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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy	Date: May 2017
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Appropriation/Budget Activity	R-1 Program Element (Number/Name)											
1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603795N / <i>Land Attack Tech</i>											
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	14.584	0.887	6.015	33.568	-	33.568	43.713	40.906	47.818	48.769	Continuing	Continuing
2020: <i>Advanced Gun System Projectile</i>	0.000	0.000	0.000	18.000	-	18.000	0.000	0.000	0.000	0.000	0.000	18.000
2038: <i>ADVANCED MINOR CALIBER GUN</i>	14.584	0.887	0.573	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.044
3370: <i>Railgun</i>	0.000	0.000	5.442	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.442
3401: <i>Guided Projectile</i>	0.000	0.000	0.000	15.568	-	15.568	43.713	40.906	47.818	48.769	Continuing	Continuing

A. Mission Description and Budget Item Justification

Project 2020: The Advanced Gun System (AGS) projectile will provide Naval Surface Fires support for DDG 1000 class destroyers from the MK-51 Gun Weapon System (GWS). The AGS projectile will replace the Long Range Land Attack Projectile which was the original 155mm munitions developed for the MK-51 GWS. The development effort focuses on integration of a 155mm guided projectile in the MK-51 GWS which includes modifications to address initialization, dimensional, gun launch, and automated handling interface differences. Components affected by the integration of a 155mm guided projectile include the guided projectile, the propelling charge, the MK-51 Gun Weapon System, and the Total Ship Computing Environment. The program was funded under PE 0204202N DDG 1000 in FY 2017. A round selection is planned for August 2017 where initial performance characteristics will be determined and subsequently matured through FY 2019. The capability is planned for Initial Operational Capability in 4QFY2021. This is not a new start.

Project 2038: The Advanced Minor Caliber Gun will support non-recurring engineering, component integration, and testing efforts required for capability upgrades to the MK38 Mod 2, a minor caliber gun weapon system.

Project 3401: The Hyper Velocity Projectile (HVP) Block (BLK) 0 effort will double the range of the current 5-inch conventional ammunition while meeting multi-mission operational requirements for Anti-Surface Warfare (ASuW), Anti-Air Warfare (AAW), and Naval Surface Fire Support (NSFS) missions. This project executes pre milestone (MS) B activities and begins preparations for the Engineering, Manufacturing, and Development Phase planned for FY 2019. This includes development of system specifications and HVP BLK 0 interface control documents to support transition to MS B. HVP tactical subcomponent and integration risk reduction efforts will be initiated to support MS B Acquisition Milestone and Competitive E&MD Award. The Hyper Velocity 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). This is not a new start.

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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy				Date: May 2017	
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	0.887	6.015	15.608	-	15.608
Current President's Budget	0.887	6.015	33.568	-	33.568
Total Adjustments	0.000	0.000	17.960	-	17.960
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	17.937	-	17.937
• Rate/Misc Adjustments	0.000	0.000	0.023	-	0.023
Change Summary Explanation					
Increase of +\$18.023M supports establishment of project unit 2020 Advanced Gun System Projectile (\$18.000M) and miscellaneous adjustments.					

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech				Project (Number/Name) 2020 / Advanced Gun System Projectile			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
2020: Advanced Gun System Projectile	0.000	0.000	0.000	18.000	-	18.000	0.000	0.000	0.000	0.000	0.000	18.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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, which was the original 155mm munition developed for the MK 51 GWS. The development effort focuses on integration of an affordable 155mm guided projectile in the MK 51 GWS and includes modifications to address initialization, dimensional, gun launch, and automated handling interface differences. Components affected by the integration of an affordable 155mm guided projectile include the guided projectile, the propelling charge, the MK 51 Gun Weapon System, and the Total Ship Computing Environment. The program is funded under PE 0204202N DDG 1000 in FY 2017. A round selection is planned for August 2017 where initial performance characteristics will be determined and subsequently matured through FY 2019. The capability is planned for Initial Operational Capability in 4QFY2021.

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

	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Systems Engineering and Design Verification	0.000	0.000	18.000	0.000	18.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: N/A					
FY 2017 Plans: N/A					
FY 2018 Base Plans: Baseline Interface Control Documents Baseline system specification for a 155mm guided projectile Initiate modifications to the guided projectile to support interface requirements Begin design on MK-51 Gun Weapon System modifications Begin design verification testing on MK-51 Gun Weapon System modifications Begin design verification testing for an alternate propelling charge system Complete alternate logical and electrical Critical Design Review for initialization conversion Complete a technology transfer to industry for the electrical and logical interface conversion					

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy				Date: May 2017	
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>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO
Initiate development on system integration modifications					
FY 2018 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals		0.000	0.000	18.000	0.000
C. Other Program Funding Summary (\$ in Millions) N/A					
Remarks					
D. Acquisition Strategy Sole source selection based on capability, cost, technology maturity, cost, and ability to support Initial Operational Capability.					
E. Performance Metrics Development cost, unit cost, Initial Operational Capability					

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy												Date: May 2017			
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 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
Guided Projectile Modification Development	C/CPFF	TBD : Not Specified	0.000	0.000		0.000		3.200	Dec 2017	-		3.200	39.502	42.702	-
Propelling Charge Development	C/CPFF	TBD : Not Specified	0.000	0.000		0.000		2.655	Dec 2017	-		2.655	9.148	11.803	-
Munitions Container Development	C/CPFF	BAE Systems : Fridley, MN	0.000	0.000		0.000		2.100	Dec 2017	-		2.100	3.540	5.640	-
Munition Container Modification Development, Electrical	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.000		0.000		0.365	Oct 2017	-		0.365	0.200	0.565	-
Munitions Container and Propelling Charge Technical Data Package Modification	WR	NSWC IHEODTD : Picatinny, NJ	0.000	0.000		0.000		0.241	Oct 2017	-		0.241	0.246	0.487	-
Munitions Container and Propelling Charge Technical Data Package Modification	WR	NSWC CN : Corona, CA	0.000	0.000		0.000		0.075	Oct 2017	-		0.075	0.080	0.155	-
MK 51 Munition Container Modification Development, Software	MIPR	ARDEC : Picatinny, NJ	0.000	0.000		0.000		0.250	Oct 2017	-		0.250	0.100	0.350	-
MK 51 GWS Modification Development	C/CPFF	BAE Systems : Fridley, MN	0.000	0.000		0.000		5.068	Dec 2017	-		5.068	19.932	25.000	-
Total Ship Computing Environment Modification Development	C/CPFF	Raytheon IDS : Tewksbury, MA	0.000	0.000		0.000		0.000		-		0.000	15.000	15.000	-
Subtotal			0.000	0.000		0.000		13.954		-		13.954	87.748	101.702	-
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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 Services Engineering	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.000		0.000		0.780	Oct 2017	-		0.780	1.251	2.031	-

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Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech				Project (Number/Name) 2020 / Advanced Gun System Projectile					
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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 Services Engineering	WR	NSWC IHEOTD : Indian Head MD	0.000	0.000		0.000		0.790	Oct 2017	-		0.790	1.128	1.918	-
Government Services Engineering	WR	NSWC IHEOTD : Picatinny, NJ	0.000	0.000		0.000		0.626	Oct 2017	-		0.626	1.144	1.770	-
Government Services Engineering	WR	NAWC,CL : China Lake, CA	0.000	0.000		0.000		0.100	Oct 2017	-		0.100	0.181	0.281	-
Subtotal			0.000	0.000		0.000		2.296		-		2.296	3.704	6.000	-
Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
Test Analysis and Articles	MIPR	USAASC : Picatinny, NJ	0.000	0.000		0.000		0.500	Oct 2017	-		0.500	4.704	5.204	-
Test Range	MIPR	Dugway Proving Grounds : Dugway, UT	0.000	0.000		0.000		0.450	Oct 2017	-		0.450	0.900	1.350	-
Test Range	MIPR	Yuma Proving Grounds : Yuma, AZ	0.000	0.000		0.000		0.180	Oct 2017	-		0.180	0.300	0.480	-
Test Range	WR	Dahlgren Range : Dahlgren, VA	0.000	0.000		0.000		0.320	Oct 2017	-		0.320	1.269	1.589	-
Test Range	WR	White Sands Missile Range : White Sands, NM	0.000	0.000		0.000		0.000		-		0.000	0.900	0.900	-
Test Range	WR	NSWC IHEODTD : Picatinny, NJ	0.000	0.000		0.000		0.000		-		0.000	0.575	0.575	-
Subtotal			0.000	0.000		0.000		1.450		-		1.450	8.648	10.098	-

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy													Date: May 2017		
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 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
Contract Support Services	C/CPFF	CACI : Arlington, VA	0.000	0.000		0.000		0.300	Oct 2017	-		0.300	0.900	1.200	-
Subtotal			0.000	0.000		0.000		0.300		-		0.300	0.900	1.200	-
			Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		0.000		18.000		-		18.000	101.000	119.000	-
Remarks FY 2019 and out on the R-4 RDT&E Schedule Profile is notional.															

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Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy

Date: May 2017

Appropriation/Budget Activity

1319 / 4

R-1 Program Element (Number/Name)

PE 0603795N / Land Attack Tech

Project (Number/Name)

2020 / Advanced Gun System Projectile

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	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 2020																												
Guided Projectile Modification Development																												
Propelling Charge Development																												
Munitions Container Modification Development																												
MK 51 GWS Development																												
Total Ship Computing Environment Modification Development																												
Guided Projectile Delta Qualification																												
Propelling Charge Qualification																												
Munitions Container Qualification																												
Projectile System Qualification																												
MK 51 GWS/TSCE Integration & Test																												
Guided Projectile qualification test article acquisition/receipt																												
Guided Projectile DT/FOTE hardware award																												
Propelling Charge Qual, DT/FOTE hardware award																												
Munitions Container Qual, DT/FOTE hardware award																												
Insensitive Munition Testing																												
System Integration, Test, & Certification																												
Land-based DT																												
Shipboard FOT&E																												
Initial Operational Capability																												

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Exhibit R-4A, RDT&E Schedule Details: FY 2018 Navy

Date: May 2017

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				
Guided Projectile Modification Development	1	2018	1	2020
Propelling Charge Development	1	2018	1	2020
Munitions Container Modification Development	1	2018	1	2020
MK 51 GWS Development	1	2018	1	2020
Total Ship Computing Environment Modification Development	1	2019	4	2019
Guided Projectile Delta Qualification	4	2019	2	2020
Propelling Charge Qualification	2	2020	4	2020
Munitions Container Qualification	4	2019	2	2020
Projectile System Qualification	4	2019	2	2020
MK 51 GWS/TSCE Integration & Test	1	2020	4	2020
Guided Projectile qualification test article acquisition/receipt	3	2019	4	2019
Guided Projectile DT/FOTE hardware award	1	2020	2	2021
Propelling Charge Qual, DT/FOTE hardware award	2	2018	3	2020
Munitions Container Qual, DT/FOTE hardware award	1	2019	2	2021
Insensitive Munition Testing	1	2021	2	2021
System Integration, Test, & Certification	1	2020	4	2020
Land-based DT	4	2020	4	2020
Shipboard FOT&E	3	2021	3	2021
Initial Operational Capability	4	2021	4	2021

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
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>			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
2038: <i>ADVANCED MINOR CALIBER GUN</i>	14.584	0.887	0.573	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.044
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification
The Advanced Minor Caliber Gun project will support non-recurring engineering, component integration, testing and qualification efforts required for the capability upgrades to the MK 38 MOD 2, a minor caliber gun weapon system. The new configuration (MOD 3) creates a near term improvement to address ship based, close range solutions to defeat the Fast Attack Craft (FAC)/Fast In-Shore Attack Craft (FIAC) threat. The MK 38 MOD 2 was developed in FY 2004 to outfit near term deployers to counter small boat threats.

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

	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Systems Engineering and Testing	0.887	0.573	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: Executed majority of qualification test and implemented the hardware improvements for MOD 3 were integrated into new production orders starting in FY 2016.					
FY 2017 Plans: Complete MOD 3 qualification test and develop engineering changes based on results from sea trials.					
FY 2018 Base Plans: N/A					
FY 2018 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.887	0.573	0.000	0.000	0.000

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

Remarks

D. Acquisition Strategy
Hardware improvement based on engineering changes will be integrated into FY 2017 and future production orders.

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
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>

E. Performance Metrics

Quarterly program reviews and semi-annual product certification panel reviews.

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech				Project (Number/Name) 3370 / Railgun			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
3370: Railgun	0.000	0.000	5.442	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.442
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Hyper Velocity Projectile (HVP) Block (BLK) 0 will double the range of the current 5-inch conventional ammunition to support multi-mission operational requirements for Anti-Surface Warfare (ASuW), Anti-Air Warfare (AAW), and Naval Surface Fire Support (NSFS) missions. This project executes pre Milestone B (MS B) activities and begins preparations for the Engineering, Manufacturing, and Development Phase planned for FY 2019. This includes development of the system specification and interfaces, and support HVP risk reduction efforts required to transition to Milestone B (MS B). The Hyper Velocity Projectile project was previously funded under the PE 0603925N / Directed Energy and Electronic Weapon Systems.

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

	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Systems Engineering and Testing	0.000	5.442	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: The Hyper Velocity Projectile technology development was previously funded under the PE 0603925N / Directed Energy and Electronic Weapon Systems Initiated HVP BLK 0 Performance Specification Development Initiated MS B Documentation Development Initiated HVP Interface Requirements Initiated HVP Technical Risk Reduction Trade Studies Initiated System Engineering Plan Initiated Capabilities Development Document Trade Studies					
FY 2017 Plans: Continued development of technical requirements for 5-inch HVP. Preparation of acquisition documentation in preparation for Milestone B, including Acquisition Program Baseline (APB), Capabilities Development Document (CDD), Should Cost Report, Systems Engineering Plan (SEP), and Test & Evaluation Master Plan (TEMP). Complete Acquisition Strategy, Acquisition Plan, and Independent Cost Reviews. Conduct Mount Ordnance Alterations (ORDALT) and Combat System Engineering Trade Studies. Complete Independent Cost Review. Complete HVP Tactical Component Risk Reduction Report.					

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy				Date: May 2017	
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603795N / <i>Land Attack Tech</i>		Project (Number/Name) 3370 / <i>Railgun</i>	
<u>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</u>					
	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Initiate Tactical Subcomponent Risk Reduction Efforts.					
<i>FY 2018 Base Plans:</i> FY 2018 plans is funded under project 3401: Guided Projectile.					
<i>FY 2018 OCO Plans:</i> N/A					
Accomplishments/Planned Programs Subtotals	0.000	5.442	0.000	0.000	0.000
<u>C. Other Program Funding Summary (\$ in Millions)</u> N/A					
<u>Remarks</u>					
<u>D. Acquisition Strategy</u> Leveraging the ONR sponsored Future Naval Capabilities project, SCO activities, and Gov't developed Interface Control Drawings and specifications to establish a competitive solicitation for E&MD Phase in FY 2019.					
<u>E. Performance Metrics</u> Quarterly Program Reviews, Monthly Reports, and Periodic Design Reviews.					

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
3401: Guided Projectile	0.000	0.000	0.000	15.568	-	15.568	43.713	40.906	47.818	48.769	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Hyper Velocity Projectile (HVP) Block (BLK) 0 effort will double the range of the current 5-inch conventional ammunition while meeting multi-mission operational requirements for ASuW, AAW, and Naval Surface Fire Support (NSFS). This project executes pre MS B activities and begins preparations for the Engineering, Manufacturing, and Development Phase planned for FY 2019. This includes development of system specifications and HVP BLK 0 interface control documents to support transition to Milestone B (MS B). HVP tactical subcomponent and integration risk reduction efforts will be initiated to support MS B Acquisition Milestone and Competitive E&MD Award. The Hyper Velocity 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 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Systems Engineering and Testing	0.000	0.000	15.568	0.000	15.568
Articles:	-	-	-	-	-
FY 2016 Accomplishments: FY 2016 HVP was funded under PE 0603925N / Directed Energy and Electronic Weapon Systems (Proj. 3370 Railgun).					
FY 2017 Plans: FY 2017 HVP was funded PE 0603795N / Land Attack Tech (Proj. 3370 Railgun).					
FY 2018 Base Plans: Finalize and publish Request for Proposals for Engineering, Manufacturing, and Development award. Evaluate technical and cost proposals. Continue development of HVP Mechanical and Electrical Interface Control Documentation (ICDs) Complete HVP Tactical Subcomponent Risk Reduction Development Efforts. Test MK 45 Mod 4 Initialization and Gun Mount Prototypes verifying interfaces and specifications. Complete documentations required for MS B Entrance Criteria. Finalize Risk Reduction Studies.					
FY 2018 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.000	0.000	15.568	0.000	15.568

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech	Project (Number/Name) 3401 / Guided Projectile	

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

N/A

Remarks

D. Acquisition Strategy

Leveraging the ONR sponsored Future Naval Capabilities project, SCO activities, and Gov't developed Interface Control Drawings and specification to establish a competitive solicitation for Engineering & Manufacturing Development (E&MD) Phase.

E. Performance Metrics

Quarterly Program Reviews, Monthly Reports, and Periodic Design Reviews.

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy												Date: May 2017			
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>					
Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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 Indian Head : Indian Head, MD	0.000	0.000		0.000		0.875	Nov 2017	-		0.875	Continuing	Continuing	Continuing
HVP Tactical Development	WR	DOTC Competitively Selected Commercial Vendor : TBD	0.000	0.000		0.000		8.446	Dec 2017	-		8.446	Continuing	Continuing	Continuing
MK 45 Gun Systems integration ORDALT Development	C/CPFF	BAE Systems : Minneapolis, MN	0.000	0.000		0.000		0.825	Nov 2017	-		0.825	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		10.146		-		10.146	-	-	-
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	0.000	0.000		0.000		3.642	Oct 2017	-		3.642	Continuing	Continuing	Continuing
Government Engineering Services	WR	NSWC Indian Head picatinny Detachment : Picatinny Arsenal, NJ	0.000	0.000		0.000		1.180	Nov 2017	-		1.180	Continuing	Continuing	Continuing
Government Engineering Services	WR	COTF/MCOTEA : Norfolk, VA	0.000	0.000		0.000		0.100	Nov 2017	-		0.100	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		4.922		-		4.922	-	-	-
Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
Program Support Services	C/CPFF	ALION : Washington, DC	0.000	0.000		0.000		0.500	Jan 2018	-		0.500	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.500		-		0.500	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy										Date: May 2017			
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603795N / Land Attack Tech				Project (Number/Name) 3401 / Guided Projectile				
	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		15.568		-		15.568	-	-	-
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy			Date: May 2017
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>	

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Exhibit R-4, RDT&E Schedule Profile: PB 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 04	R-1 Program Element (Number/Name) PE 0603795N / <i>Land Attack Tech</i>	Project (Number/Name) 3401 / <i>Guided Projectile</i>	

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	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																												
Technical Studies/Risk Reduction effort																												
Risk Reduction Studies																												
System Engineering Plan (SEP) Development																												
Test & Evaluation Mastr Plan (TEMP) Development																												
Acquisition Program Baseline (APB) Development																												
Engineering, Manufacturing & Development (EM&D) Proposal Evaluation and Award																												
Milestone B Approval and EM&D Award																												
Tactical Design Development																												
Component/System Element Qualification Build Test Hardware																												

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Exhibit R-4A, RDT&E Schedule Details: FY 2018 Navy			Date: May 2017
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>				
Technical Studies/Risk Reduction effort	4	2016	4	2018
Risk Reduction Studies	4	2016	2	2018
System Engineering Plan (SEP) Development	4	2016	4	2017
Test & Evaluation Mastr Plan (TEMP) Development	4	2016	3	2018
Acquisition Program Baseline (APB) Development	4	2016	3	2018
Milestone B Approval and E&MD Award	4	2018	1	2019
Tactical Design Development	1	2019	4	2022
Component/System Element Qualification Build Test Hardware	1	2021	4	2022