Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy										DATE: February 2010	
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 2009 Actual**	**FY 2010 Estimate**	**FY 2011 Base Estimate**	**FY 2011 OCO Estimate**	**FY 2011 Total Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
Total Program Element	59.976	74.880	46.173	0.000	46.173	55.652	52.880	53.204	55.528	Continuing	Continuing
1050: *Manufacturing Tech*	54.790	56.456	46.173	0.000	46.173	55.652	52.880	53.204	55.528	Continuing	Continuing
9999: *Congressional Adds*	5.186	18.424	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	33.666

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.

B. Program Change Summary ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	61.693	56.691	0.000	0.000	0.000
Current President's Budget	59.976	74.880	46.173	0.000	46.173
Total Adjustments	-1.717	18.189	46.173	0.000	46.173
• Congressional General Reductions		-0.311			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		18.500			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.717	0.000			
• Program Adjustments	0.000	0.000	46.173	0.000	46.173

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy	DATE: February 2010
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Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2009	FY 2010
Project: 9999: *Congressional Adds*		
Congressional Add: *Flight/Hangar Deck Cleaner*	0.000	1.394
Congressional Add: *Laser Optimization Remote Lighting System*	0.000	1.992
Congressional Add: *Weps Sys Life Ext Program*	0.000	2.490
Congressional Add: *Low Acoustic and Thermal Signature Battlefield Power Source*	0.000	3.187
Congressional Add: *Manufacturing S&T for Next-Generation Energetics*	0.000	4.979
Congressional Add: *E-Beam Free Form Repair Qualification*	1.197	0.000
Congressional Add: *Next Generation Scalable Lean Manufacturing Initia*	2.393	2.390
Congressional Add: *Out of Autoclave Composite Processing*	1.596	1.992
Congressional Add Subtotals for Project: 9999	5.186	18.424
Congressional Add Totals for all Projects	5.186	18.424

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

FY11 from previous President's Budget is shown as zero because no FY11-15 data was presented in President's Budget 2010.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy			DATE: February 2010
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 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
1050: *Manufacturing Tech*	54.790	56.456	46.173	0.000	46.173	55.652	52.880	53.204	55.528	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 Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
COMPOSITES PROCESSING AND FABRICATION	5.700	6.000	6.000	0.000	6.000
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 in FY 2009 and the outyears 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 2009 Accomplishments: - Continued Composite Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes completion of Composite Sail Cusp and VCS Impeller and continuation / initiation					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
of efforts to develop / optimize composite materials fabrication technology for reduced cost VCS construction. - Continued other composites thrusts (formerly projects) to address improvements / affordability of DDG-1000, CVN-21, VCS, and other acquisition program offices. - Continued Composite Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative. Includes continuation of DDG-1000 Helodeck Stiffeners Affordability; and continuation of DDG-1000 Radomes Affordability. - Continued Composite Materials and Process Improvement Thrust for CVN-21 Shipbuilding Affordability Initiative. - Continued Composite Materials and Process Improvement Thrust for Air Platforms. Includes completion of Composite Frame Manufacturing Technology - V-22 and H-53 and continuation / initiation of efforts to develop / optimize composite materials fabrication technology for reduced cost Air Platform construction. *FY 2010 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-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. - Complete other composites thrusts (formerly projects) to address improvements / affordability of DDG-1000, CVN-21, VCS, and other acquisition program offices.					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base 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-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.					
CORPORATE INVESTMENTS 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 eliminate 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.	12.593	12.246	5.663	0.000	5.663

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
The reduction of funding from FY10 to FY11 reflects programmatic realignments to other Navy priorities. *FY 2009 Accomplishments:* - Continued Near-Term High Priority Shipbuilding Affordability Thrust for CVN-21. Includes continuation of Light Activated Semiconductor Switches; completion of HSLA-115 Evaluation and Implementation Support; and completion of Digital Radiography Support. - 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. Includes continuation of SiGe-based System-on-Chip Low Cost / Weight Phased Array Antennas; completion of Pallet Manufacturing Process Modeling; and completion of Power Electronic Module Cost Out Effort. - Continued Near-Term High Priority Shipbuilding Affordability Thrust for VCS. Includes completion of Design for Production Process Improvement, Automated Install of Studs, Deckplate Construction Information Network (renamed Paperless Deckplate MIP OQE Data Capture), Outfitting Process Improvement, and VCS Material Management and initiation of additional near-term high priority shipbuilding affordability efforts for VCS. Also includes completion of Low Cost Impeller Support effort for Navy submarines / aircraft carriers and for shafts for Navy surface combatants. -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. *FY 2010 Plans:* - Continue Near-Term High Priority Shipbuilding Affordability Thrust for CVN-21.					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
- 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 weapon systems. *FY 2011 Base 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.					
ELECTRONICS PROCESSING AND FABRICATION 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 in FY 2009 and outyears is on shipbuilding affordability for four major platforms: DDG-1000, CVN-21,	9.680	10.000	6.300	0.000	6.300

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
VCS, and LCS, with some funding geared towards toward electronics / electro-optics improvements for high priority air platforms. The reduction in FY 2011 reflects a decrease due to fewer shipbuilding affordability requirements in electrooptics than in other areas for the four shipbuilding platforms ManTech supports. The reduction of funding from FY10 to FY11 reflects programmatic realignments to other Navy priorities. *FY 2009 Accomplishments:* - Continued Electronics / Electro-Optics Thrust for VCS Affordability Initiative. Includes completion of Conformal Acoustic Velocity Sensor CAVES for VCS and initiation of improved affordable electronics / electrooptics efforts. - Continued Electronics / Electro-Optics Thrust for LCS Shipbuilding Affordability Initiative. Includes completion of LCS Reconfigurable Antenna. - Continued 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. - Continued Electronics / Electro-Optics Thrust for Air Platforms. Includes continuation of Multispectral Mid-IR Lasers for Directional Infrared Counter Measures (DIRCM) and initiation of electronics / electro-optics efforts to improve affordability for Air Platforms. - Continued Electronics / Electro-Optics Thrust for DDG-1000 Shipbuilding Affordability Initiative. Includes radar / communications efforts to impact DDG 1000 affordability. Includes continuation of SiGE-Based Systemon-Chip for Low-Cost Weight Phased Array Antennas. Includes completion of DDG-1000 Remote Source Lighting and High-G Packaging and Miniaturization for Deeply Integrated Inertial Guidance Units. - Continued Electronics / Electro-Optic Thrust for CVN-21 Shipbuilding Affordability Initiative. Includes completion of High-Power Carbide PiN Diode Manufacturing.					

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 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 completion of Multispectral Mid-IR Lasers for DIRCM and 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. Includes completion of SiGE-Based System-on-Chip for Low-Cost Weight Phased Array Antennas. - Continue Electronics / Electro-Optic Thrust for CVN-21 Shipbuilding Affordability Initiative. Includes initiation of electronics / electro-optics efforts to improve affordability for CVN-21. - Complete 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. *FY 2011 Base 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 Shipbuilding Affordability Initiative. Includes continuation of electronics / electro-optics efforts to improve affordability for CVN-21.					
METALS PROCESSING AND FABRICATION	17.280	18.000	18.000	0.000	18.000

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
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 in FY 2009 and outyears is 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 2009 Accomplishments:* - Continued Schedule Compression / Production Engineering Thrust for VCS Shipbuilding Affordability Initiative. Includes completion of VCS Material Management; and completion of Design for Production Process Improvement. - Continued Outfitting Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of Outfitting Process Improvement. - Continued rapid response and teaching factory activities. - Continued Metals Materials and Process Improvement Thrust for DDG-1000 Shipbuilding Affordability Initiative. Includes continuation of DDG-1000 Improved Tee Sections for High-Strength Steel Structures. Includes completion of DDG-1000 Advanced Bonding Methods for Steel Structures; completion of Low Cost Pallet Systems for DDG-1000 AGS; completion of DDG-1000 Improved Tee Sections for High-Strength Steel Structures; completion of Coating Application Improvement - formerly High Solids Coatings on DDG-1000; and completion of PVLS Hull Integration (formerly Large Marine Structure Hull Integration). 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. Includes continuation of Laser Welded Lightweight Panel Structure Fabrication - NMC and					

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
continuation of Alloy 625 Formability for Future Carriers. Includes completion of CVN Preparation Methods for Coating Tanks; completion of Optimization of CVN-21 Power Unit Assembly Facility and Carrier Visual Build; completion of Ballistic 10% Ni Steel; and completion of Advanced Surface Ship Watertight Enclosures. 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. Includes continuation of Improved Dimensional Accuracy for LCS; continuation of Low Cost FSW of Aluminum for LCS Applications; and completion of LCS Paint Facility Design. - Continued Metals Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes completion of SSN Alloy 625 Pipe Welding; completion of SSN-774 Damping Material Application; completion of SSN Alternative Pipe Joining and Fittings; and completion of Laser Cladding for Submarines. 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 / Naval Sea Systems Command (NAVSEA) Platforms. - Continued Metals Materials and Process Improvement Thrust for Air Platforms. Includes continuation of Erosion Resistant Coatings for Stage 1 Compressor Components; completion of N-UCAS Structural Design and Manufacturing Development; completion of Corrosion Resistant Coatings for Magnesium Transmission Gearboxes; and completion of Translational Friction Weld Repair of Blisks. - Continued Metal Materials and Process Improvements Thrust for Marine Corps Systems. Acquisition Workforce Fund: - Funded DoD Acquisition Workforce Fund.					

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: - Continue Schedule Compression / Production Engineering Thrust for VCS Shipbuilding Affordability Initiative. - Continue Outfitting Thrust for VCS Shipbuilding Affordability Initiative. - Continue rapid response and complete teaching factory activities. - 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. Includes completion of Laser Welded Lightweight Panel Structure Fabrication - NMC and completion of Alloy 625 Formability for Future Carriers. 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. - Continue Metals Materials and Process Improvement Thrust for Air Platforms. - Continue Metal Materials and Process Improvements Thrust for Marine Corps Systems. *FY 2011 Base Plans:* - Continue Schedule Compression / Production Engineering Thrust for VCS Shipbuilding Affordability Initiative. - Continue Outfitting Thrust for VCS Shipbuilding Affordability Initiative.					

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
- 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. - Continue Metals Materials and Process Improvement Thrust for Air Platforms. - Continue Metal Materials and Process Improvements Thrust for Marine Corps Systems.					
OTHER (SHIPBUILDING, REPAIR TECH, ENERGETICS, AND TECHNICAL ENGINEERING SUPPORT)	9.537	10.210	10.210	0.000	10.210
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).					

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: - Continued Shipbuilding Affordability Thrust for CVN-21. - Continued Shipbuilding Affordability Thrust for VCS. - 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. Includes continuation of Repair Technology projects based on high priority depot needs. - Continued Energetics Thrust for PEO IWS and Other Acquisition Programs. Includes continuation of energetics efforts to support PEO IWS and other acquisition programs; and completion of Flexible Manufacturing of Nitrogen Based Gun Propellants. - Continued to provide technical engineering support for the ManTech Program.					
FY 2010 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.					
FY 2011 Base Plans: - Continue Shipbuilding Affordability Thrust for CVN-21. - Continue Shipbuilding Affordability Thrust for VCS. - Continue Shipbuilding Affordability Thrust for LCS.					

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
- 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	54.790	56.456	46.173	0.000	46.173

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 2011 Navy			DATE: February 2010
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*	

Product Development ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Mfg Development (B2P)	C/CPFF	American Competitiveness Institute (ACI) Philadelphia, PA (B2P)	2.300	2.000		2.000		0.000		2.000	0.000	6.300	Continuing
Mfg Development (CMTC)	C/CPAF	SCRA Anderson, SC	8.604	7.200		5.600		0.000		5.600	0.000	21.404	Continuing
Award Fee (CMTC)	C/CPAF	SCRA Anderson, SC	0.050	0.450		0.400		0.000		0.400	0.000	0.900	Continuing
Mfg Development (CNST)1	C/CPFF	Advanced Technology Institute (ATI) Charleston, SC	4.697	0.000		0.000		0.000		0.000	0.000	4.697	Continuing
Mfg Development (CNST)2	C/CPAF	Advanced Technology Institute (ATI) Charleston, SC	1.089	4.914		3.312		0.000		3.312	0.000	9.315	Continuing
Award Fee (CNST)	C/CPAF	Advanced Technology Institute (ATI) Charleston, SC	0.000	0.400		0.280		0.000		0.280	0.000	0.680	Continuing
Mfg Development (EMPF)	C/CPAF	American Competitiveness Institute (ACI) Philadelphia, PA	7.135	6.504		5.060		0.000		5.060	0.000	18.699	Continuing
Award Fee (EMPF)	C/CPAF		0.428	0.497		0.440		0.000		0.440	0.000	1.365	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy			DATE: February 2010
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Product Development ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		American Competitiveness Institute (ACI) Philadelphia, PA											
Mfg Development (EMTC)	WR	Naval Surface Warfare Center - Indian Head Indian Head, MD	2.000	2.000		2.000		0.000		2.000	0.000	6.000	Continuing
Mfg Development (EOC)	C/CPAF	Penn State University State College, PA (EOC)	4.351	4.300		0.850		0.000		0.850	0.000	9.501	Continuing
Award Fee (EOC)	C/CPAF	Penn State University State College, PA (EOC)	0.149	0.200		0.000		0.000		0.000	0.000	0.349	Continuing
Mfg Development (iMAST)	C/CPFF	Penn State University State College, PA (iMAST)	3.899	3.800		3.500		0.000		3.500	0.000	11.199	Continuing
Mfg Development (NJC)	C/CPAF	Edison Welding Institute Columbus, OH	2.825	3.550		2.800		0.000		2.800	0.000	9.175	Continuing
Award Fee (NJC)	C/CPAF	Edison Welding Institute Columbus, OH	0.175	0.200		0.200		0.000		0.200	0.000	0.575	Continuing
Mfg Development (NMC)	C/CPAF		11.500	11.400		11.400		0.000		11.400	0.000	34.300	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy		DATE: February 2010
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Product Development ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Concurrent Technologies Corp. Johnstown, PA											
Award Fee (NMC)	C/CPAF	Concurrent Technologies Corp. Johnstown, PA	0.500	0.600		0.600		0.000		0.600	0.000	1.700	Continuing
Mfg Development	WR	Naval Air Systems Command (NAVAIR) Patuxent River, MD	0.447	0.356		0.350		0.000		0.350	0.000	1.153	Continuing
Mfg Development	WR	Naval Research Laboratory (NRL) Washington, DC	0.160	0.120		0.120		0.000		0.120	0.000	0.400	Continuing
Mfg Development	WR	Naval Surface Warfare Center - Carderock Division (NSWC-CD) Carderock, MD	1.410	1.381		1.400		0.000		1.400	0.000	4.191	Continuing
Mfg Development	WR	Naval Undersea Warfare Center - Newport (NUWC-Newport) Newport, RI	0.050	0.330		0.000		0.000		0.000	0.000	0.380	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy		DATE: February 2010
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Product Development ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Mfg Development	WR	SPAWAR San Diego, CA	0.000	0.010		0.000		0.000		0.000	0.000	0.010	Continuing
		Subtotal	51.769	50.212		40.312		0.000		40.312	0.000	142.293	

Remarks

(1) Award Fee for SCRA (H-11) low in FY09 due to unused funds from prior years in award fee pool

Support ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Support (GTEC)	C/CPFF	Not Specified Not Specified	1.955	1.807		1.800		0.000		1.800	0.000	5.562	Continuing
Contractor Support (GMST)	C/CPFF	Not Specified Not Specified	0.000	0.048		0.000		0.000		0.000	0.000	0.048	Continuing
ManTech Registrations (GMPC)	WR	Not Specified Not Specified	0.006	0.010		0.010		0.000		0.010	0.000	0.026	Continuing
ManTech Travel (GMTT)	WR	Not Specified Not Specified	0.075	0.080		0.080		0.000		0.080	0.000	0.235	Continuing
Contracting Support (GMST)	C/CPFF	Not Specified Not Specified	0.100	0.170		0.170		0.000		0.170	0.000	0.440	Continuing
Miscellaneous (IT Support Bills)	Various/ Various	Not Specified Not Specified	0.612	1.294		1.294		0.000		1.294	0.000	3.200	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy		DATE: February 2010
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010 Cost	FY 2010 Award Date	FY 2011 Base Cost	FY 2011 Base Award Date	FY 2011 OCO Cost	FY 2011 OCO Award Date	FY 2011 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Miscellaneous (Stat Reserve)	Various/ Various	Not Specified Not Specified	0.088	2.835		2.507		0.000		2.507	0.000	5.430	Continuing
		Subtotal	2.836	6.244		5.861		0.000		5.861	0.000	14.941	

Remarks

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010 Cost	FY 2010 Award Date	FY 2011 Base Cost	FY 2011 Base Award Date	FY 2011 OCO Cost	FY 2011 OCO Award Date	FY 2011 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Workforce Fund	Various/ Various	Various Various	0.272	0.000		0.000		0.000		0.000	0.000	0.272	Continuing
		Subtotal	0.272	0.000		0.000		0.000		0.000	0.000	0.272	

Remarks

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	54.877	56.456		46.173		0.000		46.173	0.000	157.506	

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy		DATE: February 2010
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*

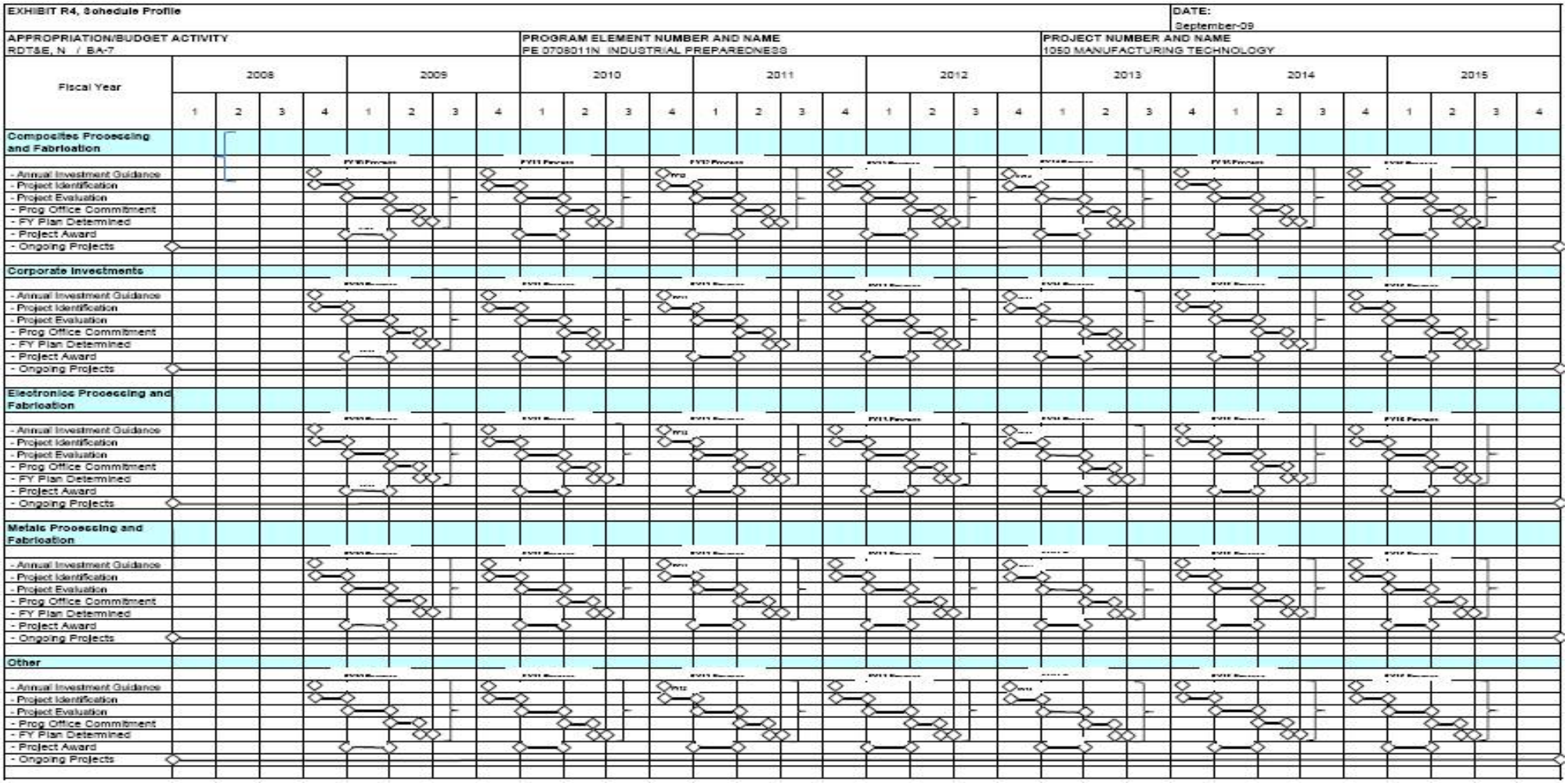

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0708011N: *Industrial Preparedness*	PROJECT 9999: *Congressional Adds*	

COST ($ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
9999: *Congressional Adds*	5.186	18.424	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	33.666
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 Program ($ in Millions)

	FY 2009	FY 2010
Congressional Add: Flight/Hangar Deck Cleaner *FY 2010 Plans:* This effort supports Flight/Hanger Deck Cleaner research.	0.000	1.394
Congressional Add: Laser Optimization Remote Lighting System *FY 2010 Plans:* This effort supports Laser Optimization Remote Lighting System research.	0.000	1.992
Congressional Add: Weps Sys Life Ext Program *FY 2010 Plans:* This effort supports the Weps Sys Life Ext Program research.	0.000	2.490
Congressional Add: Low Acoustic and Thermal Signature Battlefield Power Source	0.000	3.187

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010
FY 2010 Plans: This effort supports Low Acoustic and Thermal Signature Battlefield Power Source research.		
Congressional Add: Manufacturing S&T for Next-Generation Energetics *FY 2010 Plans:* This effort supports Manufacturing S&T for Next-Generation Energetics research.	0.000	4.979
Congressional Add: E-Beam Free Form Repair Qualification *FY 2009 Accomplishments:* This effort supported the use of Electron Beam Free Form Fabrication (EBFFF) to build near-net shapes using engineered materials in a layer-by-layer fashion or for metal deposition repair of components. This EBFFF project applied this new technology directly to components of Navy weapon systems including, but not limited to, underwater and surface vehicles. Prototype components have been produced or repaired to demonstrate the cost and viability of EBFFF.	1.197	0.000
Congressional Add: Next Generation Scalable Lean Manufacturing Initia *FY 2009 Accomplishments:* This effort supported the development of manufacturing technology to make small Navy watercraft more affordable through out of autoclave processing of high performance prepreg materials. This technology supports the affordable manufacture of composite decks and major structural components of small high performance craft. Automated fabrication methods for ply cutting and placement are sought to reduce the cost of building small high performance watercraft.	2.393	2.390

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010
FY 2010 Plans: Continues support of Next Generation Scalable Lean Manufacturing Initiative - Phase Two research.		
Congressional Add: Out of Autociave Composite Processing *FY 2009 Accomplishments:* This effort supported the development of new manufacturing technology to make future generation aircraft more affordable through the automated fiber placement of a new generation of composite materials that can be cured without the benefit of high pressure autoclaves. The development and demonstration of out of autoclave materials using automated fabrication methods reduce the cost of manufacturing Navy aircraft. *FY 2010 Plans:* Continues support of Out of Autociave composite Processing research.	1.596	1.992
Congressional Adds Subtotals	5.186	18.424

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Congressional add