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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army **Date:** April 2022

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604020A / <i>Cross Functional Team (CFT) Advanced Development & Prototyping</i>
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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	-	-	-	106.000	-	106.000	0.000	0.000	0.000	0.000	0.000	106.000
DC8: <i>Army Experimentation and Prototyping</i>	-	-	-	106.000	-	106.000	-	-	-	-	0.000	106.000

Note

This is a new start in FY 2023.

In Fiscal Year 2023 (FY23) this is a New Start Program Element (PE) in FY23.

A. Mission Description and Budget Item Justification

This Program Element (PE) is the Army led scope of the Rapid Defense Experimentation Reserve (RDER) initiative. To facilitate rapid modernization of the force, the RDER initiative was established in the Defense Planning Guidance for Fiscal Year 2023-2027, to encourage multi-component experimentation through a campaign of learning. Services, Agencies, and other participating organizations are to identify "best of breed" capabilities developed among the DoD prototyping programs, and execute approved projects through large-scale experiments in order to refine and/or validate the Joint Warfighting Concept (JWC). Organizations are to nominate proposals to the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) that are multi-component - involving Joint Services, International partners and/or other government agencies - and link to one or more of the four key supporting concepts ("functional battles") of the Joint Warfighting Concept: Joint Concept for Fires, Joint Concept for Command and Control, Joint Concept for Contested Logistics, and Joint Concept for Information Advantage.

Army lead experimentation outcomes will be designed to validate required capabilities enabling the JWC by evaluating and integrating prototyped technologies in operationally relevant, multi-domain environments. Experimentation results will facilitate Joint Staff analysis in the evaluation of the Joint Warfighting Concept, assist the Joint Requirements Oversight Counsel in requirements determination, and inform the Deputy's Management Action Group to make budget decisions that effect changes throughout the Department

The cited work is consistent with the Under Secretary of Defense, Research and Engineering science and the JWC.

Work in this PE is performed by the United States (U.S.) Army and other Service laboratories and research centers, U.S. Army and Joint Program Executive Offices and Program Management Offices.

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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604020A / <i>Cross Functional Team (CFT) Advanced Development & Prototyping</i>
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B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	106.000	-	106.000
Total Adjustments	0.000	0.000	106.000	-	106.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	106.000	-	106.000

Change Summary Explanation

FY2023 funding increase reflects the fact that the FY2022 President's Budget request did not include out year funding.

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Army										Date: April 2022		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0604020A / <i>Cross Functional Team (CFT) Advanced Development & Prototyping</i>				Project (Number/Name) DC8 / <i>Army Experimentation and Prototyping</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
DC8: <i>Army Experimentation and Prototyping</i>	-	-	-	106.000	-	106.000	-	-	-	-	0.000	106.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In Fiscal Year 2023 (FY23) this is a New Start Project in FY23.

A. Mission Description and Budget Item Justification

The Army led Olympus Project is a Joint All Domain Operations concept portfolio applicable across multiple COCOMs which addresses OUSD R&E priority scenarios (specifically INDOPACOM). Olympus will establish or optimize the architecture spanning remote sensing and C2 to support long range precision fires across a large disperse battlespace. Sufficiently mature technologies will be further matured to TRL7+ prototypes to support Soldier operated culmination test events in INDOPACOM (or other COCOMs) to evaluate advanced capabilities for sensing, target identification / target paring, multi-layer networks / data share, and advanced command and control. Technologies in the portfolio will go through risk reduction evaluations prior to the culmination testing event. Successful evaluations of the prototype efforts will lead to follow-on OSD, Army, or other Service efforts for accelerated transition of the technologies to COCOM required operations.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the JWC.

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

	FY 2021	FY 2022	FY 2023
Title: Olympus	-	-	86.000
Description: Mature technologies to TRL7+ prototypes for Soldier evaluations in INDOPACOM as primary experiment event in FY 2024. Efforts will include advanced capabilities for sensing, target identification / target paring, multi-layer networks / data share, and advanced command and control. The Olympus portfolio will initiate prototyping, integration and risk reduction activities to facilitate integrated and interoperable capabilities that leverage layered ISR and autonomy with advanced communications and architectures to enable AI-infused analytics and Layered Effects.			
FY 2023 Plans: Conduct systems design, hardware procurement, systems prototyping, software maturation and systems integration for Layered ISR and autonomy systems and communications and architectures within the Olympus portfolio. Efforts will prototype and integrate terrestrial and aerial ISR systems for evaluation on relevant test networks for a COCOM relevant scenario. Advanced communications and architectures will be prototyped and integrated to assess and refine concept of employment and associated use cases within a primary risk reduction event (FY 2023) and lead into the primary experimentation event in FY 2024.			
FY 2022 to FY 2023 Increase/Decrease Statement:			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
New Start Effort in FY 2023				
<p>Title: Army RDER Project</p> <p>Description: Army Rapid Defense Experimentation Reserve (RDER) Project</p> <p>FY 2023 Plans: The Rapid Defense Experimentation Reserve initiative budget line includes development of system prototypes for field demonstrations or experiments and/or tests in operational environments. Efforts provide proof of technological feasibility and assessment of system operability that demonstrate viability to accelerate prototype to Milestone B and insertion into existing Programs of Record or identify and demonstrate prototype capabilities that can be delivered in scale.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: New start project in FY 2023</p>		-	-	20.000
Accomplishments/Planned Programs Subtotals		-	-	106.000
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army **Date:** April 2022

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604020A / Cross Functional Team (CFT) Advanced Development & Prototyping	Project (Number/Name) DC8 / Army Experimentation and Prototyping
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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
Layered ISR and autonomy systems design	Option/TBD	Multiple : Various	-	-		-		4.000		-		4.000	0.000	4.000	-
Layered ISR and autonomy systems hardware procurement	Option/TBD	Multiple : Various	-	-		-		21.000		-		21.000	0.000	21.000	-
Layered ISR and autonomy systems prototyping	Option/TBD	Multiple : Various	-	-		-		7.000		-		7.000	0.000	7.000	-
Layered ISR and autonomy software maturation	Option/TBD	Multiple : Various	-	-		-		4.000		-		4.000	0.000	4.000	-
Layered ISR and autonomy systems integration	Option/TBD	Multiple : Various	-	-		-		4.000		-		4.000	0.000	4.000	-
Communications and architectures Systems Design	C/TBD	Multiple : Various	-	-		-		5.000		-		5.000	0.000	5.000	-
Communications and architectures hardware procurement	Option/TBD	Multiple : Various	-	-		-		9.000		-		9.000	0.000	9.000	-
Communications and architectures systems prototyping	Option/TBD	Multiple : Various	-	-		-		6.000		-		6.000	0.000	6.000	-
Communications and architectures software maturation	Option/TBD	Multiple : Various	-	-		-		7.000		-		7.000	0.000	7.000	-
Communications and architectures systems integration	Option/TBD	Multiple : Various	-	-		-		5.000		-		5.000	0.000	5.000	-
Lab Based Risk Reduction activities	Option/TBD	Multiple : Various	-	-		-		5.000		-		5.000	0.000	5.000	-
Risk Reduction and Evaluation Events	Option/TBD	Multiple : Various	-	-		-		9.000		-		9.000	0.000	9.000	-

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604020A / Cross Functional Team (CFT) Advanced Development & Prototyping	Project (Number/Name) DC8 / Army Experimentation and Prototyping

Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
Olympus																												
Layered ISR and autonomy systems design									■																			
Layered ISR and autonomy systems hardware procurement									■																			
Layered ISR and autonomy systems prototyping													■															
Layered ISR and autonomy software maturation													■				■											
Layered ISR and autonomy systems integration																	■				■							
Communications and architectures systems design									■																			
Communications and architectures hardware procurement									■																			
Communications and architectures systems prototyping													■															
Communications and architectures software maturation													■				■											
Communications and architectures systems integration																	■				■							
Lab Based Risk Reduction activities													■				■											
Risk Reduction and Evaluation Event 1																	▲											

▲
Risk Reduction Evaluation

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army			Date: April 2022
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Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
Risk Reduction and Evaluation Event 2													 Final Evaluation															
Army RDER Project																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Olympus	1	2023	4	2024
Layered ISR and autonomy systems design	1	2023	3	2023
Layered ISR and autonomy systems hardware procurement	1	2023	3	2023
Layered ISR and autonomy systems prototyping	2	2023	1	2024
Layered ISR and autonomy software maturation	2	2023	4	2024
Layered ISR and autonomy systems integration	3	2023	4	2024
Communications and architectures systems design	1	2023	3	2023
Communications and architectures hardware procurement	1	2023	3	2023
Communications and architectures systems prototyping	2	2023	1	2024
Communications and architectures software maturation	2	2023	4	2024
Communications and architectures systems integration	3	2023	4	2024
Lab Based Risk Reduction activities	1	2023	4	2024
Risk Reduction and Evaluation Event 1	4	2023	4	2023
Risk Reduction and Evaluation Event 2	4	2024	4	2024
Army RDER Project	1	2023	4	2024