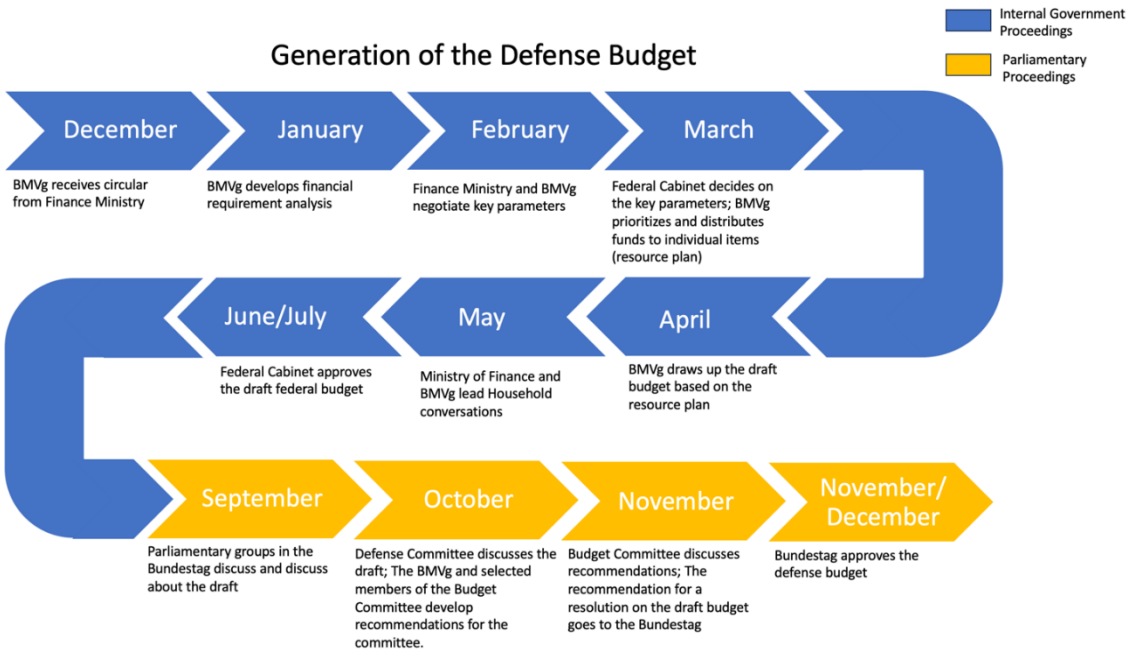

Figure 3. Flowchart for the Creation of the Defense Budget. Adapted from BMVg (BMVg, 2023).

Finally, in the concluding phase of the budget cycle, the Bundestag debates the recommendations in November or December (Bundesministerium der Finanzen, 2015). After thorough discussion, the Bundestag votes on the Defense budget, and upon approval, the Einzelplan 14 is established, determining the financial framework for the German defense forces for the upcoming year.

Throughout this process, the development of the defense budget is marked by a systematic approach that involves several stages of analysis, negotiation, and parliamentary scrutiny. This ensures that the defense budget not only reflects the strategic imperatives of the Bundeswehr but also aligns with the broader fiscal strategy of the government (Schnell, 2021, p. 8).

d. The Role of the German Bundestag

In the context of Germany's military acquisition process, the Bundestag, particularly through its Budget Committee, plays a crucial role in overseeing and approving defense contracts, a practice encapsulated by the "Parliamentary Loop." This procedural requirement is designed to ensure that significant defense procurement projects are subject to legislative scrutiny before they are finalized. The Parliamentary Loop mandates that contracts exceeding a certain financial threshold (more than €25 million) must be presented to the Budget Committee for its approval, effectively rendering such contracts conditionally effective until they gain parliamentary consent. This mechanism is rooted in the broader principle of legislative oversight and fiscal responsibility, aiming to align substantial defense expenditures with parliamentary will and oversight (BMWK, 2023, p. 6). After the Budget Committee approves a project, the Bundestag, along with other parliamentary bodies such as the Defense Committee, continues to exercise oversight over the implementation and progress of defense procurement projects (Deutscher Bundestag, n.d.). Besides these mechanisms, the Bundestag does not possess the authority to actively engage in or directly intervene in the defense acquisition process itself.

e. Strategic Portfolio Management in the Bundeswehr's Integrated Planning Process

Within the German IPP, portfolio management (PFM) emerges as a pivotal strategy for guiding the evolution of military capabilities in alignment with both current and future operational demands, as well as financial sustainability. Central to this approach is the collaborative effort led by the Federal Ministry of Defense's Planning Department and Cyber/IT Department, alongside the Planning Office of the Bundeswehr and the Command Cyber and Information Space. These entities bear the responsibility for managing the Bundeswehr's portfolio at the capability level, aiming to transition smoothly toward the envisioned Future Portfolio of the Bundeswehr (FPBw).

PFM in the Bundeswehr is characterized by its comprehensive scope, covering tasks from generating transparency in capability landscapes to conducting in-depth portfolio analyses to identify and address capability gaps. This methodology is crucial for implementing control measures for capability development and providing strategic advice to decision-makers, ensuring that each step toward capability enhancement is backed by thorough analysis and strategic foresight.

The process is meticulously structured across several key sub-processes: prioritizing objectives and conducting mid-term planning, developing and evaluating capabilities, and initiating measures to close or prevent capability gaps. Each sub-process is designed to foster a cooperative and integrated working environment among the various departments, ensuring that capability planning is not only responsive to immediate operational needs but also proactively aligned with long-term strategic goals.

By focusing on a strategic portfolio management approach, the Bundeswehr's IPP effectively bridges the gap between financial planning and capability development. This alignment is instrumental in maintaining the operational readiness of the forces, ensuring future viability, and achieving financial sustainability, thereby reinforcing the Bundeswehr's strategic coherence and operational effectiveness within the broader framework of defense planning (BMVg, 2019, pp. 42–43).

2. The Acquisition Process Conducted within the Customer Product Management Framework

This section focuses on the Basic and Fast-Track procedures frequently used for major acquisition programs in Germany. The exploration begins with the Bundeswehr Office for Defense Planning requesting a technical and economic statement from the Federal Office of Bundeswehr Equipment, Information Technology, and In-Service Support (BAAINBw). This request is made when a materiel solution or service is considered for closing a capability gap (Federal Ministry of Defence, 2018, p. 10).

In its statement, the BAAINBw proposes suitable solutions for meeting the demands, either through CPM, Bundeswehr Purchasing,[2] or Complex Services,[3] to close the capability gap. The determination of the potential realization path, as shown in the flowchart in Figure 4, is primarily driven by the specific conditions of the project. A simplified realization path is generally preferred if the project's conditions allow, with exceptions permitted in justified cases. If the implementation is to follow the CPM, the statement also includes a proposed procedure (Federal Ministry of Defence, 2018, p. 10).

The flowchart in Figure 4 outlines the decision-making process for the procurement of goods or services within the Bundeswehr. Initially, the approach determines if the existing complex services can economically meet the requirements. If they cannot, it then evaluates whether the procurement conditions align with the Bundeswehr purchasing system, setting aside logistic supportability for economic considerations. If procurement does not fit within these parameters, it considers whether the project is suitable for

[2] Alongside CPM, operational purchasing forms the second pillar of the procurement and utilization process, which occurs centrally and also decentrally, both domestically and abroad. This includes all procurements of services necessary for maintaining operational activities in basic operations, exercises, and deployments, as well as all standard and Bundeswehr-specific consumables and non-consumables. This also encompasses the required follow-up procurement of spare parts during the in-service use phase (Böckmann, 2018b, p. 40).

[3] Complex services are services that, due to their extensive scope or multifaceted performance spectrum, cannot be fully provided by the Bundeswehr itself but must be implemented with the help of other companies or organizations. This often involves the privatization of certain areas, where a collaborative relationship exists between the Bundeswehr and contract partners organized under private law. This can involve either public–private partnerships or so-called in-house companies. Privatization thus forms a component of the Bundeswehr's procurement process, resulting in a hybrid structure where both private and public entities are involved (Böckmann, 2018b, p. 40).

multinational cooperation or through an international organization. For initiatives that refer to already fielded products, a modification process is suggested (Federal Ministry of Defence, 2018, p 11).

Should the estimated budget of the proposed procurement not exceed €500,000, a simplified procedure is applied. If the budget is higher, the nature of the measure is considered—either Group I or IV, indicating a basic procedure, or Group II or III, suggesting a possible procurement of off-the-shelf IT products (Federal Ministry of Defence, 2018, p. 82).[4] If off-the-shelf IT products are unsuitable, the process defaults to the basic procedure. This structured approach ensures a systematic assessment of procurement options, prioritizing economic efficiency and alignment with operational requirements and existing frameworks.

[4] Projects and events are classified into four groups based on their relevance and connection to IT, according to criteria from the FMoD's IT strategy. Group I involves non-IT measures, managed by the Bundeswehr Office for Defense Planning. Group II includes IT-related measures without military IT capabilities, overseen by the Cyber and Information Domain Service Headquarters. Group III encompasses IT measures for military capabilities, including wide-ranging connectivity and mobile elements, also managed by the Cyber and Information Domain Service Headquarters. Lastly, Group IV covers platform-specific and integrated military IT measures, handled by the Bundeswehr Office for Defense Planning.

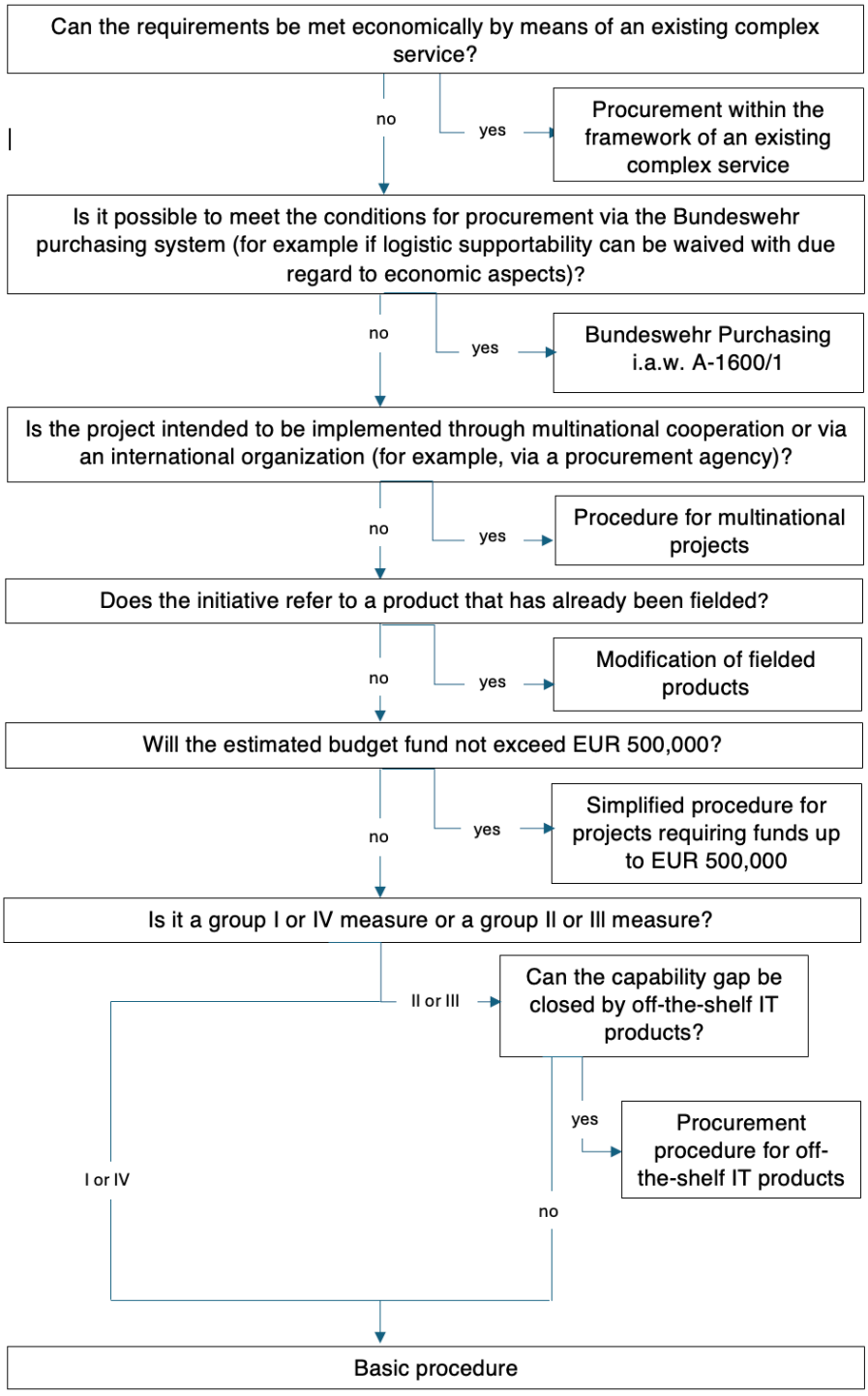

Figure 4. Flowchart Decision Process Realization Path. Adapted from Federal Ministry of Defense (2018).

While the acquisition system in the Bundeswehr is multi-dimensional, this section primarily concentrates on understanding the Basic Procedure, applied as a standard for national projects, and the Fast-Track Initiative for Operations, which prioritizes rapid solution delivery in response to unforeseen urgent operational requirements. The Basic Procedure is a comprehensive approach that involves thorough work and assessment steps to ensure legal and safety compliance of the products and is suitable for projects with clear and defined requirements. In contrast, the Fast-Track Initiative for Operations is characterized by its focus on speed, preferring simpler solutions that can provide partial capabilities quickly over more complex solutions with longer realization periods (Federal Ministry of Defence, 2018, pp. 6–9). This chapter aims to provide a detailed insight into these two prominent approaches within the Bundeswehr's CPM, highlighting their specific applications, processes, and underlying principles.

a. The Basic Procedure

The basic CPM procedure has three phases (see Figure 5).

- Analysis Phase, Part 1 and 2
- Realization Phase
- In-Service Use (Operation) Phase

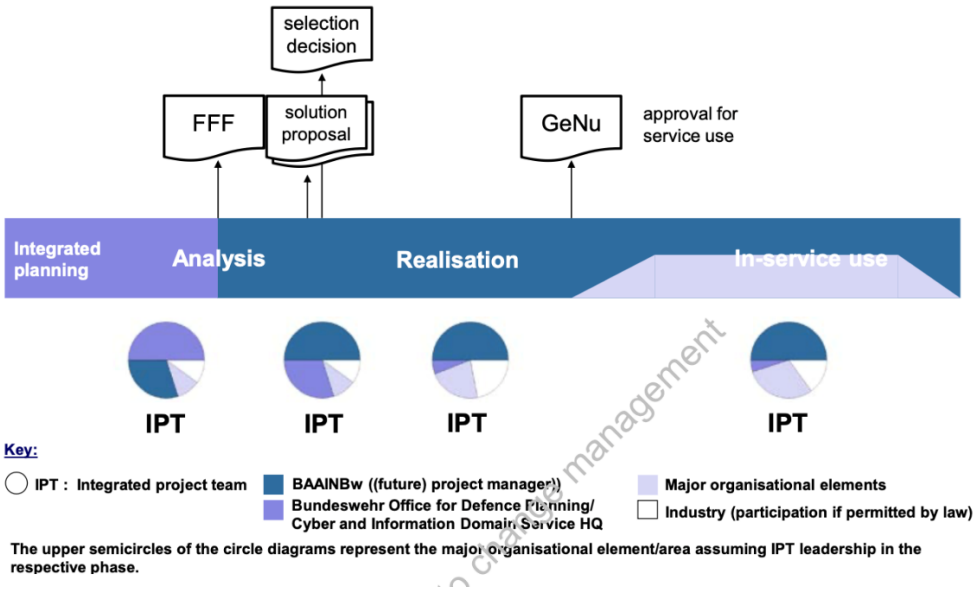

Figure 5. Sequence of the Basic Procedure. Source: Federal Ministry of Defense (2018).

The Analysis Phase of capability development in the Bundeswehr involves two main parts. In Part 1, the Office for Defense Planning, along with BAAINBw and future users, work together to define the capability gaps and functional requirements through the FFF (Fähigkeitslücke und Funktionale Forderung [Capability Gap and Functional Demands] document. This document outlines the necessary capability, architecture, costs, and risks, setting the stage for developing solution proposals. The phase concludes with the prioritization and approval of the FFF (Federal Ministry of Defence, 2018, pp. 13–16).

In Part 2, following the FFF approval, the focus shifts to developing solution proposals under the leadership of a project manager from BAAINBw. These proposals aim to address the defined requirements through available or new products, assessed for economic efficiency and compliance with legal standards. The process involves extensive planning, risk management, and collaboration with industry experts. The phase ends with the selection of a solution, marked by the AWE (Auswahlentscheidung [Decision]) (Federal Ministry of Defence, 2018, pp. 16–22).

The Realization Phase ensures the operational readiness of selected solutions, with minimal project interference anticipated. The Integrated Project Team (IPT), including

future users and industry contractors, plays a crucial role in this collaborative effort. The project manager is tasked with overseeing the project's progress within set parameters, updating requirements, and managing costs and risks (Federal Ministry of Defence, 2018, pp. 23–25).

The Contract Award Phase is focused on finalizing the contract based on the selection decision, detailing project control, quality assurance, and risk management provisions. The project manager, supported by the IPT, ensures the fulfillment of contract objectives and performance obligations (Federal Ministry of Defence, 2018, pp. 25–26).

In the In-Service Use Phase, responsibility shifts to the user/operator for maintaining operational capability and readiness, while BAAINBw retains material responsibility for operational maturity. This includes managing product modifications, obsolescence, and life-cycle costs, ensuring the long-term effectiveness and readiness of military products and services (Federal Ministry of Defence, 2018, pp. 28–32).

b. Procedure for Meeting Unforeseeable Urgent Operational Requirements (Fast-Track Initiative for Operations)

The "Fast-Track Initiative for Operations" (see Figure 6) is a critical procedure designed to address unforeseeable urgent operational requirements. This procedure can be initiated by a major organizational element like specific branches of the armed forces, a contingent like deployed task forces or international mission groups, or BAAINBw, is submitted to the Bundeswehr Joint Forces Operations Command. It prioritizes quick and efficient solutions, favoring simplicity and rapid deployment of partial capabilities over complex and time-consuming processes. These initiatives must always be given top priority, superseding other projects when necessary, and are subject to a streamlined process for expedited approval and implementation. The initiative encompasses different stages, including operational assessment, planning perspective assessment, and selecting an appropriate realization path, all the while ensuring that the necessary technical and economic expertise is applied. The process is designed to ensure that urgent operational needs are met swiftly and effectively, balancing the need for speed with the requirements of operational efficiency and effectiveness (Federal Ministry of Defence, 2018, pp. 49–50).

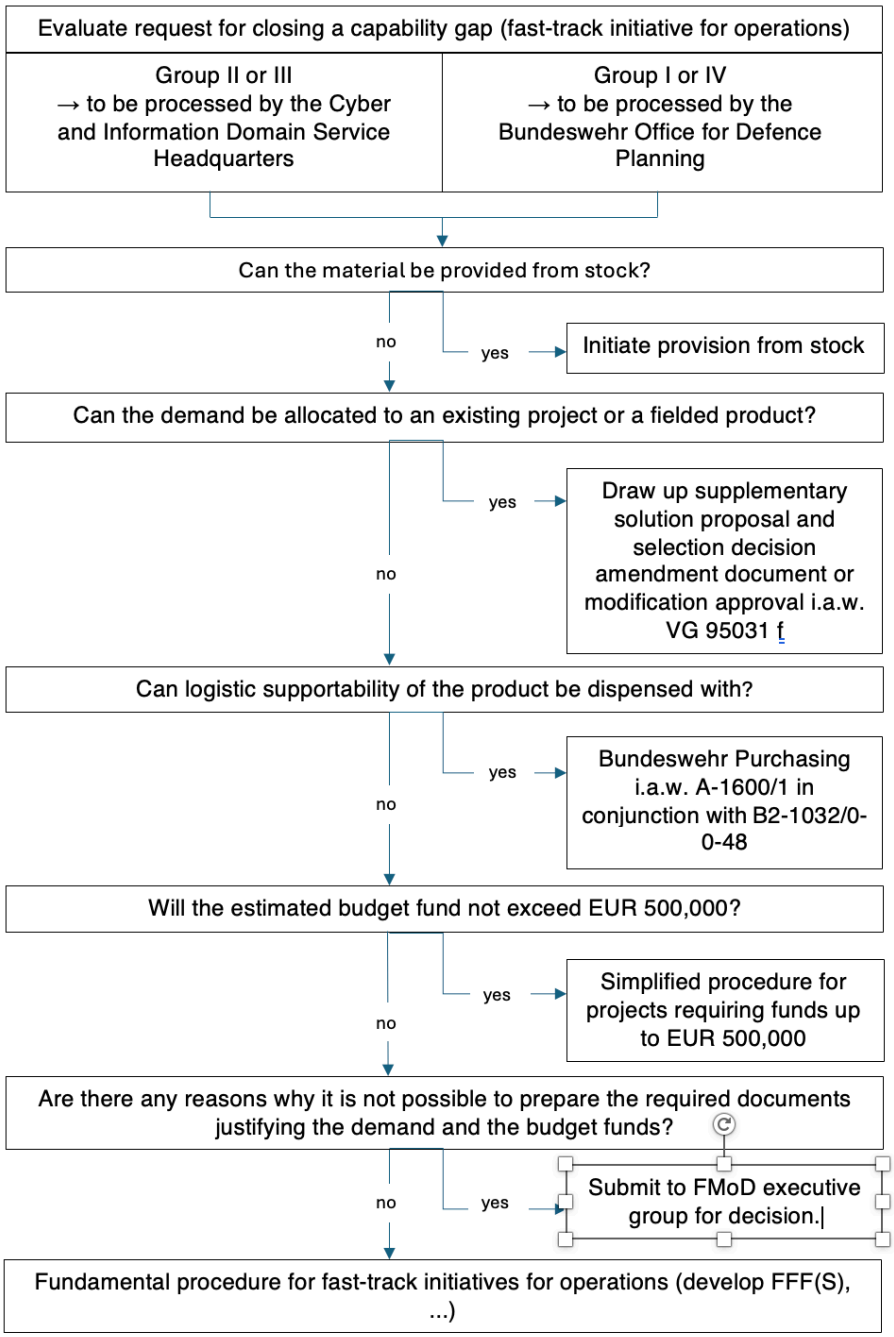

Figure 6. Flowchart Decision Process for Fast-Track Initiative. Adapted from Federal Ministry of Defense (2018).

The Fast-Track CPM basic procedure is similar to the basic procedure, which is also divided into three phases (see Figure 7) with a previous operational assessment by the Joint Forces Command.

- Operational Assessment
- Analysis Phase, Part 1 and 2
- Realization Phase
- In-Service Use (Operation) Phase

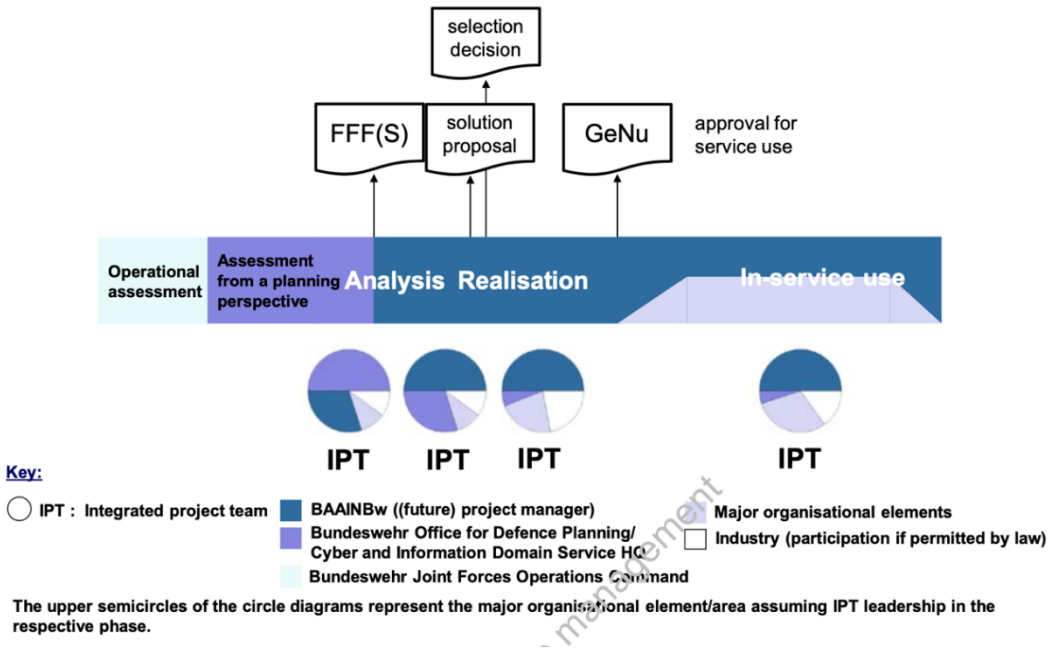

Figure 7. Sequence of Fast-Track Initiative. Source: Federal Ministry of Defense (2018).

The operational assessment for Bundeswehr fast-track initiatives is carried out by the Joint Forces Operations Command to confirm their operational need and urgency. Successful initiatives use German materiel stocks to address capability gaps and are forwarded to the Bundeswehr Office for Defense Planning for further steps (Wenzel, 2014, p. 98).

In Analysis Phase Part 1, fast-track initiatives undergo a process to identify urgent capability needs and create the FFF, detailing functional requirements and other critical elements like security measures, impact on national security, and life-cycle costs and timelines (Federal Ministry of Defence, 2018, p. 53).

Analysis Phase Part 2 develops a single solution proposal, focusing on swift realization and manageable risk, prioritizing available products, and including essential details like implementation timelines, life-cycle costs, and compliance with security interests. The Bundeswehr Office for Defense Planning or the Chief of the Cyber and Information Domain Service makes the final decision, setting the budgetary foundation for the realization phase (Federal Ministry of Defence, 2018, p. 54).

The Realization Phase involves meticulous planning, controlling, and monitoring by the project manager, focusing on efficient project execution and managing change requests, costs, and comprehensive risk management. This phase is characterized by an accelerated approach, with some elements deferred for rapid initiation being developed before service use approval (Federal Ministry of Defence, 2018, p. 55).

During the Contract Award phase, BAAINBw expedites the contracting process, including essential project management and quality assurance requirements. The project manager ensures the provision of services or supplies as agreed (Federal Ministry of Defence, 2018, pp. 55–56).

For fast-track initiatives, "Approval for Service Use" and "Phase of In-Service Use" follow the standard procedures outlined in the basic procedure. Exceptionally, for urgent operational needs bypassing standard documentation, a special process allows for direct submission to the FMoD for decision-making, using a specific template to replace standard documentation and expedite project initiation (Federal Ministry of Defence, 2018, p. 57).

C. THE U.S. ACQUISITION SYSTEM

1. Overview of the U.S. DOD Decision Support Systems—"Big A"

The goal of the U.S. DOD Decision Support System is to align with and bolster the National Defense Strategy by fostering a more powerful military force, underpinned by American technological advancements and a culture focused on high performance. This approach is intended to secure a continuous and significant advantage for the U.S. military. The system is structured to procure products and services that not only meet the requirements of its users but also enhance mission effectiveness, materiel readiness, and operational support in a quantifiable and prompt manner, all while ensuring the costs are fair and reasonable (Defense Acquisition University, 2013).

The Big "A" acquisition system consists of three primary decision-making support systems that guide defense programs: one for generating requirements, a second for resource allocation, and a third for process management. Each decision support system is fundamentally different, with often opposing objectives, but as shown in Figure 8, each interacts with another and plays a critical role in the acquisition process.

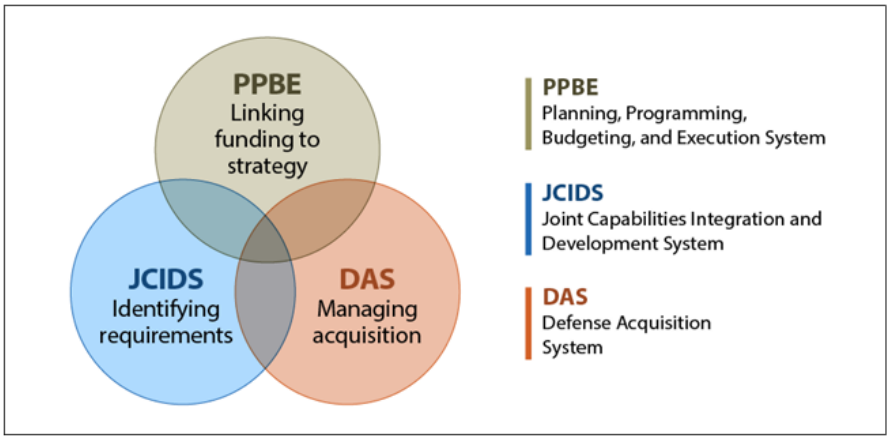

Figure 8. DOD Decision-Support Systems: Big "A" Acquisition. Source: McGarry (2022).

The Planning, Programming, Budgeting, and Execution (PPBE) Process is the method used by the Department of Defense for strategic planning, developing programs,

and determining resources. The PPBE process plays a crucial role in formulating plans and programs that align with the requirements of the National Security Strategy (NSS), all while adhering to budgetary limitations (Defense Acquisition University, 2013, p. 6).

The Joint Capabilities Integration and Development System (JCIDS) is a structured process developed by the chairman of the Joint Chiefs of Staff. It focuses on identifying, evaluating, and prioritizing deficiencies in joint warfighting abilities and proposing appropriate solutions to address these shortfalls. CJCS Instruction 3170.01 along with the JCIDS Manual outline the specific policies and procedures governing this requirements process (Defense Acquisition University, 2013, p. 6).

The Defense Acquisition System (DAS) is a framework that the Department uses to procure military equipment and services. The system emphasizes both innovation and accountability (Defense Acquisition University, 2013, p. 6).

In upcoming chapters, we explore in depth these key elements of the U.S. acquisition system, offering comprehensive insights into its various subdomains. Additionally, we investigate the historical development of these areas where applicable, to provide a clearer understanding of the system as it stands today.

2. Budgeting Process: Planning, Programming, Budgeting, and Execution (PPBE)

The PPBE system is utilized by the DOD to distribute resources across the armed forces, defense agencies, and various components. The system is comprised of four phases: planning, programming, budgeting, and execution. This annual procedure acts as a structure for the DOD's civilian and military leaders to determine funding priorities for programs and force management needs in alignment with strategic goals. DOD Directive 7045.14 outlines that PPBE is the department's yearly method for resource distribution over a multi-year planning period. The directive's goal is to equip the DOD with the most effective combination of forces, equipment, workforce, and support possible within budget limits. The Chairman of the Joint Chiefs of Staff Instruction characterizes the process as the secretary of defense's strategic planning system and the key mechanism for converting strategic guidance into decisions on resource allocation. The PPBE's purpose is to generate

the DOD's part of the president's yearly budget proposal to Congress and update the department's 5-year expenditure forecast, known as the Future Years Defense Program (FYDP). It stands as one of the DOD's three principal decision support systems related to acquisition, alongside the JCIDS for developing solutions to capability deficiencies and the DAS for overseeing acquisition initiatives (McGarry, 2022).

A critical component of the PPBE process is the appropriation of funds. In the DOD, these appropriations are commonly referred to as "colors of money." The different colors of money each represent a different category of appropriations designated for specific types of expenditures within the DOD budget. The main categories include Research, Development, Test and Evaluation; Procurement; Operations and Maintenance; Personnel; Military Construction; and Family Housing. Each category represents a "color" of money, with its specific rules on how it can be spent, time frames for spending, and congressional oversight mechanisms (CRS, 2017).

The "colors of money" concept plays a role in all phases of the PPBE process, each phase handling these categories aligned with its specific purposes and tasks. The planning phase focuses on defining strategic objectives and assessing future needs; understanding different "colors of money" shapes the early conceptualization of programs and initiatives. Planners consider what types of funding (e.g., R&D, procurement) will be necessary to achieve long-term goals, ensuring that future programs are viable within the constraints of available appropriations. During the programming phase, programs and projects are developed in detail, including the resources required to achieve objectives. Here, the DOD matches its planned initiatives with the appropriate categories of funding, considering the specific rules and time frames associated with each color of money. The programming documents outline how much funding from each category is needed for each program or project. The budgeting phase is where the alignment with the colors of money is most directly applied. In this phase, the DOD translates the program decisions into detailed budget requests, specifying amounts within each category of funding. The budget justifications submitted to Congress clearly delineate how funds are to be allocated across the different colors, ensuring that the requested appropriations meet the legal requirements and support the DOD's strategic priorities. Last, during execution, the colors of money

govern how the appropriated funds are spent. The DOD must ensure that funds are used in accordance with their designated purposes such as R&D funds for research and development activities, procurement funds for purchasing equipment, and so on. This phase involves the monitoring of expenditures, reprogramming of funds (if necessary and authorized), and compliance with the fiscal policies associated with each color of money (CRS, 2017). Throughout the PPBE process, the categorization of funds into different colors of money ensures that resources are allocated, budgeted, and spent in a manner that is consistent with legal and policy directives, supporting the DOD's mission while adhering to fiscal discipline and accountability.

a. Steps in the PPBE Process: Planning, Programming, Budgeting, and Execution Phases

The planning phase is the initial step in the DOD process for distributing resources. It involves coordinated efforts from both the civilian aspect of the Office of the Secretary of Defense (OSD), led by the undersecretary of defense for policy (USD Policy), and the military side, spearheaded by the Joint Chiefs of Staff (JCS) with contributions from the Services and Combatant Commands (COCOMs). While the USD (Policy) officially heads the PPBE process's planning stage, the Joint Chiefs of Staff (CJCS) chairman significantly influences it. This phase kicks off following the National Security Strategy (NSS) release by the National Security Council, incorporating perspectives from various federal agencies to outline national strategic objectives. These goals are further detailed in the secretary of defense's Defense Strategy Guidance (DSG) and the CJCS's National Military Strategy (NMS).

During this initial stage, the DOD conducts a comprehensive review of all prior strategic directions alongside the latest NSS. This review includes assessing changes in military capabilities, strategies, and policies as outlined in the DSG by the secretary of defense. The review also encompasses the NMS by the CJCS, which offers strategic guidance for aligning military efforts with the objectives set in the DSG, all while adhering to the overarching goals of the NSS. These documents collectively provide strategic planning input and broad programming recommendations for the Defense Planning Guidance (DPG), presenting a long-term perspective on security challenges and shaping

the investment strategy for the next 5 fiscal years as outlined in the Program Objective Memorandum (POM) to be developed by the military departments and defense agencies. Previously known as the Defense Planning and Programming Guidance (DPPG), this key strategy document was renamed the Defense Planning Guidance (DPG) in 2012 (Defense Acquisition University, n.d., pp. 1–2). Figure 9 shows stakeholders' collaboration during the PPBE process's planning phase that results in the DPG, helping to align service program priorities with that of the NSS, NDS, and NMS.

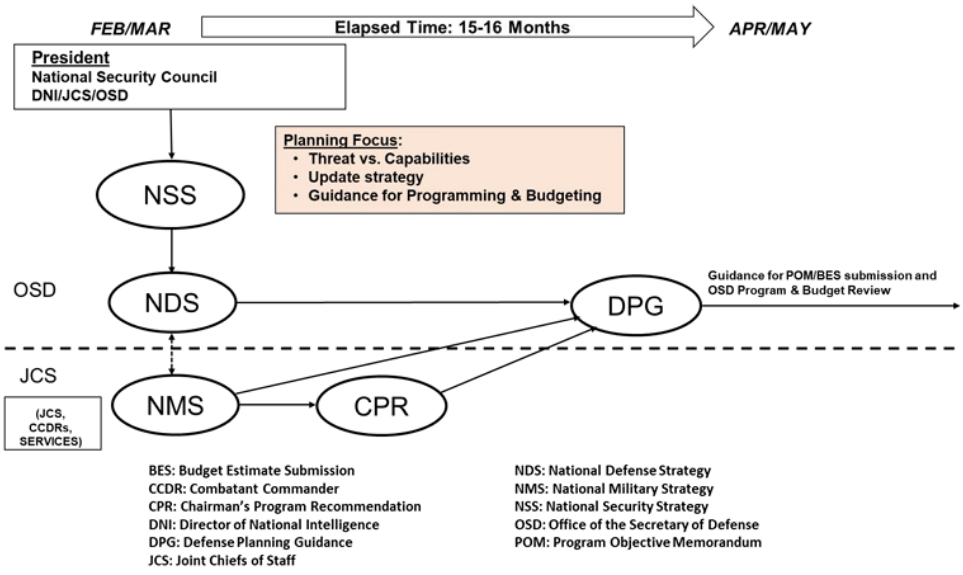

Figure 9. PPBE Planning. Source: Defense Acquisition University (2022, p. 13)

The Programming Phase in the DOD's resource allocation process is dedicated to assigning resources in support of the various roles and missions undertaken by the military departments (Army, Air Force, Navy, and Marines) and defense agencies. In this phase, decisions made during planning, along with guidance from the Defense Planning Guidance (DPG), other relevant documents, and congressional input, are converted into detailed, time-phased allocations of resources. These resources encompass forces, personnel, and funding, projected over a 5-year period. This systematic process, which involves rigorous review and approval, translates force objectives and personnel needs into financial terms,

offering insights into how current decisions will influence future defense capabilities. The director of Cost Assessment and Program Evaluation (CAPE) at OSD oversees the coordination of this phase, playing a key role in its execution. Figure 10 shows the programming phase, which begins with DOD components submitting a POM, an assessment and review by CAPE, and deconflicting any issues identified in the POM, and ends with the PDM approved by the secretary of defense.

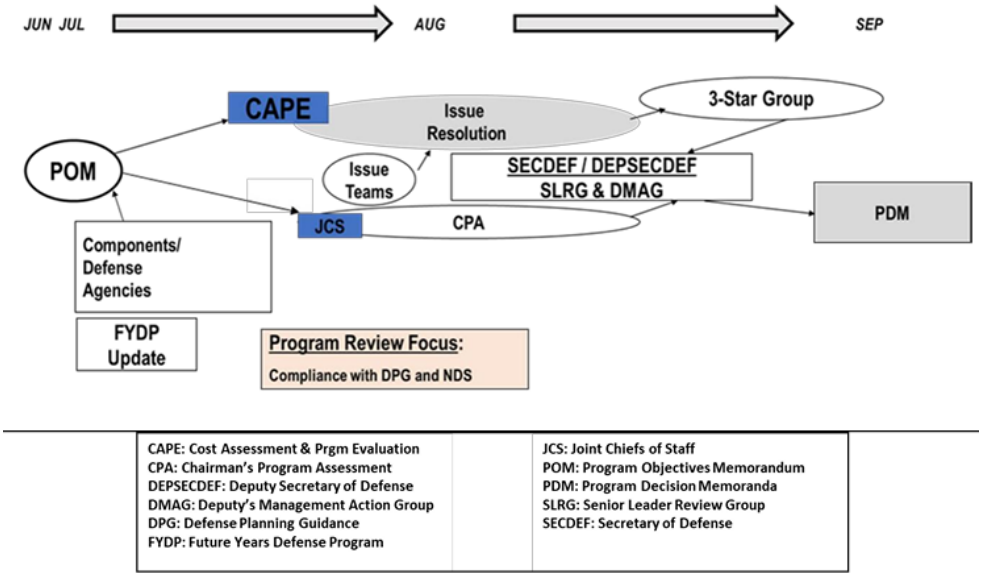

Figure 10. PPBE Programming. Source: Defense Acquisition University (2022, p. 14.)

During the PPBE process, the budgeting phase runs parallel to the programming phase, with each DOD component submitting their Budget Estimate Submission (BES) at the same time as their POM. This budgeting step translates the program-focused plans into a format that aligns with the structure of congressional appropriations, complete with detailed budget justification documents. Unlike the POM, which covers a multi-year outlook, the budget concentrates on a single fiscal year, providing a more detailed financial breakdown. After these submissions, budget estimates undergo a thorough examination by analysts from the Office of the Undersecretary of Defense (Comptroller) and the Office of Management and Budget (OMB) (Defense Acquisition University, 2013, pp. 7–8). Figure

11 illustrates the budgeting phase of the PPBE process, beginning with a review of the BESs conducted by the USD(C) and OMB. Services may be asked to justify or clarify items in their BES during budget hearing sessions before ending the process with an approved Program Budget Decision (PBD) by the secretary of defense for inclusion into the president's budget.

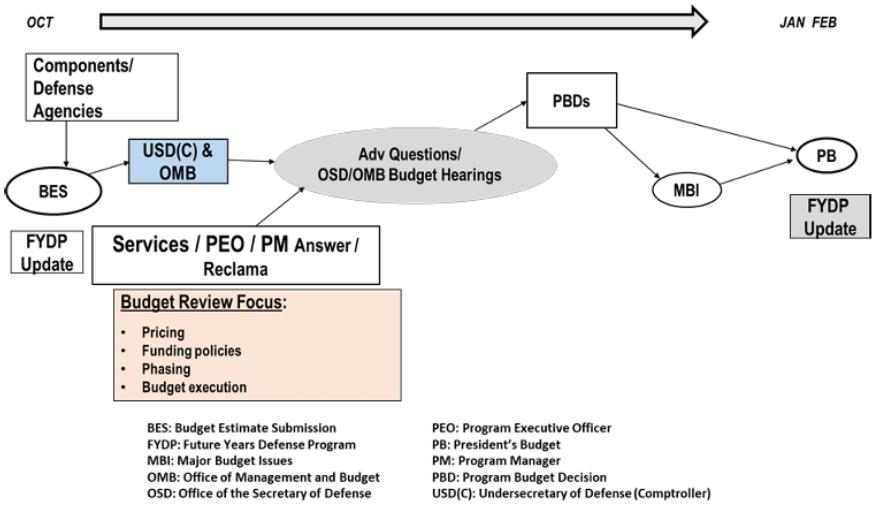

Figure 11. PPBE Budgeting. Source: Defense Acquisition University (2022, p. 15).

The undersecretary of defense (Comptroller) leads the Budgeting Phase, overseeing the coordination of this segment of the PPBE process (McGarry, 2022). A distinctive aspect of this process is the involvement of senior budget examiners from the OMB, who participate in DOD budget reviews to streamline the integration of the defense budget into the president's budget, a requirement that distinguishes the DOD from other federal agencies. Following these reviews, draft PBDs are prepared for each appropriation category, possibly leading to discussions with the components on specific issues. These PBDs are then escalated for final decisions by the secretary or deputy secretary of defense. There's a provision for components to request a reevaluation of PBDs through a Major Budget Issue (MBI) meeting, although such instances have been rare in recent years.

After the Budgetary Resource Management Decisions (RMDs) are completed, departments have time to revise budget numbers to align with these final decisions and create supporting documents for the OMB. This represents the second revision of the Future Years Defense Program (FYDP) during the annual PPBE process (Defense Acquisition University, 2013; McGarry, 2022).

In the execution phase of the PPBE process, the Office of the Secretary of Defense (OSD), along with DOD components, conducts an evaluation of fund obligations, expenditures, and the results of various programs. The goal of this execution review is to compare the objectives of the programs against the actual outcomes achieved. This analysis involves checking the components' adherence to established priorities and guidance from the secretary of defense, evaluating performance metrics, and analyzing the outcomes of programs. OSD personnel then scrutinize these evaluations and, in collaboration with the chairman of the Joint Chiefs of Staff (CJCS) and the Joint Staff, suggest any necessary adjustments (McGarry, 2022, p. 2).

Budget execution, also referred to as execution review, encompasses two interconnected dimensions. The first involves assessing the efficiency with which current appropriations are obligated and spent, essentially gauging the proportion of funds obligated and expended against the targets set by the Office of the Secretary of Defense (OSD) for those appropriations. While crucial, the second dimension holds equal if not greater significance: it evaluates the discrepancy between the DOD's stated objectives for its appropriations and the actual outcomes realized, focusing on achieved results. Should the execution review reveal that a program's performance goals are not being met, it may prompt recommendations for resource reallocation or programmatic restructuring to meet those targets. This scrutiny facilitates the DOD's compilation of its Annual Performance Report (APR), a requirement for all major Executive Branch agencies under the Government Performance Results Act (GPRA). The first dimension answers the question of whether appropriated funds are being effectively obligated and utilized, while the second examines whether the intended outcomes of using those funds are being attained. The APR's submission to Congress and the public, mandated by GPRA, aims to assess the Executive Branch's success in achieving the objectives outlined in the president's budget,

as adjusted by congressional amendments through various appropriations acts signed into law (Defense Acquisition University, n.d., pp. 3–4). Figure 12 shows the phases, actors, and outputs of the DOD PPBE process.

Phase	Description	Lead Actor	Output(s)
Planning	Review strategic guidance Assess threats Evaluate takeaways from war games Identify capability gaps and risks	Under Secretary of Defense for Policy	Chairman's Program Recommendations (CPR) Defense Planning Guidance (DPG) Fiscal Guidance (FG)
Programming	Translate planning decisions into program and resource requirements Consider program alternatives Develop five-year projections for forces, personnel, funding	Director, Cost Assessment and Program Evaluation (CAPE)	Program Objective Memorandum (POM) Resource Management Decisions (RMDs; programmatic)[a] Future Years Defense Program (FYDP) updates
Budgeting	Review budget justifications Consider funding alternatives Prepare budget submission	Under Secretary of Defense (Comptroller)	Budget Estimate Submission (BES) RMDs (programmatic)[a] FYDP updates (incorporating RMDs) DOD portion of President's budget request
Execution	Assess output to planned performance Adjust resources, as necessary	Multiple: Under Secretary of Defense (Comptroller) and DOD component financial managers	Assessments (internal reviews by OSD and DOD components) Reprogramming actions and transfers (including external interactions with Congress)

Figure 12. Phases, Actors, and Outputs of the DOD Planning, Programming, Budgeting, and Execution (PPBE) Process. Source: McGarry (2022).

b. Congressional and Department of Defense roles in Budget Determination

During the PPBE process, both Congress and the DOD play crucial, distinct roles in determining the defense budget. The interaction between the DOD and Congress in the budget determination process is dynamic. The DOD's budget request is informed by its

strategic planning and programming phases, which is then submitted to Congress for review. Congress exercises its constitutional power of the purse to modify, approve, or reject the budget request, influencing the final allocation of resources for defense. The approved budget reflects a compromise between the DOD's requirements and Congress's priorities, including considerations of national security, fiscal responsibility, and political factors (CRS, 2022, pp. 26–29). This chapter first presents a discussion of the role of the DOD during each phase of the PPBE process.

The DOD's role in the PPBE process is comprehensive and complex, covering a wide spectrum of activities designed to ensure that defense spending aligns with national security goals and priorities. This multifaceted process is divided into four integrated phases, each underpinned by rigorous analysis, strategic foresight, and a commitment to fiscal stewardship, aimed at fostering a defense posture that is both robust and responsive to the dynamic global security landscape.

The undersecretary of defense for policy (USD Policy) spearheads the planning phase for the DOD, orchestrating a comprehensive review of strategic documents including the president's NSS, the secretary of defense's National Defense Strategy, and the chairman of the Joint Chiefs of Staff's NMS (CRS, 2022, pp. 7–9). This review aims to shape the Defense Planning Guidance (DPG) to align with the current administration's policy objectives, addressing potential threats, desired force structure, readiness levels, and other critical factors. In this phase, the Office of the Secretary of Defense (OSD) also outlines fiscal guidance to forecast funding allocations for DOD components.

Additionally, the CJCS contributes significantly by issuing the NMS and presenting a program recommendation to the secretary of defense. This recommendation, a key element in formulating the DPG, reflects the CJCS's military advice on programming priorities, informed by an assessment of capability gaps conducted by the Joint Requirements Oversight Council. This assessment considers the priorities set forth by combatant commanders through integrated priority lists (IPLs) and the chief of the National Guard Bureau, ensuring a comprehensive understanding of military needs. The culmination of these efforts is the drafting of the DPG by the USD Policy, which provides targeted

guidance on investments and divestments across DOD components, thereby guiding the development of each component's POM (CRS, 2022a, pp. 7–9).

Transitioning from strategic planning to actionable programming, the Programming phase translates the previously identified objectives and requirements into detailed, resource-allocated programs. This phase is orchestrated by the director of the Cost Assessment and Program Evaluation (CAPE), who provides a comprehensive analytical foundation. This foundation includes an integrated dataset that encompasses the plans of combatant commanders and decisions related to force management, serving as the basis for assessing the POMs submitted by DOD components (CRS, 2022, pp. 8–11).

Following the submission of POMs by each DOD component, the chairman of the Joint Chiefs of Staff (CJCS) provides a chairman's program assessment to the secretary of defense. This independent review aims to shed light on the programming process, particularly evaluating how well the military departments have met the requirements of combatant commands. The director of CAPE then leads the program reviews, projecting resource requirements for the forthcoming 5 years and making necessary updates to the FYDP. In instances where program and budget reviews lead to disputes, the deputy secretary of defense has the authority to call a session of the deputy's Management Action Group to resolve these issues. Based on the outcomes of these program reviews, the secretary of defense may instruct the components to implement Resource Management Decisions (RMDs), guiding adjustments to align with strategic priorities and resource availability (CRS, 2022, pp. 8–11).

The budgeting phase marks a critical transition from strategic programming to financial specificity, wherein the program plans are meticulously translated into a comprehensive budget request. The budgeting phase is overseen by the Department of Defense (DOD) Comptroller, during which DOD components prepare their Budget Estimate Submission (BES) for the initial year of the Future Years Defense Program (FYDP). Following guidelines issued by the OMB, the DOD Comptroller examines these budget proposals to ensure appropriate funding levels and fiscal discipline, assess the timing of the proposed efforts across the funding timeline, and verify the practicality of these plans within the fiscal year. The culmination of this phase is the submission of the

finalized budget to OMB in December, which is then incorporated into the president's annual budget request to Congress, typically presented in February (CRS, 2022, p. 10).

In the execution phase, the OSD, along with DOD components, undertakes a thorough evaluation of how funds are obligated and spent, in addition to analyzing the outcomes of various programs. This execution review aims to compare the set objectives of programs against the actual results achieved. The assessment process involves examining adherence to established priorities, compliance with the secretary of defense's directives, and evaluating performance indicators and program outcomes. The OSD personnel then scrutinize these evaluations and, in collaboration with the chairman of the Joint Chiefs of Staff (CJCS) and the Joint Staff, propose necessary modifications to enhance program effectiveness and alignment with strategic goals (McGarry, 2022, p. 2). The role of Congress in the execution of the PPBE process is equally important and will be examined in further detail in the following section of this paper.

Congress plays a critical and influential role in the DOD's PPBE process, a role that encompasses legislative authority, budgetary approval, and strategic oversight (CRS, 2022). As stewards of the national defense policy and fiscal guardians of the federal budget, Congress's interactions with the PPBE process are multifaceted and vital for ensuring that DOD operations align with national security objectives and fiscal responsibility.

Congress possesses the constitutional authority to raise and support armies, maintain a navy, and make rules for the governance and regulation of the military services. This authority is exercised through the annual National Defense Authorization Act (NDAA), which authorizes DOD programs and sets policy, and the Defense Appropriations Bill, which provides the budgetary resources for these programs (CRS, 2022). During the PPBE process, the DOD submits its budget request, which includes funding for various programs and initiatives across the military departments and defense agencies. Congress reviews this request through its Armed Services and Appropriations Committees in both the House and Senate. These committees scrutinize the DOD's proposals, conduct hearings with senior defense officials, and make adjustments based on strategic assessments, fiscal considerations, and political priorities. The outcome of this

process is a legislatively approved budget that may include modifications to the DOD's request, reflecting Congress's priorities and strategic vision (CRS, 2022).

In execution on the DOD's PPBE process, Congress exercises a dual role of oversight and strategic guidance that is both comprehensive and critical for aligning defense operations with national security priorities and legislative intentions. Through rigorous oversight mechanisms, Congress ensures accountability and scrutinizes the DOD's adherence to authorized programs and efficiency of defense spending. This aim is accomplished via a series of hearings and testimonies, where DOD officials are summoned to discuss and justify their strategic and budgetary decisions before congressional committees, offering a transparent view into program performance and strategic alignment. Additionally, Congress mandates the submission of detailed reports and audits, often conducted in collaboration with the Government Accountability Office (GAO) and the DOD Inspector General, to furnish critical data that inform legislative decision-making. Through legislative provisions within the NDAA and other bills, Congress imposes specific requirements and restrictions on DOD programs and funding, thereby directly influencing policy directions and resource allocation (CRS, 2022).

Beyond oversight, Congress's strategic guidance is pivotal in shaping the DOD's planning and execution of defense initiatives. By setting policy directives and prioritizing funding through the budgetary process, Congress delineates the strategic contours within which the DOD operates, emphasizing areas such as technological innovation, readiness, and force modernization as reflective of national security imperatives. Engagements between Congressional members and military leadership through hearings, briefings, and direct communications foster a dynamic dialogue that further informs defense strategies and operational planning, ensuring that military capabilities and priorities are attuned to the legislative vision and the broader national interest.

Furthermore, Congress fulfills a pivotal role through its engagement with an extensive range of stakeholders, enhancing the discourse on defense planning and budgeting by incorporating diverse perspectives. This engagement is manifested through a series of public hearings where testimony from a wide range of stakeholders—including defense industry executives, military leaders, veterans' advocates, academic experts, and

policy analysts—is solicited, providing Congress with valuable insights into the multifaceted implications of defense policies and budgetary allocations (CRS, 2022).

In recent years, Congress has recognized the evolving challenges and the need for a more responsive PPBE process in today's dynamic global security environment, contemplating reforms to enhance the process's relevance and efficiency (CRS, 2022). This effort includes comparisons with private industry practices, other federal agencies, and international counterparts to identify potential improvements. Congress formally established a commission in the FY2022 NDAA to examine the effectiveness of the PPBE process, focused in respect to facilitating defense modernization (Cancian, 2023). While Congress has instituted specific organizational frameworks, financial regulations, and reporting mandates, the PPBE system operates not by legislative decree but through internal directives of the DOD.

This arrangement affords the DOD significant flexibility in implementing adjustments subject, however, to the endorsement of various stakeholders, most notably Congress, which ultimately holds decisive authority. In the release of the commission's interim report, the commission opted not to advocate for a complete overhaul but rather suggested several adjustments that essentially present Congress with an offer: enhanced transparency and a strengthened partnership in return for a reduction in its control over the defense budget. Additionally, it is suggested that the staff of the Office of the Secretary of Defense (OSD) should delegate more authority to the services and agencies. While the commission put forward a broad range of valuable suggestions regarding training, staffing, and information technologies, the emphasis on boosting agility stands out as a core theme. There is no current indication that Congress will utilize its authority to legislate the PPBE process and procedures into law (Cancian, 2023). The fundamental issue for Congress in the PPBE process is balancing the need for detailed oversight and control with allowing sufficient flexibility for the DOD to efficiently manage its resources and respond to emerging threats. Historical perspectives suggest that the PPBE system can adapt to various appropriations structures, indicating that technological advancements may facilitate efficient translation between programmatic and budgetary categories without sacrificing congressional oversight.

In summary, Congress's role in the PPBE process is indispensable, spanning the authorization of defense policies and programs, approval of the defense budget, and rigorous oversight of its execution. As the DOD faces new challenges and the pace of technological and strategic change accelerates, the dialogue between Congress and the DOD on potential PPBE reforms continues to be a critical element of national defense planning and resource allocation.

c. Alignment of Budgeting with Capability Requirements and Acquisition Planning

The relationship of budgeting funds with capability requirements and acquisition planning within the DOD's PPBE process is a critical aspect that ensures the effective and efficient use of resources to meet the military's strategic objectives. This alignment is foundational to maintaining the United States' defense posture and technological edge in a rapidly evolving global security environment.

The process begins with the identification of capability requirements, which are determined based on current and future threat assessments, strategic defense reviews, and operational needs of the armed forces. This step involves a thorough analysis of the military's existing capabilities against those needed to address anticipated security challenges. The Joint Capabilities Integration and Development System (JCIDS) plays a key role in this phase by providing a structured methodology for identifying, assessing, and prioritizing joint military capabilities (Defense Acquisition University, 2022).

Acquisition planning follows the identification of capability requirements. This phase focuses on determining the most effective and efficient means to acquire the necessary capabilities, whether through the development of new technologies, procurement of existing systems, or modification of current assets. The DAS guides this process, establishing the framework for managing the DOD's major acquisition programs. Acquisition planning includes considerations of cost, schedule, performance, and risk management, aiming to outline a clear path for the development and procurement of required systems and equipment (Defense Acquisition University, 2022).

The budgeting phase, as part of the PPBE process, directly aligns with both capability requirements and acquisition planning. During this phase, detailed financial plans are developed to secure the necessary funding for the identified capability needs and planned acquisitions. The budgeting phase involves translating programmatic plans and acquisition strategies into specific budget requests, which are then integrated into the DOD's overall budget proposal. This proposal, formulated within the constraints of the Future Years Defense Program (FYDP), outlines the allocation of resources over a multi-year period, ensuring that funding is available to support the acquisition and sustainment of required capabilities (Defense Acquisition University, 2022).

Finally, the execution phase of the PPBE process involves the actual allocation and expenditure of budgeted funds to implement the planned acquisition programs. This phase includes the awarding of contracts, management of program schedules, and oversight of development and procurement activities. Execution is closely monitored to ensure that programs are progressing as planned and that they remain aligned with the identified capability requirements and budgetary constraints. Adjustments are made as necessary to address any discrepancies, ensuring that the acquisition of capabilities is effectively supported by the allocated budget (Defense Acquisition University, 2022).

In summary, the relationship of budgeting with capability requirements and acquisition planning in the PPBE process is a dynamic and iterative one, ensuring that the DOD's financial resources are strategically allocated to develop and procure the capabilities necessary to achieve national defense objectives. This alignment is essential for ensuring that the military remains prepared to address current and future challenges, maintaining the United States' strategic advantage and operational readiness.

3. Requirements: Joint Capabilities Integration and Development System Process

The JCIDS process is critical to the DOD's strategic planning and acquisition framework. Instituted to ensure that the armed forces are equipped with the necessary capabilities to meet current and future threats, JCIDS facilitates a systematic approach to identifying, assessing, and developing military capabilities across the joint force (Joint

Staff J-8, 2018). JCIDS was established to respond to the need for a more integrated and joint approach to developing military capabilities, emphasizing interoperability and efficiency. The process is governed by the Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3170.01, which outlines the procedural guidance for the operation of JCIDS. At its core, JCIDS is designed to identify capability gaps within the military's existing and planned force structure and to propose solutions—both materiel and non-materiel—to address these gaps (Defense Acquisition University, 2022). The following sections provide a detailed overview of the JCIDS process, delineating its phases, objectives, and pivotal role in bolstering national defense.

a. Process of Capability Identification and Development

The first step in JCIDS involves evaluating the military's roles and tasks against current and expected threats to identify capability needs. These needs are described without specifying service, solution, or cost, focusing only on what must be accomplished and the required performance standards. Identified needs are then matched against current capabilities to find gaps that could hinder mission execution. These gaps are assessed for risk and urgency, influencing the development and validation of new capabilities. (Joint Staff J-8, 2018).

The JCIDS process requires thorough documentation that traces the origin of the capability requirements, identifies capability gaps, assesses associated risks, and outlines the timeliness of the capability solution needed. An Analysis of Alternatives (AoA) or similar assessment is subsequently performed to evaluate different solution approaches, recommending the most suitable options for informed decision-making. Follow-on documentation ensures traceability to validated capability requirements and includes measures of performance (MOP) and the resources required for developing the proposed solutions. For the JCIDS documentation to become actionable, it must be validated by an appropriate authority, typically within the DOD hierarchy. This validation process is designed to accommodate a wide range of timeliness regarding warfighter needs, from near-term to long-term solutions. Once validated, these documents inform technology

maturation, acquisition programs, and the development of the proposed capability solutions, thereby closing the identified capability gaps (Joint Staff J-8, 2018, p. A-1).

JCIDS is structured to address various operational timelines through distinct lanes: the Ongoing Contingency Lane, Anticipated Contingency Lane, and the Deliberate Lane. Each lane is tailored to different urgency levels for capability needs, ranging from urgent needs under 2 years to future needs extending beyond 2 years. The process facilitates the development and validation of capability requirements through specific documentation and streamlined staffing timelines, ensuring timely responses to capability gaps across the spectrum of military operations. Figure 13 below shows the JCIDS process lanes, depicting the operational timeline, required documents, and the JCIDS staffing timeline.

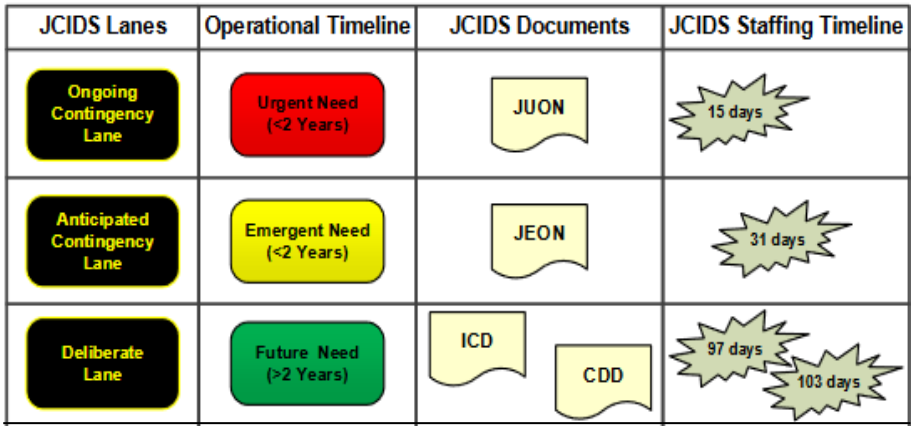

Figure 13. JCIDS Process Lanes. Source: Joint Staff J-8 (2018, p. A-2).

The Deliberate Process within JCIDS caters to long-term future needs, specifically those projected to be over 2 years away. This process primarily utilizes the Initial Capabilities Document (ICD) and the Capability Development Document (CDD) to articulate and validate joint military capability requirements and proposed solutions. The staffing duration for documents in the Deliberate Lane is meticulously defined—97 days for an ICD and 103 days for a CDD from submission to staffing and consideration by the Joint Staff Gatekeeper. This thorough process underscores the system's commitment to a detailed examination of capability needs and solutions for future operational scenarios (Joint Staff J-8, 2018).

Conversely, the JCIDS Urgent/Emergent Process lane is designed to swiftly address capability gaps in ongoing or imminent contingency operations within a 2-year period. Utilizing Joint Urgent Operational Needs (JUON) or Joint Emergent Operational Needs (JEON) documentation, this lane accelerates the approval of joint military capability requirements. The staffing timeline is notably expedited, with urgent needs being addressed within 15 days and emergent needs within 31 days. This fast-track approach exemplifies JCIDS's adaptability to rapidly evolving operational demands (Joint Staff J-8, 2018).

In essence, the JCIDS process employs a structured approach to capability development, from identifying and documenting capability gaps to validating and implementing solutions. Through its distinct lanes and document types, JCIDS ensures that the armed forces are equipped to address both immediate and future challenges, fostering a responsive, integrated, and capable joint force. This comprehensive process underscores the Department of Defense's strategic commitment to maintaining operational readiness and superiority in an ever-changing global security environment.

b. Integration of JCIDS with Other Acquisition Processes

The JCIDS functions in tandem with the Defense Acquisition System, as delineated in Department of Defense Directive (DoDD) 5000.01, necessitating early and sustained collaboration across the entire DOD enterprise. This collaboration is crucial for crafting capability requirements that are stable, technologically feasible, and economically viable. The JCIDS process, as outlined in CJCSI 5123.01 and further detailed in the JCIDS Manual, is designed to identify, describe, and justify the warfighting capabilities needed across the joint force, providing structured formats for each required document within the process (Defense Acquisition University, 2022).

The JCIDS role in the deliberate acquisition process begins when a Materiel Development Decision (MDD) is considered by an appropriate authority, usually upon validation of an Initial Capabilities Document (ICD). This document, which outlines one or more capability requirements that might necessitate a new materiel capability solution, sets in motion the DAS process. An Acquisition Decision Memorandum (ADM), conforming to specific references, documents the MDD, possibly directing the entry into

an appropriate acquisition phase based on the maturity of the capability solution for the validated requirements (Joint Staff J-8, 2018). Figure 14 shows how key documents such as the ICD and CDD from the JCIDS process are required to assist the Milestone Decision Authority (MDA) at key points in the DAS process in making informed decisions on a program.

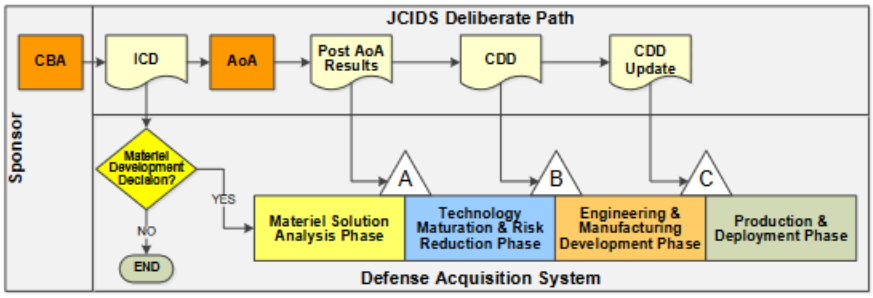

Figure 14. JCIDS Path into DAS. Source: Joint Staff J-8 (2018, p. A-A-12).

JCIDS's interaction with the DAS is integral to ensuring balanced trade-offs among life-cycle cost, schedule, performance, and procurement quantities in establishing and approving joint military capabilities. The process overview delineated in JCIDS documentation provides a structured pathway from the Materiel Solution Analysis Phase through Technology Maturation & Risk Reduction Phase, Engineering and Manufacturing Development Phase, and finally to the Production and Deployment Phase. Each phase involves crucial reviews that ensure the alignment of capability solutions with strategic requirements and operational priorities (Joint Staff, 2018).

In essence, the interaction between JCIDS and DAS underscores a systematic approach to capability development, ensuring that every step, from identifying capability gaps to validating and developing capability solutions, is rigorously examined to meet the strategic and operational needs of the joint force effectively. This integrated process ensures that the acquisition of new capabilities is not only aligned with current and future threats but also represents a judicious investment of resources to maintain the technological edge and operational readiness of the warfighter.

4. Defense Acquisition System—"Little A

a. Overview of the DAS

As a formalized framework, the DAS evolved over several decades, especially post-World War II, as the need for a structured approach to managing complex military procurement became evident. One of the key milestones in formalizing the DAS was enacting the Defense Acquisition Workforce Improvement Act (DAWIA) in 1990, which established more defined processes and standards for defense acquisition. The DAS has undergone numerous revisions and updates to adapt to changing defense needs, technological advancements, and strategic objectives (Fox, 2011).

The DAS, as detailed in DODD 5000.01, is a comprehensive framework for acquiring systems, subsystems, equipment, services, and technology vital for military operations and national security. At its core, the DAS is focused on maintaining the U.S. military advantage by ensuring efficient and effective procurement processes (OUSD A&S, 2022, p. 4).

Central to this system is delivering performance at the speed of relevance. This aspect emphasizes a rapid and flexible approach to meet the urgent needs of warfighters. It empowers program managers, simplifies acquisition policies, and encourages tailored approaches to acquisition. In tandem with this, the DAS incorporates a System of Systems Analysis, ensuring integration and interoperability of systems for effective execution of mission requirements. This approach involves a comprehensive analysis of capability portfolios, mission engineering, and the development of system capabilities (OUSD A&S, 2022, p. 4).

Innovation is also a pivotal theme within the DAS, where creativity and critical thinking are at the forefront of the acquisition process. Innovative practices, including commercial best practices and electronic business solutions, are encouraged to enhance efficiency and effectiveness. This culture of innovation seamlessly integrates with the necessity for secure capability development (OUSD A&S, 2022, p. 5)

The DAS also emphasizes competition and responsiveness. By promoting a competitive acquisition environment and integrating advanced technology into prototypes

and production systems, it aims to swiftly address military needs and operational requirements. This effort is complemented by a disciplined and efficient management approach, which underscores the importance of program discipline, focusing on cost, schedule, and performance parameters. Decentralizing responsibilities maximizes efficiency, empowering managers at various levels within the system (OUSD A&S, 2022, pp. 5–6).

Affordability and sustainability are also key considerations in the DAS. The system stresses the significance of balancing program requirements and costs, factoring in the constraints of available funding. It also strongly emphasizes life-cycle management to ensure the long-term sustainability and effectiveness of acquired systems. Moreover, the DAS proactively integrates emerging technologies like artificial intelligence, machine learning, and deep learning throughout the acquisition process. This forward-looking approach ensures that the U.S. military remains equipped with the most advanced and effective tools for national defense, securing its position as a leading military power (OUSD A&S, 2022, pp. 6–9).

b. Adaptive Acquisition Framework

The Adaptive Acquisition Framework (AAF), as detailed in DODI 5000.02, serves as the foundational structure of the DAS, heralding a new era of flexibility and agility in defense procurement practices. This framework accommodates the vast diversity of acquisition programs, ranging from major weapon systems to critical IT projects. It introduces a range of tailored acquisition pathways (see Figure 15), each crafted to address the unique characteristics, complexities, and risks associated with different types of programs. This level of customization ensures that the strategies employed are optimally aligned with each program's specific needs and timelines, facilitating the rapid delivery of critical capabilities to the warfighter (OUSD A&S, 2020a, p. 9).

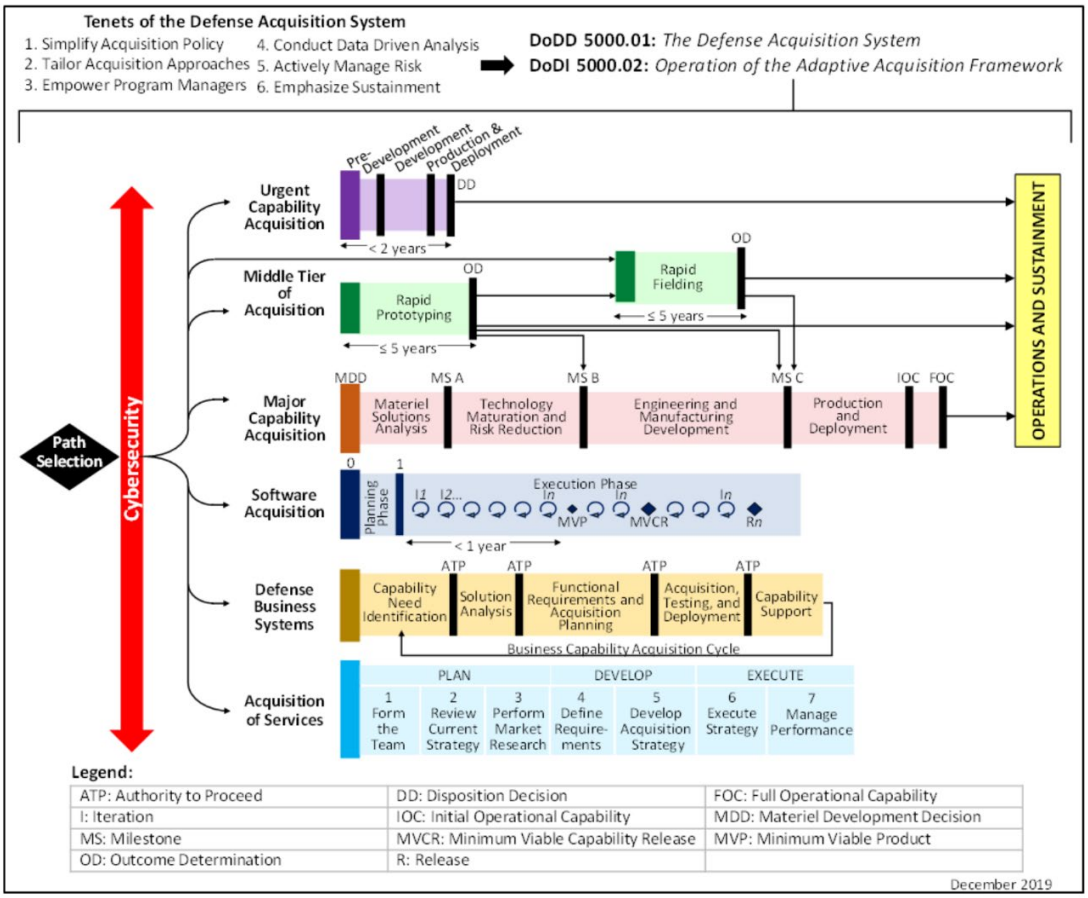

Figure 15. Adaptive Acquisition Framework. Source: OUSD A&S (2020a).

At the heart of the AAF is the principle of enabling rapid decision-making and streamlining processes, which is critical in a landscape characterized by fast-paced technological advancements and shifting global threats. By reducing bureaucratic red tape and emphasizing efficiency, the AAF significantly shortens the time from concept to deployment, ensuring that the U.S. military can quickly adapt to and counter emerging threats. Furthermore, the AAF supports the evolving needs of the U.S. military by fostering an environment that encourages innovation and the integration of cutting-edge technologies (OUSD A&S, 2020a, pp. 10–11).

The AAF is structured around six distinct pathways: Urgent Capability Acquisition, Middle Tier of Acquisition, Major Capability Acquisition, Software Acquisition, Defense Business Systems, and Acquisition of Services (see Figure 15). Each path is designed with

specific procedures, reviews, and documentation requirements, allowing program managers and decision authorities to best tailor the acquisition process to suit the program's needs. (OUSD A&S, 2020a, pp. 10–15).

By adopting this multifaceted approach, the AAF effectively addresses the broad spectrum of acquisition challenges, enabling the DOD to maintain technological superiority and operational readiness. It represents a significant shift toward a more responsive and adaptive acquisition system that can meet the demands of modern warfare and security challenges, ensuring that the U.S. military remains equipped with the most effective and advanced capabilities (OUSD A&S, 2020a, p. 3).

c. Major Capability Acquisition Pathway

The Major Capability Acquisition Pathway (see Figure 16) embodies a comprehensive and systematic approach to procuring and modernizing military-specific programs that deliver long-lasting capabilities. This pathway is integral to the strategic framework of defense acquisition, emphasizing a phased structure that spans the entire life-cycle of a program, from initial analysis to development, integration, testing, production, and sustainment. It caters specifically to major defense acquisition programs (MDAPs) and other complex acquisitions, offering a tailored methodology that considers each program's unique attributes, risks, and requirements (OUSD A&S, 2021b, pp. 8–10).

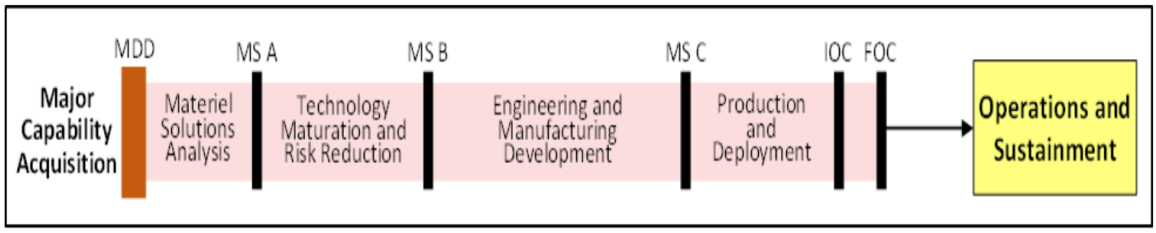

Figure 16. Major Capability Acquisition Pathway. Source: OUSD A&S (2021b).

This pathway commences with the Materiel Development Decision (MDD), marking the "entry point into the major capability acquisition process and is informed by

a validated requirements document and the completion of the analysis of alternatives (AoA)" (OUSD A&S, 2021b, p.11). Following the MDD, the Materiel Solution Analysis (MSA) phase undertakes the AoA alongside other activities necessary to define the system-specific requirements and plan the acquisition strategy. This leads to the Technology Maturation and Risk Reduction (TMRR) phase, aimed at reducing program risks to manageable levels before proceeding to the Engineering and Manufacturing Development (EMD) phase (OUSD A&S, 2021b, pp. 11–16).

Throughout these stages, the Major Capability Acquisition Pathway emphasizes rigorous testing and evaluation processes to validate system performance and readiness for production and deployment. The EMD phase, in particular, focuses on developing, building, testing, and evaluating the materiel solution, ensuring compliance with operational and implied requirements. This phase is critical for verifying that the system meets all validated requirements and supports the decision to transition into the Production and Deployment (P&D) phase (OUSD A&S, 2021b, p. 17).

The pathway culminates in the Operations and Support (O&S) phase, where the focus shifts to executing the Product Support Strategy (PSS), achieving materiel readiness, and ensuring the system's sustainment over its life cycle. This phase involves continuous monitoring and management of system performance, sustainment metrics, and implementation of corrective actions to maintain or improve system readiness and operational support performance (OUSD A&S, 2021b, p. 18).

d. Middle Tier of Acquisition Pathway

The Middle Tier of Acquisition (MTA) Pathway (see Figure 17) streamlines the defense acquisition process to deliver capabilities to the end user significantly faster than the traditional methods. This pathway is split into two primary tracks: rapid prototyping and rapid fielding, each designed with a clear focus and objectives to speed up military capabilities' development and deployment phases (OUSD A&S, 2019a, pp. 3–4).

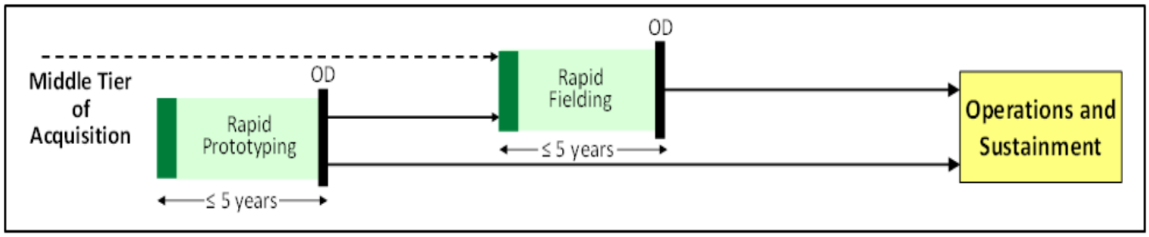

Figure 17. Middle Tier of Acquisition Pathway. Source: OUSD A&S (2019a).

Rapid prototyping aims to develop fieldable prototypes that can be demonstrated in an operational environment. The program's goal is to achieve a residual operational capability within 5 years of its start. This track encourages using innovative technologies to meet defined requirements quickly, emphasizing the importance of operational testing and evaluation to ensure that the prototypes effectively meet current operational purposes. Transitioning from prototyping, the rapid fielding track emphasizes utilizing proven technologies to swiftly produce and deploy new or enhanced systems. The objective is to initiate production within 6 months and complete the fielding process within 5 years, addressing urgent operational needs with minimal developmental delay. This approach leverages existing, reliable technologies to expedite delivery, shortening traditional developmental timelines (OUSD A&S, 2019a, p. 8).

e. Urgent Capability Acquisition Pathway

The Urgent Capability Acquisition (UCA) Pathway (see Figure 18) is a specialized process within the DAS designed to address and rapidly fulfill urgent operational needs and quick reaction capabilities. This pathway is essential for delivering critical capabilities to warfighters facing imminent threats or engaged in ongoing conflicts, ensuring they receive the support needed to succeed in their missions. It is tailored for projects that must be developed and deployed within a stringent timeline of less than 2 years, catering to high-priority needs that arise unexpectedly and demand immediate attention (OUSD A&S, 2019b, pp. 3–4).

Figure 18. Urgent Capability Acquisition Pathway. Source: OUSD A&S (2019b).

The UCA pathway stands out for its streamlined approach to acquisition, significantly reducing the bureaucracy and documentation typically associated with defense procurement. This streamlined process is facilitated by a set of tailored and expedited procedures and documentation requirements, enabling swift action and decision-making to meet the pressing demands of the battlefield. The DOD prioritizes these urgent acquisitions, ensuring they do not exceed predefined cost thresholds for research, development, testing, and procurement, thereby maintaining fiscal responsibility while addressing critical needs (OUSD A&S, 2019b, pp. 4–7).

f. Software Acquisition Pathway

The Software Acquisition Pathway is designed for the acquisition of custom software capabilities within the DOD, acknowledging the distinct challenges and rapid pace of technological change inherent to software development. This pathway (Figure 19) is an integral part of the AAF, aiming to deliver effective, resilient, supportable, and affordable software solutions to end users, facilitating execution at the speed of relevance and innovation (OUSD A&S, 2020c, pp. 3–4).

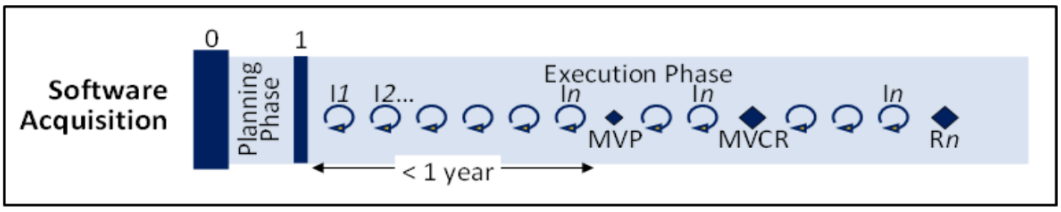

Figure 19. Software Acquisition Pathway. Source: OUSD A&S (2020c).

Key features of the Software Acquisition Pathway include encouraging modern iterative software development methodologies, such as Agile or Lean, and practices like DevSecOps, which incorporate security considerations throughout the development life cycle. This approach emphasizes human-centered design processes, ensuring software developments align with user needs and operational requirements. A cornerstone of this pathway is the active and continuous collaboration with end users throughout the software development process. This ensures that the delivered software accurately addresses users' priority needs, maximizes mission impact, and is subject to regular software performance and risk assessments. The pathway also promotes using existing enterprise services and leveraging category management solutions and enterprise software agreements, thus avoiding unnecessary duplication and fostering the use of shared services (OUSD A&S, 2020c, pp. 8–11).

g. Defense Business Systems

The acquisition of Defense Business Systems (DBS) is a critical component of the DOD's strategy to improve mission performance through the alignment of business practices and IT solutions (see Figure 20). DODI 5000.75 establishes the policy, responsibilities, and procedures guiding the acquisition of DBS within the DOD. This directive applies across the DOD components, encompassing various business capabilities and supporting business systems, including "as-a-service" (aaS) solutions (OUSD A&S, 2020b, pp. 5–6).

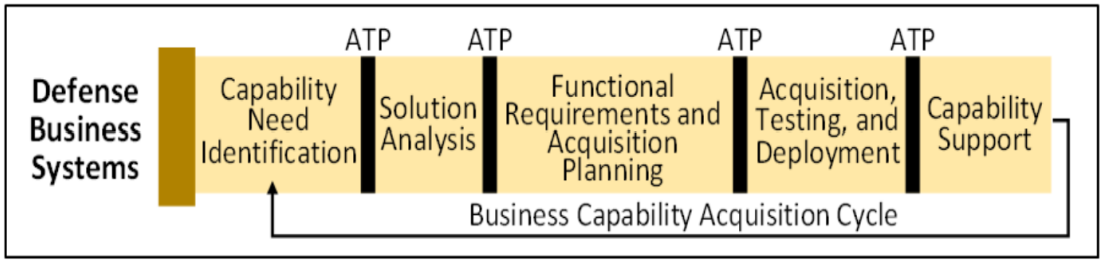

Figure 20. DBS Pathway. Source: OUSD A&S (2020b).

The core policy underpinning the acquisition of DBS emphasizes the alignment of acquisitions with commercial best practices, minimizing customization of commercial products to the extent practicable. This pathway mandates a collaborative approach between the functional (end-user) and acquisition communities to ensure the successful delivery of business capabilities, from initial process design through system deployment and ongoing support. The directive highlights the importance of change management and the prioritization of commercial off-the-shelf (COTS) and government off-the-shelf (GOTS) solutions whenever feasible (OUSD A&S, 2020b, pp. 5–6).

h. Acquisition of Services

DoDI 5000.74 details procedures and guidelines for acquiring services from private sector entities (OUSD A&S, 2021a). This directive is applicable across the DOD, including military departments, defense agencies, and other organizational entities, focusing on acquisitions exceeding the simplified acquisition threshold. This pathway exempts certain types of services, such as research and development, construction, and those directly supporting contingency operations, to ensure a focused and standardized approach toward procurement. The directive aims to streamline service acquisitions by establishing a comprehensive framework and enhancing efficiency, effectiveness, and compliance with federal and departmental regulations. The Acquisition of Services pathway mandates competitive, incentive-based, and performance-based contracting strategies to improve productivity and align with DOD objectives (Figure 21). Furthermore, the directive places significant emphasis on the training and development of the workforce involved in service

acquisition, recognizing the critical role of experienced and educated personnel in achieving procurement success (OUSD A&S, 2021a, pp. 4–7).

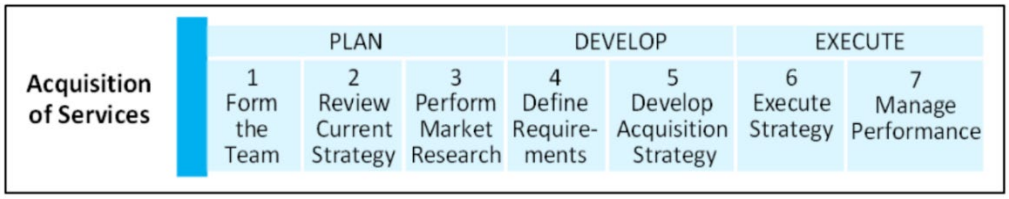

Figure 21. Acquisition of Services Pathway. Source: OUSD A&S (2021a).

This pathway also emphasizes the importance of a well-defined acquisition strategy for each procurement, incorporating performance management metrics to identify and mitigate potential risks. Independent management reviews are mandated for high-value contracts to assess performance, contractor management, and oversight effectiveness. The directive advises against bridge contracts by advocating timely planning and appropriate procurement strategies (OUSD A&S, 2021a, pp. 20–21).

D. SUMMARY

The background chapter lays the groundwork for understanding the intricate acquisition systems of Germany and the United States, highlighting their structures, processes, and underlying principles. This chapter described the German Integrated Planning Process, the U.S. Joint Capabilities Integration and Development System, the U.S. Planning, Programming, Budgeting, and Execution Process, and the Defense Acquisition System, shedding light on how these frameworks support the procurement of defense materials and services while ensuring operational readiness. With an emphasis on the importance of budgeting, planning, and acquisition processes, the chapter provided essential insights into each system's approach to meeting their respective military needs. This exploration sets the stage for a detailed comparative analysis, aiming to identify differences, similarities, and potential areas for integrating innovative acquisition strategies between the two systems.

IV. COMPARATIVE OVERVIEW OF GERMAN AND U.S. ACQUISITION SYSTEMS

This chapter provides a detailed comparative analysis of the German and U.S. defense acquisition systems. Our exploration aims to uncover the intricacies and overarching methodologies underpinning these systems, focusing specifically on their approaches to requirements definition, budgeting processes, and, most importantly, acquisition pathways. Both systems, deeply rooted in the operational and bureaucratic structures of their respective nations, operate under the umbrella of democratic governance. They are distinctly characterized by a threefold division: the initial establishment of requirements, the orchestration of budgeting processes, and the critical execution of acquisition pathways.

Crucially, these systems are operational within Western democratic standards. This system includes independent budgetary oversight and approval processes conducted by their respective legislative bodies, the Bundestag in Germany and Congress in the United States. Such mechanisms ensure accountability and transparency in the allocation and utilization of defense resources, a hallmark of democratic institutions.

Our analysis in this chapter primarily focuses on the differences and similarities between the German Integrierter Planungsprozess and the U.S. JCIDS in terms of the requirements process. Additionally, we dissect and contrast the budgeting and acquisition processes of both systems. A significant portion of our attention is dedicated to examining the acquisition pathways. This emphasis is particularly pivotal as we aim to investigate the feasibility and implications of potentially integrating elements of the U.S. middle-tier acquisition pathway into the German acquisition framework.

Considering the complex nature and extensive scope of these systems, our analysis is structured to highlight their key distinctions and parallels. This method offers a detailed and understandable insight into the differences between the systems. We explore how these systems, though operating under similar democratic principles, diverge or converge in their strategies and processes, particularly in fulfilling their national defense objectives and adapting to evolving military needs. This exploration lays a solid groundwork for further

discussions in our thesis, particularly regarding the adaptation and integration of innovative acquisition approaches.

A. COMPARATIVE ANALYSIS OF THE REQUIREMENTS PROCESS IN GERMAN AND U.S. DEFENSE ACQUISITION SYSTEMS

In this chapter, we undertake a comprehensive comparative analysis of the requirements processes within the German and U.S. defense acquisition systems, represented by the IPP and the JCIDS, respectively. These pivotal systems are cornerstones in their respective countries' defense procurement strategies, shaping how military requirements are identified, prioritized, and addressed.

The German IPP represents a multi-dimensional capability planning approach characterized by its dual-directional framework. This framework integrates a top-down approach, guided by strategic objectives, and a bottom-up approach, responsive to operational realities. This system seeks to align the capabilities of the Bundeswehr with both strategic imperatives and emerging operational demands, ensuring that operational readiness is maintained alongside strategic development (Rühle, 2014, pp. 40–41).

Conversely, the U.S. JCIDS, established in 2003, signifies a paradigm shift from a threat-centric to a capabilities-centric model in determining the requirements of the warfighter. Central to this system is the alignment of defense acquisitions with overarching strategic directives, as delineated in key documents like the National Military Strategy (NMS), National Defense Strategy (NDS), and National Strategy for Homeland Security. The JCIDS process revolves around a thorough assessment of military capability needs and gaps, culminating in the creation of an Initial Capabilities Document (ICD) for potential materiel solutions, which is subject to the scrutiny and approval of the Joint Requirements Oversight Council (CRS, 2009, pp. 3–4).

Both systems exhibit distinct methodologies and approaches to fulfilling defense requirements. Both systems, operating within the democratic structures of Germany and the United States, exhibit distinct methodologies and approaches to fulfilling defense requirements. This chapter aims to dissect these methods, focusing on their decision-making processes and how they adapt to the ever-evolving landscape of defense needs. Our

exploration underscores the key differences and parallels between the IPP and JCIDS, providing a clear perspective on how each system approaches modern defense procurement challenges. This analysis not only sheds light on the unique attributes of each system but also pave the way for further discussion on how these methodologies might inform or enhance each other, particularly in the context of integrating advanced acquisition strategies like the U.S. middle-tier pathway into the German framework.

B. SIMILARITIES OF THE IPP AND THE JCIDS PROCESS

Several similarities stand out between the IPP of the German defense acquisition system and the U.S. JCIDS. They are identified and explained in Table 1. These commonalities reflect a shared understanding of the complexities involved in modern defense procurement and capability development.

Table 1. Similarities Overview

Aspect	IPP	JCIDS
Stakeholder Involvement	Involves stakeholders from various military branches for a holistic understanding of requirements.	Involves a diverse range of stakeholders, including military services and defense agencies.
Flexibility	Demonstrates adaptability through an integrated approach combining strategic directives with operational insights.	Adapts to shifting needs by assessing and addressing capability needs and gaps.
Capability-Based Approach	Focuses on aligning capability planning with strategic directives and operational needs.	Emphasizes the identification and prioritization of capabilities based on broader strategic objectives.
Strategic Alignment	Ensures that capability development is in full harmony with Germany's defense strategic outlook.	Operates under the guidance of U.S. strategic documents to ensure that capabilities fulfill strategic objectives.

1. Stakeholder Involvement

In both systems, including a wide range of stakeholders is fundamental to ensuring that the defense acquisition processes align with broader operational and strategic needs. In the German IPP, stakeholders from various military branches, including operational commanders and defense planners, contribute to a holistic understanding of requirements, ensuring that the capabilities developed are strategically viable and practically applicable. Similarly, the U.S. JCIDS process involves diverse stakeholders, including military services, defense agencies, and, sometimes, non-military government departments. This cross-sectional participation ensures that the capabilities developed provide a comprehensive range of operational scenarios (Joint Staff J-8, 2018, p. 2). In both systems, this multi-faceted stakeholder involvement is crucial for a dynamic and responsive acquisition process, allowing for a more efficient and effective translation of strategic objectives into operational capabilities.

2. Flexibility

The flexibility and adaptability inherent in the IPP and JCIDS are pivotal for addressing the complexities of contemporary defense landscapes. The IPP demonstrates adaptability through an integrated approach combining strategic directives and operational insights, ensuring the Bundeswehr's capabilities remain relevant and forward-looking. This approach allows for dynamic responses to new threats and technological advancements. Similarly, JCIDS adapts its processes to meet the shifting needs of the U.S. military, focusing on assessing and addressing capability needs and gaps through an iterative process, exemplified by the development of ICDs. This approach enables JCIDS to swiftly adjust to changes in the operational environment, ensuring that acquisitions are responsive to the latest challenges and technological advancements (Joint Staff J-8, 2018, p. A-2). Both the IPP and JCIDS demonstrate a strong commitment to maintaining agility in the defense procurement process, allowing for timely and effective capability adjustments to address current and future requirements.

3. Capability-Based Approach

The capability-based approach is a core principle shared by both IPP and JCIDS, guiding their defense acquisition and capability development processes. This method emphasizes the identification, prioritization, and development of military capabilities required to meet current threats and future operational objectives effectively. In the IPP, this approach is manifested through a structured process that aligns capability planning with strategic directives and operational needs, ensuring that the Bundeswehr is prepared to face both present and anticipated challenges (Czernik, n.d., p. 30). Similarly, JCIDS focuses on assessing capability needs and gaps within the context of the broader strategic environment defined by the National Military Strategy and National Defense Strategy. This ensures that U.S. military acquisitions are not just reactive to current threats but are also proactively preparing for future operational landscapes (Joint Staff, 2018, p. A-5). By adopting a capability-based approach, both systems demonstrate a forward-looking perspective in military planning, emphasizing the need to develop versatile and adaptable capabilities that can support a wide range of future missions and security challenges.

4. Strategic Alignment

Strategic alignment serves as a critical link between the acquisition processes within the IPP and the JCIDS and their respective national defense and security strategies. This alignment ensures that decisions made in the acquisition cycle directly support and are coherent consistent with each nation's broader strategic goals and national security objectives. In the case of the IPP, the process is intricately designed to ensure that the capabilities developed are in full harmony with Germany's defense strategic outlook, effectively responding to the Bundeswehr's operational requirements within the scope of Germany's security policy and its commitments to international organizations like NATO (Hunte, 2021, pp. 32–33; Rühle, 2014, p. 39).

Similarly, JCIDS operates under the guidance of the U.S. National Military Strategy and National Defense Strategy, ensuring that the capabilities identified are essential for fulfilling the strategic objectives of the United States, including its commitments to international partnerships and organizations (Joint Staff, 2018, p. A-1).

Through this strategic alignment, both the IPP and JCIDS ensure that military planning and acquisitions are not isolated activities but integral components of a comprehensive approach to national security, driving the development of relevant and critical capabilities in achieving strategic imperatives and international collaborative goals.

5. Top-Down vs. Bottom-Up Planning

Both the IPP and JCIDS employ a dual strategy that intertwines top-down and bottom-up approaches in their acquisition processes, demonstrating a sophisticated balance between strategic directives and operational insights. Predominantly, both systems evolve from a top-down perspective, aligning capability development with overarching strategic and national defense objectives (Hunte, 2021, p. 33). This ensures that the capabilities being developed are in sync with the broader national security and defense strategy goals. However, recognizing the importance of practical, on-the-ground experience, both frameworks also incorporate a bottom-up approach (Joint Staff, 2018, p. A-7; Rühle, 2014, p. 40). This method allows for incorporating insights and feedback from operational forces, ensuring that the identified capabilities address real-world needs and emerging threats. Such a hybrid approach facilitates a dynamic and responsive planning process capable of adjusting to the evolving landscape of defense requirements while maintaining strategic coherence.

C. DIFFERENCES BETWEEN THE IPP AND THE JCIDS PROCESS

In the capability development landscape, the IPP and the JCIDS display a remarkable alignment in their core objectives and methodologies, emphasizing their shared commitment to enhancing defense capabilities. Among these parallels, a distinct divergence is evident in their approach to integrating planning and budgeting processes, highlighting a unique aspect of the IPP. These differences are shown in Table 2.

Table 2. Differences between the IPP and the JCIDS Process

Aspect	IPP	JCIDS
Planning and Budgeting Integration	Integrates budget considerations directly into the planning phase to align resources with strategic defense objectives	Identifies capabilities and operational needs first, with budget considerations addressed in subsequent phases
Management Approach	Employs a portfolio-structured approach for holistic capability development and flexible resource allocation	Utilizes a program-centric focus, emphasizing the development of individual programs through a structured process

1. Integrated Planning vs. Stand-Alone Capability Management

The integration of budgeting directly into the planning phase stands out as a significant difference between the two systems. This methodological distinction showcases the IPP's holistic approach, where budget considerations are intricately woven into the planning stages. This ensures that financial planning is not an afterthought but a fundamental aspect of capability development. Such an approach aligns resource allocation with strategic defense objectives, facilitating a seamless transition from planning to execution (Rühle, 2014, p. 41).

This emphasis on budget integration within the IPP contrasts with the JCIDS, where the budgeting process, though integral, often runs independently to requirements development. In the JCIDS framework, identifying capabilities based on operational needs typically precedes detailed financial considerations, which are addressed in subsequent phases. This sequence reflects a different emphasis in the planning process, where budget considerations, although crucial, follow the initial capability development phase.

The IPP's approach to merging planning and budgeting from the outset represents a strategic decision to ensure that capability development is consistently aligned with financial constraints and possibilities. This integration aims to prevent mismatches between planned capabilities and available resources, thereby enhancing the efficiency and effectiveness of defense planning. It fosters a disciplined planning environment where

financial feasibility and capability requirements are balanced, ensuring a pragmatic path toward capability enhancement.

2. Portfolio-Structured vs. Program-Centric Approach

The JCIDS traditionally operates with a program-centric focus, emphasizing individual programs' development through a structured requirements and acquisition process. Since there is no defense-wide capability portfolio framework, this approach tends to isolate programs, limiting opportunities for cross-program integration and synergies. Each program progresses through the JCIDS process independently, with requirements and budgets established outside the immediate control of Program Executive Officers and Program Managers, thereby constraining their ability to optimize across a broader spectrum of capabilities (Section 809 Panel, 2019, pp. 65–72).

In contrast, the Integrated Planning Process (IPP) in Germany incorporates a portfolio-structured approach, aiming to manage a collection of capabilities that align with strategic and operational goals. This method, as part of the IPP, allows for a holistic view of capability development, enabling the Bundeswehr to prioritize and allocate resources more flexibly and responsively across a range of projects and programs. Portfolio management within the IPP facilitates the identification of capability gaps, the assessment of potential solutions, and the strategic allocation of resources, emphasizing a coherent and integrated development strategy.

One key aspect of the IPP's portfolio approach is the inclusion of portfolio management, which is tasked with strategic capability development steering within the given financial constraints (BMVg, 2019, pp. 42–43). This contrasts with the JCIDS framework, where the acquisition community is often engaged after requirements and funding decisions have been made, to execute pre-planned requirements and budgets.

The distinction between JCIDS's program-centric model and IPP's portfolio-structured approach reflects differing methodologies in managing defense capabilities, with IPP integrating capability planning, budgeting, and operational needs into a unified strategic framework.

3. Conclusion

The German IPP and the U.S. JCIDS form the backbone of their respective nations' defense acquisition systems, with both sharing key objectives in capability development. Commonalities include stakeholder involvement, adaptability, a capability-based approach, strategic alignment, and integrated planning. However, they diverge significantly in their approach to capability management and budget integration. The IPP employs a portfolio-structured approach, promoting holistic capability development and flexible resource allocation, underpinned by strategic budget integration from the planning phase. This contrasts with JCIDS's program-centric focus, which tends to isolate programs, with budget considerations typically addressed after capability development. This fundamental difference underscores the IPP's comprehensive strategy in aligning resources with strategic goals, ensuring efficient and effective planning. These differences highlight each system's unique approach to defense planning, demonstrating tailored strategies to meet their operational and fiscal requirements.

D. BUDGETING PROCESS IN ACQUISITIONS: SIMILARITIES AND DIFFERENCES

In this section, we conduct an in-depth comparative analysis of the budgeting frameworks within the German and U.S. defense acquisition systems, specifically focusing on Germany's Budgeting Process integrated into the German IPP and the U.S. Planning, Programming, Budgeting, and Execution system. These processes are instrumental in determining how each country allocates its defense budget, directly influencing the strategic and operational capabilities of their armed forces.

The IPP in Germany is recognized for its holistic approach to integrating capability planning with budgetary considerations. The exploration into budgeting is, therefore, an extension of our discussion on the IPP, highlighting how financial planning is seamlessly integrated into the strategic and operational fabric of the Bundeswehr. Through this lens, we aim to provide a detailed examination of how budgeting underpins the IPP's objectives, ensuring the effective allocation of resources in alignment with Germany's defense needs.

Conversely, the PPBE system in the United States offers a structured and cyclical approach to defense budgeting, encompassing planning, programming, budgeting, and execution phases. Initiated in the early 1960s, the PPBE is designed to ensure that resource allocation is in strict alignment with the Department of Defense's strategic goals, as outlined in key strategic documents such as the National Defense Strategy and the National Military Strategy. This process is characterized by its emphasis on detailed programming and budgeting activities that lead to the formulation of the president's budget proposal to Congress, reflecting a comprehensive strategy for addressing the nation's defense requirements within fiscal limitations (Defense Acquisition University, n.d.).

Both the IPP and PPBE processes operate within the democratic frameworks of their respective countries, tailored to meet the unique defense planning and budgeting needs of Germany and the United States. This comparative exploration aims to dissect these budgeting methodologies, highlighting how each system manages the complex interplay between strategic defense planning and financial resource allocation. By examining the distinctive features and operational mechanics of the IPP and PPBE, this analysis illuminates the comparative advantages and challenges inherent in each approach, contributing to a broader understanding of how both countries navigate the intricacies of defense budgeting in support of national security objectives.

Since the IPP encompasses both the requirements and budgeting domains, it is inevitable that duplications will arise in the subsequent chapter when comparing the IPP with the PPBE process, which have already been observed in the preceding chapter during the comparison of the IPP and the JCIDS process.

E. SIMILARITIES BETWEEN THE PPBE PROCESS AND THE IPP

Several parallels are evident between the IPP in Germany's defense acquisition framework and the U.S. PPBE system. These similarities, as described in Table 3, underscore a mutual recognition of the intricacies inherent in contemporary defense planning and budgeting, highlighting the global challenges of aligning strategic military objectives with fiscal realities.

Table 3. Similarities between IPP and PPBE

Aspect	IPP	PPBE
Legislative Budget Process	In Germany, the defense budget is approved by the Bundestag, ensuring parliamentary oversight and alignment with national priorities.	In the United States, Congress reviews, amends, and authorizes the defense budget, reflecting democratic scrutiny and fiscal responsibility.
Strategic Alignment	The IPP ensures that defense planning is consistently aligned with Germany's national security strategies and objectives.	The PPBE integrates U.S. defense objectives with strategic planning, ensuring that budgeting supports overarching strategic goals.
Transparency and Oversight	The IPP involves structured engagements with the Bundestag, facilitating oversight and ensuring accountability in defense planning.	The PPBE process involves submitting detailed justifications and reports to Congress, promoting transparency and enabling effective oversight.
Structural and Procedural Nature	Both systems are schedule-driven, aligning defense planning and budgeting with the fiscal years and governmental budgetary cycles, showcasing a disciplined approach to fiscal management.	Both systems emphasize a forward-looking perspective, planning typically over a 5-year horizon to integrate defense capabilities with financial planning effectively.

1. General Legislative Budgeting Process

In both systems, the legislative bodies (the Bundestag in Germany and Congress in the United States) play a critical role in approving the defense budget. This process involves reviewing, amending, and ultimately authorizing the proposed defense budget, ensuring that allocated resources reflect national priorities and legislative intent.

2. Strategic Alignment

Both the German Institutional Planning Process (IPP) and the U.S. Planning, Programming, Budgeting, and Execution (PPBE) system are foundational to aligning defense planning and budgeting with their respective national security strategies. In Germany, the IPP ensures this alignment by methodically analyzing military needs against the backdrop of global security trends and national strategic objectives (Rühle, 2014, pp. 40–41). Similarly, the PPBE process in the United States articulates defense objectives through a systematic, iterative approach that integrates strategic goals into planning, resource allocation, and program execution (CRS, 2022, pp. 8–10). By doing so, both processes aim to ensure that military capabilities are developed and maintained in direct response to strategic imperatives and emerging threats. This strategic alignment is critical for sustaining the operational readiness and technological superiority of military forces, making them capable of addressing both current and future challenges in an unpredictable global security landscape.

3. Transparency and Oversight

Transparency and oversight are pivotal elements within both the German IPP and the U.S. PPBE system, with each tailored to the governance and legislative structures of their respective countries. In the United States, the PPBE process is designed to foster an environment of transparency through the submission of detailed budget justifications and comprehensive reports to Congress. This approach not only facilitates informed decision-making but also ensures that Congress can exercise its constitutional role in overseeing defense spending effectively. The process is structured to allow for rigorous scrutiny at multiple stages, enabling legislators to assess the alignment of budget requests with strategic priorities, operational needs, and fiscal responsibility (CRS, 2022, p. 26).

Similarly, in Germany, the IPP process incorporates mechanisms aimed at maintaining transparency and accountability within defense planning and procurement. Structured engagements with the Bundestag, Germany's federal parliament, are a cornerstone of this approach. These engagements include formal presentations, reports, and discussions that allow parliamentary committees to closely monitor and evaluate defense

initiatives, expenditures, and strategic alignment. Through these interactions, the Bundestag exercises oversight, ensuring that defense planning and budgeting processes are conducted in alignment with national security objectives and legislative expectations (Deutscher Bundestag, n.d.).

Both systems demonstrate a commitment to maintaining oversight and transparency in defense planning and budgeting, recognizing the importance of legislative scrutiny in the allocation of national defense resources. This commitment helps to foster a culture of accountability, where strategic decisions and financial allocations are subject to comprehensive review and justification. By institutionalizing these mechanisms, both Germany and the United States aim to ensure that their defense policies and programs are not only strategically sound but also fiscally responsible and aligned with broader national interests.

4. Structural and Procedural Nature

The Integrated Planning Process in Germany and the Planning, Programming, Budgeting, and Execution system of the U.S. Department of Defense both exemplify schedule-driven frameworks designed to strategically allocate defense resources efficiently. Despite their distinct national contexts, these processes share a disciplined approach to aligning defense planning and budgeting with fiscal years and government budgetary cycles, showcasing a remarkable similarity in their strategic financial management approach.

Both the IPP and PPBE adopt a forward-looking perspective, typically over a 5-year horizon, to ensure that the development of defense capabilities and operational needs are closely integrated with financial planning. Central to this integration are the German Finanzplan and the U.S. Future Years Defense Program (FYDP), which serve as strategic frameworks outlining medium-term financial intentions and priorities, including defense spending. This strategic foresight is crucial for the alignment of annual budgeting processes—Germany's Haushaltsplan and the U.S. defense budget—with long-term goals and fiscal strategies.

The process within the IPP is meticulously structured to synchronize defense planning with Germany's broader financial planning (Finanzplanung) and annual budgeting (Haushaltsplanung), from the initial assessment of defense requirements to the formulation of budget proposals within the governmental budgetary framework. Conversely, the PPBE system integrates into the U.S. defense mechanism, with a strong emphasis on aligning with strategic defense objectives while ensuring compliance with Congressional budgetary oversight, from strategic guidance through to the execution of the approved budget (McGarry, 2022, pp. 1–2; Rühle, 2014, pp. 37–39).

Despite procedural and integrational differences within their respective defense and government budgeting structures, both IPP and PPBE are committed to a systematic, schedule-driven methodology. This approach ensures that defense initiatives are not only funded but also executed in a manner that aligns with broader strategic goals and financial constraints. The inclusion of legislative oversight, with critical roles played by the German Bundestag and the U.S. Congress in reviewing and approving annual budgets, further emphasizes a shared commitment to accountability and transparency in defense spending. Together, these aspects highlight a common understanding of the importance of synchronizing military planning with fiscal policies to achieve strategic objectives within the constraints of national financial resources, reflecting the shared values and methodologies underpinning both the IPP and PPBE systems.

F. DIFFERENCES BETWEEN THE IPP AND THE PPBE PROCESS

Despite these parallels, the IPP and PPBE also exhibit distinctive features that underscore the varied approaches taken by Germany and the United States in defense planning and budgeting, reflecting their unique policy environments and strategic priorities. These features are described in Table 4.

Table 4. Differences Between IPP and PPBE

Aspect	IPP	PPBE
Integration vs. Serialization	The IPP adopts an integrated approach, where planning and budgeting are conducted simultaneously, enhancing agility and responsiveness to changing defense needs.	The PPBE follows a sequential process, where requirements are established before budgeting, potentially introducing delays in adapting to new threats.
Legislative Oversight	In Germany, the Bundestag's approval is required for acquisitions exceeding a certain threshold, focusing on major investments and budget allocations.	The U.S. Congress exercises broader authority, impacting budget decisions and specific acquisition programs, reflecting a more granular level of control.
Budget Categories "Color of Money"	The IPP operates under a consolidated budget framework, allowing for flexible allocation of resources without stringent categorization.	The PPBE system uses specific budget categories ("colors of money"), aiming for transparency but possibly limiting flexibility in fund reallocation.

1. Integration vs. Serialization

The German IPP and the U.S. PPBE system present contrasting approaches to the integration of defense planning and budgeting. A key differentiator between the two lies in their treatment of requirements and budgeting processes. The IPP exemplifies an integrated approach where budgeting is seamlessly incorporated into the requirements process. This methodology facilitates a simultaneous consideration of what is needed and what is financially feasible, ensuring that capability development and operational planning are inherently aligned with budget constraints from the beginning. This integration helps streamline decision-making, as it allows for a holistic view where operational requirements and budgetary considerations are balanced in real-time (Rühle, 2014, pp. 38–39).

Additionally, in Germany, the Bundestag's involvement is mainly centered around approving acquisitions that exceed €25 million through the Parliamentary Loop Acquisition Program and endorsing the defense budget within the annual federal budget.

Discussions are underway to reassess the Parliamentary Loop mechanism, with suggestions to either raise the approval threshold beyond €25 million or eliminate the process entirely. Critics argue that while intended to ensure transparency and accountability, the Parliamentary Loop can lead to delays, increases costs due to renegotiation and lobbying, and hinders the government's capacity for prompt decision-making in defense procurement. This ongoing debate signifies a critical examination of how to effectively balance parliamentary oversight with the need for efficiency and flexibility in military acquisitions (BMWK, 2023, pp. 6–10).

Conversely, the PPBE process, while comprehensive and methodical, adopts a more sequential approach. Requirements, as identified through the JCIDS, must first be established and approved before they can be considered within the budgeting process. This sequence means that the delineation of defense needs and the allocation of resources to meet those needs occur in distinct phases and independent from each other (Section 809 Panel, 2019). While this approach allows for a thorough vetting of requirements before committing financial resources, it introduces a time lag between identifying operational needs and securing budget approval to address them. This sequentiality can potentially slow down the adaptation to emerging threats and the procurement of necessary capabilities.

The IPP's integrated model aims to ensure that financial planning is not an afterthought but a critical component of the requirements determination process. In contrast, the PPBE's sequential model emphasizes a deliberate, step-by-step progression from defining requirements to securing the budget. This difference in approach highlights the IPP's focus on agility and alignment between planning and budgeting, compared to the PPBE's emphasis on thoroughness and the meticulous validation of requirements before budgetary consideration.

2. Legislative Oversight in Budgeting: Bundestag vs. Congress

Exploring the roles of the German Bundestag and the U.S. Congress in military acquisitions unveils a nuanced landscape of budgetary oversight and control. In Germany, the Bundestag's involvement is mainly centered around approving acquisitions that exceed

€25 million through the Parliamentary Loop Acquisition Program and endorsing the defense budget within the annual federal budget. Additionally, the Bundestag must also be involved in submissions to the Budget Committee if costs of current projects increase by more than 15%, highlighting a mechanism for fiscal oversight (Federal Ministry of Defence, 2018, p. 66). However, once these approvals are granted, the Bundestag's direct influence on specific defense projects becomes notably limited, illustrating a structured yet constrained oversight role (BMWK, 2023, p. 6).

In contrast, the U.S. Congress has greater authority and influence over the PPBE process, manifesting in a wider impact on military acquisitions and budget decisions. Congress exercises its authority through a combination of budgetary control, legislative mandates, oversight, and specific reporting requirements, ensuring that defense spending aligns with national priorities and legislative intent.

Through the appropriations process, Congress not only allocates funding to the DOD but also to specific acquisition programs, effectively determining their scope and continuation. This budgetary power allows Congress to directly influence the direction and scale of defense projects, with the ability to modify, restrict, or halt funding based on program performance, strategic value, and cost-effectiveness. Legislative mandates further extend Congress's reach, allowing it to direct the initiation, continuation, modification, or termination of specific defense programs through laws such as the NDAA (Barkley, n.d.).

Congressional oversight, exercised through committee hearings and reports, scrutinizes program execution, budget adherence, and outcomes, holding the DOD accountable for delays, cost overruns, and failures. This oversight often results in legislative or budgetary adjustments that directly affect the execution and priorities of DOD acquisition programs. Additionally, Congress imposes reporting requirements and restrictions on program funds, ensuring transparency and compliance with legislative directives. This multifaceted involvement enables Congress to maintain a significant degree of control and oversight over the PPBE process and individual acquisition programs, balancing departmental flexibility with the need for accountability and strategic alignment with U.S. defense objectives (CRS, 2022, pp. 28–30).

3. Budget Categories—"Colors of Money"

In the U.S. Department of Defense, financial management is categorized through the "colors of money" concept, which designates funds into specific categories such as research and development, procurement, operations and maintenance, and personnel (CRS, 2017). This framework imposes a strict regulatory environment on how funds are to be utilized, aiming for transparency and accountability but at the cost of flexibility. The need to adhere to these categories can lead to inefficiencies, particularly when transferring funds between categories to meet evolving program requirements, necessitating complex bureaucratic processes.

Conversely, the Bundeswehr operates within a budgetary framework that is consolidated under Einzelplan 14, a single plan within the federal budget that encompasses all defense-related expenditures. Unlike the U.S. system, the German model does not strictly segregate funds into rigid categories akin to the colors of money. This integrated approach allows for a more fluid allocation of resources, enabling the Bundeswehr to adjust and reallocate funds more freely across different needs and priorities. As funds are centrally located within Einzelplan 14, this system supports a holistic view of resource management, fostering a degree of flexibility in how financial resources are directed toward various military programs and projects (BMVg, 2023c).

This fundamental difference in budgeting philosophy highlights the contrasting approaches to fiscal management between the two systems. The U.S. DOD's "colors of money" ensures strict compliance with the intended use of funds but can restrict rapid response to changing operational demands. In contrast, the German Bundeswehr's more unified budget structure under Einzelplan 14, devoid of stringent categorization, allows for greater adaptability and responsiveness, although it also requires strong internal controls and oversight mechanisms to ensure that such flexibility is not misused

4. Conclusion

This chapter presented a comparative analysis of the German IPP and the U.S. PPBE, focusing on their budgeting processes within defense acquisitions. It revealed that while both systems aim to align defense spending with strategic goals, they approach the

task differently. The IPP integrates budgeting into capability planning, promoting a seamless financial and operational planning alignment. In contrast, the PPBE follows a more sequential method, separating the establishment of requirements from budgeting decisions.

Key similarities of the two systems include strategic alignment and legislative oversight, demonstrating a mutual commitment to ensuring defense expenditures reflect national priorities and strategic objectives. However, the IPP's integrated approach contrasts with the PPBE's phased sequence, highlighting differences in flexibility, responsiveness, and the extent of legislative influence in defense budgeting.

The IPP and PPBE represent distinct paths toward the common goal of strategic and fiscal alignment in defense planning. This exploration into their methodologies not only underscores the unique aspects of each system but also points to potential areas for cross-learning and improvement in defense budgeting practices globally.

G. COMPARISON OF THE ACQUISITION PROCESS AND PATHWAYS OF THE AAF AND THE CPM

In this section, we conduct a comparative analysis between the United States' Adaptive Acquisition Framework and Germany's Customer Product Management process among their respective acquisition pathways. The frameworks are the respective country's strategies for defense procurement and capability development and reflect the complexity of military requirements and technological progress. This study is intended to highlight the core principles, methodologies, and operational dynamics based on those systems while indicating the differences and similarities between them in approaches to defense acquisitions. By analyzing the AAF and CPM, we aim to show best practices, identify areas that need improvement, and discover chances for learning from each other and collaborating in defense acquisitions.

In comparing the U.S. AAF with the German CPM process, it is essential to note that the CPM's starting point for direct comparison should be at the onset of the Analysis Phase Part 2. This distinction is crucial because the initial part of the analysis phase in CPM is conducted under the Integrated Planning Process and not within the CPM framework

itself. Therefore, the transfer of the Capability Gap and Functional Requirements document (FFF) from the Bundeswehr Office for Defence Planning to the project manager at BAAINBw marks the true beginning of the CPM's actionable phase, setting the stage for solution development and subsequent acquisition activities.

In our comparison of the AAF and CPM, we take a nuanced approach. Instead of dividing our analysis into separate lists of similarities and differences as we did with previous comparisons, we merge these aspects into a cohesive discussion. This method reflects the complexity of comparing AAF and CPM, where initial similarities often give way to significant differences upon closer inspection. By examining each aspect together, we can more accurately depict how each framework operates in its unique context, highlighting both the shared goals and the distinct methods they employ to achieve these objectives. This approach allows for a more detailed and insightful comparison, recognizing the subtleties that differentiate these two processes. Table 5 shows the comparison between the AAF and the CPM Framework.

Table 5. Comparison of AAF and CPM

Aspect	Adaptive Acquisition Framework	Customer Product Management
Acquisition Pathways	Offers six distinct pathways for flexibility and adaptability, including a specific pathway for rapid software acquisition	Primarily utilizes two pathways: one for Major Defense Acquisition Programs and another for Urgent Operational Needs
End-User Involvement	Blends formal and informal practices with significant emphasis on operational testing and evaluation for end-user feedback. Not mandatory for Programs.	Incorporates end-user feedback comprehensively throughout the process, with formal operational testing and "Einsatzprüfung." Mandatory for every Program.
Milestones and Decision Reviews	Employs structured milestones and decision reviews as critical checkpoints to assess and approve project progression	Utilizes Quality Gates for a flexible approach to project assessment, allowing strategic placement throughout the life cycle
Decision Authorities	Centralized MDA makes critical decisions, ensuring projects meet strategic, performance, and budgetary criteria	Implies a more decentralized, project manager-centric approach without a formalized MDA, focusing on agility and project-specific decision-making

1. Acquisition Pathways

In the realm of acquisition frameworks, navigating through various pathways tailored to the specific needs and timelines of projects is crucial. The AAF exemplifies this adaptability by offering six distinct pathways, catering to the diverse spectrum of DOD requirements. These pathways are designed to facilitate rapid and flexible responses to changing defense needs and technological landscapes. In turn, the existence of such pathways enables tailored acquisition strategies that align closely with each project's unique requirements, complexities, and timelines. This customization facilitates more efficient and effective outcomes, optimizing the process to meet specific project needs.

Notably, the AAF gives project managers the freedom to choose the best pathway at the start of a project and offers the ability to switch between pathways (OUSD for Acquisition and Sustainment, 2020, p. 9). This adaptability is a significant advantage, enabling the DOD to respond more adeptly to unforeseen challenges or to capitalize on emerging opportunities.

Additionally, the AAF is designed to expedite the delivery of capabilities to the warfighter, especially through pathways like the middle tier of acquisition. This focus on speed is crucial for maintaining a competitive edge, ensuring that technological and operational advantages are quickly realized on the battlefield. Also within this framework, the software pathway is specifically intended to streamline the development and deployment of critical software capabilities. Recognizing the rapid pace of software innovation and its pivotal role in modern warfare, this pathway facilitates faster delivery by adopting agile development practices, continuous integration and delivery, and iterative feedback loops. The intent is to ensure that software can be updated and adapted at the speed of relevance, allowing for immediate system performance and security improvements to meet emerging threats and operational needs.

In contrast, the CPM process primarily utilizes two acquisition pathways, as practiced within a different organizational context. These pathways are structured to meet the broad spectrum of requirements: one pathway focuses on Major Defense Acquisition Programs, aligning with traditional and comprehensive acquisition processes, while the

other addresses Urgent Operational Needs, offering a fast-track approach to rapidly fielding capabilities in response to immediate operational demands. The CPM's structure, emphasizing these two pathways, reflects a streamlined approach aimed at efficiency and rapid response to critical needs. However, the lack of explicit flexibility to switch between pathways in the CPM might limit responsiveness to unforeseen changes or emerging opportunities, potentially leading to suboptimal outcomes. This more rigid structure could lead acquisition professionals to miss chances to exploit emerging technologies or accelerate delivery, and the one-size-fits-all approach might not always provide the most efficient or effective solution for every project.

In the German CPM structure, where only two pathways currently exist, there seems to be a gap for a pathway that offers more flexibility and rapid capability delivery, akin to the Middle Tier of Acquisition pathway found in the AAF. This missing middle pathway could significantly enhance the German defense acquisition system by providing a balanced approach, enabling quicker adaptation and implementation of new technologies to meet evolving defense requirements. Integrating a pathway that mirrors the MTA's flexibility and speed could bridge this gap, making the acquisition process more responsive and better suited to the fast-paced nature of modern military operations and technological advancements.

Additionally, the absence of a specific pathway for software acquisition within the CPM may pose challenges, given the increasing prevalence of software in major weapon systems and the anticipated rise of software components in future military equipment. This omission could hinder the adaptation to the rapidly evolving landscape of defense technology, where software plays a critical and expanding role (Federal Ministry of Defence, 2018).

This comparison highlights a fundamental difference in how the AAF and CPM approach the concept of acquisition pathways. While the AAF provides a broad and adaptable framework with multiple pathways and the option to transition between them, the CPM focuses on two well-defined pathways with no specified mechanism for switching between them. This distinction underscores the varying strategic approaches to acquisition

within different organizational and operational contexts, each with its merits and considerations.

2. End-User Involvement

End-user involvement plays a foundational role in the success of any acquisition process, acting as the linchpin that ensures the final product not only meets the specified requirements but is also practical, effective, and fully aligned with the operational context it is intended for. This involvement is crucial for bridging the gap between what is technically feasible and what is operationally necessary, ensuring that the product truly enhances the capabilities of its users.

In the CPM process, end-user involvement is critical and comprehensive, ensuring that acquisitions align perfectly with operational requirements and user expectations. From the outset, users play a pivotal role in defining requirements, and this influence continues throughout the analysis, development, and solution selection phases. Integrated Project Teams (IPTs), including end-users and operational experts, are essential for refining and adapting requirements based on evolving threats and real-world feedback. The PM makes sure that the knowledge of current and future users is integrated into the IPTs' work. This mandatory involvement guarantees that user perspectives and operational expertise shape every aspect of the project, from initial concept to final realization (Federal Ministry of Defence, 2018, p. 17).

As solutions are developed and assessed, user feedback is instrumental in fine-tuning technical and functional performance targets, guaranteeing that the chosen solution is ideally suited to meet operational needs. This active engagement proceeds into the realization phase, where continuous collaboration between project managers, IPTs, and users facilitates the iterative refinement of project details considering new insights and feedback.

A critical aspect of this engagement is the "Einsatzprüfung" (operational testing), wherein the systems are subjected to rigorous evaluation by the end-users themselves under realistic operational conditions. This stage is crucial for verifying that the equipment meets the established performance criteria in actual operational settings. The feedback generated

from operational testing is invaluable, leading directly to the final modifications and improvements before widespread deployment. Incorporating this feedback ensures that the system is effective and appropriate for its intended use and builds user confidence in the new equipment, affirming its capability to fulfill specific operational demands.

Moreover, a formal step within the CPM process underscores the significance of user acceptance. The future users or operators declare their readiness to assume control of the system once the "Einsatzprüfung" has been successfully conducted against the benchmarks set by the operational scenarios, the requirements, and the expected usage profile outlined. This formal declaration of readiness ensures that there is a clear and unequivocal acceptance of the system based on its performance in tests that simulate actual operational environments, marking a critical milestone in the acquisition process (Federal Ministry of Defence, 2018, p. 26). This structured approach within the CPM ensures that the transition from testing to full operational deployment is both smooth and efficient, guaranteeing that the acquired capabilities are thoroughly vetted and meet the precise requirements of the forces in the field.

In the AAF, end-user involvement, particularly outside the software acquisition pathway, relies on a blend of formal and informal practices, with operational testing and evaluation (OT&E) serving as a primary avenue for structured end-user feedback. Unlike the software pathway, where user involvement is an explicit and integral part of the iterative development process, other pathways under the AAF do not uniformly mandate end-user engagement in their policy language (OUSD A&S, 2020c, p. 4).

Operational testing and evaluation within the AAF is a critical phase where end-users play a significant role in assessing whether systems meet the operational requirements and are suitable for full-scale deployment. This phase ensures that the systems developed and procured can effectively support the users in real-world scenarios by incorporating feedback directly from those who will use the technology in the field (AcqNotes, n.d.-b). However, aside from software, the approach to involving end-users across the various AAF pathways tends to be more decentralized, often leveraging informal mechanisms such as working groups, forums, or lower-level guidance rather than explicit policy mandates. This approach reflects a reliance on the existing culture and practices

within the DOD to ensure that end-user needs and feedback are considered throughout the acquisition process (GAO, 2023b, p. 17). While operational testing and evaluation clearly incorporate end-user involvement by assessing system performance in operationally realistic conditions, the broader AAF framework exhibits a nuanced stance on mandating user engagement across all acquisition efforts.

3. Milestones and Decision Reviews

Milestones and Decision Reviews in an acquisition process serve as critical checkpoints designed to evaluate a project's progress, performance, and viability at specific stages of its life cycle. These predetermined points allow decision-makers to assess whether a project should proceed as planned, requires adjustments, or should be terminated. Milestones help to structure the acquisition process into manageable phases, ensuring that each step is completed successfully before moving on to the next. They facilitate a systematic approach to project management and decision-making, enabling the efficient allocation of resources, timely identification of risks, and the ability to make informed choices. By providing clear criteria for progress assessment, milestones support the governance of the acquisition process, ensuring that projects align with strategic objectives, meet operational needs, and adhere to budgetary constraints and timelines (AcqNotes, n.d.-c).

The Department of Defense employs a structured approach to managing the acquisition of major systems, utilizing milestones and decision reviews to ensure that projects are developed efficiently and effectively. These milestones are pivotal points in the life cycle of a project, offering a systematic method for assessing progress, performance, and potential risks. The primary reason the DOD uses milestones is to facilitate decision-making at critical junctures of a project, ensuring that it remains aligned with strategic objectives, operational needs, and fiscal constraints. Each decision point evaluates the viability of continuing, adjusting, or halting a project based on comprehensive analyses of technology maturity, cost, schedule, and alignment with defense capabilities and requirements.

Milestones and decision reviews serve multiple functions, including validating the project's acquisition strategy, confirming the maturity of necessary technologies, and ensuring

that the project is affordable and executable within the projected budget and time frame. This phased approach identifies and mitigates risks early in the acquisition process, promoting better resource allocation and more informed decision-making. By requiring that projects meet specific criteria before advancing to the next phase, the DOD aims to minimize the likelihood of project failures, cost overruns, and delays, thus enhancing the overall effectiveness and efficiency of its acquisition processes. This methodical approach underscores the DOD's commitment to fiscal responsibility and the delivery of capabilities that meet the current and future needs of the armed forces (OUSD A&S, 2021b, pp. 10–17).

In the CPM process, Quality Gates serve as milestones that can be applied at various phases, providing a structured mechanism for assessing project progress, decision-making, and necessary adjustments. Unlike rigid checkpoints, these Quality Gates offer a more flexible approach, allowing for their strategic placement throughout a project's life cycle based on specific project needs and goals. This flexibility facilitates a more dynamic and responsive project management environment, enabling stakeholders to make timely decisions and adjustments. Quality Gates help to ensure that projects are aligned with strategic objectives, operational requirements, and resource allocations, fostering a systematic and controlled approach to project execution. By setting specific criteria for evaluation at these gates, projects can be assessed for their readiness to proceed to the next phase, ensuring that each stage of development meets the required standards for success (Federal Ministry of Defence, 2018, p. 97).

Comparing the use of milestones in the CPM with the AAF of the Department of Defense, a key difference emerges in the mandatory nature of milestones and decision reviews within the AAF. The AAF mandates specific milestones and decision reviews at predetermined points in a project's life cycle, serving as compulsory checkpoints for evaluating progress, viability, and alignment with strategic and operational objectives. This structured approach ensures rigorous governance and accountability, requiring projects to demonstrate readiness and meet predefined criteria before advancing. In contrast, the CPM's Quality Gates provide a more flexible mechanism that can be tailored to each project's unique requirements, emphasizing adaptability and responsiveness over the fixed, mandatory checkpoints found in the AAF. This distinction highlights a fundamental

difference in project management philosophy between the two frameworks: while the AAF focuses on stringent control and standardized evaluation points to manage risk and ensure alignment with broader defense objectives, the CPM offers a more adaptable approach, prioritizing flexibility and the ability to make timely adjustments based on project-specific needs and circumstances.

4. Decision Authorities

In acquisition programs, the Milestone Decision Authority (MDA) plays a crucial role and is tasked with approving projects to move through their life-cycle phases. The MDA evaluates projects against strategic objectives, performance criteria, and budgetary limits before authorizing progress past key milestones. This approach ensures projects align with requirements and manage risks effectively, fostering successful outcomes through informed and accountable decision-making.

In the AAF, the role of the MDA is central to guiding and controlling the life cycle of defense acquisition programs. This authority is responsible for making critical decisions at key points, or milestones, in a program's development to ensure it meets its cost, schedule, and performance targets. The MDA oversees the assessment and approval of various program documents and plans, including acquisition strategies and systems engineering plans, effectively shaping the direction of the program.

The MDA's decisions are based on comprehensive reviews conducted at predetermined milestones throughout the acquisition process. These reviews evaluate whether a program is ready to proceed to the next phase of development, from initial concept to full-rate production and deployment. The MDA has the power to halt, redirect, or continue a program based on its ability to meet defined requirements and objectives.

The authority of the MDA, often held by high-level officials within the Department of Defense, underscores the importance of accountability and informed decision-making in managing complex defense acquisition projects. By requiring formal certifications and approvals at critical junctures, the MDA framework ensures that programs are rigorously evaluated and that resources are allocated efficiently, supporting the overarching goal of

delivering effective capabilities to the warfighter within the constraints of time and budget (AcqNotes, n.d.-a).

In the CPM framework, the approach to milestone decision-making differs from the structured authority seen in the AAF. The CPM does not explicitly designate an MDA across its process, implying a more decentralized and potentially project manager–centric decision-making structure. This approach allows project managers to control key milestones within their programs without requiring formal approvals from a higher authority at each decision point. While this approach can enhance agility and responsiveness within the project scope, it also places a considerable onus on project managers to ensure that decisions align with broader strategic and operational requirements. The absence of a defined MDA could lead to variability in how milestones are approached and assessed, relying heavily on the expertise and judgment of individual project managers and their integrated project teams. This methodology suggests a flexible but less formalized system of milestone oversight, potentially affecting the consistency and predictability of decision outcomes across different projects within the framework (Federal Ministry of Defence, 2018).

5. Conclusion

The comparative analysis of the Adaptive Acquisition Framework and the Customer Product Management process highlights the unique approaches of the United States and Germany to defense procurement, emphasizing adaptability and operational efficacy. The AAF's diverse pathways provide the United States with a flexible framework for tailoring acquisition strategies, enabling the Department of Defense to swiftly adapt to changing needs and emerging technologies. This system emphasizes structured oversight through clearly defined milestones and decision authority, ensuring accountability and alignment with strategic goals.

Conversely, the CPM streamlines acquisition, focusing on efficiency, flexibility, and user engagement to meet operational needs. Central to the CPM's effectiveness is the autonomy granted to project managers, allowing for greater flexibility in decision-making and the ability to make adjustments responsive to evolving project requirements. This

approach underscores a pragmatic balance between strategic oversight and operational flexibility, ensuring that the German defense procurement process remains agile and focuses on timely solutions for the warfighter.

In essence, both the AAF and CPM embody tailored strategies to meet their respective defense objectives, with each framework offering insights into efficient and responsive acquisition practices. While the AAF provides a structured yet adaptable pathway for procurement, the CPM emphasizes project manager autonomy, highlighting the importance of flexibility and user involvement in modern defense acquisition processes.

H. COMPARISON CONCLUSION

In this chapter, we explored the intricate details of the German and U.S. defense acquisition systems, focusing on their comparative approaches to defining requirements, budgeting, and executing acquisition pathways. By delving into the German Integrierter Planungsprozess (IPP) and the U.S. Joint Capabilities Integration and Development System (JCIDS), we uncovered the differences and similarities in how both countries address the complex process of defense procurement within the framework of democratic governance.

We found that both systems share a common commitment to stakeholder involvement, flexibility, and a capability-based approach, ensuring that their defense needs align with strategic objectives while remaining adaptable to changing threats and technological advancements. However, significant differences were highlighted in terms of integrated planning and budgeting, where the IPP incorporates budget considerations early in the planning phase, contrasting with the JCIDS's more sequential approach.

The chapter further detailed the budgeting processes within the German and U.S. systems, specifically examining the integration of budgeting in the German IPP and the structured, cyclical nature of the U.S. PPBE system. Here, we noted similarities in legislative involvement and the strategic alignment of budgeting with national defense strategies. Yet, the IPP and PPBE differ in their methodologies, particularly in the integration of planning and budgeting processes, highlighting the IPP's more holistic approach compared to the PPBE's phased, sequential method.

Furthermore, we delved into the acquisition processes and pathways within the U.S. Adaptive Acquisition Framework (AAF) and Germany's Customer Product Management (CPM) framework, revealing how each framework is designed to meet the evolving needs of military procurement. The AAF's multiple pathways offer flexibility and responsiveness, while the CPM focuses on efficiency and direct user involvement, underscoring the importance of matching acquisition strategies to operational requirements.

This comparative analysis shows the similarities and differences between the German and U.S. Defense Acquisition Systems and sets the foundation for further discussions and opportunities to improve both approaches. Ultimately, this allows us to formulate recommendations for enhancing both acquisition systems, making them more effective in their respective environments.

V. CONCLUSION AND RECOMMENDATIONS

In this project, we have explored the U.S. and German military acquisition systems. Through a comparative analysis, this research has illuminated the strengths and challenges of each system, revealing insights into how they can be optimized to meet the rapidly evolving demands of modern military operations.

The findings from this study uncover a range of additional strategies that could further strengthen both the U.S. and German acquisition systems. These strategies emerge from thoroughly examining existing practices and pinpointing areas where improvements could yield significant benefits in process acceleration, cost efficiency, and strategic alignment with defense objectives.

As we draw this study to a close, this chapter seeks to synthesize the key insights and offer a comprehensive set of recommendations to refine and augment the acquisition frameworks of both nations. These recommendations are crafted with the intent to provide actionable guidance for policymakers and defense procurement officials, considering the unique operational, organizational, and geopolitical contexts in which these acquisition systems operate.

A. RESEARCH QUESTIONS

(1) What are the key differences between the U.S. and German defense acquisition systems?

The examination of the key differences between the U.S. and German defense acquisition systems is comprehensively addressed in Chapter IV of our paper, titled "Comparative Overview of German and U.S. Acquisition Systems." This analysis deeply explores their structural organization, decision-making processes, and procurement flexibility. The U.S. system is characterized by its tripartite framework, including resource allocation (PPBE), requirements identification (JCIDS), and acquisition management, showcasing a comprehensive and adaptable approach that fosters rapid innovation through diverse acquisition pathways. Conversely, the German system's strategy is centralized around the Integrated Planning Process, focusing on efficiently synchronizing budgeting

and capability planning to address capability gaps with a streamlined procurement process. This chapter illustrates how each system's unique operational and organizational priorities reflect distinct approaches to meeting their military needs and strategic goals, as revealed through the application of the acquisition efficiency framework developed in our paper.

(2) What recommendations can be made for both the U.S. and German defense acquisition systems based on their differences?

Our capstone recommends leveraging the strengths of both the U.S. and German defense acquisition systems to enhance each other, as outlined in the remainder of Chapter VI, "Conclusion and Recommendations." For the U.S. system, it suggests adopting aspects of Germany's streamlined Integrated Planning Process to improve coherence between budgeting and capability planning, enhancing efficiency and responsiveness. Conversely, for Germany, we emphasize the importance of incorporating elements of the United States's flexible acquisition pathways and rapid procurement processes to foster innovation and adaptability. Specifically, we identified the Middle Tier of Acquisition pathway as a beneficial improvement that could be quickly and easily implemented into the German system, offering a significant and swift enhancement by enabling faster fielding of capabilities to address urgent operational needs, drawing on the U.S. experience to improve the responsiveness and adaptability of Germany's defense acquisition system. These recommendations underscore the importance of learning from each system's unique approaches: the U.S.'s adaptability and innovation capabilities can inform more dynamic procurement strategies in Germany, while the structured, unified approach of Germany's IPP offers lessons in strategic coherence and efficiency for the United States By integrating these and the other identified recommendations, both nations can achieve more effective and efficient defense acquisition processes, better aligned with their strategic and operational needs.

(3) Has the recent security situation in Ukraine prompted a political realization in Germany that their defense acquisition system needs modernization?

Our analysis indicates that the recent security situation in Ukraine has indeed sparked a political realization in Germany regarding the necessity for modernization within

its defense acquisition system. This awakening is evidenced by the shift in policy and strategic priorities, highlighting an urgent need to adapt and enhance the procurement framework to address contemporary challenges effectively. The evolving geopolitical landscape, underscored by the crisis in Ukraine, has catalyzed a reevaluation of existing practices, underscoring the importance of agility, innovation, and responsiveness within Germany's defense acquisition processes. This situation has led to a consensus on the critical need for reform, aiming to ensure that Germany's defense capabilities are robust, adaptable, and capable of meeting the demands of an increasingly complex and unpredictable security environment.

B. RECOMMENDATIONS FOR THE GERMAN ACQUISITION SYSTEM

Considering the comprehensive analysis conducted throughout this thesis, it has become evident that the German military acquisition system, represented by the CPM, stands at a pivotal juncture. The evolving nature of defense technologies, particularly the increasing reliance on software capabilities, alongside the urgent need for rapid deployment of military assets, necessitates a strategic overhaul of the existing procurement framework. We propose a series of targeted recommendations for the German system to address these challenges and leverage the opportunities for enhancing agility, efficiency, and responsiveness. These recommendations are designed to integrate modern procurement practices, streamline processes, adjust financial thresholds for parliamentary oversight, and ensure the Bundeswehr is equipped to meet current and future operational demands effectively.

The following are the proposed areas of focus, each underpinned by specific recommendations that collectively aim to modernize and optimize the German military acquisition landscape:

1. Implementation of Middle-Tier Acquisition procedures
2. Introduction of a software acquisition pathway
3. Revision of the urgent acquisition pathway criteria
4. Adjustment of financial thresholds for parliamentary oversight

5. Incorporation of fixed milestones and Milestone Decision Authorities

6. Adoption of the adaptive principle for flexible pathway transitions

These focus areas, discussed in further detail below, are carefully selected to address the multifaceted nature of acquisition challenges, ensuring a comprehensive approach to reform. By embracing these recommendations, the German military acquisition system can significantly enhance its capability to rapidly and efficiently field the advanced technologies to maintain operational superiority.

1. Implementation of Middle-Tier Acquisition Procedures

The current acquisition system of the Bundeswehr, known as the Customer Product Management, operates primarily through two distinct pathways: the FastTrack Procedure for urgent operational needs and the Basic Procedure for standard procurement processes. However, this bifurcated approach often restricts the system's ability to respond quickly and flexibly, particularly in rapidly evolving military contexts. The introduction of a Middle-Tier-of-Acquisition Approach, akin to the pathway utilized by the United States, presents a promising solution to bridge this gap. See Appendix B for selected U.S. Middle-Tier Acquisition Programs. By incorporating a strategy that emphasizes the swift development and deployment of military capabilities through the use of mature technologies and rapid prototyping, the Bundeswehr could significantly enhance its procurement agility. This adaptation would not only streamline the acquisition timeline but also ensure that the procurement is both cost-effective and closely aligned with immediate operational demands. Establishing clear guidelines and implementing stringent oversight mechanisms would be essential to effectively integrate the MTA pathway within the CPM. These steps would help to overcome the challenges of oversight, scheduling, and documentation, as observed in the U.S. experience (GAO, 2023b), thereby maximizing the approach's benefits for the German defense acquisition landscape.

2. Introduction of a Software Acquisition Pathway

Establishing a software acquisition pathway is important for enhancing the agility and responsiveness of the German CPM system to the evolving demands of digital warfare.

This pathway should leverage agile development practices, such as Agile and Lean, and incorporate DevSecOps principles to ensure that development processes are iterative, efficient, and aligned with end-user needs and operational requirements. Notably, the CPM framework already strongly emphasizes user engagement, with continuous involvement of users in Integrated Project Teams (IPTs) throughout the acquisition process. This existing principle of user engagement provides a solid foundation for implementing a software-centric pathway, as it underscores the importance of developing solutions that are closely aligned with the actual needs and feedback of end-users.

By adopting a software acquisition pathway that builds on the CPM's strengths in user engagement and integrates modern software development practices, the German military acquisition system would markedly improve its capacity to develop and deploy software solutions critical for future defense programs. This strategic enhancement aims to create a more adaptive, efficient, and user-focused framework for software procurement, positioning the Bundeswehr to leverage technological innovation.

3. Revision of the Urgent Acquisition Pathway Criteria

In light of the pressing requirement for rapid adaptation and acquisition in response to emerging threats, we propose revising the German CPM system's Fast-Track Procedure criteria. The initiation of projects under this procedure is constrained to needs directly arising from ongoing, mandated Bundeswehr missions. This limitation significantly restricts the Bundeswehr's ability to respond proactively to emerging operational challenges and technological advances that have been identified through broader military observations, including those not directly involving the Bundeswehr.

By revising the Fast-Track Procedure to allow for initiatives based on a wider array of insights, including the operational experiences of allied forces and observations of technological advancements, the Bundeswehr can ensure a more agile and responsive procurement system. Such a revision to the Fast-Track Procedure would enable the Bundeswehr to rapidly incorporate necessary technological solutions and operational tactics, thus maintaining a state of readiness against potential adversaries. The proposed change emphasizes the need for an acquisition process that can quickly adapt to the fast-

evolving landscape of defense technology and operational requirements without being hindered by overly restrictive criteria.

Therefore, even with the potential introduction of an MTA, which could facilitate fast and efficient acquisition, the Fast-Track Procedure should be specifically adjusted to meet urgent needs. This approach will ensure that the Bundeswehr is equipped to address immediate capability gaps with the necessary speed and efficiency, learning from global military developments and preparing adequately for future conflicts.

4. Adjustment of Financial Thresholds for Parliamentary Oversight

Adjusting the "Parliamentary Loop" within the German defense procurement framework, particularly the aspect mandating Bundestag approval for acquisitions exceeding €25 million, necessitates a nuanced understanding of the balance between legislative oversight and executive efficiency. This requirement, while established to ensure fiscal accountability, may inadvertently constrain the agility needed for prompt defense procurement in response to evolving military requirements. A critical examination suggests that revising this threshold could enhance procurement flexibility without undermining the legislative authority vested in budgetary control.

Elevating or eliminating the €25 million threshold would not diminish the Bundestag's role in budgetary governance but rather refine the procurement mechanism to align with the exigencies of contemporary defense strategies. The parliamentary loop, in its existing form, appears to blend legislative oversight with executive procurement processes in a manner that may impede the swift execution of critical defense projects. While the government is accountable to parliament, maintaining operational effectiveness within the allocated defense budget is paramount for national security (BMWK, 2023, pp. 6–9). The Bundestag's approval of the overall budget delineates a fiscal framework, providing the executive with the autonomy to manage specific expenditures, including those related to defense procurement. This arrangement is intended to circumvent the micromanagement of executive activities by the legislature, facilitating a responsive and adaptable approach to defense procurement (BMWK, 2023, p. 7).

Moreover, the detailed evaluation of individual procurement processes often requires specialized knowledge, which exceeds the Bundestag's immediate expertise. This discrepancy highlights the practical challenges associated with expecting the legislature to assess specific procurement decisions comprehensively, thereby supporting the rationale for revising the parliamentary loop to foster a more efficient procurement process (BMWK, 2023, p. 7).

Ultimately, a recalibration of the threshold or procedural stipulations associated with the Parliamentary Loop would pragmatically align legislative oversight with the need for executive agility in defense procurement. Such adjustments would streamline the Bundeswehr's ability to address immediate capability gaps and operational needs effectively and ensure that Germany's defense procurement system remains robust, responsive, and capable of meeting current and future security challenges within the established budgetary framework.

5. Incorporation of Fixed Milestones and Milestone Decision Authorities

While acknowledging the benefits of the Quality Gates within the German CPM system for enhancing project flexibility and dynamism, it is important to recognize the potential augmentation that fixed milestones and the establishment of Milestone Decision Authorities could provide. The Quality Gates incorporated in the CPM allow project managers significant latitude in adapting projects according to evolving needs and goals. However, the incorporation of fixed milestones would introduce structured, objective decision points for evaluating a project's progress and alignment with strategic objectives, thereby offering a comprehensive assessment of whether a project should proceed, undergo modifications, or be terminated.

The current absence of MDAs in the CPM represents a gap in ensuring neutral, independent judgment on project progress. Presently, project managers hold sole responsibility for making critical decisions regarding their projects' continuation, adjustment, or cancellation. This arrangement might inadvertently foster a scenario where projects persist without sufficient external scrutiny, potentially overlooking unfavorable forecasts, budgetary overruns, or schedule deviations.

To address this, we recommend the introduction of MDAs within the organizational structure of BAAINBw. Department heads within each department could assume the role of MDAs, providing an impartial and informed evaluation of projects at designated milestones. This structure would not only bring an added layer of oversight and accountability but also ensure that decision-making regarding the continuation or modification of projects is based on a balanced and comprehensive assessment of their current status and future viability.

Thus, while maintaining the adaptability afforded by Quality Gates, integrating fixed milestones and establishing MDAs would significantly enhance the governance and strategic oversight of defense procurement projects within the CPM. This approach combines the dynamic project management facilitated by Quality Gates with the rigorous, objective evaluation framework offered by fixed milestones and MDAs, ensuring that projects are managed efficiently, transparently, and in alignment with the Bundeswehr's operational needs and fiscal responsibilities.

6. Adoption of the Adaptive Principle for Flexible Pathway Transitions

The current structure of the German CPM system exhibits a rigidity in transitioning between its distinct procurement procedures. This inflexibility stands in contrast to the AAF utilized by the United States, which is characterized by its ability to allow projects to transition between different acquisition pathways, thereby enhancing the system's adaptability to changes in project scope or operational demands.

To address this discrepancy and improve the CPM's responsiveness to evolving defense requirements, it is recommended that the CPM integrate aspects of the AAF's adaptive flexibility. Specifically, this would involve the establishment of mechanisms within the CPM that facilitate the transition between the acquisition procedures when deemed necessary by the project's development, strategic priorities, or changes in operational context. Such an integration would enable a more dynamic management of procurement projects, ensuring that they are conducted under the most appropriate procedure at any given time.

The implementation of adaptive flexibility within the German CPM system necessitates the establishment of clear transition criteria and designated evaluation points within the project life cycle to assess the appropriateness of shifting between procurement procedures. Perhaps more importantly, these criteria should be based on an objective analysis of the project's progress, ensuring that decisions to transition between procurement pathways are made with a clear focus on achieving optimal outcomes. Integrating this adaptive flexibility aligns naturally with the previously discussed recommendation to incorporate fixed milestones and establish MDAs within the CPM framework. The introduction of MDAs and predetermined milestones would provide a structured framework for evaluating project progress, thereby facilitating the identification of suitable moments for procedure transitions. By aligning the adoption of adaptive flexibility with the enhancements in project governance through MDAs and milestones, the CPM would evolve into a more dynamic and responsive procurement system.

C. RECOMMENDATIONS FOR THE U.S. ACQUISITION SYSTEM

Considering the detailed exploration of the U.S. Defense Acquisition System presented in this report, opportunities exist to refine and enhance its efficiency and responsiveness. The examination of both the strengths and areas for improvement within the current framework reveals a pathway toward a more streamlined and effective procurement process. Drawing from the insights gained through this analysis, we propose a series of recommendations aimed at enhancing the agility and effectiveness of the U.S. Defense Acquisition System. These suggestions are designed to foster a more integrated, user-focused, and flexible approach to defense procurement, ensuring the United States remains at the forefront of military capability development.

The following recommendations are proposed to modernize and optimize the U.S. military acquisition landscape:

1. Reduced Congressional control to enable department flexibility
2. Integration of the JCIDS and PPBE processes
3. Introduction of mandatory defense-wide portfolio management

4. Mandatory user involvement through Integrated Product Teams (IPTs)

5. Enhance flexibility within the defense budget – "Colors of Money"

These focus areas, discussed further below, have been selected to address the complex challenges facing the U.S. Defense Acquisition System, ensuring a comprehensive and forward-looking approach to reform. By implementing these recommendations, the DAS can enhance its capacity to rapidly and effectively field the advanced technologies essential to maintaining superiority on the battlefield.

1. Reduced Congressional Control to Enable Department Flexibility

There must be a delicate balance between congressional oversight and the flexibility of a program to execute with autonomy. Drawing insights from the German Bundestag's involvement in the acquisition process, where the budget, once approved, is utilized at the government's discretion with the notable exception of the "Parliamentary Loop" for acquisitions exceeding €25 million, a parallel recommendation can be made for the United States. This recommendation is particularly focused on enhancing the DOD's ability to remain agile and able to respond to a changing operational landscape more rapidly.

Applying this principle to the United States, we recommend a recalibration of congressional influence post-approval of the president's budget, aiming to afford the DOD greater latitude in executing its acquisition strategies. While ensuring fiscal responsibility and oversight, the current practice often imposes constraints that can delay the procurement process, potentially hindering the DOD's ability to respond swiftly to emergent threats and technological advancements. A model akin to Germany's, notwithstanding the differences in political structure and procurement scales, underscores the potential benefits of granting departments enhanced flexibility within the confines of the approved budgetary framework.

By advocating for a reduction in congressional control after the budget's approval, this recommendation aims to enable the DOD to navigate acquisition processes with increased efficiency and adaptability. Such a shift would not eliminate congressional

oversight but streamline the acquisition process by minimizing procedural bottlenecks, enabling faster deployment of critical defense capabilities.

This approach aligns with the broader objective of refining defense acquisition processes to better serve national security interests in an era characterized by rapid technological change and evolving global threats. It also resonates with the essence of our recommendation for the German acquisition system, suggesting that less legislative interference, once the budgetary framework is established, could significantly expedite acquisition timelines and enhance the DOD's operational flexibility. Implementing this recommendation requires careful consideration of the balance between accountability and efficiency, ensuring that the integrity of the budgetary process is maintained while optimizing the DOD's capacity to fulfill its strategic objectives promptly.

This issue is also briefly discussed in the Congressional Research Service report titled *DOD Planning, Programming, Budgeting, and Execution (PPBE): Overview and Selected Issues for Congress*, underscoring its importance in the context of defense appropriations and PPBE reform discussions (CRS, 2022, pp. 36–37).

2. Integrating JCIDS and PPBE Processes

Based on the insights gained from comparing the U.S. Department of Defense's Planning, Programming, Budgeting, and Execution (PPBE) process and the Joint Capabilities Integration and Development System (JCIDS) with the German Integrated Planning Process (IPP), we recommend a more integrated approach between JCIDS and PPBE. The IPP demonstrates the significant advantages of combining capability planning, budgeting, and operational needs within a unified strategic framework, offering an effective model for enhancing the U.S. Defense Acquisition System's efficiency and responsiveness.

This recommendation aligns with Recommendation #3: Establish Continuous Planning and Analysis, from the Final Report on Defense Resourcing for the Future from the Commission on PPBE Reform (Commission on PPBE Reform, 2024, pp. 53–55). It proposes an expansion of analytic capabilities, aiming to ensure that the DOD's decision-making process is both strategic and informed by ongoing, data-driven analysis. It suggests

a shift toward a model where planning and analysis are not episodic or solely tied to budget cycles but are continuous, allowing for the adjustment of strategies and resources in response to evolving threats and opportunities (Commission on PPBE Reform, 2024, pp. 53–55).

This approach draws a parallel to the German Integrated Planning Process, which seamlessly integrates capability planning, budgeting, and operational needs within a unified strategic framework. The continuous planning and analysis advocated in the recommendation echo the German IPP's holistic and agile approach to defense planning. By adopting a similar continuous analysis framework, the DOD could achieve a more synchronized and responsive planning system where strategic decisions are better aligned with financial realities and operational requirements.

This recommendation also aligns with the Congressional Research Service's advocacy for a portfolio management framework to address the inefficiencies of disjointed decision-support systems, as noted in *DOD Planning, Programming, Budgeting, and Execution (PPBE): Overview and Selected Issues for Congress* (CRS, 2022, pp. 34–35). Implementing an integrated planning approach like the German IPP, complemented by the continuous planning and analysis as recommended, would not only streamline the acquisition process but also foster a more innovation-driven environment within the DOD, making the system more responsive to changing strategic and operational needs.

3. Introduction of Defense-Wide Portfolio Management

The recommendation for introducing defense-wide portfolio management into the U.S. Defense Acquisition System seeks to address the complexities and inefficiencies of the current program-centric execution model that many of the departments and military services use. Drawing upon the comparative analysis with the German Integrated Planning Process, which successfully employs a portfolio-structured approach, it is evident that a similar strategy could significantly benefit the U.S. DAS by enhancing its agility, responsiveness, and strategic alignment of defense capabilities. While some departments, such as the U.S. Army, already follow a portfolio management model as a best practice,

this recommendation seeks to establish mandatory portfolio management practices across all of the DOD.

The IPP's portfolio management framework enables a holistic view of capability development, allowing for a more flexible and responsive allocation of resources across a broad spectrum of projects and programs. This approach fosters synergies between different initiatives and aligns capability development more closely with strategic and operational objectives. The success of the IPP in integrating capability planning, budgeting, and operational needs into a unified strategic framework across all services serves as a compelling model for the U.S. DAS, suggesting that a shift toward mandatory portfolio management could overcome many of the current system's limitations, especially in the realm of joint capabilities.

These observations aside, the implementation of defense-wide portfolio management within the U.S. DAS presents unique challenges, primarily due to the structure and size of the U.S. armed forces. The U.S. military's vast and diverse array of programs and capabilities and decentralized command structure could complicate the transition to a portfolio-based approach. Overcoming these obstacles would require a concerted effort to reorient the acquisition culture, streamline decision-making processes, and enhance cross-functional collaboration across different levels of the defense establishment.

To facilitate this transition, it is necessary to establish clear guidelines and frameworks for portfolio management, invest in training and development for acquisition personnel, and create mechanisms for effective oversight and governance of portfolio activities. Additionally, leveraging technology such as the data analytics capabilities of artificial intelligence could play a crucial role in managing the complexity of a defense-wide portfolio, enabling more informed decision-making and resource allocation. This recommendation is supported by similar suggestions made by the Report of the Advisory Panel on Streamlining and Codifying Acquisition Regulations within the findings of the Section 809 Panel (Section 809 Panel, 2019, pp. 53–75).

While introducing defense-wide portfolio management into the U.S. DAS is undoubtedly challenging, the potential benefits of increased joint efficiency, strategic coherence, and the ability to rapidly adapt to changing operational demands make it a necessary evolution. Learning from the German IPP's successful portfolio management application offers valuable insights that can guide the United States in implementing this transformative approach.

4. Mandatory User Involvement Through Integrated Product Teams

In the context of evolving military acquisition strategies, the comparison between the United States AAF and Germany's CPM system underscores another area for enhancement: end-users' involvement in the acquisition process. The CPM demonstrates the significant impact of integrating future users throughout the procurement process, granting them a voice within specially constituted Integrated Product Teams. This inclusive approach ensures that the acquired capabilities precisely align with the operational needs and preferences of the end-users, significantly enhancing the effectiveness and suitability of the final product. Just as with the previous recommendation, many of the services and departments already follow a user-focused strategy as a best practice, but it has not been codified as a mandatory practice across all of the DAS.

The U.S. AAF mandates end-user involvement only in the software acquisition pathway (OUSD A&S, 2020a, p. 4). While this practice has been recognized for its contributions to tailoring software solutions closely to user requirements, the broader and mandatory application of this principle across all acquisition pathways remains a missed opportunity for optimization.

Therefore, we recommend extending the requirement for end-user involvement to all pathways within the AAF. By institutionalizing end-user participation beyond the software pathway, the DOD can ensure that the perspectives, insights, and operational expertise of future users are integral to the decision-making process across all types of acquisitions. This shift toward mandatory end-user involvement would capitalize on the demonstrated benefits observed in the CPM system, turning a best practice into a standard procedure across the acquisition framework.

Implementing this recommendation would necessitate adjustments in policy and procedure to accommodate the active participation of end-users in all relevant IPTs and decision-making forums. It would foster a more user-centric acquisition culture, ensuring that the solutions developed are technologically advanced and pragmatically aligned with the real-world demands of military operations.

By embracing a model that prioritizes end-user involvement across the entirety of its acquisition pathways, the DOD can enhance its procurement activities' relevance and effectiveness. This approach aligns with broader efforts to streamline acquisition processes and reinforces the commitment to delivering capabilities that comprehensively meet the strategic and operational needs of the armed forces.

5. Enhance Flexibility Within the Defense Budget—"Colors of Money"

To improve the efficiency and responsiveness of the U.S. Department of Defense's financial management system, steps should be taken to enhance flexibility within the existing "colors of money" framework. While the current categorization of funds into specific areas such as research and development, procurement, and operations is essential for transparency and accountability, it often restricts the ability to swiftly reallocate resources in response to changing program needs. Drawing inspiration from the Bundeswehr's more fluid budgetary approach, as seen in their consolidated Einzelplan 14, the United States could explore ways to simplify the transfer of funds between categories.

Ultimately, our recommendation to solve this friction point in the budgeting process aligns with the recommendations in the final report by the Commission on Planning, Programming, Budgeting, and Execution Reform. The Commission suggests that program and office funding should be streamlined according to the program's main activity, using one funding type to simplify and speed up response to needs while lessening administrative work. For example, an office focused on procurement, such as one for acquiring new aircraft, would fund all its activities with procurement dollars. Also, simplifying funding into one category would decrease management complexity and better reflect industry norms, where managers have a single funding source and the discretion to use these funds within broad guidelines. This would offer Congress a more comprehensive understanding

of an organization's financial health. By adopting a more flexible approach, the U.S. DOD could achieve a balance between strict compliance with funding purposes and the ability to adapt to dynamic operational demands, thereby enhancing overall fiscal management and operational readiness (Commission on PPBE Reform, 2024, pp. 83–89).

LIST OF REFERENCES

AcqNotes. (n.d.-a). *Middle Tier of Acquisition (MTA)*. AcqNotes. Retrieved November 13, 2023, from https://acqnotes.com/acqnote/acquisitions/middle-tier-acquisitions

AcqNotes. (n.d.-b). *Operational Test & Evaluation (OT&E)*. AcqNotes. Retrieved February 12, 2024, from https://acqnotes.com/acqnote/careerfields/operational-test-and-evaluation-ote

AcqNotes. (n.d.-c). Milestone Overview. AcqNotes. Retrieved February 13, 2024, from https://acqnotes.com/acqnote/acquisitions/milestone-overview.

Adamowitsch, G., Baumann, J., & Mehdorn, H. (2012). Bewertung des neuen Ausrüstungs- und Nutzungsprozesses der Bundeswehr durch das Gremium externer Sachverständiger Rüstungsexperten. [Assessment of the Bundeswehr's new equipment and usage process by the committee of external armaments experts].

Auswärtiges Amt. (2023). *Nationale Sicherheitsstrategie: Wehrhaft. Resilient. Nachhaltig*. Integrierte Sicherheit für Deutschland. [National Security Strategy: Defensive. Resilient. Sustainable. Integrated security for Germany.] https://www.nationalesicherheitsstrategie.de

Besch, S. (2023, January 18). *"To really modernize its armed forces, Germany needs a long-term increase of the regular defense budget"* [Interview]. https://fourninesecurity.de/en/2023/01/18/to-really-modernize-its-armed-forces-germany-needs-a-long-term-increase-of-the-regular-defense-budget

Bieri, M. (2014). *Mehr Verantwortung?* Deutsche Aussenpolitik 2014. [More responsibility? German foreign policy 2014.] https://css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-securities-studies/pdfs/CSSAnalyse149-DE.pdf

Blumenau, B. (2022). Breaking with convention? Zeitenwende and the traditional pillars of German foreign policy. *International Affairs*, *98*. https://doi.org/10.1093/ia/iiac166

BMVg. (n.d.). *Beschaffung im Wandel der Zeit. [Procurement over time.]* Retrieved November 6, 2023, from https://www.bundeswehr.de/de/aktuelles/schwerpunkte/65-jahre-bundeswehr/beschaffung-im-wandel-der-zeit-3520546

BMVg. (2013). Bericht zum Stand der Neuausrichtung der Bundeswehr (Ressortbericht). [Report on the status of the realignment of the Bundeswehr (departmental report).] http://www.ag-friedensforschung.de/themen/Bundeswehr/neuausrichtung-bericht.pdf

BMVg. (2019). Leistungsprozess “Integrierte Planung durchführen.” A-400/7. [Performance process “Perform integrated planning.” A-400/7]

BMVg. (2023a). *17. Bericht des BMVg zu Rüstungsangelegenheiten. [17th BMVg report on acquisition matters.]* https://www.bmvg.de/resource/blob/5639826/45547a72b96fb60d6d82f061913d9d3a/17-ruestungsbericht-data.pdf

BMVg. (2023b). Haushaltsplan 2023—Einzelplan 14. [Budget 2023—Section 14.] https://www.bundesrechnungshof.de/SharedDocs/Downloads/DE/Berichte/2022/entwicklung-einzelplan-14-bundeshaushalt-2023.pdf?__blob=publicationFile&v=2

BMVg. (2023c, November 3). *Verteidigungshaushalt*. [Defense Budget] https://www.bmvg.de/de/themen/verteidigungshaushalt

Böckmann, G. (2018). Die öffentliche Beschaffung der Bundeswehr: Rechtsrahmen und Gestaltungsmöglichkeiten im Aufgabenwandel. [Public procurement of the Bundeswehr: Legal framework and design options in changing tasks.] https://ediss.sub.uni-hamburg.de/bitstream/ediss/9149/1/Dissertation.pdf

Brzoska, M. (n.d.). It’s not the money, stupid! https://www.greenpeace.de/publikationen/S04011-greenpeace-studie-frieden-beschaffungswesen-bundeswehr.pdf

Bub, K. R. (n.d.). Analysis of rapid prototyping within the DOD. https://dair.nps.edu/handle/123456789/4971

Bundesministerium der Finanzen. (2015). Das System der Öffentlichen Haushalte. [The system of public budgets]. https://www.bundesfinanzministerium.de/Content/DE/Downloads/Oeffentliche-Finanzen/Haushaltsrecht-und-Haushaltssystematik/das-system-der-oeffentlichen-haushalte.pdf?__blob=publicationFile&v=7

Bundesministerium der Justiz. (2022). BwBBG – Gesetz zur Beschleunigung von Beschaffungsmaßnahmen für die Bundeswehr [BwBBG – Law to accelerate procurement measures for the Bundeswehr] https://www.gesetze-im-internet.de/bwbbg/BJNR107800022.html

Bundesministerium für Wirtschaft und Klimaschutz. (2023). *Bundeswehr besser ausrüsten – aber wie?* [Equipping the German forces better—But how?] https://www.bmwk.de/Redaktion/DE/Publikationen/Ministerium/Veroeffentlichung-Wissenschaftlicher-Beirat/bundeswehr-besser-ausruesten.html

Burbey, D. W., Gabbert, M., & Bailey, K. (2019). Middle-tier acquisition authority features flexible prototype and fielding options. https://www.army.mil/article/227151/middle_tier_acquisition_authority_features_flexible_prototype_and_fielding_options

Cancian, M. F. (2023). *Reforming the Pentagon's budgeting system: Can DOD and Congress strike a deal?* https://www.csis.org/analysis/reforming-pentagons-budgeting-system-can-dod-and-congress-strike-deal

Joint Staff. (2018, August 31). CJCSI 5123.01H.pdf. https://cle.nps.edu/access/content/group/e387e8d0-5507-40f6-8fce-8a5ded8408fe/References/CJCSI%205123.01H.pdf

Commission on PPBE Reform. (2024, March 6). *Commission on PPBE reform: Full report*. https://ppbereform.senate.gov/wp-content/uploads/2024/03/Commission-on-PPBE-Reform_Full-Report_6-March-2024_FINAL.pdf

CRS. (Congressional Research Service) (2017). End-Year DOD Contract Spending. https://www.google.com/search?client=safari&rls=en&q=End-Year+DOD+Contract+Spending&ie=UTF-8&oe=UTF-8

CRS. (Congressional Research Service) (2022). *DOD planning, programming, budgeting, and execution (PPBE): Overview and selected issues for Congress*. https://crsreports.congress.gov/product/pdf/R/R47178

CRS. (2009). Defense Acquisitions: How DOD Acquires Weapon Systems and Recent Efforts to Reform the Process. Congressional Research Service. https://sgp.fas.org/crs/natsec/RL34026.pdf

Czernik, I. (n.d.). Integrierte Planung in der Bundeswehr – ein Instrument, zwei Sichten. [Integrated planning in the Bundeswehr – one approach, two views.] https://www.bundeswehr.de/resource/blob/158502/c67c367ecb3c2a4786c82815bdb9fd4b/integrierte-planung-in-der-bundeswehr-data.pdf

Defense Acquisition University. (n.d.). *Planning, programming, budgeting & execution process (PPBE)*. Retrieved February 1, 2024, from https://www.dau.edu/acquipedia-article/planning-programming-budgeting-execution-process-ppbe

Defense Acquisition University. (2013, September 16). *Defense acquisition guidebook*. https://www.dote.osd.mil/Portals/97/docs/TEMPGuide/DefenseAcquisitionGuidebook.pdf

Defense Acquisition University. (2022, August 4). *A guide to DOD program management business processes*. https://www.dau.edu/sites/default/files/2023-09/A-Guide-to-DOD-Program-Management-Business-Processes.pdf

Der Bundespräsident. (n.d.). *Interview: Interview mit dem ZDF-Morgenmagazin*. Retrieved October 25, 2023, from https://www.bundespraesident.de/SharedDocs/Reden/DE/Frank-Walter-Steinmeier/Interviews/2022/220405-Interview-moma-vor-ort.html

Deutscher Bundestag. (n.d.). Deutscher Bundestag—Arbeit und Aufgaben des Verteidigungsausschusses (englisch). [German Bundestag-Work and Tasks of the Defense Committee]. Deutscher Bundestag. Retrieved February 8, 2024, from https://www.bundestag.de/webarchiv/Ausschuesse/ausschuesse19/a12_Verteidigung/arbeit-und-aufgaben-des-verteidigungsausschusses-englisch-542648

Deutsche Presseagentur. (2023, March 14). *German military revamp "too sluggish," says commissioner – DW – 03/14/2023*. https://www.dw.com/en/german-military-revamp-too-sluggish-says-commissioner/a-64977832

DoDD 7045.14. (2017, August 29). 704514p.pdf. https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/704514p.pdf?ver=2017-08-29-132032-353

Eßig, M., & Glas, A. (2022). Sinnvoll beschaffen: Thesen zu einer „guten" Beschaffung für eine leistungsfähige Bundeswehr [Procure sensibly: Theses on "good" procurement for an efficient Bundeswehr]. Universität der Bundeswehr München.

Etemadi, A., & Kamp, J. (2022a). Built for speed—The Army's integrated visual augmentation (IVAS): A middle tier acquisition case study. https://dair.nps.edu/handle/123456789/4568

Etemadi, A., & Kamp, J. (2022b). Estimating middle tier acquisition schedule risk. https://dair.nps.edu/handle/123456789/4620

Etemadi, A., & Kamp, J. (2022c). Middle tier acquisition FY 2022 budget data overview. https://dair.nps.edu/handle/123456789/4618

Etemadi, A., & Kamp, J. (2022d). *Middle tier acquisitions and innovation*. Acquisition Research Program. https://www.dair.nps.edu/bitstream/123456789/4580/1/SYM-AM-22-067.pdf

Federal Ministry of Defence. (2018). *Customer product management*. https://www.bundeswehr.de/resource/blob/1718386/d21a4f590da15adad3aecd560f3cc5cc/cpm-en-data.pdf

Fox, J. R. (2011). Defense acquisition reform, 1960–2009: An elusive goal. https://history.defense.gov/Portals/70/Documents/acquisition_pub/CMH_Pub_51-3-1.pdf

Friedman, L. S. (2017). Does Policy Analysis Matter? Exploring Its Effectiveness in Theory and Practice. ISBN: 9780520287402

Fuhrhop, P. (2023, February 28). *Germany's Zeitenwende and the future of European security* [Text]. IAI Istituto Affari Internazionali. https://www.iai.it/en/pubblicazioni/germanys-zeitenwende-and-future-european-security

GAO. (2023b). Middle-tier defense acquisitions: Rapid prototyping and fielding requires changes to oversight and development approaches. https://www.gao.gov/assets/gao-23-105008.pdf

Gleis, L. (2022, July 22). *Bundeswehrbeschaffungsbeschleunigungsgesetz [Law regarding the acceleration of the acquisition process]. Gleiss Lutz*. https://www.gleisslutz.com/de/aktuelles/know-how/Bundeswehrbeschaffungsbeschleunigungsgesetz.html

Haas, M., Vuille, A., & Zapfe, M. (2018). *Grundlagen und Prozesse der Rüstungsbeschaffung* (p. 56) [Application/pdf]. ETH Zurich. https://doi.org/10.3929/ETHZ-B-000314632

Hellmich, R. (2023). A Zeitenwende of German security culture. Konstanz.

Hunte, C. (2021). Integrierte Planung durchführen Der Prozess und die Arbeiten des Planungsamtes am Prozess. [Carry out integrated planning The process and the work of the planning office on the process] *WT – Sonderheft 2021*. https://www.bundeswehr.de/resource/blob/5233244/35fc68f08cc5a35fe1adf0daf42852d5/wt-ipd-data.pdf

Inspector General. (2021). *Audit of Department of Defense middle tier of acquisition rapid prototyping and rapid fielding programs*. U.S. Department of Defense. https://media.defense.gov/2021/Sep/30/2002864712/-1/-1/1/DODIG-2021-131.PDF#page91

Jestice, C. J. (2019). Examining the critical success factors of rapid acquisition: A human capital perspective. https://apps.dtic.mil/sti/tr/pdf/AD1077180.pdf

Joint Staff. (2018). Charter Joint Requirements Oversight Council (JROC) and implementation of the Joint Capabilities Integration and Development System (JCIDS). https://acqnotes.com/wp-content/uploads/2018/11/CJCSI-5123.01H-Charter-of-the-Joint-Requirements-Oversight-Council-JROC-and-Implementation-of-the-JCIDS-31-Aug-2018.pdf

Joint Staff J-8. (2018). *Manual for the operation of the Joint Capabilities Integration and Development System*. https://www.acq.osd.mil/asda/jrac/docs/2018-JCIDS.pdf

Kausal, T., & Defense Systems Management College (Eds.). (1999). A comparison of the defense acquisition systems of France, United Kingdom, Germany and the United States. Defense Systems Management College.

Kausal, T., & Markowski, S. (2000). A Comparison of the Defense Acquisition Systems of Australia, Japan, South Korea, Singapore and the United States: Defense Technical Information Center. https://doi.org/10.21236/ADA381900

Kern, E.-M., & Richter, G. (Eds.). (2014). Streitkräftemanagement: Neue Planungs- und Steuerungsinstrumente in der Bundeswehr. [Armed Forces Management: New planning and control instruments in the Bundeswehr.] Springer Gabler.

Krause, J. (2023). Russlands Angriffskrieg gegen die Ukraine: Zeitenwende für die deutsche Sicherheitspolitik. In *Russlands Angriffskrieg gegen die Ukraine. Zeitenwende für die deutsche Sicherheitspolitik*. [Russia's war of aggression against Ukraine: a turning point for German security policy. In *Russia's war of aggression against Ukraine. Turning point for German security policy*.] Nomos Verlagsgesellschaft mbH & Co. KG. https://doi.org/10.5771/9783748933915

Krug, R. (2023, March 14). *Das Planungsamt der Bundeswehr [Planning Command of the Bundeswehr] | cpm Defence Network – News: Verteidigung und Wehrtechnik*. https://defence-network.com/das-planungsamt-der-bundeswehr/

Landeszentrale Politische Bildung. (n.d.). *Zeitenwende—Die Folgen des Ukrainekriegs in Deutschland. [Turning point—The consequences of the Ukraine War in Germany.]* Retrieved October 6, 2023, from https://www.lpb-bw.de/zeitenwende-in-deutschland#c93183

Lindner, T. (2023). Kapitel 13 Auswirkungen des russischen Angriffskriegs gegen die Ukraine auf die deutsche Außen- und Sicherheitspolitik. [Chapter 13 Effects of the Russian war of aggression against Ukraine on German foreign and security policy.] In S. Hansen, O. Husieva, & K. Frankenthal (Eds.), *Russlands Angriffskrieg gegen die Ukraine [Russia's war of aggression against Ukraine]* (pp. 283–290). Nomos Verlagsgesellschaft mbH & Co. KG. https://doi.org/10.5771/9783748933915-283

Liu, C. (2021). Comparison of Naval Acquisition Processes between the United States and Taiwan. https://apps.dtic.mil/sti/trecms/pdf/AD1151055.pdf

Lorge, M. (2018). Comparison of Naval Acquisition Efficiency Between the United States and China [Technical Report]. Acquisition Research Program. https://dair.nps.edu/handle/123456789/2305

Mader, M., & Schoen, H. (2023). No Zeitenwende (yet): Early assessment of German public opinion toward foreign and defense policy after Russia's invasion of Ukraine. *Politische Vierteljahresschrift*, *64*(3), 525–547. https://doi.org/10.1007/s11615-023-00463-5

Mahoney, J., & Thelen, K. (2015). Advances in Comparative-Historical Analysis. In J. Mahoney & K. Thelen (Eds.), Advances in Comparative-Historical Analysis (1st ed., pp. 264–288). Cambridge University Press. https://doi.org/10.1017/CBO9781316273104.011

Marchese, M. S., & Chan, S. (2023). Naval Acquisition in the United States & Russia. https://apps.dtic.mil/sti/trecms/pdf/AD1213558.pdf

Matle, A. (2023). Making Germany's military fit for purpose. *Internationale Politik Quarterly*. https://ip-quarterly.com/en/making-germanys-military-fit-purpose

McGarry, B. W. (2022). Defense primer: Planning, programming, budgeting, and execution (PPBE) Process. 1–3. Congressional Research Service

McKernan, M., Drezner, J. A., Arena, M., & Wong, J. (2022). *Using metrics to understand the performance of the adaptive acquisition framework.* RAND Corporation. https://doi.org/10.7249/RRA1349-1

Miller, D. (2019). Application of technology demonstrations and prototyping in middle tier acquisitions. Defense Acquisition University. https://apps.dtic.mil/sti/pdfs/AD1074470.pdf

Moser, C. (2022). *Die Zeitenwende. Viel Zeit, wenig Wende*. https://doi.org/DOI 10.17104/0044-2348-2022-4-741

Mullin, C. (2023). Breaking the taboo of the Iron Cross. German strategic culture and the war in the Ukraine. Central European University.

Office of the Undersecretary of Defense for Acquisition & Sustainment. (2019a). *DODI 5000.80—Operation of the middle tier of acquisition (MTA)*. https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/500080p.PDF

Office of the Undersecretary of Defense for Acquisition & Sustainment. (2019b). *DODI 5000.81—Urgent capability acquisition*. https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/500081p.PDF

Office of the Undersecretary of Defense for Acquisition & Sustainment. (2020a). *DODI 5000.02—Operation of the adaptive acquisition framework*. https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/500002p.PDF

Office of the Undersecretary of Defense for Acquisition & Sustainment. (2020b). *DODI 5000.75—Business systems requirements and acquisition.* https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/500075p.PDF

Office of the Undersecretary of Defense for Acquisition & Sustainment. (2020c). *DODI 5000.87—Operation of the software acquisition pathway*. https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/500087p.PDF

Office of the Undersecretary of Defense for Acquisition & Sustainment. (2021a). *DODI 5000.74—Defense acquisition of services*. https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/500074p.pdf

Office of the Undersecretary of Defense for Acquisition & Sustainment. (2021b). *DODI 5000.85—Major capability acquisition.* https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/500085p.pdf

Office of the Undersecretary of Defense for Acquisition & Sustainment. (2022). *DODD 5000.01—The defense acquisition system*. https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/500001p.pdf

Office of the Undersecretary of Defense for Research and Engineering, & Office of the Director, Operational Test and Evaluation. (2020, November 19). *DODI 5000.89—Test and evaluation*. https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/500089p.PDF

Pedersen, T. (n.d.). *From "Wandel durch Handel" to "Zeitenwende."* Norwegian University of Science and Technology.

Puglierin, J. (2023). Germany's "Zeitenwende" and its implication for the European security architecture. https://iep-berlin.de/site/assets/files/2370/iep_paper_bp_zeitenwende.pdf

Rahr, A. (2007). Der „Kalte Krieg" ist Geschichte: Und niemand, wirklich niemand sollte ihn wieder herbeireden wollen: Das neue ostpolitische Konzept der deutschen EU-Ratspräsidentschaft ist richtig. [The "Cold War" is history: And nobody, really nobody, should want to bring it about again: the new Eastern policy concept of the German EU Council Presidency is right.] *Internationale Politik*. https://www.ssoar.info/ssoar/bitstream/handle/document/12228/ssoar-ip-2007-3-rahr-der_kalte_krieg_ist_geschichte.pdf;jsessionid=B35D03789C7C8D8D45752961D155CF49?sequence=1

Raik, K. (2023, January 4). Germany's Zeitenwende fails to address Europe's new geopolitical reality. *Internationale Politik Quarterly*. https://ip-quarterly.com/en/germanys-zeitenwende-fails-address-europes-new-geopolitical-reality

Riposo, Jessie, Megan McKernan, and Chelsea Kaihoi, Prolonged Cycle Times and Schedule Growth in Defense Acquisition: A Literature Review. Santa Monica, CA: RAND Corporation, 2014. https://www.rand.org/pubs/research_reports/RR455.html. Also available in print form.

Rühle, J. (2014). Der Integrierte Planungsprozess in der Bundeswehr. [The integrated planning process oft he Bundeswehr] In E.-M. Kern & G. Richter (Eds.), *Streitkräftemanagement: Neue Planungs- und Steuerungsinstrumente in der Bundeswehr* (pp. 31–46). Springer Fachmedien. https://doi.org/10.1007/978-3-658-05238-6_3

Schnell, G. (2021). Einführung in die Streitkräfteplanung. https://www.unibw.de/militaeroekonomie/2021-schnell-glas_streitkraefteplanung.pdf

Scholz, O. (2022a, February 27). Policy statement by Olaf Scholz, Chancellor of the Federal Republic of Germany and Member of the German Bundestag, 27 February 2022 in Berlin. In website *of the Federal Government | Bundesregierung*. https://www.bundesregierung.de/breg-en/news/policy-statement-by-olaf-scholz-chancellor-of-the-federal-republic-of-germany-and-member-of-the-german-bundestag-27-february-2022-in-berlin-2008378

Scholz, O. (2022b, December 5). The global Zeitenwende. *Foreign Affairs*, *102*(1). https://www.foreignaffairs.com/germany/olaf-scholz-global-zeitenwende-how-avoid-new-cold-war

Schultz, B. (2023). *Disruptive innovation—Time to rethink "Big A" acquisition?* https://www.dau.edu/datl/b/disruptive-innovation

Sebaldt, M. (2020). Rüstungspolitik im Zeichen des Versagens: Die Trendwende Material der Bundeswehr zwischen Anspruch und Realität. [Acquisition policy under the sign of failure: The trend reversal Material of the Bundeswehr between demands and reality.] *Zeitschrift für Außen- und Sicherheitspolitik*, *13*(2), 177–196. https://doi.org/10.1007/s12399-020-00811-y

Section 809 Panel. (2019). *Report of the Advisory Panel on Streamlining and Codifying Acquisition Regulations*. https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Sec809Panel_Vol3-Report_Jan2019_part-1_0509.pdf

Strukturkommision der Bundeswehr. (2010). Strukturkommission der Bundeswehr: Bericht der Strukturkommission der Bundeswehr: Vom Einsatz her denken. Konzentration, Flexibilität, Effizienz. [Structural Commission of the Bundeswehr: Report of the Structural Commission of the Bundeswehr: Thinking from an operational perspective. Concentration, flexibility, efficiency.] http://www.roderichkiesewetter.de/fileadmin/Service/Dokumente/20101026-weisekommisionsbericht.pdf

U.S. Department of Defense. (2022). *National Defense Strategy*. https://media.defense.gov/2022/Oct/27/2003103845/-1/-1/1/2022-NATIONAL-DEFENSE-STRATEGY-NPR-MDR.PDF

Vierling, M. (2008). Mittelfristige Finanzplanung und jährliche Haushaltsplanung des Bundes. [Medium-term financial planning and annual federal budget planning.] *Wirtschaftsdienst*, *88*(1), 40–45. https://doi.org/10.1007/s10273-008-0749-y

Wenzel, L. (2014). Das neue Ausrüstungs-, Beschaffungs- und Nutzungsmanagement der Bundeswehr. [The Bundeswehr's new equipment, procurement and operation management.] In E.-M. Kern & G. Richter (Eds.), *Streitkräftemanagement: Neue Planungs- und Steuerungsinstrumente in der Bundeswehr* (pp. 85–100). Springer Fachmedien. https://doi.org/10.1007/978-3-658-05238-6_6

Widner, J., Woolcock, M., & Ortega Nieto, D. (Eds.). (2022). The Case for Case Studies: Methods and Applications in International Development (1st ed.). Cambridge University Press. https://doi.org/10.1017/9781108688253

The White House. (2022). *National Security Strategy*. https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf

Williamson, J. (2022). Big moves for small arms systems. https://asc.army.mil/web/news-big-moves-for-small-arms-systems/

Wissenschaftlicher Dienst. (2014). Die Neuausrichtung der Bundeswehr – Ziele, Maßnahmen, Herausforderungen. [The realignment of the Bundeswehr – goals, measures, challenges.] Deutscher Bundestag. https://www.bundestag.de/resource/blob/412254/04d0b8db2d14ece3a72d-9b580c9578a6/WD-2-040-14-pdf-data.pdf

Zimmer. (2023). *Sts-Zimmer_Erlass_Beschleunigung-Beschaffung.pdf*. Ministry of Defence Germany. https://cdn.businessinsider.de/wp-content/uploads/2023/04/230425_Sts-Zimmer_Erlass_Beschleunigung-Beschaffung.pdf

Acquisition Research Program
Naval Postgraduate School
555 Dyer Road, Ingersoll Hall
Monterey, CA 93943

www.acquisitionresearch.net