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**Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603795N / <i>Land Attack Tech</i>
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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	33.551	0.352	1.624	1.686	-	1.686	1.197	1.177	1.162	1.183	Continuing	Continuing
2038: <i>ADVANCED MINOR CALIBER GUN</i>	33.551	0.352	1.624	1.686	-	1.686	1.197	1.177	1.162	1.183	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

Project 2038: The 25mm MK 38 MOD 2 and MOD 3 Machine Gun Systems (MGS) provide Anti-Surface Warfare (ASUW) and Anti-terrorism and Force Protection (AT/FP) capability as a simple, stabilized, low cost solution to outfit near-term deployers to counter small boat threats. Over 360 U.S. Navy-owned systems are installed on U.S. Navy AS, CG, CVN, DDG, LCC, LHA, LHD, LSD, OSV, PC class ships, MK VI Patrol Boats and U.S. Coast Guard Fast Response Cutters. Established in order to respond to Joint Urgent Operational Need Statement (JUONS) CC-0558 for Counter Unmanned Aerial Systems (C-UAS), the MK 38 MOD 3 MGS's electro-optical/infrared sensor, hardware, and software are being upgraded to counter emerging unmanned aerial threats. Initial C-UAS capability was fielded in Q1FY 2020. Incremental improvements are being made to this C-UAS capability, for cybersecurity and to address operability issues. The 30mm MK 38 MOD 4 Gun Weapon System, will introduce greater accuracy, lethality, and effective range for C-UAS and Counter Unmanned Surface Vehicle (C-USV) capability with integration to highly accurate fire control system, 30mm gun, targeting sensor and AEGIS combat system. The MOD 4 will be fielded on all DDG 51 Flight IIA and Flight III AEGIS Destroyers. Project 2038 provides qualification and logistics development of the 30mm MK 38 MOD 4. This will include Function Integration Testing, Functional Acceptance Testing, AEGIS Light-off, Structural Test Firing, and an at-sea Quick Reaction Assessment (on board DDG 89). Upgrading fielded 25mm MK 38 MGS to MOD 3 with C-UAS and concurrently developing and fielding the MK 38 MOD 4 Gun Weapon System (GWS) on all current and future DDG 51 Flight IIA and Flight III Destroyers is the fastest and most cost-effective way to field critical C-UAS ship self-defense capability.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	0.358	1.624	1.717	-	1.717
Current President's Budget	0.352	1.624	1.686	-	1.686
Total Adjustments	-0.006	0.000	-0.031	-	-0.031
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.006	0.000			
• Rate/Misc Adjustments	0.000	0.000	-0.031	-	-0.031

**Change Summary Explanation**

FY 2023 includes \$0.000M in OOC enacted budget.

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FY 2023 SBIR/STTR Transfer (\$0.006). FY 2024 includes \$15.00M for the OOC budget request. FY 2025 Rate/Misc Adjustments (\$0.031).		

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Navy										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603795N / <i>Land Attack Tech</i>				<b>Project (Number/Name)</b> 2038 / <i>ADVANCED MINOR CALIBER GUN</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
2038: <i>ADVANCED MINOR CALIBER GUN</i>	33.551	0.352	1.624	1.686	-	1.686	1.197	1.177	1.162	1.183	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Project 2038: The 25mm MK 38 MOD 2 and MOD 3 Machine Gun Systems (MGS) provide Anti-Surface Warfare (ASUW) and Anti-terrorism and Force Protection (AT/FP) capability as a simple, stabilized, low-cost solution to outfit near-term deployers to counter small boat threats. Over 360 U.S. Navy-owned systems are installed on U.S. Navy AS, CG, CVN, DDG, LCC, LHA, LHD, LSD, OSV, PC class ships, MK VI Patrol Boats and U.S. Coast Guard Fast Response Cutters. Established in order to respond to Joint Urgent Operational Need Statement (JUONS) CC-0558 for Counter Unmanned Aerial Systems (C-UAS), the MK 38 MOD 3 MGS's electro-optical/infrared sensor, hardware, and software are being upgraded to counter emerging unmanned aerial threats. Initial C-UAS capability was fielded in Q1FY 2020. Incremental improvements are being made to this C-UAS capability, for cybersecurity and to address operability issues. The 30mm MK 38 MOD 4 Gun Weapon System, will introduce greater accuracy, lethality, and effective range for C-UAS and Counter Unmanned Surface Vehicle (C-USV) capability with integration to highly accurate fire control system, 30mm gun, targeting sensor and AEGIS combat system. The MOD 4 will be fielded on all DDG 51 Flight IIA and Flight III AEGIS Destroyers. Project 2038 provides qualification and logistics development of the 30mm MK 38 MOD 4. This will include Function Integration Testing, Functional Acceptance Testing, AEGIS Light-off, Structural Test Firing, and an at-sea Quick Reaction Assessment (on board DDG 89). Upgrading fielded 25mm MK 38 MGS to MOD 3 with C-UAS and concurrently developing and fielding the MK 38 MOD 4 Gun Weapon System (GWS) on all current and future DDG 51 Flight IIA and Flight III Destroyers is the fastest and most cost-effective way to field critical C-UAS ship self-defense capability.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<b>Title:</b> Systems Engineering and Testing	0.352	1.624	1.686	0.000	1.686
<b>Articles:</b>	-	-	-	-	-
<b>FY 2024 Plans:</b>					
- Continue planning and perform Quick Reaction Assessment of prototype 30mm MK 38 MOD 4 GWS					
- Complete combat system certification and element certification					
- Perform and complete qualification re-testing on components upgraded to support FY25 Initial Operational Capability (IOC)					
<b>FY 2025 Base Plans:</b>					
- Incorporate additional functionality into the 30mm MK 38 MOD 4 GWS to increase effectiveness against Unmanned Aerial Systems (UAS) and Unmanned Surface Vehicle (USV).					
- Complete IOC Capability Improvement system certification					
<b>FY 2025 OCO Plans:</b>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Navy	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603795N / <i>Land Attack Tech</i>	<b>Project (Number/Name)</b> 2038 / <i>ADVANCED MINOR CALIBER GUN</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
NA					
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY 2024 to FY 2025 Increase attributed to developing additional MK 38 MOD 4 capabilities and creating logistics documentation to support MK 38 MOD 4 Initial Operational Capabilities (IOC) in FY 2025.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.352	1.624	1.686	0.000	1.686

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

N/A

**Remarks**

**D. Acquisition Strategy**

Engineering and technical services to support qualification and ILS development for the 30mm MK 38 MOD 4 GWS in FY23-25 is being procured from Naval Surface Warfare Center (NSWC) Dahlgren, NSWC Indian Head Picatinny, NSWC Crane, and MSI-Defence Systems.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603795N / <i>Land Attack Tech</i>	<b>Project (Number/Name)</b> 2038 / <i>ADVANCED MINOR CALIBER GUN</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
Counter-UAS (JUONS CC-0558) Primary Product Integration	SS/BOA	BAE Systems : Minneapolis MN	15.824	0.000		0.000		0.000		-		0.000	0.000	15.824	-
30mm MK 38 MOD 4 Electro-optical Sensor/ Gun Mount Performance Demonstration	C/CPFF	BAE Systems : Minneapolis, MN	1.641	0.000		0.000		0.000		-		0.000	0.000	1.641	-
30mm MK 38 MOD 4 Electro-optical Sensor/ Gun Mount Performance Demonstration	C/CPFF	MSI-Defence Systems : Rock Hill, SC	0.575	0.000		0.000		0.500	Mar 2025	-		0.500	0.000	1.075	-
<b>Subtotal</b>			18.040	0.000		0.000		0.500		-		0.500	0.000	18.540	N/A

**Remarks**  
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
Government Engineering Services	WR	NSWC, DD : Dahlgren, VA	13.400	0.352	Nov 2022	1.309	Nov 2023	0.750	Nov 2024	-		0.750	Continuing	Continuing	Continuing
Government Engineering Services	WR	NSWC, IHD : Picatinny, NJ	1.318	0.000		0.157	Nov 2023	0.136	Nov 2024	-		0.136	Continuing	Continuing	Continuing
Government Engineering Services	WR	NSWC, CR : Crane, IN	0.793	0.000		0.158	Nov 2023	0.300	Nov 2024	-		0.300	Continuing	Continuing	Continuing
<b>Subtotal</b>			15.511	0.352		1.624		1.186		-		1.186	Continuing	Continuing	N/A

**Remarks**  
Government Engineering Services: NSWC Dahlgren provides engineering services for gun weapon system technical direction and test engineering. NSWC IHD provides engineering services for gun weapon system configuration management, logistics, and in-service engineering. NSWC Crane provides engineering services for electro-optical sensor technical direction and test engineering.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2025 Navy</b>								<b>Date: March 2024</b>					
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	<b>Prior Years</b>	<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	33.551	0.352		1.624		1.686		-		1.686	Continuing	Continuing	N/A

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603795N / <i>Land Attack Tech</i>	<b>Project (Number/Name)</b> 2038 / <i>ADVANCED MINOR CALIBER GUN</i>
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	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

<b>Proj 2038</b>	
30mm MK 38 MOD 4 GWS: Functional Integration Test	██████
30mm MK 38 MOD 4 GWS: Plan & Execute Quick Reaction Assessment	████████████████████
30mm MK 38 MOD 4 GWS: Perform variance qualification for IOC configuration	██████████████████████████████
30mm MK 38 MOD 4 GWS: Complete element & combat system certifications	████████████████
30mm MK 38 MOD 4 GWS: IOC Capability Improvement and ILS documentation creation	██████████████████████████
30mm MK 38 MOD 4 GWS: IOC Capability Improvement system certification	██████████████████████████

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Navy		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603795N / <i>Land Attack Tech</i>	<b>Project (Number/Name)</b> 2038 / <i>ADVANCED MINOR CALIBER GUN</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2038</b>				
30mm MK 38 MOD 4 GWS: Functional Integration Test	1	2023	2	2023
30mm MK 38 MOD 4 GWS: Plan & Execute Quick Reaction Assessment	1	2023	4	2024
30mm MK 38 MOD 4 GWS: Perform variance qualification for IOC configuration	1	2023	4	2025
30mm MK 38 MOD 4 GWS: Complete element & combat system certifications	1	2023	1	2024
30mm MK 38 MOD 4 GWS: IOC Capability Improvement and ILS documentation creation	1	2025	1	2026
30mm MK 38 MOD 4 GWS: IOC Capability Improvement system certification	1	2025	1	2026