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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Office of the Secretary Of Defense **Date:** February 2020

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>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	0.000	27.231	15.875	29.059	-	29.059	28.185	28.402	28.750	29.081	Continuing	Continuing
<i>796: Laboratory Resource Management</i>	0.000	6.110	8.445	5.355	-	5.355	4.748	4.811	4.915	5.015	Continuing	Continuing
<i>797: Defense Technology Analysis</i>	0.000	5.487	5.947	11.000	-	11.000	11.000	11.500	11.500	11.500	Continuing	Continuing
<i>798: Defense Support Teams</i>	0.000	1.768	1.483	9.204	-	9.204	8.937	9.091	9.335	9.566	Continuing	Continuing
<i>728: Homeland Defense Capability Development Initiatives</i>	0.000	0.000	0.000	3.500	-	3.500	3.500	3.000	3.000	3.000	Continuing	Continuing
<i>102: Data Vulnerability Assessment and Analysis</i>	0.000	13.866	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Note

In FY 2020, Project 102 funding is realigned to PE 0605797D8Z.

A. Mission Description and Budget Item Justification

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 DoD enterprise. In this capacity, OUSD(R&E) conducts analyses and studies; develops policies; provides technical leadership, oversight and advice; and issues guidance for Department of Defense (DoD) RDT&E programs. This program element (PE) provides mission support to the Office of the USD(R&E) (OUSD(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 Research, Development, Test and Evaluation (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.

The PE 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 PE 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

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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>
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Beginning in FY 2021, the PE will also fund research and technical analysis and management, under the direction of the newly created Director of Defense Research and Engineering for Modernization. These investments will promote further prioritization and targeting of the Department's key investments across the modernization efforts.

Beginning in FY 2021, this PE will also fund 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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	27.425	16.875	16.721	-	16.721
Current President's Budget	27.231	15.875	29.059	-	29.059
Total Adjustments	-0.194	-1.000	12.338	-	12.338
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-4.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	3.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.649	-			
• SBIR/STTR Transfer	-0.838	-			
• Other Adjustments	-0.005	-	-0.139	-	-0.139
• Economic Assumption	-	-	-0.023	-	-0.023
• Adjustment to support Modernization priorities	-	-	11.000	-	11.000
• Adjustment for Counter Unmanned Aircraft Systems	-	-	1.500	-	1.500

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

Project: 796: *Laboratory Resource Management*

Congressional Add: *Program Increase - Defense Technology Transfer*

	FY 2019	FY 2020
Congressional Add Subtotals for Project: 796	2.992	3.000
Congressional Add Totals for all Projects	2.992	3.000

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Office of the Secretary Of Defense										Date: February 2020		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605798D8Z / Defense Technology Analysis				Project (Number/Name) 796 / Laboratory Resource Management			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
796: Laboratory Resource Management	0.000	6.110	8.445	5.355	-	5.355	4.748	4.811	4.915	5.015	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Defense Laboratory Office (DLO) provides advocacy, strategic planning, and policy for the DoD's in-house 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). The Defense Laboratory Office develops plans and investment strategies for laboratory infrastructure, technology transfer programs, and personnel development. Section 211 of the FY 2017 National Defense Authorization Act (NDAA) 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 Assistant Secretary of Defense for Research and Engineering (ASD(R&E)). Section 218 of the FY 2018 NDAA amended the authority by redesignating management to the Under Secretary of Defense for Research and Engineering (USD(R&E)).

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

	FY 2019	FY 2020	FY 2021
Title: Defense Laboratory Office	3.118	5.445	5.355
Description: Provides advocacy, strategic planning, and policy for the DoD's in-house laboratories. Develops plans and investment strategies for laboratory infrastructure, technology programs, and personnel development.			
FY 2020 Plans:			
<ul style="list-style-type: none"> The DLO will continue to develop plans, policies and investment strategies for laboratory infrastructure, technology transfer programs, personnel development, and the Laboratory Quality Enhancement Program Panels that supports the in-house Defense Laboratory Enterprise. The DLO will develop an advanced technical training pilot program to efficiently and effectively provide insight on technology transfer from DoD laboratories to the market. Future initiatives will look at developing a single intellectual property (IP) docketing and tracking system across DoD that will enable real time tracking of the DoD IP portfolio. 			
FY 2021 Plans:			
<ul style="list-style-type: none"> The DLO will continue to develop plans, policies and investment strategies for laboratory infrastructure, technology transfer programs, personnel development, and the Laboratory Quality Enhancement Program Panels that supports the in-house Defense Laboratory Enterprise. The DLO will develop an advanced technical training pilot program to efficiently and effectively provide insight on technology transfer from DoD laboratories to the market. Future initiatives will look at developing a single intellectual property (IP) docketing and tracking system across DoD that will enable real time tracking of the DoD IP portfolio. 			
FY 2020 to FY 2021 Increase/Decrease Statement:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Office of the Secretary Of Defense		Date: February 2020
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 2019	FY 2020	FY 2021
The level of effort is consistent between FY 2020 and FY 2021. Small changes reflect minor budget fluctuations.			
Accomplishments/Planned Programs Subtotals	3.118	5.445	5.355

	FY 2019	FY 2020
Congressional Add: Program Increase - Defense Technology Transfer	2.992	3.000
FY 2019 Accomplishments: • Initiated innovative technology transfer pilot programs. • Produced engagement tools to highlight mechanisms and enable greater technology transfer to the defense industrial base, non traditional performers and other private sector entities.		
FY 2020 Plans: • Continue innovative technology transfer pilot programs.		
Congressional Adds Subtotals	2.992	3.000

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

N/A

Remarks

D. Acquisition Strategy

N/A

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Office of the Secretary Of Defense										Date: February 2020		
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>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
<i>797: Defense Technology Analysis</i>	0.000	5.487	5.947	11.000	-	11.000	11.000	11.500	11.500	11.500	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 (OUSD(R&E)) and specifically the office of the Director of Defense Research and Engineering for Modernization (DDR&E(Modernization)) starting in FY 2021. The DDR&E(Modernization) supports the USD(R&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 code are critical to establish roadmaps in modernization areas that ultimately support the technical advantage of the Warfighter.

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

	FY 2019	FY 2020	FY 2021
Title: Defense Technology Analysis	5.487	5.947	11.000
<p>Description: The DDR&E(Modernization) has oversight of the National Defense Strategy modernization priorities. The eleven modernization priorities are: 5G; Artificial Intelligence/Machine Learning; Cyber; Biotechnology; Directed Energy; Space; Quantum Science; Hypersonics; Autonomy; Fully Networked Command, Control, and Communication; and Microelectronics. Identifying leading edge technology in these areas to maintain superiority is critical to the warfighting efforts of the U.S. military. Funding for research, technical analysis and management, and other advanced research methods will allow for success in identifying the key investments in the Department's modernization efforts.</p> <p>FY 2020 Plans: Continue to provide engineering, scientific, analytical, and managerial support to the OUSD(R&E) to develop strategies, plans, and policies to develop and exploit technology; conduct technology analyses; make recommendations and develop guidance for RDT&E plans and programs in Modernization priority areas; review acquisition programs and make recommendations to optimize effectiveness of the DoD investments; and oversee RDT&E issues and initiatives and respond to Congressional special interests in the OUSD(R&E) portfolio areas.</p> <p>FY 2021 Plans: Advance and update modernization roadmaps to reflect emerging trends in the modernization field. Continue analysis in defense modernization efforts while coordinating with Service leads to identify Military Department specific needs.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement:</p>			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Office of the Secretary Of Defense		Date: February 2020
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 2019	FY 2020	FY 2021
The increase in FY 2021 supports efforts under the office of the DDR&E(Modernization).			
Accomplishments/Planned Programs Subtotals	5.487	5.947	11.000

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

N/A

Remarks

D. Acquisition Strategy

N/A

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Office of the Secretary Of Defense **Date:** February 2020

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>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
<i>798: Defense Support Teams</i>	0.000	1.768	1.483	9.204	-	9.204	8.937	9.091	9.335	9.566	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2021, funding re-aligned from Project Code 797 to accurately reflect support to mission.

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 (OUSD(R&E)). The OUSD(R&E) staff augment their responsibilities through connections to technology experts in various fields throughout academia, industry, and government.

In FY 2021, efforts from Project Code 797, Defense Technology Analysis, will be aligned to this project code to continue to provide engineering, scientific, and analytical support to the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&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 and that 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 2019	FY 2020	FY 2021
Title: Defense Support Teams	1.768	1.483	9.204
Description: This project provides engineering, scientific, and analytical support to the OUSD(R&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 2020 Plans: In FY 2020, continue to establish support teams and conduct technology analyses to support R&E program investment decisions. For selected acquisition programs and efforts, reviewed in technical detail the respective program issues and offered technical solutions to program managers. Assessed the maturity of technologies that were candidates for transition to acquisition programs.			
FY 2021 Plans: In FY 2021, this project will provide engineering, scientific, analytical, and managerial support to the OUSD(R&E) in developing strategies, plans, and policies to develop and exploit technology; conducting technology analyses, making recommendations, and developing guidance for S&T plans and programs; reviewing acquisition programs and making recommendations to optimize			

UNCLASSIFIED

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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 2019	FY 2020	FY 2021
<p>effectiveness of the DoD investments; and oversight of S&T issues and initiatives and responding to Congressional special interests.</p> <p>The program will also conduct technology analyses to support R&E program investment decisions. For selected acquisition programs and efforts, respective program issues will be reviewed and technical solutions will be offered to program managers. The maturity of technologies that are candidates for transition to acquisition programs will also be assessed.</p> <p><i>FY 2020 to FY 2021 Increase/Decrease Statement:</i> In FY 2021, efforts from Project Code 797, Defense Technology Analysis, are re-aligned to this Project Code to provide engineering, scientific, and analytical support to the OUSD(R&E) in its responsibility for direction, overall quality, and content of the S&T program.</p>				
Accomplishments/Planned Programs Subtotals		1.768	1.483	9.204
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Office of the Secretary Of Defense **Date:** February 2020

Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605798D8Z / Defense Technology Analysis	Project (Number/Name) 728 / Homeland Defense Capability Development Initiatives
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
<i>728: Homeland Defense Capability Development Initiatives</i>	0.000	0.000	0.000	3.500	-	3.500	3.500	3.000	3.000	3.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

FY 2021 funding re-aligned from Project Code 797 to establish new Pcode in support of Homeland Defense Capability Development efforts.

A. Mission Description and Budget Item Justification

Homeland Defense Capability Development (HDCD) uniquely engages with the Services, Combatant Commands, and our Federal partners on critical Science and Technology (S&T) and Research, Development, Test and Evaluation (RDT&E) initiatives to address technology application in support of homeland defense of our military installations and the surrounding areas. 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. HDCD remains engaged on current and future initiatives in order to advance the “Homeland Defense Layer” identified in the National Defense Strategy (NDS).

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

	FY 2019	FY 2020	FY 2021
Title: Homeland Defense Capability Development Initiatives	-	-	3.500
FY 2021 Plans: 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.			
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. These plans support the NDS global trends on technology.			
FY 2020 to FY 2021 Increase/Decrease Statement: New project code established in FY 2021 to support Homeland Defense Capability Development Initiatives; efforts previously funded under Project Code 797.			
Accomplishments/Planned Programs Subtotals	-	-	3.500

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

N/A

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Office of the Secretary Of Defense		Date: February 2020
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 Initiatives</i>

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

Remarks

D. Acquisition Strategy

N/A

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2021 Office of the Secretary Of Defense **Date:** February 2020

Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605798D8Z / <i>Defense Technology Analysis</i>	Project (Number/Name) 102 / <i>Data Vulnerability Assessment and Analysis</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
<i>102: Data Vulnerability Assessment and Analysis</i>	0.000	13.866	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2020, this funding is transferred to the Maintaining Technology Advantage PE 0605797D8Z, in accordance with the new OUSD(R&E) re-organization.

A. Mission Description and Budget Item Justification

Most DoD technical information resides on unclassified networks where it is at risk of being targeted for cyber espionage campaigns. Protecting DoD unclassified controlled technical information is a high priority for the Department, and is critical to preserving intellectual property and competitive capabilities of our national industrial base. To maintain full confidence in our systems, the Department must also assess the effect the loss of this information has on our warfighting capabilities. DoD contractors who produce or access controlled technical information must incorporate security standards on their networks and report cyber-intrusion incidents that result in the loss of this information. These requirements are important, but insufficient in the face of a determined adversary. The Department must take steps to understand the impacts of losses and rethink how we safeguard our capabilities. This information, while unclassified, includes data and intellectual property concerning defense systems requirements, concepts of operations, technologies, designs, engineering, systems production, and component manufacturing.

This project supports protection of unclassified controlled technical information, and an analysis of losses, to determine consequences and appropriate requirements, acquisition, programmatic, and strategic courses of action.

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

	FY 2019	FY 2020	FY 2021
Title: Data Vulnerability Program	13.866	-	-
Description: The Data Vulnerability Assessment and Analysis project will establish a joint analysis capability to conduct comprehensive assessments of controlled unclassified technical information losses, and will engage acquisition and intelligence sources, to determine consequences and appropriate preventative/mitigation actions.			
Accomplishments/Planned Programs Subtotals	13.866	-	-

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

N/A

Remarks

D. Acquisition Strategy

N/A