Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
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 0604924D8Z / *High Energy Laser Advanced Component Development & Prototype*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	0.000	2.931	-	2.931	5.646	8.207	11.023	13.683	Continuing	Continuing
921: *High Energy Laser Tech Maturation*	0.000	0.000	0.000	2.931	-	2.931	5.646	8.207	11.023	13.683	Continuing	Continuing

Note

New Start (Y/N): YES

Funding was realigned from Program Element 0602890D8Z: High Energy Laser Development and Program Element 0603924D8Z: High Energy Laser Advanced Development.

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to build a sustainable and long-term advantage, as well as a resilient joint force and defense ecosystem.

This program reduces the technology risk, engineering integration, and life-cycle costs associated with directed energy weapon systems. Conducting competitive prototyping of system elements to inform requirements, this program will develop functional and allocated baselines of end-item system configurations. Directed energy weapon systems have many potential advantages, including speed-of-light time-to-target, high precision, low incremental cost per kill, and a magazine that is recharged through on-board, fuel-based power and thermal management systems that reduce logistics requirements in contrast to stocks of munitions or warheads. As a result, directed energy weapon systems have the potential to perform a wide variety of military missions. Activities conducted under this program will evaluate, prototype, and demonstrate directed-energy integrated technologies in operationally relevant environments, enabling the employment of directed energy weapon systems in support of mission areas across the Department of Defense.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	2.931	-	2.931
Total Adjustments	0.000	0.000	2.931	-	2.931
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Internal Realignments	-	-	2.961	-	2.961

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Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604924D8Z *I High Energy Laser Advanced Component Development & Prototype*

• Program Adjustment	-	-	-0.030	-	-0.030

Change Summary Explanation

The increase in FY 2025 of $2.925 million is the result of a internal realignments from (1) 0602890D8Z: High Energy Laser Development (0.727 million) and (2) 0603924D8Z: High Energy Laser Advanced Development (2.228 million).

In addition to the internal realignments, a reduction of $-0.030 million was applied to meet DoD overall funding reductions, which were spread to mitigate impact.

This overall increase is in support of the evaluation, development, and demonstration of directed energy advanced components and prototypes.

Small increase of due to economic assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604924D8Z / *High Energy Laser Advanced Component Development & Prototype*	Project (Number/Name) 921 / *High Energy Laser Tech Maturation*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
921: *High Energy Laser Tech Maturation*	0.000	0.000	0.000	2.931	-	2.931	5.646	8.207	11.023	13.683	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start (Y/N): YES

Funding was realigned from Program Element 0602890D8Z: High Energy Laser Development and Program Element 0603924D8Z: High Energy Laser Advanced Development.

A. Mission Description and Budget Item Justification

This program element reduces the technology risk, engineering integration, and life-cycle costs associated with directed energy weapon systems. Conducting competitive prototyping of system elements to inform requirements, this program will develop functional and allocated baselines of end-item system configurations. Directed energy weapon systems have many potential advantages, including speed-of-light time-to-target, high precision, low incremental cost per kill, and a magazine that is recharged through on-board, fuel-based power and thermal management systems that reduce logistics requirements in contrast to stocks of munitions or warheads. As a result, directed energy weapon systems have the potential to perform a wide variety of military missions. Activities conducted under this program will evaluate, prototype, and demonstrate directed-energy integrated technologies in operationally relevant environments, enabling the employment of directed energy weapon systems in support of mission areas across the Department of Defense.

This program provides cross-cutting products to the Services, enabling next generation directed energy weapons that engage threats at longer ranges with shorter engagement timelines in adverse environments with improved size, weight, and power requirements. Products include: common architectures; mission engineering studies; and next generation battle management. As a result, this program transitions directed-energy technology to the Services at a high enough technical readiness level for insertion into directed energy weapon systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Directed Energy Advanced Component Development & Prototypes	-	-	2.931
Description: Develop, mature, and demonstrate open architectures that will enable operational weapon systems. Develop, mature, and demonstrate command and control to improve battle management for directed energy systems. Conduct mission engineering studies with system-level models to evaluate military utility.			
FY 2025 Plans: Open Architecture: Using a modular open system approach, leverage previously identified reference architectures and identify a scalable beam control solution.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604924D8Z / *High Energy Laser Advanced Component Development & Prototype*	**Project (Number/Name)** 921 / *High Energy Laser Tech Maturation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Command and Control: Survey engagement timelines for missions across the Department of Defense and optimize the kill chain associated with directed energy weapon systems to reduce latency and enable more robust battle management. Mission Engineering: Develop high fidelity system-level models and conduct military utility studies with warfighter input to evaluate the future employment of directed energy weapon systems in operationally relevant environments. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of $2.925 million between FY 2024 and FY 2025 reflects internal realignments from Program Element 0602890D8Z, High Energy Laser Development and Program Element 0603924D8Z: High Energy Laser Advanced Development. Overall, this increase will support the evaluation, development, and demonstration of directed energy advanced components and prototypes.			
Accomplishments/Planned Programs Subtotals	-	-	2.931

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

NA

D. Acquisition Strategy

NA

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604924D8Z / *High Energy Laser Advanced Component Development & Prototype*	Project (Number/Name) 921 / *High Energy Laser Tech Maturation*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Open Architecture	WR	NSWC Dahlgren : Dahlgren, VA	-	-		-		0.400		0.000		0.400	Continuing	Continuing	-
Open Architecture	C/CPFF	MITRE : McLean, VA	-	-		-		0.525		0.000		0.525	Continuing	Continuing	-
Command & Control	WR	NSWC Dahlgren : Dahlgren, VA	-	-		-		1.031		0.000		1.031	Continuing	Continuing	-
Mission Engineering	WR	AFRL Directed Energy : Albuquerque, NM	-	-		-		0.975		0.000		0.975	Continuing	Continuing	-
		Subtotal	-	-		-		2.931		0.000		2.931	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		2.931		0.000		2.931	Continuing	Continuing	N/A

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604924D8Z / *High Energy Laser Advanced Component Development & Prototype*	**Project (Number/Name)** 921 / *High Energy Laser Tech Maturation*