Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0708011N: *Industrial Preparedness*							
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	71.277	46.173	54.031	-	54.031	51.001	51.264	53.577	59.366	Continuing	Continuing
1050: *Manufacturing Tech*	53.856	46.173	54.031	-	54.031	51.001	51.264	53.577	59.366	Continuing	Continuing
4027: *Naval Innovative Science and Engineering*	0.391	-	-	-	-	-	-	-	-	0.000	0.391
9999: *Congressional Adds*	17.030	-	-	-	-	-	-	-	-	0.000	17.030

A. Mission Description and Budget Item Justification

The Manufacturing Technology (ManTech) program is intended to improve the productivity and responsiveness of the U.S. defense industrial base by funding the development and transition of leading edge manufacturing technologies. The ManTech program is executed through a Center of Excellence (COE) strategy. A majority of the COEs are consortium based with only a small group of technical and management personnel at the center. ManTech projects are primarily performed by industry participants that bill the COE which, in turn, bills the Navy which causes a non-traditional financial execution profile for the program. The program therefore does not meet traditional execution benchmarks. The ManTech program, by providing seed funding for the development of moderate to high risk process and equipment technology, permits contractors to upgrade their manufacturing capabilities. Ultimately, the program aims to produce high-quality weapon systems with shorter lead times and reduced acquisition costs.

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

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy	DATE: February 2011
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B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	74.880	46.173	55.652	-	55.652
Current President's Budget	71.277	46.173	54.031	-	54.031
Total Adjustments	-3.603	-	-1.621	-	-1.621
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-1.794	-			
• SBIR/STTR Transfer	-2.046	-			
• Program Adjustments	-	-	-1.323	-	-1.323
• Section 219 Reprogramming	0.240	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.298	-	-0.298
• Congressional General Reductions Adjustments	-0.003	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 9999: *Congressional Adds*		
Congressional Add: *Laser Optimization Remote Lighting System*	1.992	-
Congressional Add: *Weps Sys Life Ext Program*	2.490	-
Congressional Add: *Low Acoustic and Thermal Signature Battlefield Power Source*	3.187	-
Congressional Add: *Manufacturing S&T for Next-Generation Energetics*	4.979	-
Congressional Add: *Next Generation Scalable Lean Manufacturing Initia*	2.390	-
Congressional Add: *Out of Autoclave Composite Processing*	1.992	-
Congressional Add Subtotals for Project: 9999	17.030	-
Congressional Add Totals for all Projects	17.030	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0708011N: *Industrial Preparedness*	PROJECT 1050: *Manufacturing Tech*	

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
1050: *Manufacturing Tech*	53.856	46.173	54.031	-	54.031	51.001	51.264	53.577	59.366	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The ManTech Program is intended to improve the productivity and responsiveness of the U.S. defense industrial base by funding the development of manufacturing technologies. Major areas of endeavor both underway and planned include: advanced manufacturing technology for metalworking, joining, electronics and electro-optics, composites, shipbuilding, and above-the-factory-floor business operations technology. The ManTech Program is aimed at assisting acquisition programs in meeting performance and affordability goals by inserting manufacturing process solutions early into the design phase.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: COMPOSITES PROCESSING AND FABRICATION	6.000	6.000	6.000
Articles:	0	0	0

Description: The primary technical goal of the Composites Processing and Fabrication activity is improving weapon systems affordability, enhancing weapon system effectiveness and improving reliability / war-fighter readiness through the increased utilization of composite materials and structures. This is being achieved through the development and maturation of affordable, robust manufacturing and assembly processes that fully exploit the benefits of composite materials. Concentration is on composites processing for the following four platforms: DDG-1000, CVN-21, VCS, and LCS although ManTech will continue to develop composites manufacturing technology for high priority air platforms.

FY 2010 Accomplishments:

- Continued Composite Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of efforts to develop/optimize composite materials fabrication technology for reduced cost VCS construction.
- Continued Composite Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative.
- Continued Composite Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative.
- Continued Composite Materials and Process Improvement Thrust for Air Platforms. Included continuation of efforts to develop/ optimize composite materials fabrication technology for reduced cost Air Platform construction.
- Completed DDG-1000 Radomes Affordability.
- Completed other composites thrusts (formerly projects) to address improvements/affordability of DDG-1000, CVN-21, VCS, and other acquisition program offices.

FY 2011 Plans:

- Continue Composite Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of efforts to develop / optimize composite materials fabrication technology for reduced cost VCS construction.

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
- Continue Composite Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative. - Continue Composite Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative. - Continue Composite Materials and Process Improvement Thrust for Air Platforms. Includes continuation of efforts to develop/ optimize composite materials fabrication technology for reduced cost Air Platform construction. ***FY 2012 Plans:*** - Continue Composite Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of efforts to develop/optimize composite materials fabrication technology for reduced cost VCS construction. - Continue Composite Materials and Process Improvement Thrust for DDG Shipbuilding Affordability Initiative. - Continue Composite Materials and Process Improvement Thrust for CVN-21 (CVN-78) Shipbuilding Affordability Initiative. - Continue Composite Materials and Process Improvement Thrust for Air Platforms. Includes continuation of efforts to develop/ optimize composite materials fabrication technology for reduced cost Air Platform construction. - Initiate Composite Materials and Process Improvement Thrust for LCS Shipbuilding Affordability Initiative.			
Title: CORPORATE INVESTMENTS	10.646	5.663	10.297
Articles:	0	0	0
Description: The Corporate Investments activity is focused on accelerating defense industrial enterprise progress toward implementation of world-class industrial practices as well as advanced design and information systems that support weapon system development, production, and sustainment. Key emphasis areas include: 1) Benchmarking and accelerating the implementation of world-class industrial practices throughout the contractor base; 2) Demonstrating and validating advanced business practices and information technologies capable of streamlining management functions in all industrial base tiers; and 3) Leveraging information technologies in pursuit of tighter coupling of all defense industrial enterprise elements. Corporate Investment efforts create improvements to cost and cycle time for weapon system development, production, and repair. Additionally, Corporate Investments include the funding of recently identified near-term high priority shipbuilding affordability efforts for the four major platforms - DDG-1000, CVN-21, VCS, and LCS. The funding decrease from FY 2010 to FY 2011 will result in the elimination of several high payoff ship reduction efforts supporting LCS and VIRGINIA Class submarines. Moreover, planned work such as developing pervasive technology for improved supply chain management and model based ship production will be reduced. The reduction of funding from FY10 to FY11 reflects programmatic realignments to other Navy priorities. The increase from FY11 to FY12 reflects funding alignment back to manufacturing priorities. ***FY 2010 Accomplishments:*** - Continued Near-Term High Priority Shipbuilding Affordability Thrust for CVN-21.			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
- Continued Near-Term High Priority Shipbuilding Affordability Thrust for LCS. - Continued efforts to improve the Navy industrial base through above-the-factory-floor enhancements and supply chain processes/technology improvements for Navy weapon system acquisition programs such as the DDG-1000, CVN 21, LCS, VCS, and others. - Continued Near-Term, High Priority Shipbuilding Affordability Thrust for DDG-1000. - Continued Near-Term High Priority Shipbuilding Affordability Thrust for VCS. - Continued Benchmarking and Best Practices effort to identify, validate, and disseminate best-in-class practices, processes, and technologies to help improve the competitiveness of the defense industrial base and the affordability/performance of Navy and defense platforms and weapon systems. - Completed Light Activated Semiconductor Switches. - Completed System-on-Chip Low Cost / Weight Phased Array Antennas. ***FY 2011 Plans:*** - Continue Near-Term High Priority Shipbuilding Affordability Thrust for CVN-21. - Continue Near-Term High Priority Shipbuilding Affordability Thrust for LCS. - Continue efforts to improve the Navy industrial base through above-the-factory-floor enhancements and supply chain processes/ technology improvements for Navy weapon system acquisition programs such as the DDG-1000, CVN 21, LCS, VCS, and others. - Continue Near-Term, High Priority Shipbuilding Affordability Thrust for DDG-1000. - Continue Near-Term High Priority Shipbuilding Affordability Thrust for VCS. - Continue Benchmarking and Best Practices effort to identify, validate, and disseminate best-in-class practices, processes, and technologies to help improve the competitiveness of the defense industrial base and the affordability/performance of Navy and defense platforms and weapons systems. ***FY 2012 Plans:*** - Continue Near-Term High Priority Shipbuilding Affordability Thrust for CVN-21 (CVN-78). - Continue Near-Term High Priority Shipbuilding Affordability Thrust for LCS. - Continue efforts to improve the Navy industrial base through above-the-factory-floor enhancements and supply chain processes/ technology improvements for Navy weapon system acquisition programs such as the DDG, CVN 21 (CVN-78), LCS, VCS, and others. - Continue Near-Term, High Priority Shipbuilding Affordability Thrust for DDG. - Continue Near-Term High Priority Shipbuilding Affordability Thrust for VCS.			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
- Continue Benchmarking and Best Practices effort to identify, validate, and disseminate best-in-class practices, processes, and technologies to help improve the competitiveness of the defense industrial base and the affordability/performance of Navy and defense platforms and weapons systems.			
Title: ELECTRONICS PROCESSING AND FABRICATION	9.000	6.300	9.734
Articles:	0	0	0
Description: Electronics Processing and Fabrication efforts develop and deploy affordable, robust manufacturing processes and capabilities for electronics critical to defense applications over their full life cycle. Efforts create new and improved manufacturing processes on the shop floor, as well as repair and maintain facilities such as depots and logistics centers, with a strong emphasis on process maturation. Emphasis is on shipbuilding affordability for four major platforms: DDG-1000, CVN-21, VCS, and LCS, with some funding geared towards toward electronics / electro-optics improvements for high priority air platforms. The reduction in FY 2011 reflects an overall budget decrease and relative priority of manufacturing needs due to fewer shipbuilding affordability requirements in electrooptics than in other technical areas for the four shipbuilding platforms ManTech supports. The reduction of funding from FY10 to FY11 reflects programmatic realignments to other Navy priorities. The increase from FY11 to FY12 reflects funding alignment back to manufacturing priorities. ***FY 2010 Accomplishments:*** - Continued Electronics/Electro-Optics Thrust for VCS Affordability Initiative. Included continuation of improved affordable electronics/electro-optics efforts. - Continued Electronics/Electro-Optics-Optics Thrust for LCS Shipbuilding Affordability Initiative. - Continued Electronics/Electro-Optics-Optics Thrust for Air Platforms. and continuation of electronics/electro-optics efforts to improve affordability for Air Platforms. - Continued Electronics/Electro-Optics-Optics Thrust for DDG-1000 Shipbuilding Affordability Initiative. Included radar/ communications efforts to impact DDG 1000 affordability. - Continued Electronics/Electro-Optics-Optic Thrust for CVN-21 Shipbuilding Affordability Initiative. Included initiation of electronics/electro-optics efforts to improve affordability for CVN-21. - Completed advanced electronics and electro-optics efforts/thrusts to address improvements/affordability for DDG-1000, CVN-21, VCS, LCS, F/A-18, EA-18G, and others. - Completed Multispectral Mid-IR Lasers for Directional Infrared Counter Measures (DIRCM). - Completed SiGE-Based System-on-Chip for Low-Cost Weight Phased Array Antennas. ***FY 2011 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
- Continue Electronics/Electro-Optics Thrust for VCS Affordability Initiative. Includes continuation of improved affordable electronics/electro-optics efforts. - Continue Electronics/Electro-Optics Thrust for LCS Shipbuilding Affordability Initiative. - Continue Electronics/Electro-Optics Thrust for Air Platforms. Includes continuation of electronics/electro-optics efforts to improve affordability for Air Platforms. - Continue Electronics/Electro-Optics Thrust for DDG-1000 Shipbuilding Affordability Initiative. Includes radar/communications efforts to impact DDG 1000 affordability. - Continue Electronics/Electro-Optic Thrust for CVN-21 Shipbuilding Affordability Initiative. Includes continuation of electronics/ electro-optics efforts to improve affordability for CVN-21. ***FY 2012 Plans:*** - Continue Electronics/Electro-Optics Thrust for VCS Affordability Initiative. Includes continuation of improved affordable electronics/electro-optics efforts. - Continue Electronics/Electro-Optics Thrust for LCS Shipbuilding Affordability Initiative. - Continue Electronics/Electro-Optics Thrust for Air Platforms. Includes continuation of electronics/electro-optics efforts to improve affordability for Air Platforms. - Continue Electronics/Electro-Optics Thrust for DDG-1000 Shipbuilding Affordability Initiative. Includes radar/communications efforts to impact DDG-1000 affordability. - Continue Electronics/Electro-Optic Thrust for CVN-21 (CVN-78) Shipbuilding Affordability Initiative. Includes continuation of electronics/electro-optics efforts to improve affordability for CVN-21 (CVN-78).			
Title: METALS PROCESSING AND FABRICATION	18.000	18.000	18.000
Articles:	0	0	0
Description: The objective of the Metals Processing and Fabrication activity is to develop affordable, robust manufacturing processes and capabilities for metals and special materials critical to defense weapon system applications. Major areas that support this objective include: processing methods, special materials, joining, and inspection and compliance. These efforts directly impact the cost and performance of future aircraft, rotorcraft, land combat vehicles, surface and subsurface naval platforms, space systems, artillery and ammunition, and defense industry manufacturing equipment. Emphasis on shipbuilding affordability for four major platforms: DDG-1000, CVN-21, VCS, and LCS, with some funding geared toward metals processing and fabrication improvements for high priority air platforms. ***FY 2010 Accomplishments:*** - Continued Schedule Compression/Production Engineering Thrust for VCS Shipbuilding Affordability Initiative. - Continued Outfitting Thrust for VCS Shipbuilding Affordability Initiative.			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
- Continued rapid response. - Continued Metals Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative. Metallic materials and process efforts for DDG-1000 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for DDG 1000 components. - Continued Metals Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative. Metallic materials and process efforts for CVN 21 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for CVN 21 components. - Continued Metals Thrust for Littoral Combat Ship (LCS) Shipbuilding Affordability Initiative. - Continued Metals Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Metallic materials and process efforts for VCS include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, coating/cladding, etc.) resulting in reduced cost of fabrication for VCS components. - Continued Metal Materials and Process Improvements Thrust for Other Ship/NAVSEA Platforms. - Continued Metals Materials and Process Improvement Thrust for Air Platforms. - Continued Metal Materials and Process Improvements Thrust for Marine Corps Systems. - Completed teaching factory activities. - Completed Laser Welded Lightweight Panel Structure Fabrication - NMC. - Completed Alloy 625 Formability for Future Carriers.			
FY 2011 Plans: - Continue Schedule Compression/Production Engineering Thrust for VCS Shipbuilding Affordability Initiative. - Continue Outfitting Thrust for VCS Shipbuilding Affordability Initiative. - Continue rapid response efforts. - Continue Metals Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative. Metallic materials and process efforts for DDG-1000 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for DDG 1000 components. - Continue Metals Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative. Metallic materials and process efforts for CVN 21 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for CVN 21 components. - Continue Metals Thrust for Littoral Combat Ship (LCS) Shipbuilding Affordability Initiative. - Continue Metals Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Metallic materials and process efforts for VCS include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, coating/cladding, etc.) resulting in reduced cost of fabrication for VCS components. - Continue Metal Materials and Process Improvements Thrust for Other Ship/NAVSEA Platforms.			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
- Continue Metals Materials and Process Improvement Thrust for Air Platforms. - Continue Metal Materials and Process Improvements Thrust for Marine Corps Systems. ***FY 2012 Plans:*** - Continue Schedule Compression/Production Engineering Thrust for VCS Shipbuilding Affordability Initiative. - Continue Outfitting Thrust for VCS Shipbuilding Affordability Initiative. - Continue rapid response efforts. - Continue Metals Materials and Process Improvement Thrust for DDG Shipbuilding Affordability Initiative. Metallic materials and process efforts for DDG include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for DDG components. - Continue Metals Materials and Process Improvement Thrust for CVN-21 (CVN-78) Shipbuilding Affordability Initiative. Metallic materials and process efforts for CVN-21 (CVN-78) include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for CVN-21 (CVN-78) components. - Continue Metals Thrust for Littoral Combat Ship (LCS) Shipbuilding Affordability Initiative. - Continue Metals Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Metallic materials and process efforts for VCS include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, coating/cladding, etc.) resulting in reduced cost of fabrication for VCS components. - Continue Metal Materials and Process Improvements Thrust for Other Ship / NAVSEA Platforms. - Continue Metals Materials and Process Improvement Thrust for Air Platforms. - Continue Metal Materials and Process Improvements Thrust for Marine Corps Systems.			
Title: OTHER (SHIPBUILDING, REPAIR TECH, ENERGETICS, AND TECHNICAL ENGINEERING SUPPORT) ***Articles:*** ***Description:*** The "Other" activity includes shipbuilding technology, repair technology, energetics, and technical engineering support. Shipbuilding technology primarily addresses the development of manufacturing process improvements for shipyards and is geared towards affordability efforts for four ship platforms: DDG-1000, CVN-21, VIRGINIA Class Submarine (VCS), and Littoral Combat Ship (LCS). Repair technology addresses repair, overhaul, and sustainment functions that emphasize remanufacturing processes and advancing technology. Energetics efforts concentrate on developing energetics solutions to ensure the availability of safe, affordable, and quality energetics products largely in support of Program Executive Office (PEO) Integrated Warfare Systems (IWS). ***FY 2010 Accomplishments:*** - Continued Shipbuilding Affordability Thrust for VCS.	10.210 0	10.210 0	10.000 0

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
- Continued Shipbuilding Affordability Thrust for LCS. - Continued Shipbuilding Affordability Thrust for DDG-1000. - Continued Shipbuilding Thrust for Other Ship/NAVSEA Platforms. - Continued Repair Technology Thrust for repair and sustainment of Navy weapons systems. Included continuation of Repair Technology projects based on high priority depot needs. - Continued Energetics Thrust for PEO IWS and Other Acquisition Programs. Included continuation of energetics efforts to support PEO IWS and other acquisition programs. - Continued to provide technical engineering support for the ManTech Program. ***FY 2011 Plans:*** - Continue Shipbuilding Affordability Thrust for CVN-21. - Continue Shipbuilding Affordability Thrust for VCS. - Continue Shipbuilding Affordability Thrust for LCS. - Continue Shipbuilding Affordability Thrust for DDG-1000. - Continue Shipbuilding Thrust for Other Ship/NAVSEA Platforms. - Continue Repair Technology Thrust for repair and sustainment of Navy weapons systems. Includes continuation of Repair Technology projects based on high priority depot needs. - Continue Energetics Thrust for PEO IWS and Other Acquisition Programs. Includes continuation of energetics efforts to support PEO IWS and other acquisition programs. - Continue to provide technical engineering support for the ManTech Program. ***FY 2012 Plans:*** - Continue Shipbuilding Affordability Thrust for VCS. - Continue Shipbuilding Affordability Thrust for LCS. - Continue Shipbuilding Affordability Thrust for DDG-1000. - Continue Shipbuilding Thrust for Other Ship/NAVSEA Platforms. - Continue Repair Technology Thrust for repair and sustainment of Navy weapons systems. Includes continuation of Repair Technology projects based on high priority depot needs. - Continue Energetics Thrust for PEO IWS and Other Acquisition Programs. Includes continuation of energetics efforts to support PEO IWS and other acquisition programs. - Continue to provide technical engineering support for the ManTech Program.			
Accomplishments/Planned Programs Subtotals	53.856	46.173	54.031

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C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

Efforts are focused on shipbuilding affordability reduction for the following the Integrated Systems Investment Strategy platforms: DDG 1000, CVN 21, Littoral Combat Ship (LCS), and the VIRGINIA Class Submarine (VCS) as well as more limited efforts for aircraft / other programs.

E. Performance Metrics

The ManTech program's overall goal is to transition production technology to reduce the cost of Navy weapons systems. Metrics are currently collected on the cost savings per hull and for the class for each of the 4 primary shipbuilding platforms, DDG-1000, CVN-21, LCS and VCS.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mfg Development (B2P)	C/CPFF	American Competitiveness Institute (ACI):Philadelphia, PA (B2P)	4.300	2.000	Oct 2010	2.000	Oct 2011	-		2.000	0.000	8.300	
Mfg Development (CMTC)	C/CPAF	SCRA:Anderson, SC	15.804	5.600	Oct 2010	7.300	Oct 2011	-		7.300	Continuing	Continuing	Continuing
Award Fee (CMTC)	C/CPAF	SCRA:Anderson, SC	0.500	0.400	Oct 2010	0.300	Oct 2011	-		0.300	0.000	1.200	
Mfg Development (CNST)1	C/CPFF	Advanced Technology Institute (ATI):Charleston, SC	4.697	-		-		-		-	0.000	4.697	
Mfg Development (CNST)2	C/CPAF	Advanced Technology Institute (ATI):Charleston, SC	6.003	3.312	Oct 2010	4.497	Oct 2011	-		4.497	0.000	13.812	
Award Fee (CNST)	C/CPAF	Advanced Technology Institute (ATI):Charleston, SC	0.400	0.280	Oct 2010	0.300	Oct 2011	-		0.300	0.000	0.980	
Mfg Development (EMPF)	C/CPAF	American Competitiveness Institute (ACI):Philadelphia, PA	13.639	5.060	Oct 2010	6.727	Oct 2011	-		6.727	0.000	25.426	
Award Fee (EMPF)	C/CPAF	American Competitiveness Institute (ACI):Philadelphia, PA	0.925	0.440	Oct 2010	0.373	Oct 2011	-		0.373	0.000	1.738	
Mfg Development (EMTC)	WR	Naval Surface Warfare Center - Indian Head:Indian Head, MD	4.000	2.000	Nov 2010	2.000	Nov 2011	-		2.000	0.000	8.000	
Mfg Development (EOC)	C/CPAF	Penn State University:State College, PA (EOC)	8.651	0.850	Oct 2010	4.225	Oct 2011	-		4.225	0.000	13.726	
Award Fee (EOC)	C/CPAF	Penn State University:State College, PA (EOC)	0.349	-		0.275	Oct 2011	-		0.275	0.000	0.624	
Mfg Development (iMAST)	C/CPFF		7.699	3.500	Dec 2010	3.575	Dec 2011	-		3.575	0.000	14.774	

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Penn State University:State College, PA (iMAST)											
Mfg Development (NJC)	C/CPAF	Edison Welding Institute:Columbus, OH	6.375	2.800	Oct 2010	2.782	Oct 2011	-		2.782	0.000	11.957	
Award Fee (NJC)	C/CPAF	Edison Welding Institute:Columbus, OH	0.375	0.200	Oct 2010	0.218	Oct 2011	-		0.218	0.000	0.793	
Mfg Development (NMC)	C/CPAF	Concurrent Technologies Corp.:Johnstown, PA	22.900	11.400	Oct 2010	11.500	Oct 2011	-		11.500	0.000	45.800	
Award Fee (NMC)	C/CPAF	Concurrent Technologies Corp.:Johnstown, PA	1.100	0.600	Oct 2010	0.600	Oct 2011	-		0.600	0.000	2.300	
Mfg Development	WR	Naval Air Systems Command (NAVAIR):Patuxent River, MD	0.803	0.350	Nov 2010	0.400	Nov 2011	-		0.400	0.000	1.553	
Mfg Development	WR	Naval Research Laboratory (NRL):Washington, DC	0.280	0.120	Nov 2010	0.170	Nov 2011	-		0.170	0.000	0.570	
Mfg Development	WR	Naval Surface Warfare Center - Carderock Division:Carderock, MD	2.791	1.400	Nov 2010	1.488	Nov 2011	-		1.488	0.000	5.679	
Mfg Development	WR	Naval Undersea Warfare Center - Newport:Newport, RI	0.380	-		-		-		-	0.000	0.380	
Mfg Development	WR	SPAWAR:San Diego, CA	0.010	-		-		-		-	0.000	0.010	
		Subtotal	101.981	40.312		48.730		-		48.730			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0708011N: *Industrial Preparedness*	PROJECT 1050: *Manufacturing Tech*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Support (GTEC)	C/CPFF	DRC:Andover, MA	3.762	1.800	Oct 2010	1.800	Oct 2011	-		1.800	0.000	7.362	
Contractor Support (GMST)	C/CPFF	DRC:Andover, MA	0.048	-		0.140	Oct 2011	-		0.140	0.000	0.188	
ManTech Registrations (GMPC)	Various	TBD:TBD	0.016	0.010	Jun 2011	0.010	Jun 2012	-		0.010	0.000	0.036	
ManTech Travel (GMTT)	Various	TBD:TBD	0.155	0.080	Sep 2011	0.080	Sep 2012	-		0.080	0.000	0.315	
Contractor Support (GMST)	C/CPFF	TBD:TBD	0.270	0.170	Dec 2010	0.135	Dec 2011	-		0.135	0.000	0.575	
Miscellaneous (IT Support Bills)	C/CPFF	TBD:TBD	1.906	1.294	Oct 2010	1.865	Oct 2011	-		1.865	0.000	5.065	
Miscellaneous (Stat Reserve)	TBD	TBD:TBD	2.923	2.507	Mar 2011	1.271	Mar 2012	-		1.271	0.000	6.701	
		Subtotal	9.080	5.861		5.301		-		5.301	0.000	20.242	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	111.061	46.173		54.031		-		54.031			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0708011N: *Industrial Preparedness*	PROJECT 1050: *Manufacturing Tech*

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0708011N: *Industrial Preparedness*	**PROJECT** 1050: *Manufacturing Tech*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1050				
Composites Processing and Fabrication	1	2010	4	2016
-- Annual Investment Guidance (CP&F)	4	2010	4	2015
-- Project Identification (CP&F)	4	2010	1	2016
-- Project Evaluation (CP&F)	1	2010	2	2016
-- Prog Office Commitment (CP&F)	1	2010	2	2016
-- FY Plan Determined (CP&F)	2	2010	3	2016
-- Project Award (CP&F)	1	2010	2	2016
-- Ongoing Projects (CP&F)	1	2010	4	2016
Corporate Investments	1	2010	4	2016
-- Annual Investment Guidance (CI)	4	2010	4	2015
-- Project Identification (CI)	4	2010	1	2016
-- Project Evaluation (CI)	1	2010	2	2016
-- Prog Office Commitment (CI)	1	2010	2	2016
-- FY Plan Determined (CI)	2	2010	3	2016
-- Project Award (CI)	1	2010	2	2016
-- Ongoing Projects (CI)	1	2010	4	2016
Electronics Processing and Fabrication	1	2010	4	2016
-- Annual Investment Guidance (EP&F)	4	2010	4	2015
-- Project Identification (EP&F)	4	2010	1	2016
-- Project Evaluation (EP&F)	1	2010	2	2016
-- Prog Office Commitment (EP&F)	1	2010	2	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0708011N: *Industrial Preparedness*	**PROJECT** 1050: *Manufacturing Tech*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
-- FY Plan Determined (EP&F)	2	2010	3	2016
-- Project Award (EP&F)	1	2010	2	2016
-- Ongoing Projects (EP&F)	1	2010	4	2016
Metals Processing and Fabrication	1	2010	4	2016
-- Annual Investment Guidance (MP&F)	4	2010	4	2015
-- Project Identification (MP&F)	4	2010	1	2016
-- Project Evaluation (MP&F)	1	2010	2	2016
-- Prog Office Commitment (MP&F)	1	2010	2	2016
-- FY Plan Determined (MP&F)	2	2010	3	2016
-- Project Award (MP&F)	1	2010	2	2016
-- Ongoing Projects (MP&F)	1	2010	4	2016
Other	1	2010	4	2016
-- Annual Investment Guidance (Other)	4	2010	4	2015
-- Project Identification (Other)	4	2010	1	2016
-- Project Evaluation (Other)	1	2010	2	2016
-- Prog Office Commitment (Other)	1	2010	2	2016
-- FY Plan Determined (Other)	2	2010	3	2016
-- Project Award (Other)	1	2010	2	2016
-- Ongoing Projects (Other)	1	2010	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0708011N: *Industrial Preparedness*	PROJECT 4027: *Naval Innovative Science and Engineering*	

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
4027: *Naval Innovative Science and Engineering*	0.391	-	-	-	-	-	-	-	-	0.000	0.391
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Funding supports research and development efforts as directed under Section 219 of the fiscal year 2009 Duncan Hunter National Defense Authorization Act.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Naval Innovative Science and Engineering	0.391	-	-
Articles:	0		
Description: Funding supports research and development efforts as directed under Section 219 of the fiscal year 2009 Duncan Hunter National Defense Authorization Act. ***FY 2010 Accomplishments:*** Section 219 (Naval Innovative Science and Engineering) included in the FY 2009 Duncan Hunter National Defense Authorization Act, established mechanisms whereby the director of a naval laboratory may utilize up to three percent of all funds available to the laboratory to sponsor individual projects for: 1. Innovative basic and applied research that is conducted at the laboratory and supports military missions; 2. Development programs that support the transition of technologies developed by the defense laboratory into operational use; 3. Development activities that improve the capacity of the defense laboratory to recruit and retain personnel with needed scientific and engineering expertise; and 4. The revitalization and recapitalization of the laboratories.			
Accomplishments/Planned Programs Subtotals	0.391	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0708011N: *Industrial Preparedness*	PROJECT 4027: *Naval Innovative Science and Engineering*

E. Performance Metrics

The overall metrics of Section 219 is to increase retention and recruitment; number of advanced degrees, patent awards, and technical papers; successful technology transition to the warfighter; and laboratory ability to conduct innovative research.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0708011N: *Industrial Preparedness*	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
9999: *Congressional Adds*	17.030	-	-	-	-	-	-	-	-	0.000	17.030
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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: Laser Optimization Remote Lighting System ***FY 2010 Accomplishments:*** This effort investigated laser light sources for remote source lighting currently used aboard the LPD 17 and the DDG1000 classes. The research concentrated on optimizing three areas: (1) the light source; (2) the fiber cable; and (3) the luminaire to meet the broadest range of high interest applications.	1.992	-
Congressional Add: Weps Sys Life Ext Program ***FY 2010 Accomplishments:*** This effort determined the requirements and feasibility of using emerging materials processing technologies to repair Navy system components and structures to reduce life-cycle maintenance costs and extend the structural life of legacy and future weapons systems. Friction stir welding processes were identified to reduce life cycle costs and the linkage with the NAVICP was established to pilot the implementation for high priority parts.	2.490	-
Congressional Add: Low Acoustic and Thermal Signature Battlefield Power Source ***FY 2010 Accomplishments:*** This effort researched, developed, and constructed a durable, low acoustic and low thermal signature battlefield power source utilizing advanced fuel cell technologies which support U.S. Navy operational requirements. Best practices that enable the manufacturing and development of durable fuel cells with low acoustic and thermal signatures were identified and documented, additionally, roadmaps were developed related to the manufacturing and fabrication of fuel cells to ensure that future research will meet high priority Navy needs as it relates to battlefield power sources.	3.187	-
Congressional Add: Manufacturing S&T for Next-Generation Energetics ***FY 2010 Accomplishments:*** This effort designed and developed safe and cost-effective manufacturing processes for next generation energetics and their associated systems. Investment in the development of new manufacturing processes is required for the military to safely produce the new, superior explosives and propellants that it will use in future conflicts.	4.979	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0708011N: *Industrial Preparedness*	PROJECT 9999: *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011
- Developed improved manufacturing techniques to more affordably and repeatably produce the energetic system of the Microelectronic-Mechanical system (MEMS) fuze. - Developed continuous low-cost production process for Butyl-NENA, Methyl-NENA, and Ethyl-NENA to support propellant production programs. - Developed a manufacturing capability using Twin Screw Mixing/Extruder technology to produce PBXN-18 explosive for loading into the M72A9 & M72E19 warheads for Marine ground forces in shoulder launch applications.		
Congressional Add: Next Generation Scalable Lean Manufacturing Initia ***FY 2010 Accomplishments:*** This effort addressed the manufacturing issues associated with large scale automated production of Navy products under 60 meters long, focusing on modular molding, rapid reconfigurable tooling, and time reduction/process improvement through automation. The project also developed seal technologies that will allow for modular molding, a necessary step to process large structures in an automated cell, and rapid prototyping techniques were utilized to reconfigure a tool while maintaining geometric tolerances through a heating cycle.	2.390	-
Congressional Add: Out of Autociave Composite Processing ***FY 2010 Accomplishments:*** This effort focused on developing processes using fiber placement and other automated techniques on next-generation out-of-autoclave composite material prepreg systems for current and future aircraft platforms. The result will be lower cost aircraft components. Completed the final interactions of the 8-D Taguchi design of experiments matrix to identify the interaction of process variables on fiber placed Out-of-Autoclave (OOA) laminates and initiated fabrication and testing of OOA panels.	1.992	-
Congressional Adds Subtotals	17.030	-

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Congressional add