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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Defense Threat Reduction Agency **Date:** March 2023

Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0604551BR / CATAPULT INFORMATION SYSTEM
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	8.110	6.979	7.130	8.328	-	8.328	7.475	7.625	7.777	7.933	Continuing	Continuing
RA: CWMD CROSS-CUTTING TECHNICAL AND INFORMATION SCIENCES	8.110	6.979	7.130	8.328	-	8.328	7.475	7.625	7.777	7.933	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program designs, develops, tests, and delivers mission capabilities that support the ability to aggregate, and analyze data on global emerging threats and expedites DTRA's technology transition from the laboratory to operational use to reduce risk within the acquisition process. This is done by developing and deploying emerging technologies into our fully operational system through our Development, Security, and Operations (DevSecOps) pipeline.

B. Program Change Summary (\$ in Millions)

	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	7.166	7.130	7.328	-	7.328
Current President's Budget	6.979	7.130	8.328	-	8.328
Total Adjustments	-0.187	0.000	1.000	-	1.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.187	0.000			
• Realignment	-	-	1.000	-	1.000

Change Summary Explanation

The increase in FY 2024 from the previous President's Budget is due to increased investment in Project RA: CWMD Cross-Cutting Technical and Information Sciences for the Catapult Information System funded by decreased investment in Projects RA: CWMD Cross-Cutting Technical and Information Sciences, RD: Nuclear Technologies and Capabilities Development, and RR: CWMD Test and Evaluation in PE 0603160BR.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Threat Reduction Agency **Date:** March 2023

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604551BR / CATAPULT INFORMATION SYSTEM	Project (Number/Name) RA / CWMD CROSS-CUTTING TECHNICAL AND INFORMATION SCIENCES
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
RA: CWMD CROSS-CUTTING TECHNICAL AND INFORMATION SCIENCES	8.110	6.979	7.130	8.328	-	8.328	7.475	7.625	7.777	7.933	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project enables DTRA's Catapult Information System Program to design, develop, test and deliver mission capabilities that support the ability to aggregate and analyze data on global emerging threats, threat actors and threat networks. Catapult allows DTRA to rapidly develop, engineer, test and deploy analytical tools, data science methodologies and software applications in support of the warfighter. Catapult and its associated Attack the Network Tool Suite (ANTS) integrates data sources that support the detection and identification of emerging threats, threat networks and actors, command and control, operations, intelligence, and engagement for neutralizing, attacking and defeating both current and emerging threats and threat networks.

Catapult uses its RDT&E funding to meet user needs using tools and services that reside in Catapult, a cloud technology-based data analytics platform developed and delivered by DTRA that provides an extensible, continuously augmented, real-time repository of data on emerging threats and worldwide threat actors. Catapult is fully operational and accredited on the Secret Internet Protocol Router Network (SIPRNet) and Joint Worldwide Intelligence Communications System (JWICS). The Catapult architecture pulls from more than 850 data sources on SIPRNet and more than 170 data sources on JWICS. Catapult uses ANTS tools and services to provide national-level capabilities for data and information capture, discovery, access, aggregation, correlation, visualization, analysis, sharing, and distribution for users from the strategic level to the tactical edge.

This project achieves transformational mission capabilities and postures the Agency to meet emerging mission requirements through innovative technology solutions and service upgrades.

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

	FY 2022	FY 2023	FY 2024
Title: RA: CWMD Cross-Cutting Technical and Information Sciences	6.979	7.130	8.328
Description: This project enables DTRA's Catapult Information System Program to design, develop, test, and deliver mission capabilities that support the ability to aggregate and analyze data on global emerging threats. Catapult allows DTRA to rapidly develop, engineer, test and deploy analytical tools, data science methodologies and software applications in support of the warfighter. The project achieves transformational mission capabilities and postures the Agency to meet emerging mission requirements through innovative technology solutions and service upgrades.			
FY 2023 Plans:			

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

	FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Develop predictive Data Science models through supervised and unsupervised Machine Learning (ML) against current and emerging threats; including fusion of multi-INT data across unclassified and classified data sets to identify networks and locations of interest to DTRA and its mission partners. - Integrate ML-driven application features into ANTS capabilities, such as ML JavaScript libraries, to enhance human-centered design of applications and tailor individual access to applications to improve user experience. - Develop an Active Learning-enabled extension to the data annotation platform to accelerate preparation of training sets for both new and retrained machine learning models. - Develop a Named Entity Recognition (NER) enhancement using machine learning techniques to expand the scope of captured entities, including events, location features, person attributes and affiliations. - Integrate a query expansion capability to automatically recommend keywords in the corpus of documents as users are typing queries; accelerate document discovery and enhance information retrieval features in ANTS applications. - Automate the process of labeling data for supervised machine learning by integrating labeling functions or custom recipes. - Modernize the Catapult data model using JADC2-recognized formats, such as National Information Exchange Model (NIEM), or other open and recognized data model standards to improve the cross-compatibility of the Catapult corpus with other data repositories in the DoD. - Standardize open API services to adhere to JADC2 recommendations to improve data accessibility by using familiar lexicon, formats and techniques for retrieving data by data-as-a-service subscribers and citizen data scientists. - Develop the Next Generation of the Catapult Information System to align to the Joint All Domain Command and Control and Joint Warfighting Concept. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Develop predictive Data Science models through supervised and unsupervised Machine Learning (ML) against current and emerging threats; including fusion of multi-INT data across unclassified and classified data sets to identify networks and locations of interest to DTRA and its mission partners. - Continue the modernization of Catapult's data model using JADC2-recognized formats, such as National Information Exchange Model (NIEM), or other open and recognized data model standards to improve the cross-compatibility of the Catapult corpus with other data repositories in the DoD. - Continue to standardize open API services to adhere to JADC2 recommendations to improve data accessibility by using familiar lexicon, formats and techniques for retrieving data by data-as-a-service subscribers and citizen data scientists. - Develop the Next Generation of the Catapult Information System to align to the Joint All Domain Command and Control and Joint Warfighting Concept. - Design and implement a cross domain solution to enable data sharing across enclaves. <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
The increase from FY 2023 to FY 2024 funds system upgrades for new CWMD mission related data feeds, cross-domain solutions, and system modifications to enable allies and strategic partners access to the Catapult Information System.			
Accomplishments/Planned Programs Subtotals	6.979	7.130	8.328

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 23/0602718BR/RA: COUNTER WEAPONS OF MASS DESTRUCTION APPLIED RESEARCH	45.294	3.140	37.218	-	37.218	37.914	29.639	30.543	31.213	Continuing	Continuing
• 33/0603160BR/RA: COUNTER WEAPONS OF MASS DESTRUCTION ADVANCED TECHNOLOGY DEVELOPMENT	76.268	78.991	86.415	-	86.415	90.571	88.687	89.660	92.136	Continuing	Continuing
• 144/0605502BR/RA: SMALL BUSINESS INNOVATION RESEARCH	16.870	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Remarks

N/A

D. Acquisition Strategy

Assessment and selection of best performers to provide contractual services to develop and operationalize requirements through the IMAX contract to minimize cost and technical risk. Performer base selection includes research developers across DoD and other Government agency laboratories, academia, and industry.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Defense Threat Reduction Agency **Date:** March 2023

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Catapult Information System	C/CPAF	Booz Allen Hamilton : Reston, VA	5.218	5.782	Jun 2022	6.140	Jul 2023	7.328	Jul 2024	0.000		7.328	Continuing	Continuing	24.468
Subtotal			5.218	5.782		6.140		7.328		0.000		7.328	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Catapult Information System	C/CPAF	Booz Allen Hamilton : Reston, VA	0.917	0.000	Jun 2022	0.000		0.000		0.000		0.000	0.000	0.917	0.917
Subtotal			0.917	0.000		0.000		0.000		0.000		0.000	0.000	0.917	N/A

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Catapult Information System	C/CPAF	Booz Allen Hamilton : Reston, VA	0.500	0.963	Jun 2022	0.990	Jun 2023	1.000	Jul 2024	0.000		1.000	Continuing	Continuing	3.453
SETA - Capability Research Architecture Cell (CRAC)	C/CPAF	TBD : Ft. Belvoir, VA	1.475	0.000		0.000		0.000		0.000		0.000	0.000	1.475	0.000
TACEON	C/CPAF	Booz Allen Hamilton : Reston, VA	0.000	0.234	Jun 2022	0.000		0.000		0.000		0.000	0.000	0.234	0.000
Subtotal			1.975	1.197		0.990		1.000		0.000		1.000	Continuing	Continuing	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Defense Threat Reduction Agency		Date: March 2023
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FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Catapult and Technology Analysis

Catapult / Attack the Network Tool Suite (ANTS) Support																												
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Defense Threat Reduction Agency		Date: March 2023
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Catapult and Technology Analysis</i>				
Catapult / Attack the Network Tool Suite (ANTS) Support	4	2022	4	2028