

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification				DATE:		February 2006	
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-4		0603795N/Land Attack Technology					
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	98.435	73.983	18.571	29.797	40.089	29.065	18.414
2156/Naval Surface Fire Support (NSFS)	30.605	10.687	16.307	28.436	38.459	27.407	16.729
2325/Naval Fires Control System (NFCS)	6.063	3.296	2.264	1.361	1.630	1.658	1.685
9051/Advance Medium Caliber Gun Demonstrator (AMCGD) ⁽¹⁾	3.302	0.000	0.000	0.000	0.000	0.000	0.000
9359/Affordable Weapon System (AWS) ⁽¹⁾	47.505	0.000	0.000	0.000	0.000	0.000	0.000
9542/ 57mm Gun Qualification and Test ⁽¹⁾	10.960	0.000	0.000	0.000	0.000	0.000	0.000
9999/Congressional Adds ²	0.000	60.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles & Cost (see attached projects)							
⁽¹⁾ Funding includes the following FY05 Congressional Adds: Advanced XLR Medium Gun Demo Project 9051 - \$3.302M; Affordable Weapon System Project 9359 - \$19.467M; 57mm Gun Qualification & Test - Project 9542 - \$10.960M							
⁽²⁾ Funding includes the following FY06 Congressional Adds: Advanced XLR Medium Gun Demo Project 9051C - \$2.400M; Affordable Weapon System Project 9359C - \$35.000M; 57mm Gun Qualification & Test - Project 9828N - \$8.400M; Millennium Gun System - Project 9827N - \$4.000M; Ballistic Trajectory Extended Range Munition - Project 9826N - \$10.2M							
A. (U) Mission Description and Budget Item Justification: The Naval Surface Fire Support (NSFS) mission supports the Land Attack Technology program element. To meet the United States Marine Corp (USMC) requirements for NSFS, the Navy is developing a variety of weapons systems including both gun and missile systems that can provide the required range, lethality, accuracy, and responsiveness. The NSFS program (Project 2156) develops gun systems including the 5"/62 gun (a modification of the existing 5"/54 gun) and a 5" Extended Range Munition (ERM) with a coupled Global Positioning System (GPS) and an Inertial Navigation System (INS). This munition will have the capability to deliver its payload to a range in excess of current conventional ammunition with associated propelling charge improvements. The ERM development will leverage technology and "lessons learned" from current and previous extended range munition efforts. The Naval Fires Control System (NFCS) (Project 2325) develops systems that will automate shipboard land attack battle management duties to be interoperable and consistent with joint C4ISR systems. These shipboard weapon systems will significantly improve the Navy's ability to support OMFTS. The Advanced Medium Caliber Gun System (AMCGD) (Project 9051 and 9051C) is a demonstration to investigate an advanced gun design encompassing modularity, scalability, compactness, and long range. The Ballistic Trajectory Extended Range Munition (BTERM) (Project 9826N) - BTERM is a 5" gun-launched projectile employing a ballistic trajectory enroute to the target. BTERM utilizes rocket assisted propulsion to achieve extended ranges and a coupled GPS/INS guidance system for improved accuracy over current 5" ballistic ammunition. The Affordable Weapons System (AWS) (Project 9359 and 9359C) is a COTS based Land Attack and Strike missions missile that can loiter and be directed to the target by the shooter or a Forward Observer (FO/FAC). The Millennium Gun System (MGS) (Project 9827N) - The Millennium Gun System supports the investigation of a 35mm minor caliber gun mount and associated munitions for ship self defense mission area capability in USN Surface Ships. The 57mm Gun qualification and Test (Project 9542 and 9828N) - The 57mm Gun System is being procured and installed on US Coast Guard Integrated Deepwater System Cutters and is planned to be installed on other Naval platforms. Effort encompasses complete qualification and fire control system development for 57mm MK 110 Mod 0 Gun System.							

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 1 of 22)

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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603795N/Land Attack Technology			PROJECT NUMBER AND NAME 2156/Naval Surface Fire Support			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	30.605	10.687	16.307	28.436	38.459	27.407	16.729
RDT&E Articles Qty					60		

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The NSFS program develops gun systems including the 5"/62 gun (a modification of the existing 5"/54 gun) and a 5" Extended Range Munition (ERM) with a coupled Global Positioning System (GPS) and an Inertial Navigation System (INS). This munition will have the capability to deliver its payload to a range in excess of current conventional ammunition with associated propelling charge improvements. The ERM development will leverage technology and "lessons learned" from current and previous extended range munition efforts. In FY06, a contract will be awarded for the 5" guided projectile for System Development and Demonstration (SDD). The SDD continues in FY07 leading to an LRIP decision in FY10 and Initial Operational Capability in FY11.

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Exhibit R-2a, RDTEEN Project Justification
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603795N/Land Attack Technology	PROJECT NUMBER AND NAME 2156/Naval Surface Fire Support	
B. Accomplishments/Planned Program			
	FY 05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	10.698	0.000	0.000
RDT&E Articles Quantity			
Continued ERGM development. Addressed technical issues and continued component testing, qualification efforts and Land Based Flight Tests. ERGM contract will close in 3Q of FY06.			
	FY 05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	18.035	0.000	0.000
RDT&E Articles Quantity			
Contract awarded 3Q FY04 for the BTERM II demonstration. Began component design efforts in FY04. Continued round design efforts in FY05 leading to the start of All-up round flight tests. Complete demonstration phase at end of CY05.			
	FY 05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.000	10.347	16.307
RDT&E Articles Quantity			
A contract for ERM SDD will be awarded in 3Q FY06 leading to an FY11 IOC. Component design will begin in FY06 and continue through FY07.			

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Exhibit R-2a, RDTEN Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: <div style="text-align: right;">February 2006</div>																								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603795N/Land Attack Technology	PROJECT NUMBER AND NAME 2156/Naval Surface Fire Support																								
B. Accomplishments/Planned Program (Cont.) <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"><thead><tr><th style="width: 33%;"></th><th style="width: 16.5%;">FY 05</th><th style="width: 16.5%;">FY06</th><th style="width: 16.5%;">FY07</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">0.335</td><td style="text-align: center;">0.340</td><td style="text-align: center;">0.000</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Continued development of the EX-167 Propelling Charge. Complete Technical Data Package and continue qualification efforts until the end of FY06.</div> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"><thead><tr><th style="width: 33%;"></th><th style="width: 16.5%;">FY 05</th><th style="width: 16.5%;">FY06</th><th style="width: 16.5%;">FY07</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">1.318</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.000</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 5px;">Continued development, integration and testing of 5" MK 45 modification and GFM preparation in support of the Extended Range Munition IOC .</div>				FY 05	FY06	FY07	Accomplishments/Effort/Subtotal Cost	0.335	0.340	0.000	RDT&E Articles Quantity					FY 05	FY06	FY07	Accomplishments/Effort/Subtotal Cost	1.318	0.000	0.000	RDT&E Articles Quantity			
	FY 05	FY06	FY07																							
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	FY 05	FY06	FY07																							
Accomplishments/Effort/Subtotal Cost	1.318	0.000	0.000																							
RDT&E Articles Quantity																										

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Exhibit R-2a, RDTE Project Justification
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B. Accomplishments/Planned Program (Cont.)			
	FY 05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.219	0.000	0.000
RDT&E Articles Quantity			
<div>Continued development and testing of the Gun Fire Control Modification and required interfaces.</div>			

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C. PROGRAM CHANGE SUMMARY: <table> <tr> <td>Funding:</td> <td>FY 2005</td> <td>FY 2006</td> <td>FY 2007</td> </tr> <tr> <td>FY06 President's Budget:</td> <td>31.239</td> <td>10.849</td> <td>17.912</td> </tr> <tr> <td>FY07 President's Budget:</td> <td>30.605</td> <td>10.687</td> <td>16.307</td> </tr> <tr> <td>Total Adjustments</td> <td>-0.634</td> <td>-0.162</td> <td>-1.605</td> </tr> <tr> <td colspan="4">Summary of Adjustments:</td> </tr> <tr> <td>Other general provisions</td> <td>-0.024</td> <td>-0.162</td> <td></td> </tr> <tr> <td>SBIR</td> <td>-0.571</td> <td></td> <td></td> </tr> <tr> <td>Other misc. changes</td> <td>-0.039</td> <td></td> <td>-0.113</td> </tr> <tr> <td>Programmatic Changes</td> <td>0.000</td> <td></td> <td>-1.492</td> </tr> <tr> <td></td> <td>-0.634</td> <td>-0.162</td> <td>-1.605</td> </tr> </table> <p>The Land Attack Technology PE comprises multiple programs to provide a Naval Surface Fire Support capability. The challenge is the coordinated delivery of the Mk 45 Mod 4 Gun System, extended range munition capability, and the Mk 160 Fire Control upgrades. These together provide a significant enhancement to Naval Surface Fire Support. The ERGM program was restructured reflecting schedule delays associated with test failures, budget shortfalls, and schedule delays. The contractor began the ERGM LBFT series in FY04. A contract was awarded in 3Q FY04 for the BTERM II demonstration.</p> <p>Technical: N/A</p>				Funding:	FY 2005	FY 2006	FY 2007	FY06 President's Budget:	31.239	10.849	17.912	FY07 President's Budget:	30.605	10.687	16.307	Total Adjustments	-0.634	-0.162	-1.605	Summary of Adjustments:				Other general provisions	-0.024	-0.162		SBIR	-0.571			Other misc. changes	-0.039		-0.113	Programmatic Changes	0.000		-1.492		-0.634	-0.162	-1.605
Funding:	FY 2005	FY 2006	FY 2007																																								
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<p>D. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 5%;"><u>FY2005</u></th> <th style="width: 5%;"><u>FY2006</u></th> <th style="width: 5%;"><u>FY2007</u></th> <th style="width: 5%;"><u>FY2008</u></th> <th style="width: 5%;"><u>FY2009</u></th> <th style="width: 5%;"><u>FY2010</u></th> <th style="width: 5%;"><u>FY2011</u></th> <th style="width: 5%;"><u>Complete</u></th> <th style="width: 5%;"><u>Cost</u></th> </tr> </thead> <tbody> <tr> <td>PAN,MC BL, 025300</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>70.783</td> <td>122.468</td> <td>CONT</td> <td></td> </tr> <tr> <td>WPN BLI:4217, E5004</td> <td>15.047</td> <td>8.302</td> <td>1.676</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>CONT</td> <td></td> </tr> </tbody> </table> <p>E. ACQUISITION STRATEGY:</p> <p>The ERM program will be executed via a contract award in FY06. It is expected that technology and "lessons learned" will be leveraged from other guided munitions efforts to provide a relatively low risk approach in meeting the ERM FY11 IOC requirement. The gun is being developed under a sole source arrangement with United Defense, the sole source manufacturer of the 5" MK 45 Gun Mount. A compliant open architecture (OA) Fire Control System (MK 160) is currently being developed by the Naval Surface Warfare Center, Dahlgren.</p> <p>F. MAJOR PERFORMERS:</p> <p>Prime Contractor for ERM: TBD</p> <p>Prime Contractor for ERGM development: Raytheon Missile Systems located in Tucson, AZ. Raytheon subsequently purchased TI and moved operations to the Tucson location.</p> <p>Prime Contractor for Gun development: United Defense Limited Partnership (UDLP) located in Minneapolis, MN. Contract awarded to UDLP in February 1996 to modify the existing 5"/54 gun to a 5"/62 Gun to accommodate handling, loading, and firing the ERGM round.</p> <p>Prime Contractor for BTERM II development: Alliant TechSystems located in Woodland Hills, CA.</p> <p>Primary Navy Warfare Center: Naval Surface Warfare Center (NSWC) located in Dahlgren, VA. Will provide technical assistance to the PMO, input into Integrated Product Teams, and will be responsible for Ship Based Developmental Flight testing and evaluation.</p>											<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>	<u>Complete</u>	<u>Cost</u>	PAN,MC BL, 025300	0.000	0.000	0.000	0.000	0.000	70.783	122.468	CONT		WPN BLI:4217, E5004	15.047	8.302	1.676	0	0	0	0	CONT	
	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>FY2010</u>	<u>FY2011</u>	<u>Complete</u>	<u>Cost</u>																														
PAN,MC BL, 025300	0.000	0.000	0.000	0.000	0.000	70.783	122.468	CONT																															
WPN BLI:4217, E5004	15.047	8.302	1.676	0	0	0	0	CONT																															

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Exhibit R-3 Cost Analysis (page 1)							DATE: February 2006					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4			PROGRAM ELEMENT 0603795N/Land Attack Technology				PROJECT NUMBER AND NAME 2156/Naval Surface Fire Support					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Privatization	CPAF	UDLP, Louisville, KY	3.908									
Primary Hardware Development	CPIF/FF	UDLP, Minneapolis, MN (C5223)	58.738	0.000	N/A	0.000	N/A	0.000	N/A	CONT	CONT	59.657
	CPFF	UDLP, Minneapolis, MN (C4101)	8.954	0.918	11/04	0.000	11/05	0.000	11/06	CONT	CONT	48.414
	CPAF/IF	Raytheon, Tucson, AZ	177.699	10.698	11/04	0.000	11/05	0.000	N/A	CONT	CONT	182.862
	WR	NSWC Dahlgren, VA	56.867	0.000		0.000	N/A	0.000	N/A			N/A
	WR	NSWC Indian Head, MD	15.088	0.000		0.250						N/A
	WR	NSWC Port Hue., CA	25.386	0.000								N/A
BTERM II Demonstration	CPIF/AF	ATK, Woodland Hills, CA	7.913	8.313	11/04	0.000	N/A	0.000	N/A	CONT	CONT	16.226
	WX/WR	NSWC (Various)	0.190	1.432	11/04	0.000	N/A	0.000	N/A	CONT	CONT	N/A
ERM SDD	TBD	TBD	0.000	0.000	N/A	8.298	1/06	13.483	11/06	CONT	CONT	TBD
Systems Engineering	WX/WR	NSWC (Various)	15.962	0.318	11/04	0.000	N/A	0.000	N/A	CONT	CONT	N/A
Systems Engineering	VAR	Miscellaneous	33.281	0.000	N/A	0.000	N/A	0.000	N/A	CONT	CONT	N/A
Award Fees	CPAF/IF	Raytheon, Tucson, AZ	3.369	0.000	11/04	0.000	N/A	0.000	N/A	CONT	CONT	4.915
	CPIF/AF	ATK, Woodland Hills, CA	0.000	0.832								
Subtotal Product Development			407.355	22.511		8.548		13.483		CONT	CONT	CONT
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support	WR/WX	NSWC (Various)	8.659	0.265	11/04	0.000	N/A	0.000	N/A	CONT	CONT	N/A
Configuration Management												
Technical Data												
GFE												
Subtotal Support			8.659	0.265		0.000		0.000		CONT	CONT	CONT

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Exhibit R-2a, RD TEN Project Justification
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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2006				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4				PROGRAM ELEMENT NUMBER AND NAME 0603795N/Land Attack Technology				PROJECT NUMBER AND NAME 2156/Naval Surface Fire Support				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR/WX	NSWC (Various)	34.844	2.969	11/04	0.460		0.850		CONT	CONT	N/A
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			34.844	2.969		0.460		0.850		CONT	CONT	N/A
Contractor Engineering Support												
Government Engineering Support	WR/WX	NSWC (Various)	16.995	0.954	11/04	0.852	11/05	0.800	11/06	CONT	CONT	N/A
Project Engineering Support	WR/WX	NSWC (Various)	6.669	1.272	11/04	0.000	11/05	0.000	11/06	CONT	CONT	N/A
Program Management Support	WR/WX	Various	12.047	2.534	11/04	0.777	11/05	1.124	11/06	CONT	CONT	N/A
Travel	PD	NAVSEA HQ	1.028	0.100	VAR	0.050	VAR	0.050	VAR	CONT	CONT	N/A
Labor (Research Personnel)												
Overhead												
Subtotal Management			36.739	4.860		1.679		1.974		CONT	CONT	N/A
Total Cost			487.597	30.605		10.687		16.307		CONT	CONT	CONT
Remarks:												

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Exhibit R-2a, RD TEN Project Justification
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EXHIBIT R-4, Schedule Profile																DATE:											
February 2006																											
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NAME AND NUMBER								PROJECT NAME AND NUMBER											
RDT&E, N / BA-4								0603795N/Land Attack Technology								2156/Naval Surface Fire Support											
D. (U) Schedule Profile:																											
FY05				FY06				FY07				FY08				FY09				FY10				FY11			
1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Extended Range Guided Munition (ERGM)																											
Milestones																											
Design Development		SDD																									
		Land Based Flight Tests																									
Flight Tests		AUR Qual Tests																									
Ballistic Trajectory Extended Range Munition (BTERM) II																											
Milestones																											
Design		Demonstration																									
		Flight																									
Flight Tests																											
Extended Range Munition (ERM)																											
Milestones																											
Design Development																											
Flight Tests																											
Prop Charge Development / Tests																											
EX 45 5"/62 Mod 4 Gun																											
Milestones																											
Tests																											
Production																											
GWS Development																											
Tech Demos																											
Fire Control System Upgrade (MK 160 Mod 8)																											
Design Development & Tests																											

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Exhibit R-2a, RDTE Project Justification
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Exhibit R-4a, Schedule Detail					DATE:		
					February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME		
RDT&E, N / BA-4		0603795N/Land Attack Technology			2156/Naval Surface Fire Support		
Schedule Profile for NSFS Munition	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ERGM							
Systems Development & Demonstration	1Q-4Q	1Q-3Q					
Land Based Flight Test Series	1Q-4Q	1Q-3Q					
Unitary Warhead Flight Test							
Component & All-Up Round Qualifications (Part of SDD)	1Q-4Q	1Q-3Q					
Develop Testing (DT)/Operational Testing (OT)							
Operational Evaluation (OPEVAL) Rounds Decision							
Operational Evaluation (OPEVAL) Award							
LRIP Decision							
LRIP Deliveries							
MS C							
IOC							
BTERM II⁽¹⁾							
BAA Contract Award							
Demonstration Phase	1Q-4Q	1Q-4Q					
Flight Tests	3Q-4Q	1Q-4Q					
ERM (Includes Prop Charge)							
SDD Contract Award		3Q					
Land Based Flight Test				3Q-4Q	1Q-2Q		
Component & All-Up Round Qualifications (Part of SDD)		3Q<				>3Q	
Technical Evaluation (TECHEVAL)						3Q	
Operational Evaluation (OPEVAL)						3Q	
LRIP Decision						4Q	
LRIP Deliveries							4Q
MS C						4Q	
PROPELLING CHARGE (for ERM)		3Q<				>3Q	
IOC							4Q
EX 45 5"/62 MOD 4							
Development Testing (DT) (Conventional Ammo)							
Operational Test (OT) (Conventional Ammo)							
MS III							
GWS Development & Integration for ERM			1Q<			> 4Q	

⁽¹⁾ BTERM II schedule is in PU 9052

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603795N/Land Attack Technology			PROJECT NUMBER AND NAME 2325/Naval Fires Control System			
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY2011
Project Cost	6.063	3.296	2.264	1.361	1.630	1.658	1.685
RDT&E Articles Qty							
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>A. (U) Mission Description and Budget Item Justification: Naval Fires Control System (NFCS) covers the mission planning and coordination for current and future Naval Surface Fire Support system requirements. NFCS will plan, coordinate and manage the firing of the new Naval Surface Fires Support (NSFS) weapon systems including the 5"/62 caliber gun and Conventional Munitions. The NFCS phase I will be interfacing with the Advanced TOMAHAWK Weapons Control Systems (ATWCS) and the Tactical TOMAHAWK Weapons Control Systems (TTWCS) in order for the NFCS to share the Advanced Tactical Display Console (ATDC) with the ATWCS and TTWCS. Naval Surface Fire Support (NSFS) functionality and hardware/software improvements to incorporate OPEVAL deficiencies were done in FY05. The NFCS phase II functionality (Battle Force Tactical Trainers (BFTT) integration, Massing of fires, Surface Fires Coordination, improved air de-confliction) will be developed and implemented in FY06 throughout the FYDP.</p>							

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Exhibit R-2a, RD TEN Project Justification
(Exhibit R-2a, page 12 of 22)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603795N/Land Attack Technology	PROJECT NUMBER AND NAME 2325/Naval Fires Control System	
B. Accomplishments/Planned Program			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	3.846	2.259	1.460
RDT&E Articles Quantity			
Funding provides software and system engineering analysis and development, reuse and integration of government and commercial computer programs to support extended range munitions and other naval weapon applications.			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.400	0.188	0.103
RDT&E Articles Quantity			
Funding supports hardware configuration to support NFCS implementation. Support DT validation.			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.500	0.250	0.301
RDT&E Articles Quantity			
Funding provides Technical Direction Agent support, joint requirements investigation, Concept of Operations (CONOPs) scenario development.			

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 13 of 22)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006																																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603795N/Land Attack Technology	PROJECT NUMBER AND NAME 2325/Naval Fires Control System																																				
B. Accomplishments/Planned Program (Cont.)																																						
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 15%;">FY 05</th><th style="width: 15%;">FY 06</th><th style="width: 15%;">FY 07</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">0.404</td><td style="text-align: center;">0.299</td><td style="text-align: center;">0.200</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">Funding provides C4I and combat system interface investigation and analysis to include BFTT, Link 16, TTWCS and other developing C4I system and technology.</div> <table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 15%;">FY 05</th><th style="width: 15%;">FY 06</th><th style="width: 15%;">FY 07</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">0.353</td><td style="text-align: center;">0.300</td><td style="text-align: center;">0.200</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">Funding supports developmental test and evaluation, and logistics support elements development.</div> <table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 15%;">FY 05</th><th style="width: 15%;">FY 06</th><th style="width: 15%;">FY 07</th></tr></thead><tbody><tr><td>Accomplishments/Effort/Subtotal Cost</td><td style="text-align: center;">0.560</td><td style="text-align: center;">0.000</td><td style="text-align: center;">0.000</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td></tr></tbody></table> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">Funding supports operational test and evaluation, and logistics support elements development.</div>				FY 05	FY 06	FY 07	Accomplishments/Effort/Subtotal Cost	0.404	0.299	0.200	RDT&E Articles Quantity					FY 05	FY 06	FY 07	Accomplishments/Effort/Subtotal Cost	0.353	0.300	0.200	RDT&E Articles Quantity					FY 05	FY 06	FY 07	Accomplishments/Effort/Subtotal Cost	0.560	0.000	0.000	RDT&E Articles Quantity			
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(Exhibit R-2a, page 14 of 22)

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EXHIBIT R-2a, RDT&E Project Justification		DATE:	February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		
RDT&E, N / BA4	0603795N/Land Attack Technology	2325/Naval Fires Control System	

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget:	6.075	3.346	2.386
FY07 President's Budget:	6.063	3.296	2.264
Total Adjustments	-0.012	-0.050	-0.122

Summary of Adjustments

Other general provisions	-0.012	-0.050	
Other misc. reductions			-0.022
Programmatic Changes	0.000	0.000	-0.100
Subtotal	-0.012	-0.050	-0.122

Schedule:

NFCS milestone III schedule adjustment from 4th quarter FY04 to 1st quarter FY05 was due to test ship availability for TECHEVAL and OPEVAL and software development delay. IOC schedule adjustment from 4th quarter FY04 to 3rd quarter FY05 was due to corrections of deficiencies identified by OPEVAL.

Technical:

N/A

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4		PROGRAM ELEMENT NUMBER AND NAME 0603795N/Land Attack Technology			PROJECT NUMBER AND NAME 2325/Naval Fires Control System				
D. OTHER PROGRAM FUNDING SUMMARY:									
<u>Line Item No. & Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN BLI 5112	3.254	4.267	3.311	2.374	2.688	2.414	2.093	CONT	
E. ACQUISITION STRATEGY:									
A sole source contract was awarded to GDIS for Phase 1 software development. NSW/C/DD took over this function from GDIS and will remain the software developer. The hardware developer is NUWC-KP.									
F. MAJOR PERFORMERS:									
NSWC/DD - Technical Direction Agent, Software Development Agent and Systems Engineering Lead. NUWC/KP - Hardware Design Agent and Hardware Developer. NSWC/PHD - Test and Evaluation Agent and Integrated Logistics Support Agent. SPAWARSYSCEN, San Diego - Common Operating Environment (COE) and Adjunct Processor Developer.									

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Exhibit R-3 Cost Analysis (page 1)						DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-4			0603795N/Land Attack Technology			2325/Naval Fires Control System						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Software Development	SS/CPAF	GDIS, Arlington, VA	27.517	0.000						CONT	CONT	TBD
	SS/CPAF	LM/MDS, Valley Forge, PA	19.079	0.000						CONT	CONT	
	WR/WX	NSWC, Dahlgren, VA	8.302	3.000	10/04	2.018	10/05	1.181	10/06	CONT	CONT	
	VAR	VARIOUS	1.119							CONT	CONT	
	WR/WX	SSC/SD	4.236	0.400	10/04	0.340	10/05	0.295	10/06	CONT	CONT	
Systems Engineering	WR	SSC/SD	2.951							CONT	CONT	
	WR/WX	NSWC, Dahlgren, VA	17.105	0.916	10/04	0.200	10/05	0.100	10/06	CONT	CONT	
	SS/CP	VITRO/BAE	0.670	0.000	N/A					CONT	CONT	
	VAR	VARIOUS	1.304							CONT	CONT	
Ancillary Hardware Development	WR/WX	NUWC, Keyport Division	10.474	0.200	10/04	0.088	10/05	0.058	10/06	CONT	CONT	
	WR/WX	NSWC/PT HUE, CA	5.135	0.200	10/04	0.200	10/05	0.200	10/06	CONT	CONT	
	VAR	PMFATDS	3.576	0.000	N/A					CONT	CONT	
	SS/CPAF	JHU/APL	1.362							1.362	1.362	
	SS/CPFF	JHU/APL	0.121							CONT	CONT	
	WR	NSWC, Dahlgren, VA	2.236	0.000	N/A					CONT	CONT	
	VAR	VARIOUS	1.541	0.000	N/A					CONT	CONT	
LAM FC Hardware/Software Dev	SS/CPFF	LM/Baltimore, MD	4.181								4.181	
TERMINATED	SS/CPAF	LM/MDS, Valley Forge, PA	12.131								12.131	
	SS/CPFF	UDLP	0.455								0.455	
	WR	NSWC, Dahlgren, VA	1.162								1.162	
	WR	SSC/SD	0.486								0.486	
LAM FC Systems Engineering	SS/CPFF	JHU/APL	0.386								0.386	
TERMINATED	WR	NSWC/PT HUE, CA	0.361								0.361	
Award Fees			3.979								3.979	
Subtotal Product Development			129.869	4.716		2.846		1.834		CONT	CONT	
Remarks:												
Development Support Equipment												
Software Development		NSWC, Panama City	0.049									
Training Development	VAR	VARIOUS	0.487	0.000		0.000						
Integrated Logistics Support	VAR	VARIOUS	4.665	0.305	Various	0.090	Various	0.150	Various	CONT	CONT	
Configuration Management												
Technical Data												
GFE												
Subtotal Support			5.201	0.305		0.090		0.150		CONT	CONT	
Remarks:												

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 17 of 22)

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Exhibit R-3 Cost Analysis (page 2)					DATE: February 2006							
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME							
RDT&E, N / BA-4			0603795N/Land Attack Technology		2325/Naval Fires Control System							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR/WX	NSWC/PT HUE, CA	5.615	0.300	10/04	0.210	10/05	0.150	10/06	CONT	CONT	
	VAR	Various	1.500									
Operational Test & Evaluation	VAR	Various	4.948	0.500	10/04	0.000	10/05	0.000	10/06	CONT	CONT	
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			12.063	0.800		0.210		0.150				
Remarks:												
BTR			0.000									
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	VAR	VARIOUS	4.492	0.192	Various	0.120	Various	0.100	Various	CONT	CONT	
Travel	PD	NAVSEA HQ	0.455	0.050	Various	0.030	Various	0.030	Various	CONT	CONT	
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			4.947	0.242		0.150		0.130		CONT	CONT	
Remarks:												
Total Cost			152.080	6.063		3.296		2.264		CONT	CONT	
Remarks:												

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Exhibit R-2a, RD TEN Project Justification
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CLASSIFICATION:

EXHIBIT R-4	DATE: February 2006
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APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-4	PROGRAM ELEMENT NAME AND NUMBER 0603795N/Land Attack Technology	PROJECT NAME AND NUMBER 2325/Naval Fires Control System
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D. (U) Schedule Profile:

	FY05				FY06				FY07				FY08				FY09				FY10				FY11				
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
Naval Fires Control System (NFCS) Phase I																													
Milestones / Reviews	★ MS III		★ IOC					★ FOT&E																					
Design Development																													
Tests																													
Tests - DT/OT				△ ^{VCD}																									
Phase II					△	Development & Implementation (includes testing)																							▽

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Exhibit R-2a, RD TEN Project Justification
(Exhibit R-2a, page 19 of 22)

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603795N/Land Attack Technology	PROJECT NUMBER AND NAME Project Unit No. 9999 Name: Congressional Adds : VARIOUS																	
CONGRESSIONAL ADDS:																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 25%;"></td><td style="width: 10%; text-align: center;">FY 06</td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 35%;"></td></tr><tr><td>9051C</td><td></td><td></td><td></td><td></td></tr><tr><td>Advanced Medium Gun Demonstrator</td><td style="text-align: center;">2.4</td><td></td><td></td><td></td></tr></table>						FY 06				9051C					Advanced Medium Gun Demonstrator	2.4			
	FY 06																		
9051C																			
Advanced Medium Gun Demonstrator	2.4																		
<div style="border: 1px solid black; padding: 5px; min-height: 60px;">The Advanced Medium Caliber Gun System (AMCGD) (Project 9051 and 9051C) is a demonstration to investigate an advanced gun design encompassing modularity, scalability, compactness, and long range.</div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 25%;"></td><td style="width: 10%; text-align: center;">FY 06</td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 35%;"></td></tr><tr><td>9359C</td><td></td><td></td><td></td><td></td></tr><tr><td>Affordable Weapon System</td><td style="text-align: center;">35.0</td><td></td><td></td><td></td></tr></table>						FY 06				9359C					Affordable Weapon System	35.0			
	FY 06																		
9359C																			
Affordable Weapon System	35.0																		
<div style="border: 1px solid black; padding: 5px; min-height: 60px;">FY06 (\$35.0M): Conduct spiral 1 development of COTS based loitering missile for sea-based land attack technology. Perform land-based validation testing of spiral 1 system configuration. Perform at-sea system test on Self Defense Test Ship to validate military utility and shipboard weapon system integration.</div>																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 25%;"></td><td style="width: 10%; text-align: center;">FY 06</td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 35%;"></td></tr><tr><td>9826N</td><td></td><td></td><td></td><td></td></tr><tr><td>Ballistic Trajectory Extended Range Munition Program</td><td style="text-align: center;">10.2</td><td></td><td></td><td></td></tr></table>						FY 06				9826N					Ballistic Trajectory Extended Range Munition Program	10.2			
	FY 06																		
9826N																			
Ballistic Trajectory Extended Range Munition Program	10.2																		
<div style="border: 1px solid black; padding: 5px; min-height: 60px;">The Ballistic Trajectory Extended Range Munition (BTERM) (Project 9826N) - BTERM is a 5" gun-launched projectile employing a ballistic trajectory enroute to the target. BTERM utilizes rocket assisted propulsion to achieve extended ranges and a coupled GPS/INS guidance system for improved accuracy over current 5" ballistic ammunition.</div>																			

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4	PROGRAM ELEMENT NUMBER AND NAME 0603795N/Land Attack Technology	PROJECT NUMBER AND NAME Project Unit No. 9999Name: Congressional Adds: VARIOUS																	
CONGRESSIONAL ADDS:																			
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	FY 06																		
9827N																			
Millennium Gun System	4.0																		
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	FY 06																		
9828N																			
Mk57mm gun/ammo transition and start up	8.4																		
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	FY 06																		

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