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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 3: <i>Advanced Technology Development (ATD)</i>					PE 0603758N: <i>Navy Warfighting Exp & Demo</i>							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	0.000	50.062	51.819	51.463	-	51.463	53.701	101.644	94.345	137.542	Continuing	Continuing
2918: <i>Navy Warfighting Experiments and Demo</i>	0.000	50.062	51.819	51.463	-	51.463	53.701	101.644	94.345	137.542	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

This Program Element (PE) addresses the development of recent technology breakthroughs to meet current operational needs from a subscale proof-of-principle into a full-scale prototype for warfighter experimentation during laboratory and operational demonstrations, Fleet Battle Experiments (FBE), Limited Objective Experiments (LOEs) and Sea Trial Exercises. The key aspects of this PE are divided into four areas: (1) SwampWorks develops and demonstrates newly invented or recently discovered technologies that address emergent and enduring operational problems in an accelerated timeframe; (2) Naval Warfare Experimentation develops prototypes of recent technology breakthroughs and provides them to the warfighter for experimentation during FBEs, LOEs or Sea Trials; (3) Tech Solutions develops rapid response science and technology prototypes addressing Fleet/Force needs identified by Sailors and Marines at the deckplate level; and (4) Operations Analysis provides the Navy and Marine Corps the means to identify capability needs that can be addressed with science and technology solutions, and (5) Manufacturing Technology Science and Technology (S&T) to accelerate recently discovered manufacturing technologies to reduce the acquisition and ownership costs of current and future platforms.

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

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	49.996	51.819	56.200	-	56.200
Current President's Budget	50.062	51.819	51.463	-	51.463
Total Adjustments	0.066	0.000	-4.737	-	-4.737
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.621	0.000			
• SBIR/STTR Transfer	-1.556	0.000			
• Program Adjustments	0.000	0.000	-4.737	-	-4.737
• Rate/Misc Adjustments	0.001	0.000	0.000	-	0.000

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<u>Change Summary Explanation</u> Technical: Not applicable. Schedule: Not applicable.		

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APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 3: Advanced Technology Development (ATD)					R-1 ITEM NOMENCLATURE PE 0603758N: Navy Warfighting Exp & Demo				PROJECT 2918: Navy Warfighting Experiments and Demo			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
2918: Navy Warfighting Experiments and Demo	0.000	50.062	51.819	51.463	-	51.463	53.701	101.644	94.345	137.542	Continuing	Continuing
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
This project focuses on the development of recent technology breakthroughs to meet current operational needs from a subscale proof-of-principle into a full-scale prototype for warfighter experimentation during laboratory and operational demonstrations, FBE, LOEs and Sea Trial Exercises.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2012	FY 2013	FY 2014	
Title: NAVAL WARFARE EXPERIMENTATION									19.815	19.200	19.119	
Description: The objective of this project is to capitalize on recent technology breakthroughs to develop prototypes quickly and provide them to the warfighter for experimentation during laboratory and operational demonstrations, Sea Trials or LOEs.												
FY 2012 Accomplishments:												
- Continued concept based technology program efforts.												
- Continued experimentation efforts with technologies developed in SwampWorks/Tech Solutions.												
- Continued to identify promising technology breakthroughs that can be prototyped and delivered to the warfighter for experimentation.												
- Continued development and demonstration of real time situational awareness technologies.												
- Continued technology experimentation for Total Ownership Cost (TOC) reduction.												
- Continued efforts to develop and demonstrate technologies to meet current or emerging operational needs.												
- Completed Ship Affordability program to examine ship designs and construction processes and develop technologies that can significantly reduce the costs to conceive, design and construct naval ships.												
- Completed effort to develop and demonstrate integrated intelligence, surveillance, observation, and navigation technologies into a common operation picture accessible throughout the U.S. Government.												
FY 2013 Plans:												
- Continue all FY 2012 efforts, less those noted as complete above.												
- Initiate efforts to experiment and demonstrate technologies to meet current or emerging operational needs.												
FY 2014 Plans:												
- Continue efforts initiated in FY13 as necessary												

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014	
- Develop, demonstrate and experiment with technologies to rapidly evaluate operational capabilities of new or recently developed technologies.					
Title: OPERATIONS ANALYSIS Description: The objective of this project is to provide operational analysis through studies, analyses, gaming and experimentation to identify Navy and Marine Corps capability needs that can be addressed with Science and Technology (S&T) solutions. The effort includes core analysis of S&T programs, military utility/capability gaps analyses, war gaming, structured experimentation events, the articulation of the results of that analysis and wargaming, and the development of innovation strategies and messages resulting from these analyses. Recent work includes participation in SIMEX design, data collection and analysis events; wargame design in support of the ONR Office of Innovation; analytical, strategic planning, and wargaming support; organizing and conducting workshops and symposia that increase innovation outreach; and participating in Red Teaming and conceptual analysis. FY 2012 Accomplishments: - Continued to conduct Military Utility Analyses of Future Naval Capability technologies. - Continued to conduct capability gaps analyses to identify areas that can be addressed with products from the S&T portfolio. - Continued to conduct SIMEX development, execution, data collection and analysis. - Continued to conduct wargame design in support of the ONR Office of Innovation. FY 2013 Plans: - Continue all FY 2012 efforts. FY 2014 Plans: - Continue all FY 2013 efforts.		2.697	2.726	2.714	
Title: SWAMPWORKS Description: SwampWorks seeks to develop and demonstrate technologies that address emergent and enduring operational problems in an accelerated timeframe. Some of these technologies may end up in the hands of the warfighter for experimentation, or may culminate in a significant exercise that demonstrates capability then transitions into the Acquisition Program of Record (POR). FY 2012 Accomplishments: - Continued to identify enduring and emergent operational barriers identified by naval leadership and responded with relevant technology developments and demonstrations. - Continued disruptive commercial technology studies at varied military, government, and educational institutions. - Continued high risk/high payoff projects to explore significant reduction in TOC.		17.924	18.484	18.305	

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none">- Continued efforts to develop technologies to meet current or emerging operational needs.- Continued investment in submarine control surface technologies to provide improved maneuvering capabilities and drastically reduce TOC. Programs include but are not limited to the Virginia class, and Ohio Class replacement programs.- Continued investment in advanced electronic warfare technologies; projects are expected to be classified at a higher level.- Completed novel heavy fuel propulsion system development.- Completed exploration of technologies to address emergent EW threats for surface and air platforms. <p>FY 2013 Plans:</p> <ul style="list-style-type: none">- Continue all FY 2012 efforts.- Initiate efforts to develop and demonstrate technologies to meet current or emerging operational needs. <p>FY 2014 Plans:</p> <ul style="list-style-type: none">- Continue FY13 efforts as necessary.- Initiate efforts that develop and/or demonstrate advanced technologies in support of Fleet issue in an accelerated timeframe.				
<p>Title: TECH SOLUTIONS</p> <p>Description: Tech Solutions develops rapid response S&T solutions to immediate Fleet/Force needs identified by individual warfighters at the deckplate level. Sailors, Marines and Science Advisors submit their issues throughout the year via the Tech Solutions website, email, phone, or chain of command. Projects are initiated as requests come in and are completed in approximately twelve to eighteen months, resulting in a prototype demonstration of TRL 6 or higher.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none">- Developed, demonstrated and delivered prototype technical solutions to projects initiated in the previous fiscal year, including: a new day/night fire control sight for the M203 grenade launcher; Back to Basics irregular warfare decision training system for the Surface Warfare Officers' School; a Power Management Kit for Navy EOD teams; corrosion data capture system for H-60 helicopters.- Initiated development of additional projects that will provide solutions to address emergent critical needs. <p>FY 2013 Plans:</p> <ul style="list-style-type: none">- Develop, demonstrate and deliver technical solution prototypes to projects initiated in the previous fiscal year.- Initiate development of additional projects that will provide solutions to address emergent critical needs.- Continue development of projects that provide solutions to problems identified by Science Advisors and the Fleet/Force to address emergent critical needs <p>FY 2014 Plans:</p> <ul style="list-style-type: none">- Develop, demonstrate and deliver technical solution prototypes to projects initiated in the previous fiscal year.		9.626	9.507	9.469

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013
- Initiate development of additional projects that will provide solutions to address emergent critical needs.			
Title: MANUFACTURING TECHNOLOGY S&T Description: The Manufacturing Technology Science and Technology (S&T) program accelerates recently discovered manufacturing technologies to reduce the acquisition and ownership costs of current and future platforms which assists in meeting performance and platform affordability goals - both acquisition and life-cycle. This supports a critical goal of the Navy, meeting the affordability goals of major acquisition platforms, by accelerating emerging manufacturing technology. Funding does not begin until FY 2013. FY 2013 Plans: - Initiate/accelerate recently discovered manufacturing technologies to reduce the acquisition and ownership costs of current and future platforms. FY 2014 Plans: - Continue manufacturing technology development efforts of FY2013 to reduce the acquisition and ownership costs of current and future platforms.		0.000	1.902
Accomplishments/Planned Programs Subtotals		50.062	51.819
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy Not applicable.			
E. Performance Metrics Overall metric goals are to transition the 6.3 advanced technology projects into acquisition programs of record, demonstrate successful technologies to enable new operational concepts, and enable the production of technology products such as proofs of concept and manufacturing packages. The performance of the work funded in this PE is reviewed at several levels to ensure that the investment is relevant and productive. At the macroscopic level, the investment is coordinated with Navy Warfare Development Command and Commander, Fleet Forces Command to address the goals and objectives identified for Sea Trials and LOEs. At the microscopic level, the work funded in this PE is reviewed periodically by the Program Manager to ensure the investment is meeting the goals defined for each project. This review includes feedback collected from the warfighter community on all Sea Trials and LOEs to support the Program Manager's assessment of the value and relevance of each investment. Furthermore, the entire program is reviewed yearly by the Chief of Naval Research.			