

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Office of the Secretary Of Defense **Date:** April 2022

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605798D8Z / <i>Defense Technology Analysis</i>
--	--

COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	22.544	35.149	56.114	0.000	56.114	58.396	58.264	59.276	60.461	Continuing	Continuing
<i>796: Laboratory Resource Management</i>	-	7.957	15.892	31.332	0.000	31.332	34.362	34.370	34.886	35.584	Continuing	Continuing
<i>797: Defense Technology Analysis</i>	-	3.211	8.487	11.648	0.000	11.648	11.714	11.701	11.944	12.182	Continuing	Continuing
<i>798: Defense Support Teams</i>	-	9.338	8.339	8.816	0.000	8.816	9.071	9.297	9.490	9.680	Continuing	Continuing
<i>728: Homeland Defense Capability Development</i>	-	2.038	2.431	4.318	0.000	4.318	3.249	2.896	2.956	3.015	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Departments initiatives to Build a Sustainable and Long-Term Advantage, and Build a Resilient Joint Force and Defense Ecosystem.

The Under Secretary of Defense for Research and Engineering (USD(R&E)) is the principal staff advisor to the Secretary and Deputy Secretary of Defense, responsible for the research, development, and prototyping activities across the Department of Defense (DoD) enterprise. In this capacity, the USD(R&E) conducts analyses and studies; develops policies; provides technical leadership, oversight and advice; and issues guidance for the Department of Defense (DoD) Research, Development, Test and Evaluation (RDT&E) programs. This program element (PE) provides mission support to the USD(R&E) covering a wide range of studies and analysis in support of the R&E program and its impacts to the Department's decision to fund RDT&E efforts. Such activities include: (1) identification and development of new technological opportunities; (2) insertion of new technologies into warfighting systems and operations; and (3) management and evaluation of the effectiveness of technology programs.

This program provides funding for the Defense Laboratory Office within the USD(R&E). The Defense Laboratory Office mission is to craft policy and provide the oversight necessary to both preserve current, and develop future, DoD in-house laboratory capability such that they continue to generate mission-critical innovations that increase the U.S. military advantage and enhance U.S. national security. The Defense Laboratory Office advocates and supports the DoD laboratory system in three areas: (1) facilities and infrastructure; (2) personnel and quality of workforce; and (3) technology transfer.

The program provides funding for engineering, scientific, and analytical support to the USD(R&E) in its responsibility for direction, overall quality, and content of the science and technology (S&T) program and to ensure that the technology being developed is affordable and helps minimize system development risk.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Office of the Secretary Of Defense **Date:** April 2022

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> / BA 6: <i>RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605798D8Z / <i>Defense Technology Analysis</i>
--	--

These funds research and technical analysis and management, under the direction of the Director of Defense Research and Engineering for Modernization (DDRE(M)). These investments will promote further prioritization and targeting of the Department's key investments across the modernization efforts.

Additionally, this program funds Homeland Defense Capabilities Development Initiatives to address technology application in support of homeland defense of our military installations and the surrounding areas.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	23.341	39.774	0.000	0.000	0.000
Current President's Budget	22.544	35.149	56.114	0.000	56.114
Total Adjustments	-0.797	-4.625	56.114	0.000	56.114
• Congressional General Reductions	-	-7.500			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	3.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.793	-			
• Other Reprogramming	-0.004	-			
• FFRDC	-	-0.125			
• Adjustments to Budget Year	-	-	53.309		53.309
• Economic Assumption	-	-	1.905		1.905
• Defense Advanced Battery Supply Chain	-	-	0.900		0.900

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 796: *Laboratory Resource Management*

Congressional Add: *Program Increase - Defense Technology Transfer*

	FY 2021	FY 2022
Congressional Add Subtotals for Project: 796	3.000	3.000
Congressional Add Totals for all Projects	3.000	3.000

Change Summary Explanation

In FY 2022 congressional funding reduction of -\$7.500 million due to excess growth.

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense										Date: April 2022		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605798D8Z / <i>Defense Technology Analysis</i>				Project (Number/Name) 796 / <i>Laboratory Resource Management</i>			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
796: <i>Laboratory Resource Management</i>	-	7.957	15.892	31.332	0.000	31.332	34.362	34.370	34.886	35.584	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Laboratories & Personnel Office (L&PO) provides advocacy, strategic planning, and policy for the DoD's laboratories. The DoD Laboratory Enterprise consists of more than 60 laboratories with approximately 67,000 employees (approximately 50,000 of whom are scientists and engineers). L&PO develops proposals and investment strategies for laboratory infrastructure, technology transfer programs, and personnel development. Section 211 of the National Defense Authorization Act (NDAA) for FY 2017 also transferred the management of the laboratory demonstration program at Science and Technology Reinvention Laboratories (STRs) from the Under Secretary of Defense for Personnel and Readiness (USD(P&R)) to the Under Secretary of Defense for Research and Engineering (USD(R&E)). Section 218 of the NDAA for FY 2018 amended the authority by re-designating management to the USD(R&E).

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023
Title: Laboratories and Personnel Office	4.957	3.192	6.332
Description: Provides advocacy, strategic planning, and policy for the DoD's laboratories. Develops proposals and investment strategies for laboratory infrastructure, technology transfer programs, and personnel development.			
FY 2022 Plans:			
<ul style="list-style-type: none"> • Continue to develop plans, policies, and investment strategies for laboratory infrastructure, technology transfer programs, personnel development, and Laboratory Quality Enhancement Program Panels that support the Defense Laboratory Enterprise. • From the completed Partnership Intermediary Agreement study, identify best practices and value/impact to laboratory and/or Service mission, and understand the various business models implemented across the DoD technology transfer community. 			
FY 2023 Plans:			
<ul style="list-style-type: none"> • Propose and evaluate best practices for planning, programming, and executing infrastructure construction projects at DoD Science and Technology Reinvention Laboratories (STRs) and support methodologies for assessing their readiness to achieve their missions. 			
FY 2022 to FY 2023 Increase/Decrease Statement:			
Increase in funding to support additional pilot programs and development of case studies/training material to support the DoD's laboratories in enhancing their technology transfer and public/private partnership efforts.			
Title: Central Lab Investment Program (CLIP)	-	9.700	25.000

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense		Date: April 2022
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605798D8Z / <i>Defense Technology Analysis</i>	Project (Number/Name) 796 / <i>Laboratory Resource Management</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
<p>Description: This effort seeks to address infrastructure gaps within the Department’s Laboratory community by establishing a dedicated funding stream for the DoD’s laboratories to address infrastructure issues, including facility planning, design, construction, sustainment repair, and/or modernization. In addition, CLIP could be used to acquire advanced equipment and tools, enabling the laboratories to devote their RDT&E funding to critical research and development and offset their sustainment, repair, and modernization (SRM) funding gap.</p> <p>FY 2022 Plans: Establish and execute policy and a program to solicit and select laboratory infrastructure and equipment projects executable within one year of award.</p> <p>FY 2023 Plans: Select and award laboratory infrastructure and equipment projects received under a FY 2022 call for proposals. Continue strategic plans and projects that meet the program’s objectives to comprehensively address infrastructure issues.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The DoD Laboratories have annually presented an unfunded military construction request to Congress; this fund will begin to address the challenges that the Service laboratories face in their attempts to fund laboratory and equipment capability improvements through a comprehensive strategic plan. The increase in funding will support additional laboratory and infrastructure projects selected through a FY 2022 call for proposals.</p>			
Accomplishments/Planned Programs Subtotals	4.957	12.892	31.332

	FY 2021	FY 2022
Congressional Add: Program Increase - Defense Technology Transfer	3.000	3.000
<p>FY 2021 Accomplishments: Funding was sent to the Air Force Research Laboratory to support the MilTech technology transition program, which will:</p> <ul style="list-style-type: none"> - Provide technology transition expert support to the DoD laboratories and programs; - Develop and provide technology transition training to the DoD technology transfer professionals; and - Identify and share best practices of the DoD technology transition activities and programs. <p>FY 2022 Plans: Continue to build on FY 2021 progress through a Partnership Intermediary Agreement (PIA) with MilTech.</p>		
Congressional Adds Subtotals	3.000	3.000

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense		Date: April 2022
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605798D8Z / <i>Defense Technology Analysis</i>	Project (Number/Name) 796 / <i>Laboratory Resource Management</i>

C. Other Program Funding Summary (\$ in Millions)
N/A

Remarks

D. Acquisition Strategy
N/A

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense										Date: April 2022		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605798D8Z / Defense Technology Analysis				Project (Number/Name) 797 / Defense Technology Analysis			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
797: Defense Technology Analysis	-	3.211	8.487	11.648	0.000	11.648	11.714	11.701	11.944	12.182	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Defense Technology Analysis (DTA) project funds engineering, scientific, and analytical support for the Office of the Under Secretary of Defense for Research and Engineering (OUSDR&E) and specifically the office of the Director of Defense Research and Engineering for Modernization (DDRE(M)) starting in FY 2021. The DDRE(M) supports the USDR&E by prioritizing the National Defense Strategy modernization lines of effort in order to maintain competitive advantage against adversaries. The efforts funded in this project directly support and are critical to developing and continuously updating research and technology development roadmaps as required by Section 217 of the National Defense Authorization Act for FY 2021 .

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023
Title: Defense Technology Analysis	3.211	8.487	11.648
Description: The DDRE(M) is responsible for developing the Department's roadmap efforts in the eleven modernization priorities areas: 5G; Artificial Intelligence; Autonomy; Biotechnology; Cyber; Directed Energy; Fully Networked Command, Control, and Communication; Hypersonics; Microelectronics; Quantum Science; and Space. Identification of leading edge technology is critical in delivering capability to the warfighter and maintaining the competitive advantage. Funding for research, technical analysis and management, and other advanced research methods will allow for success in identifying game changing technology investments for the Department's modernization efforts.			
FY 2022 Plans: Leverage strategic partnerships to ensure the Department's investments are appropriately focused on the modernization priorities and address issues to close remaining investment gaps. Continue to conduct analysis and research studies to support updates and advancements of modernization roadmaps to reflect emerging trends and ensuring the Department's competitiveness.			
FY 2023 Plans: Adversary and competitor actions seek to disrupt and diminish the United States' advantages. Advancement of research and development in the eleven modernization priorities will enhance the United States' competitive advantage. The Department will continue to conduct analysis and research studies to support updates to and advancements of modernization roadmaps synchronized with related priorities. Focus areas include the emerging technology industrial base and the workforce, including universities. The studies and analyses conducted will focus not only on closing gaps and identifying overlap, but providing leap-ahead capabilities.			
FY 2022 to FY 2023 Increase/Decrease Statement:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense	Date: April 2022
--	-------------------------

Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605798D8Z / <i>Defense Technology Analysis</i>	Project (Number/Name) 797 / <i>Defense Technology Analysis</i>
--	--	--

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
Increased emphasis and need for promoting the Department's key priorities across the modernization efforts with increased investment in engineering, scientific, analytical, and managerial support to and studies for the OUSD(R&E).			
Accomplishments/Planned Programs Subtotals	3.211	8.487	11.648

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense **Date:** April 2022

Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605798D8Z / Defense Technology Analysis	Project (Number/Name) 798 / Defense Support Teams
--	---	---

COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
798: Defense Support Teams	-	9.338	8.339	8.816	0.000	8.816	9.071	9.297	9.490	9.680	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Department's key expertise for reviewing and guiding research and engineering (R&E) programs resides in the Office of the Under Secretary of Defense for Research and Engineering (OUSDR&E). The OUSDR&E staff augment their responsibilities through connections to technology experts in various fields throughout academia, industry, and government.

This project provides engineering, scientific, and analytical support to the Office of the Under Secretary of Defense for Research and Engineering (OUSDR&E) in its responsibility for direction, overall quality, and content of the science and technology (S&T) program. This activity conducts assessments and analyses to ensure maximum utilization of research and development funds to accomplish the overall objectives of the S&T program. It ensures the technology being developed is affordable and minimizes system development risk. Funds are required for technical, analytical, management support, travel, and publications.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023
Title: Defense Support Teams	9.338	8.339	8.816
Description: This project provides engineering, scientific, and analytical support to the OUSDR&E in its responsibility for direction, overall quality, and content of the S&T program. Furthermore, it ensures that the technology being developed is affordable and minimizes system development risk.			
FY 2022 Plans: Continue to provide engineering, scientific, analytical, and managerial support to the OUSDR&E in developing strategies, plans, and policies to develop and exploit technology; conduct technology analyses, make recommendations, and develop guidance for S&T plans and programs; review acquisition programs and make recommendations to optimize effectiveness of the DoD investments; and oversight of S&T issues and initiatives and respond to Congressional special interests.			
FY 2023 Plans: Continue to provide engineering, scientific, analytical, and managerial support to the OUSDR&E in developing strategies, plans, and policies to develop and exploit technology; conduct technology analyses, make recommendations, and develop guidance for S&T plans and programs; review acquisition programs and make recommendations to optimize effectiveness of the DoD investments; and oversight of S&T issues and initiatives and respond to Congressional special interests.			
FY 2022 to FY 2023 Increase/Decrease Statement:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense		Date: April 2022
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605798D8Z / <i>Defense Technology Analysis</i>	Project (Number/Name) 798 / <i>Defense Support Teams</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
There is no significant change between FY 2022 and FY 2023.			
Accomplishments/Planned Programs Subtotals	9.338	8.339	8.816

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense										Date: April 2022		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605798D8Z / Defense Technology Analysis				Project (Number/Name) 728 / Homeland Defense Capability Development			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
728: Homeland Defense Capability Development	-	2.038	2.431	4.318	0.000	4.318	3.249	2.896	2.956	3.015	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In order to better align and support the Joint Warfighting Concept, the Homeland Defense Capability Development initiative is focused on small unmanned and counter small unmanned systems science and technology (S&T) innovation.

A. Mission Description and Budget Item Justification

The Homeland Defense Capability Development Initiatives project uniquely engages with the Services, Combatant Commands, and our federal partners on critical S&T initiatives to both develop emerging unmanned systems technology and countering small unmanned system threats to our military forces and installations across all domains. Work in this project explores and identifies critical technology needs across the domains of Air, Land, Sea and Space, and enables development of synergistic platforms and weapons systems S&T strategies to include unmanned and counter small unmanned systems technologies, directed energy, munitions, power and energy, and their applications to future force projection and protection capabilities as identified in the National Defense Strategy.

Key technology applications complement the Office of the Under Secretary of Defense for Research and Engineering's modernization priorities: Fully Networked Command, Control, and Communications; Directed Energy; Cyber; Autonomy; and Machine Learning/Artificial Intelligence.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023
Title: Homeland Defense Capability Development Initiatives	2.038	2.431	3.418
FY 2022 Plans: Continue to provide S&T and RDT&E support from FY 2020 Cruise Missile Defense (CMD)/Homeland Defense Design, Humanitarian Assistance/Disaster Relief (HADR) Enabling Commercial Technologies, and Sustainable Microgrid Technologies to Defend Key Locations/Assets against Powergrid Attacks efforts. Continue to support analysis to include the discrimination of 5G-enabled autonomous threats, interagency Unmanned Aircraft Systems (UAS) technology projects, defense against autonomous systems, and defense against projected homeland air threats, supporting NDS global trends on technology. Conduct strategic studies, analyses, and modeling to identify critical technologies required to enable advanced force projection and protection capabilities, such as the ability to mitigate adversarial large-scale collaborative engagement and swarming of munitions and unmanned systems.			
FY 2023 Plans: Complete analyses of 5G-enabled autonomous threats, exploring ways in which the 5G communication and control links associated with a sUAS platform can be used for detection and discrimination from non-sUAS 5G users. Evaluate Group 3			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense		Date: April 2022		
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605798D8Z / <i>Defense Technology Analysis</i>	Project (Number/Name) 728 / <i>Homeland Defense Capability Development</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>Unmanned Aircraft System impacts on integrated air defense capabilities in the NORAD and USNORTHCOM or INDOPACOM areas of regard, describe limitations of current technology, as well as identify opportunities for new technologies to improve integrated air defense capabilities against emerging Group 3 UAS threats. Further strategic studies, analyses and modeling to identify critical technologies required to enable advanced force projection and protection capabilities and mitigate adversarial large-scale collaborative engagement and swarming of munitions and unmanned systems. Assess and identify critical unmanned systems technologies and novel use of cross domain unmanned systems across force protection applications.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Increase in funding required to explore cross domain applications of unmanned systems for force protection applications.</p>				
<p>Title: Defense Advanced Battery Supply Chain</p> <p>FY 2023 Plans: In coordination with Army, Navy, and USD(A&S), generate analytics that characterize the Department's current and projected energy/advanced battery needs. Develop and implement the methodology to effectively measure and track vulnerabilities in the battery supply chain across the Services.</p> <p>Funding provided in PEs 0603342D8Z, 0605798D8Z, 0603680D8Z, 0607210D8Z, 0605805Z, 0603724N, 0603462A, and 0901212N.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: FY 2023 enhancement to support the Defense Advanced Battery Supply Chain consistent with DoD priorities.</p>		-	-	0.900
Accomplishments/Planned Programs Subtotals		2.038	2.431	4.318
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				