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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy

DATE: February 2011

APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE											
1319: Research, Development, Test & Evaluation, Navy		PE 0603123N: Force Protection Advanced Technology											
BA 3: Advanced Technology Development (ATD)													
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost		
Total Program Element	94,569	61,877	64,057	-	64,057	71,574	77,254	61,939	69,146	Continuing	Continuing		
2912: Force Protection Advanced Technology	59,700	59,405	42,730	-	42,730	49,879	55,182	59,271	66,429	Continuing	Continuing		
3049: Force Protection	3,266	2,472	2,504	-	2,504	2,552	2,612	2,668	2,717	Continuing	Continuing		
3315: Medium Range Unmanned Aerial System	-	-	18,823	-	18,823	19,143	19,460	-	-	0.000	57,426		
4027: Naval Innovative Science and Engineering	4,397	-	-	-	-	-	-	-	-	-	4,397		
9999: Congressional Adds	27,206	-	-	-	-	-	-	-	-	-	27,206		

A. Mission Description and Budget Item Justification

The efforts described in this Program Element (PE) are based on investment directions as defined in the Naval S&T Strategic Plan approved by the S&T Corporate Board (Feb 2009). This strategy is based on needs and capabilities from Navy and Marine Corps guidance and input from the Naval Research Enterprise (NRE) stakeholders (including the Naval enterprises, the combatant commands, the Chief of Naval Operations (CNO), and Headquarters Marine Corps). It provides the vision and key objectives for the essential science and technology efforts that will enable the continued supremacy of U.S. Naval forces in the 21st century. The Strategy focuses and aligns Naval S&T with Naval missions and future capability needs that address the complex challenges presented by both rising peer competitors and irregular/asymmetric warfare.

This PE addresses advanced technology development associated with providing the capability of Platform and Force Protection for the U.S. Navy. This program supports the development of technologies associated with all naval platforms (surface, subsurface, terrestrial and air) and the protection of those platforms. This PE supports the Future Naval Capabilities (FNC) in the areas of Sea Shield and Cross Pillar Enablers, and Enterprise and Platform Enablers (EPE). The goal of this program is to provide the ability to win or avoid engagements with other platforms or weapons and, in the event of engagement, to resist and control damage while preserving operational capability. Surface Ship & Submarine, Hull, Mechanical & Electrical (HM&E), Missile Defense, Fleet Force Protection and Defense against Undersea Threats, and Emerging Threats activities all support FNC efforts.

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

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	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
B. Program Change Summary (\$ in Millions)					
Previous President's Budget	92.962	61.877	54.554	-	54.554
Current President's Budget	94.569	61.877	64.057	-	64.057
Total Adjustments	1.607	-	9.503	-	9.503
• Congressional General Reductions	-	-	-	-	-
• Congressional Directed Reductions	-	-	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	-0.509	-	-	-	-
• SBIR/STTR Transfer	-2.060	-	9.747	-	9.747
• Program Adjustments	-	-	-	-	-
• Section 219 Reprogramming	4.179	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.244	-	-0.244
• Congressional General Reductions Adjustments	-0.003	-	-	-	-

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 9999: Congressional Adds

Congressional Add: Captive Air Amphibious Transporter (CAAT)	2.191	-	-	-	-
Congressional Add: HBCU Applied Research Incubator	0.797	-	-	-	-
Congressional Add: High-Temperature Radar Dome Materials	1.593	-	-	-	-
Congressional Add: Multi-Element Structured Filter Arrays for Naval Platforms	3.426	-	-	-	-
Congressional Add: NAVAIR Project for Land/Sea-Based Air Systems Maintenance and Air Worthiness	1.992	-	-	-	-
Congressional Add: Pure Hydrogen Supply from Logistic Fuels	2.390	-	-	-	-
Congressional Add: Agile Port And High Speed Ship Technology	1.593	-	-	-	-
Congressional Add: Single Generator Operations Lithium Ion Battery	3.983	-	-	-	-
Congressional Add: High Power Density Motor Drive	2.868	-	-	-	-
Congressional Add: Wide Area Sensor For Force Protection Targeting	1.593	-	-	-	-
Congressional Add: Accelerated Fuel Cells Manufacturability and Their	1.593	-	-	-	-
Congressional Add: Advanced Logistics Fuel Reformer For Fuel Cells	2.390	-	-	-	-

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R-1 ITEM NOMENCLATURE
PE 0603123N: Force Protection Advanced Technology

Congressional Add Details (\$ in Millions, and Includes General Reductions)		FY 2010	FY 2011
Congressional Add: High Temperature Superconductor Trap Field Magnet		0.797	-
Congressional Add Subtotals for Project: 9999		27.206	-
Congressional Add Totals for all Projects		27.206	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2A, RD&E Project Justification: PB 2012 Navy

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 1319: Research, Development, Test & Evaluation, Navy
 BA 3: Advanced Technology Development (ATD)

R-1 ITEM NOMENCLATURE
 PE 0603123N: Force Protection Advanced Technology

PROJECT
 9999: Congressional Adds

COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
	27.206	-	-	-	-	-	-	-	-	0.000	27.206

A. Mission Description and Budget Item Justification

Congressional Interest Items not included in other Projects.

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

	FY 2010	FY 2011
Congressional Add: Captive Air Amphibious Transporter (CAAT)	2.191	-
FY 2010 Accomplishments: This effort developed a 1/2 scale technology demonstrator of an amphibious, logistic craft for the Marine Corps to transport supplies and equipment from ship to challenging landing locations.		
Congressional Add: HBCU Applied Research Incubator	0.797	-
FY 2010 Accomplishments: This effort demonstrated a realistic three-dimensional flat display surface multi-touch technology for the effective control of submarine perspective displays replacing the current two dimension "plan-view" displays.		
Congressional Add: High-Temperature Radar Dome Materials	1.593	-
FY 2010 Accomplishments: This effort supported high-temperature radar dome materials research.		
Congressional Add: Multi-Element Structured Filter Arrays for Naval Platforms	3.426	-
FY 2010 Accomplishments: This effort provided research to reduce weight, volume and parasitic energy consumption of air filtration and distribution systems used for next generation shipboard fuel cell auxiliary power units, which will significantly increase the effectiveness of current and future Naval platforms by enhancing key war fighting capabilities such as speed, range and fuel efficiency.		
Congressional Add: NAVVAIR Project for Land/Sea-Based Air Systems Maintenance and Air Worthiness	1.992	-
FY 2010 Accomplishments: This effort developed thermal barrier coating systems for the Naval Air Systems Command (NAVAIR) in collaboration with Focus: HOPE.		
Congressional Add: Pure Hydrogen Supply from Logistic Fuels	2.390	-
FY 2010 Accomplishments: This effort investigated a means of extracting pure hydrogen from standard logistic fuels to be used by all applications of fuel cells.		
Congressional Add: Agile Port And High Speed Ship Technology	1.593	-

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APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 3: Advanced Technology Development (ATD)	R-1 ITEM NOMENCLATURE PE 0603123N: Force Protection Advanced Technology	PROJECT 9999: Congressional Adds
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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2010	FY 2011
FY 2010 Accomplishments: This effort supported agile port and high speed ship technology research.		
Congressional Add: Single Generator Operations Lithium Ion Battery	3.983	-
FY 2010 Accomplishments: This effort supported single generator operations lithium ion battery research.		
Congressional Add: High Power Density Motor Drive	2.868	-
FY 2010 Accomplishments: This effort identified optimal trade-offs between various component and subsystem ratings, sizes, weights that will lead to a fully realizable demonstration of an advanced high power density motor drive at a modest power rating.		
Congressional Add: Wide Area Sensor For Force Protection Targeting	1.593	-
FY 2010 Accomplishments: This effort developed a design for a podlet structure attached to the ball-gimbal sensor suitable for carriage on a tactical Unmanned Air System (UAS), such as the MQ-1C Extended Range Multi-Purpose (ERMP) Warrior. The structure design, mounting, packaging and interconnection of the system components in the podlet were developed.		
Congressional Add: Accelerated Fuel Cells Manufacturability and Their	1.593	-
FY 2010 Accomplishments: This effort provided for the demonstration of a high-volume assembly and remanufacturing processes associated with the life-cycle of solid oxide fuel cells.		
Congressional Add: Advanced Logistics Fuel Reformer For Fuel Cells	2.390	-
FY 2010 Accomplishments: This effort conducted advanced technology development targeted towards demonstration of a fuel processor system and development of a diesel engine performance improvement system for shipboard applications to improve the reliability and efficiency of shipboard engines, improve service life and reduce operating costs.		
Congressional Add: High Temperature Superconductor Trap Field Magnet	0.797	-
FY 2010 Accomplishments: This effort supported high-temperature superconductor trap field magnet motor research.		
Congressional Adds Subtotals	27.206	-

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Exhibit R-2A, RDTE Project Justification: PB 2012 Navy

DATE: February 2011

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BA 3: Advanced Technology Development (ATD)

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PE 0603123N: Force Protection Advanced
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PROJECT
9999: Congressional Adds

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Congressional Add.

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