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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy	Date: March 2019
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Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>					R-1 Program Element (Number/Name) PE 0603795N / <i>Land Attack Tech</i>							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	16.179	16.684	7.100	9.086	1.428	10.514	12.552	10.097	5.852	5.575	Continuing	Continuing
2020: <i>Advanced Gun System Projectile</i>	0.000	2.884	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.884
2038: <i>ADVANCED MINOR CALIBER GUN</i>	16.179	2.018	1.400	4.500	1.428	5.928	5.857	4.186	1.815	1.546	Continuing	Continuing
3401: <i>Guided Projectile</i>	0.000	11.782	0.700	4.586	-	4.586	6.695	5.911	4.037	4.029	Continuing	Continuing
9999: <i>Congressional Adds</i>	0.000	0.000	5.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.000

A. Mission Description and Budget Item Justification

Project 2020: The Advanced Gun System (AGS) projectile will provide affordable Naval Surface Fires Support for DDG 1000 class destroyers from the MK 51 Gun Weapon System (commonly referred to as AGS). Initiation of a demonstration and development planning for an affordable round was directed by Assistant Secretary of the Navy, Research, Development, and Acquisition to address the unaffordability of the Long Range Land Attack Projectile. The effort focuses on integration of an affordable 155mm guided projectile in the MK 51 GWS. Several options were assessed in FY17 and determined to be unaffordable; additional studies are planned to assess longer term options or options not previously considered to identify potential candidates for projectile replacement. The program was funded under PE 0204202N DDG 1000 in FY 2017.

Project 2038 Base & OCO: The MK 38 MOD 3 Machine Gun System (MGS) provides 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 300 systems are installed on U.S. Navy AS, CG, CVN, DDG, LCC, LHA, LHD, LSD, OSV, PC class ships and MK VI Patrol Boats. In order to respond to the Joint Urgent Operational Need (JUONS CC-0558) Counter Unmanned Aerial Systems (C-UAS), the MK 38 MOD 3 MGS' electro-optical/infra-red sensor, hardware, and software is being upgraded to counter emerging unmanned aerial threats. Fielding of initial capability will start in fourth quarter of FY19. Incremental improvements will be made in the out years to further improve on accuracy, effective range, and lethality. Starting in FY20, further development will improve the MK 38 MGS' accuracy, lethality, and effective range to counter unmanned air (C-UAS) and unmanned surface (C-USV) threats with integration to highly accurate fire control system, 30mm gun, and targeting sensor.

Projects 3401 & C452: The Gun Launched Guided Projectile provides initial operational capability for Cruise Missile Defense (CMD) with potential future Surface Warfare and Naval Surface Fire Support capability. This project implements a materiel design decision, conducts integration enabling technology maturation, and prepares for Engineering and Manufacturing Development (E&MD) development in FY21. The Gun Launched Guided Projectile project was previously funded under the PE 0603925N / Directed Energy and Electronic Weapon Systems (Proj: 3370 Railgun) and 0603795N / Land Attack Tech (Proj: 3370 Railgun).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy				Date: March 2019	
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech			
B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	33.568	15.529	0.000	-	0.000
Current President's Budget	16.684	7.100	9.086	1.428	10.514
Total Adjustments	-16.884	-8.429	9.086	1.428	10.514
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-14.829			
• Congressional Rescissions	-	-			
• Congressional Adds	-	5.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-3.400	0.000			
• SBIR/STTR Transfer	-0.584	0.000			
• Program Adjustments	2.100	1.400	11.312	-	11.312
• Rate/Misc Adjustments	0.000	0.000	-2.226	1.428	-0.798
• Congressional Directed Reductions Adjustments	-15.000	-	-	-	-
Congressional Add Details (\$ in Millions, and Includes General Reductions)					
Project: 9999: Congressional Adds				FY 2018	FY 2019
Congressional Add: Guided Projectile					
				0.000	5.000
Congressional Add Subtotals for Project: 9999				0.000	5.000
Congressional Add Totals for all Projects				0.000	5.000
Change Summary Explanation					
Land Attack Tech: FY19 -\$8.429M net adjustment due to: Project 3401 lack of program funding: -\$14.829M; Program Increase - Guided projectile C452: + \$5.000M; and other program adjustments: +\$1.400M.					
PU 3401: FY20-FY24 increase of +\$25.258M continues development of GLGP Block 0, which otherwise ends in FY19. GLGP Block 0 provides multi-mission capabilities for SuW, NSFS , and limited AW aboard DDG/CG platforms equipped with MK45 MOD 4 Guns. Funds also provided in out years to enable request for proposal (RFP).					
PU 2038: FY20-FY24 increase of +\$19.332M continues to support Counter Unmanned Aerial Systems (CUAS) JUON.					
The FY 2020 funding request was reduced by \$4.616 million to account for the availability of prior year execution balances.					

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy										Date: March 2019		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603795N / <i>Land Attack Tech</i>				Project (Number/Name) 2020 / <i>Advanced Gun System Projectile</i>			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
2020: <i>Advanced Gun System Projectile</i>	0.000	2.884	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.884
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification <p>The Advanced Gun System (AGS) projectile will provide affordable Naval Surface Fires Support for DDG 1000 class destroyers from the MK 51 Gun Weapon System (commonly referred to as AGS). Initiation of a demonstration and development planning for an affordable round was directed by Assistant Secretary of the Navy, Research, Development, and Acquisition to address the unaffordability of the Long Range Land Attack Projectile. The effort focuses on integration of an affordable 155mm guided projectile in the MK 51 GWS. Several options were assessed in FY17 and determined to be unaffordable; additional studies are planned to assess longer term options or options not previously considered to identify potential candidates for projectile replacement. The program was funded under PE 0204202N DDG 1000 in FY 2017.</p>												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Systems Engineering and Design Verification								2.884	0.000	0.000	0.000	0.000
Articles:								-	-	-	-	-
FY 2019 Plans: N/A												
FY 2020 Base Plans: N/A												
FY 2020 OCO Plans: N/A												
Accomplishments/Planned Programs Subtotals								2.884	0.000	0.000	0.000	0.000
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy N/A												

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603795N / <i>Land Attack Tech</i>	Project (Number/Name) 2020 / <i>Advanced Gun System Projectile</i>

E. Performance Metrics

Completion of studies; close-out of start-up efforts prior to decision to not purchase a projectile.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy												Date: March 2019			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech				Project (Number/Name) 2020 / Advanced Gun System Projectile					
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
155mm Cartridge Case Facility Equipment Installation	MIPR	DOTC : Picatinny, NJ	0.000	0.413	Mar 2018	0.000		0.000		-		0.000	0.000	0.413	-
Subtotal			0.000	0.413		0.000		0.000		-		0.000	0.000	0.413	N/A
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Alternative Projectile Studies	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.782	Oct 2017	0.000		0.000		-		0.000	0.000	0.782	-
Alternative Projectile Studies	WR	NSWC IHEOTD : Indian Head MD	0.000	0.428	Oct 2017	0.000		0.000		-		0.000	0.000	0.428	-
Alternative Projectile Studies	WR	NSWC IHEOTD : Picatinny, NJ	0.000	0.118	Oct 2017	0.000		0.000		-		0.000	0.000	0.118	-
Alternative Projectile Studies	WR	NAWC,CL : China Lake, CA	0.000	0.390	Jul 2018	0.000		0.000		-		0.000	0.000	0.390	-
Alternative Projectile Studies	MIPR	ARDEC : Picatinny, NJ	0.000	0.219	Jan 2019	0.000		0.000		-		0.000	0.000	0.219	-
Contractor Support Services	C/CPFF	Various : Various	0.000	0.328	Jan 2019	0.000		0.000		-		0.000	0.000	0.328	-
Subtotal			0.000	2.265		0.000		0.000		-		0.000	0.000	2.265	N/A
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Range Services for Alternative Projectile Studies	WR	NSWC DD : Dahlgren, VA	0.000	0.128	Jul 2018	0.000		0.000		-		0.000	0.000	0.128	-
Subtotal			0.000	0.128		0.000		0.000		-		0.000	0.000	0.128	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy												Date: March 2019			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech				Project (Number/Name) 2020 / Advanced Gun System Projectile					
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Support Service	Allot	NAVSEA : Washington, DC	0.000	0.078	Jul 2018	0.000		0.000		-		0.000	0.000	0.078	-
Subtotal			0.000	0.078		0.000		0.000		-		0.000	0.000	0.078	N/A
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	2.884		0.000		0.000		-		0.000	0.000	2.884	N/A
Remarks															
Planned integration of a projectile with the MK 51 GWS was cancelled due to cost to develop, integrate, procure, and install. Efforts were replanned to close out alternative projectile study efforts from FY17 and continue studies in FY19.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy																Date: March 2019			
Appropriation/Budget Activity 1319 / 4								R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech								Project (Number/Name) 2020 / Advanced Gun System Projectile			

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech	Project (Number/Name) 2020 / Advanced Gun System Projectile

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2020				
AGS Projectile Replacement Studies: Schedule Detail	1	2018	4	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy										Date: March 2019		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech				Project (Number/Name) 2038 / ADVANCED MINOR CALIBER GUN			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
2038: ADVANCED MINOR CALIBER GUN	16.179	2.018	1.400	4.500	1.428	5.928	5.857	4.186	1.815	1.546	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The MK 38 MOD 3 Machine Gun System (MGS) provides 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 300 systems are installed on U.S. Navy AS, CG, CVN, DDG, LCC, LHA, LHD, LSD, OSV, PC class ships and MK VI Patrol Boats. In order to respond to the Joint Urgent Operational Need (JUONS CC-0558) Counter Unmanned Aerial Systems (C-UAS), the MK 38 MOD 3 MGS' electro-optical/infra-red sensor, hardware, and software is being upgraded to counter emerging unmanned aerial threats. Fielding of initial capability will start in fourth quarter of FY19. Incremental improvements will be made in the out years to further improve on accuracy, effective range, and lethality. Starting in FY20, further development will improve the MK 38 MGS' accuracy, lethality, and effective range to counter unmanned air (C-UAS) and unmanned surface (C-USV) threats with integration to highly accurate fire control system, 30mm gun, and targeting sensor.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Systems Engineering and Testing								2.018	1.400	4.500	1.428	5.928
								Articles: -	-	-	-	-
FY 2019 Plans: OCO: - Deliver final Counter-UAS capability software release - Complete land-based and at-sea qualification testing - Obtain WSESRB concurrence for deployment - Obtain element certification of new MK 38 HW/W baseline - Field engineering design model for Initial Operational Capability												
FY 2020 Base Plans: - System requirements development for integration with 30mm gun and high accuracy gun fire control system - Develop gun, fire control, and ship combat system interfaces - Procure test hardware												
FY 2020 OCO Plans: - Train Fleet and collect feedback on operation of initial C-UAS upgrade - Analyze Fleet feedback and identify required bug fixes												
FY 2019 to FY 2020 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603795N / <i>Land Attack Tech</i>		Project (Number/Name) 2038 / <i>ADVANCED MINOR CALIBER GUN</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO
Increase of funding in the amount of \$4.528M from FY 2019 to FY 2020 to continue support of Counter Unmanned Aerial Systems (CUAS).					
Accomplishments/Planned Programs Subtotals		2.018	1.400	4.500	1.428
C. Other Program Funding Summary (\$ in Millions) N/A					
Remarks					
D. Acquisition Strategy Hardware improvement based on engineering changes was integrated into FY 2017 and follow-on production orders.					
E. Performance Metrics Quarterly program reviews and semi-annual product certification panel reviews.					

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy												Date: March 2019			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603795N / <i>Land Attack Tech</i>						Project (Number/Name) 2038 / <i>ADVANCED MINOR CALIBER GUN</i>			
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Counter-UAS (JUONS CC-0558) Primary Product Integration	SS/BOA	BAE Systems : Minneapolis MN	12.725	1.718	Feb 2018	0.550	Mar 2019	0.000		1.200	Mar 2020	1.200	Continuing	Continuing	Continuing
MK38 Counter UAS/USV Improvement Primary Product Integration	C/CPFF	TBD : Not Specified	0.000	0.000		0.000		3.000	Mar 2020	-		3.000	0.000	3.000	-
Subtotal			12.725	1.718		0.550		3.000		1.200		4.200	Continuing	Continuing	N/A
Remarks Counter UAS capability upgrades to MK 38 Machine Gun System															
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Services	WR	NSWC, DD : Dahlgren, VA	2.749	0.150	Jul 2018	0.750	Mar 2019	1.300	Nov 2019	0.098	Nov 2019	1.398	0.000	5.047	-
Government Engineering Services	WR	NSWC, IHD : Picatinny, NJ	0.640	0.050	Jul 2018	0.050	Mar 2019	0.100	Nov 2019	0.100	Nov 2019	0.200	0.000	0.940	-
Government Engineering Services	WR	NSWC, CR : Crane, IN	0.065	0.100	Jul 2018	0.050	Mar 2019	0.100	Nov 2019	0.030	Nov 2019	0.130	0.000	0.345	-
Subtotal			3.454	0.300		0.850		1.500		0.228		1.728	0.000	6.332	N/A
Remarks Configuration Management (CM), qualification testing, certification															
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			16.179	2.018		1.400		4.500		1.428		5.928	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy			Date: March 2019		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603795N / <i>Land Attack Tech</i>			Project (Number/Name) 2038 / <i>ADVANCED MINOR CALIBER GUN</i>

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
Proj 2038																												
Counter-UAS (JUONS CC-0558): Requirements and Design Development																												
Counter-UAS (JUONS CC-0558): Final SW Release																												
Counter-UAS (JUONS CC-0558): Qualification Testing																												
Counter-UAS (JUONS CC-0558): Safety and Element Certification																												
Counter-UAS (JUONS CC-0558): Fleet Feedback & Analysis																												
Counter-UAS (JUONS CC-0558): Software Fixes																												
Counter-UAS (JUONS CC-0558): Certification Test																												
MK38 Counter UAS/UAV Improvement: Requirements/ Interface Development																												
MK38 Counter UAS/UAV Improvement: Procure Test Hardware																												
MK38 Counter UAS/UAV Improvement: Qualification testing																												
MK38 Counter UAS/UAV Improvement: WSESRB approvals and Element Certification																												
MK38 Counter UAS/UAV Improvement: Field engineering design model																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech	Project (Number/Name) 2038 / ADVANCED MINOR CALIBER GUN	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2038				
Counter-UAS (JUONS CC-0558): Requirements and Design Development	1	2019	2	2019
Counter-UAS (JUONS CC-0558): Final SW Release	1	2019	4	2019
Counter-UAS (JUONS CC-0558): Qualification Testing	2	2019	4	2019
Counter-UAS (JUONS CC-0558): Safety and Element Certification	3	2019	4	2019
Counter-UAS (JUONS CC-0558): Fleet Feedback & Analysis	1	2020	4	2024
Counter-UAS (JUONS CC-0558): Software Fixes	3	2020	4	2024
Counter-UAS (JUONS CC-0558): Certification Test	3	2021	4	2024
MK38 Counter UAS/UAV Improvement: Requirements/ Interface Development	1	2020	3	2020
MK38 Counter UAS/UAV Improvement: Procure Test Hardware	4	2020	4	2021
MK38 Counter UAS/UAV Improvement: Qualification testing	1	2022	4	2022
MK38 Counter UAS/UAV Improvement: WSESRB approvals and Element Certification	4	2022	2	2023
MK38 Counter UAS/UAV Improvement: Field engineering design model	4	2023	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy										Date: March 2019		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech				Project (Number/Name) 3401 / Guided Projectile			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
3401: Guided Projectile	0.000	11.782	0.700	4.586	-	4.586	6.695	5.911	4.037	4.029	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification The Gun Launched Guided Projectile provides initial operational capability for Cruise Missile Defense (CMD) with potential future Surface Warfare and Naval Surface Fire Support capability. This project implements a materiel design decision, conducts integration enabling technology maturation, and prepares for Engineering and Manufacturing Development (E&MD) development in FY21. The Gun Launched Guided Projectile project was previously funded under the PE 0603925N / Directed Energy and Electronic Weapon Systems (Proj: 3370 Railgun) and 0603795N / Land Attack Tech (Proj: 3370 Railgun).												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)							FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	
Title: Systems Engineering and Testing							11.782	0.700	4.586	0.000	4.586	
Articles:							-	-	-	-	-	
FY 2019 Plans: - Develop acquisition strategy - Perform cost/trade studies for system integration FY 2020 Base Plans: - Documentation prep for Milestone B - Continue common interface definition documentation FY 2020 OCO Plans: N/A FY 2019 to FY 2020 Increase/Decrease Statement: FY20 increase due to FY19 Congressional adjustment of -\$14.829M that restores acquisition accountability. Funding continues development of GLGP Block 0, which otherwise ends in FY19.												
Accomplishments/Planned Programs Subtotals							11.782	0.700	4.586	0.000	4.586	
C. Other Program Funding Summary (\$ in Millions) N/A Remarks												

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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D. Acquisition Strategy Leverage the ONR sponsored Future Naval Capabilities project, Strategic Capabilities Office (SCO) Hypervelocity Projectile (HVP) demonstrations, and Gov't developed Interface Control Drawings and specification to establish a competitive solicitation for Engineering & Manufacturing Development (E&MD) Phase.		
E. Performance Metrics - Program execution review		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy												Date: March 2019			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech				Project (Number/Name) 3401 / Guided Projectile					
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
5 Inch Cartridge Case Process Modification	C/CPFF	Rock Island : Rock Island, IN	0.000	0.684	Jun 2018	0.000		0.000		-		0.000	0.000	0.684	16.000
Interface Development	WR	NSWC Dahlgren : Dahlgren, VA	0.000	1.085	Jun 2018	0.000		0.000		-		0.000	0.000	1.085	-
Tech Maturation	FFRDC	MIT : Boston, MA	0.000	0.350	Jul 2018	0.000		0.000		-		0.000	0.000	0.350	-
Tech Maturation	WR	NSWC IH : Indian Head, MD	0.000	4.452	Jun 2018	0.000		0.000		-		0.000	0.000	4.452	-
Tech Maturation	FFRDC	APL : Laurel, MD	0.000	0.312	Apr 2018	0.000		0.000		-		0.000	0.000	0.312	-
Subtotal			0.000	6.883		0.000		0.000		-		0.000	0.000	6.883	N/A
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Combat System and Terminal Guidance Analyses	C/CPFF	APL : Laurel, MD	0.000	0.500	Jul 2018	0.000		0.175	Nov 2019	-		0.175	0.000	0.675	-
Systems Engineering, Cyber, T&E, Software Guidance, and Electronic Engineering	WR	NSWC DD : Dahlgren, VA	0.000	2.000	Oct 2017	0.670	Nov 2018	2.220	Nov 2019	-		2.220	0.000	4.890	-
Program Office Contractor Services	C/CPFF	Various : Arlington, VA	0.000	1.415	Oct 2017	0.030	Nov 2018	0.659	Nov 2019	-		0.659	Continuing	Continuing	Continuing
Program Support Services	FFRDC	MITRE : McLean, VA	0.000	0.089	Nov 2017	0.000		0.000		-		0.000	0.000	0.089	-
Program Support Services	WR	NPS : Monterey, CA	0.000	0.090	Nov 2017	0.000		0.000		-		0.000	0.000	0.090	-
Fuzing, Warhead, Propellant Charge	WR	NSWC IH : Indian Head, MD	0.000	0.150	Oct 2017	0.000		0.744	Nov 2019	-		0.744	0.000	0.894	-
CM/Data Management, Acquisition Support, Logistics	WR	NSWC IH : Picatinny, NJ	0.000	0.630	Oct 2017	0.000		0.788	Nov 2019	-		0.788	0.000	1.418	-
Subtotal			0.000	4.874		0.700		4.586		-		4.586	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy												Date: March 2019			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603795N / <i>Land Attack Tech</i>				Project (Number/Name) 3401 / <i>Guided Projectile</i>					

Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
T&E Support	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.025	May 2018	0.000		0.000		-		0.000	0.000	0.025	-
Subtotal			0.000	0.025		0.000		0.000		-		0.000	0.000	0.025	N/A

	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	11.782	0.700	4.586	-	4.586	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy																Date: March 2019			
Appropriation/Budget Activity								R-1 Program Element (Number/Name)								Project (Number/Name)			
1319 / 4								PE 0603795N / Land Attack Tech								3401 / Guided Projectile			

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
Proj 3401																												
Technology Maturation																												
Integration Trade Study																												
GLGP Material Decision																												
Signed CDD																												
Gate 5 Review																												
Milestone B																												
Studies																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603795N / <i>Land Attack Tech</i>	Project (Number/Name) 3401 / <i>Guided Projectile</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3401</i>				
Technology Maturation	1	2019	4	2019
Integration Trade Study	3	2019	4	2019
GLGP Material Decision	1	2020	1	2020
Signed CDD	4	2020	4	2020
Gate 5 Review	1	2021	1	2021
Milestone B	1	2021	1	2021
Studies	2	2021	4	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy										Date: March 2019		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech				Project (Number/Name) 9999 / Congressional Adds			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	0.000	5.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Gun Launched Guided Projectile provides initial operational capability for Cruise Missile Defense (CMD) with potential future Surface Warfare and Naval Surface Fire Support capability. This project implements a materiel design decision, conducts integration enabling technology maturation, and prepares for Engineering and Manufacturing Development (E&MD) development in FY21.

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

	FY 2018	FY 2019
<i>Congressional Add:</i> Guided Projectile	0.000	5.000
<i>FY 2018 Accomplishments:</i> N/A		
<i>FY 2019 Plans:</i> - Continuation of trade studies - Continue development of interface design documentation - Continue subcomponent technology maturation for critical integration enabling technologies including propelling charge, terminal guidance technologies, and datalink. - Initiate combat system architecture and design		
Congressional Adds Subtotals	0.000	5.000

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

N/A

Remarks

D. Acquisition Strategy

Execute efforts with government labs, FFRDCs and UARCs to preserve competitive posture for a subsequent development program.

E. Performance Metrics

- Drafted common interface definition documentation
- Initiated system architecture design
- Initiated demonstration of subset integration enabling technologies
- Program execution review

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy												Date: March 2019			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech				Project (Number/Name) 9999 / Congressional Adds					
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing and Interface Development	WR	NSWC DD : Dahlgren, VA	0.000	0.000		1.333	Jan 2019	0.000		-		0.000	0.000	1.333	-
Tech Maturation	FFRDC	JHU APL : Laurel, MD	0.000	0.000		0.593	Dec 2018	0.000		-		0.000	0.000	0.593	-
Tech Maturation	FFRDC	MIT LL : Arlington, VA	0.000	0.000		0.350	Dec 2018	0.000		-		0.000	0.000	0.350	-
Tech Maturation	WR	NSWC Carderock : Bethesda, MD	0.000	0.000		0.120	Feb 2019	0.000		-		0.000	0.000	0.120	-
Fuzing, Warhead, propelling Charge	WR	NSWC IH : indian Head, MD	0.000	0.000		0.253	Jan 2019	0.000		-		0.000	0.000	0.253	-
Subtotal			0.000	0.000		2.649		0.000		-		0.000	0.000	2.649	N/A
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sys. Eng.,Cyber, T&E	WR	NSWC DD : Dahlgren, VA	0.000	0.000		1.234	Jan 2019	0.000		-		0.000	0.000	1.234	-
CDIM, Acq. Support, ILS	WR	NSWC - IH PIC Det. : Picatinny, NJ	0.000	0.000		0.810	Jan 2019	0.000		-		0.000	0.000	0.810	-
Program Eng Support	C/CPFF	Various : Various	0.000	0.000		0.307	Dec 2018	0.000		-		0.000	0.000	0.307	-
Subtotal			0.000	0.000		2.351		0.000		-		0.000	0.000	2.351	N/A
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Need Item Text	C/BA	Not Specified : Not Specified	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Subtotal			0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy										Date: March 2019					
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech					Project (Number/Name) 9999 / Congressional Adds					
		Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			0.000	0.000		5.000		0.000		-		0.000	0.000	5.000	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy																Date: March 2019			
Appropriation/Budget Activity								R-1 Program Element (Number/Name)								Project (Number/Name)			
1319 / 4								PE 0603795N / Land Attack Tech								9999 / Congressional Adds			

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
Proj 9999																												
Trade Studies																												
Common ICD Development																												
Technology Maturation																												
Combat System Architecture & Design																												
RFP Package Finalization																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603795N / <i>Land Attack Tech</i>	Project (Number/Name) 9999 / <i>Congressional Adds</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 9999</i>				
Trade Studies	1	2019	3	2019
Common ICD Development	2	2019	4	2019
Technology Maturation	1	2019	4	2019
Combat System Architecture & Design	2	2019	4	2019
RFP Package Finalization	1	2019	3	2019