Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy									DATE: February 2012	

APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 ITEM NOMENCLATURE PE 0603581N: *Littoral Combat Ship (LCS)*					

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	191.613	292.665	429.420	-	429.420	434.955	258.825	138.738	126.357	Continuing	Continuing
3096: *Littoral Combat Ship*	52.232	100.157	223.681	-	223.681	242.700	115.970	39.624	40.323	Continuing	Continuing
3129: *LCS Mission Package Development*	80.654	137.596	195.824	-	195.824	187.327	142.855	99.114	86.034	Continuing	Continuing
4018: *Littoral Combat Ship Construction*	46.788	44.912	9.915	-	9.915	4.928	-	-	-	0.000	106.543
9999: *Congressional Adds*	11.939	10.000	-	-	-	-	-	-	-	0.000	21.939

A. Mission Description and Budget Item Justification

This Program Element (PE) provides funds for detailed design, development, construction, integration, and testing of the Littoral Combat Ship (LCS). LCS is a fast, agile, and networked surface combatant with capabilities optimized to defeat asymmetric threats, and assure naval and joint force access into contested littoral regions. It uses open-systems architecture design, modular weapons, and sensor systems, and a variety of manned and unmanned vehicles to expand the battle space and project offensive power into the littoral.

LCS operates with focused-mission packages that deploy manned and unmanned vehicles to execute a variety of missions, including littoral anti-submarine warfare (ASW), surface warfare (SUW) and mine countermeasures (MCM). LCS also possesses inherent capabilities, regardless of the mission package installed, including Intelligence, Surveillance, Reconnaissance (ISR), Homeland Defense, Maritime Interdiction/Interception Operations (MIO), Anti-Terrorism/Force Protection (AT/FP), air self-defense, joint littoral mobility, Special Operating Forces (SOF), and logistic support for movement of personnel and supplies. This relatively small, high-speed surface combatant complements the U.S. Navy's Surface Fleet by operating in environments where it is less desirable to employ larger, multi-mission ships. LCS can deploy independently to overseas littoral regions, remain on station for extended periods of time either with a battle group or through a forward-basing arrangement and is capable of underway replenishment. LCS will operate with Carrier Strike Groups, Surface Action Groups, in groups of other similar ships, or independently for diplomatic and presence missions. Additionally, LCS can operate cooperatively with the U.S. Coast Guard and Allies.

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy		**DATE:** February 2012
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B. Program Change Summary ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	226.288	286.784	327.014	-	327.014
Current President's Budget	191.613	292.665	429.420	-	429.420
Total Adjustments	-34.675	5.881	102.406	-	102.406
• Congressional General Reductions	-	-0.119			
• Congressional Directed Reductions	-	-4.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	5.000	-			
• SBIR/STTR Transfer	-1.980	-			
• Program Adjustments	-	-	104.479	-	104.479
• Rate/Misc Adjustments	-	-	-2.073	-	-2.073
• Congressional General Reductions Adjustments	-0.995	-	-	-	-
• Congressional Directed Reductions Adjustments	-48.700	-	-	-	-
• Congressional Add Adjustments	12.000	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2011	FY 2012
Project: 9999: *Congressional Adds*		
Congressional Add: *MIW Modules Prog - Cong*	11.939	-
Congressional Add: *LCS MM SBIR (Cong)*	-	10.000
Congressional Add Subtotals for Project: 9999	11.939	10.000
Congressional Add Totals for all Projects	11.939	10.000

Change Summary Explanation

FY 2013 increase for seaframe and mission package included the following: Dual variant support for testing, training software development, training hardware procurement, and post-delivery test and trials; development and testing for continuous Active Sonar/Variable Depth Sonar for ASW mission packages; procurement of 30mm long rod ammunition for LCS Developmental Testing/Operational Testing (DT/OT) and testing rounds; transition and integration of Surface Mine Countermeasure Unmanned Undersea Vehicle (UUV) into the LCS MCM mission package; continued development of Increment 1 Griffin missile; and the development, integration & testing of an extended range, autonomous Increment II Surface-to-Surface Missile Module (SSMM).

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy									DATE: February 2012	

APPROPRIATION/BUDGET ACTIVITY
1319: *Research, Development, Test & Evaluation, Navy*
BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE
PE 0603581N: *Littoral Combat Ship (LCS)*

PROJECT
3096: *Littoral Combat Ship*

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
3096: *Littoral Combat Ship*	52.232	100.157	223.681	-	223.681	242.700	115.970	39.624	40.323	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The RDT&E portion of the LCS Program is comprised of design and development efforts required to deliver the Flight 0 Class Ships, including integration with modular MCM, ASW, and SUW mission packages, and construction of the first two Flight 0 Class Ships, the USS Freedom (LCS 1) delivered September 2008 and the USS Independence (LCS 2) delivered December 2009. It includes the design and development effort required to support the introduction and deployment of a Flight 0+ baseline for the ships awarded in FY09 with the incorporation of lessons learned from the design and construction of USS Freedom (LCS 1) and USS Independence (LCS 2), including improved waterjets and a waterjet tunnel extension on the Lockheed Martin (LM) LCS Design. Additionally, it includes design and development efforts required to support the design baseline for the six year block buy in FY10-15. This baseline will include lessons learned from the LCS 1 through LCS 4.

The LCS design and development phases include platform design and development, experimentation and ship system design and integration, hull platform testing, development of a Technical Data Package (TDP), total ship system engineering and integration, and planning and conduct of system testing, including procurement of ordnance in support of testing.

The R&D portion of LCS funding is also comprised of formal Developmental and Operational Assessment testing of the LCS Ships and Mission Packages. Test and Evaluation (T&E) will concentrate on verifying integration and interoperability of employed technologies and systems in the LCS seaframe designs and modular mission packages to achieve the mission capabilities and performance requirements as defined in the LCS Program's Flight 0 and Flight 0+ Capabilities Development Documents (CDD). T&E functions will include the evaluation of Critical Technical Parameters (CTP), Measures of Effectiveness (MOE), Measures of Suitability (MOS), and Key Performance Parameters (KPP) for the core seaframe and the focused missions.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: LCS Program Management	2.320	2.311	1.525
Articles:	0	0	0

Description: Provides for overall LCS Program operations including technical, production, and logistics oversight, and acquisition, contract, Earned Value (EV), risk, science and technology, and financial management.

FY 2011 Accomplishments:
Continued contract administration for all Flight 0+ ships. Revised the Acquisition Strategy to support the Navy decision to continue with both designs. Completed Milestone B documents, reflecting the revised acquisition strategy, including all required DOD and Service reviews of products and completed preparations for a Milestone B Defense Acquisition Board. Developed a total

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
program acquisition and contracting plan to support future year planning. Continued financial management and performance of USS Freedom and USS Independence formal Developmental and Operational Testing. Prepared for Milestone C. *FY 2012 Plans:* Complete contract administration for all Flight 0+ ships. Continue to provide LCS program oversight for financial, logistics, technical and production efforts. Continue financial management and performance of USS Freedom and USS Independence formal Development and Operational Testing. Continue efforts for Milestone C and maintain Milestone documentation. *FY 2013 Plans:* Continue to provide LCS program oversight for financial, logistics, technical and production efforts. Continue financial management and performance of Flight 0 and Flight 0+ formal Development and Operational Testing. Provide contract administration for all LCS contract Basic Ordering Agreements (BOAs).			
Title: LCS System-of-Systems Development, Engineering & Experimentation *Articles:* *Description:* Provides for LCS Program systems engineering in support of Flight 0, Flight 0+, and the new FY10 Block Buy baseline design, development, certification, and production (including ship system design and integration); combat system and C4I design, integration, and test; aviation (manned and unmanned) integration; modular Mine Countermeasure (MCM), Anti-Submarine Warfare (ASW), and Surface Warfare (SUW) mission package integration; logistics product development; and various systems engineering activities required to perform risk analyses of new design and production technology concepts. *FY 2011 Accomplishments:* Flight 0 baseline: Conducted systems engineering to develop solutions for emergent issues during USS Freedom Post Delivery tests and trials including Seaframe Developmental Testing (DT) and Post Shakedown Availability (PSA). Managed integration of Surface Warfare Mission Package (SUW MP) on USS Freedom and Mine Countermeasures Mission Package (MCM MP) on USS Independence and conducted Independent Verification and Validation (IV&V) and systems engineering for emergent integration issues. Flight 0+ and FY10 Block Buy baselines: Conducted systems engineering to develop solutions for Flight 0+ and FY10 baselines for design/production issues highlighted during USS Freedom and USS Independence testing and LCS 3 and LCS 4 production. Initiatives pursued included combat system integration, off-board vehicle communications, and watercraft launch, recovery and handling. Conducted systems engineering efforts in support of multiple certification requirements for the FY10 Block Buy baseline. Continued management of both baselines to ensure a seamless transition into production. *FY 2012 Plans:*	10.294 0	15.519 0	35.705 0

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Flight 0 baseline: Continue systems engineering efforts to develop solutions for emergent issues experienced during USS Freedom and USS Independence Post Delivery tests and trials including coordination, inspections, and certifications for Seaframe Developmental and Operational Testing (DT/OT), USS Freedom Final Contract Trials (FCT), and PSA. Manage integration of SUW MP on USS Freedom and MCM MP on USS Independence and conduct IV&V and systems engineering for emergent integration issues. Flight 0+ and FY10 Block Buy baselines: Continue systems engineering efforts to develop solutions for Flight 0+ and FY10 baselines for design and production issues highlighted during USS Freedom and USS Independence testing for LCS ships currently in production. Conduct systems engineering efforts in support of multiple certifications requirements for the FY10 Block Buy baseline. Continue management of both baselines to ensure a seamless transition into production. *FY 2013 Plans:* Continue systems engineering efforts to develop solutions for FY10 baselines for design and production challenges highlighted in USS Freedom and USS Independence testing for LCS ships currently in production. Continue post-delivery systems engineering support throughout testing and industrial availabilities for USS Freedom and USS Independence, including Seaframe DT, USS Independence FCT, and PSA. Manage the integration of Mission Package components and conduct Independent Verification and Validation (IV&V) for implementation. Conduct systems engineering special studies and analyses, as necessary. Continue management and transition into production of the Flight 0+ and FY10 Block Buy technical baselines including review, approval, and implementation of Engineering Change Proposals (ECPs). Conduct systems engineering efforts in support of multiple certifications issues for the new baseline. Continue management of both baselines' transition into production.			
Title: LCS Total System Training Architecture **Articles:**	16.538 0	25.641 0	128.269 0
Description: LCS is minimally manned, and the small crew size, combined with LCS's complex mission, does not allow adequate time for shipboard "on the job" training to achieve LCS operational availability. Consequently, LCS uses a Train-to-Qualify (T2Q) training process in an off-ship/shore-based virtual ship trainer environment, focused on tactical operations training. The LCS shore-based training capability satisfies individual, unit, team, and force training to meet T2Q Capability Development Document (CDD) requirements. Leverages DDG 1000 Total Ship Training System efforts, as well as trainers previously procured for LCS. *FY 2011 Accomplishments:*			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Completed enhancements to present USS Freedom and USS Independence configurations. Provided crew training to meet T2Q requirements and provided a shore training facility with Navy Continuous Training Environment (NCTE) capability for multiple crews to complete required battle group training. *FY 2012 Plans:* Initiate development of the Virtual Ship Software environment for use on future LCS Trainers. Develop training software in order to meet T2Q CDD Key Performance Parameters (KPP). Complete trainer curriculum at Surface Warfare Officer School (SWOS). Take ownership of Office of Naval Research (ONR) sponsored software for the Virtual Maintenance Performance Aide (VMPA) Training environment for continued development of the maintenance and engineering training architecture. Installation of Secret Internet Protocol, Routed (SIPR) and Non-Secure Internet Protocol Router (NIPR) distance support applications, and hardware for LCS reach back to the Class Squadron/Maritime Support Detachment (CLASSRON/MSD). Includes SIPR distance support development, testing, fielding, and training, along with hardware and software. Support classified applications such as Force Protection requirements, Casualty Reports (CASREPs), and sensitive medical information. Includes development, testing, and fielding for support of on-board operations, maintenance, and crew administration and training applications and tools. Provide for the development of the software, procurement of shore hardware, integration and testing of the tools, development of the training packages, and delivery to the ships. *FY 2013 Plans:* Continue development of Virtual Ship Software environment focused on tactical operations training for use on LCS Trainers. Provide contracting, engineering, and Navy oversight support to deliver Virtual Reality (VR) software components and their associated operations courseware to replicate essential shipboard systems. Continue to develop training software in order to meet T2Q CDD KPP. Continue to fund the VMPA Training environment for continued development of the training architecture for maintenance and engineering. Integrate the new simulator components with the existing trainers, and begin the detailed planning for installation and integration into the LCS Training Facility in San Diego. The following VR ship components and associated courseware will be developed in the VR Ship Program: - Waterjets Basic Operations/Control System - Seaframe and Maintenance - Deck - Seaframe and Maintenance - Engineering - Propulsion Diesel School - Engineering Plant Technology - Entry Point Training - Seaframe Electronics/Control Operations - Seaframe Electronics/Control Maintenance			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
- Class MT30 Gas Turbine (Freedom Variant only) - Class Gas Turbine Differences (Independence Variant only) - Twin-Boom Expandable Crane (TBEC) Ops and Maintenance (Independence Variant only) - Engineering Administrative Programs - Total Ship Computing Environment (TSCE)			
Title: LCS Test & Evaluation ***Articles:***	23.080 0	56.686 0	58.182 0

Description: Execute formal LCS Developmental Testing and Operational Testing (DT/OT), including Live Fire Test and Evaluation (LFT&E), and procurement of T&E Ordnance. Execute DT and C4I design, integration, and test; aviation (manned and unmanned) integration; modular Mine Countermeasure (MCM), Anti-Submarine Warfare (ASW), and Surface Warfare (SUW) mission package integration; logistics product development; and various systems engineering activities required to perform risk analyses of new design and production technology concepts.

FY 2011 Accomplishments:
Flight 0 baseline:
Continued Seaframe testing on USS Freedom and USS Independence, including signature trials, air warfare and surface warfare firing events, aviation integration (manned and unmanned systems), and selected sea keeping trials. Conducted detailed Seaframe DT and SUW Mission Package (MP) integration on USS Freedom and MCM MP on USS Independence, and conducted analysis efforts for emergent integration issues. Developed solutions for emergent issues during USS Freedom and USS Independence Post Delivery tests and trials including Seaframe DT and Post Shakedown Availability (PSA). Updated the LCS Test and Evaluation Master Plan (TEMP) to reflect revised Acquisition Strategy and Program schedule.

Flight 0+ and FY10 Block Buy baselines:
Planned for Flight 0+ and FY10 baselines for design/production issues highlighted in USS Freedom and USS Independence testing. Analysis included combat system integration, off-board vehicle communications, and watercraft launch, recovery, and handling. Conducted systems engineering efforts in support of multiple certification issues for new baseline. Continued management of both baselines to transition into production.

FY 2012 Plans:
Flight 0 baseline:
Continue Seaframe DT/OT on the USS Independence. Conduct initial SUW DT with USS Freedom and complete all integration testing of the MCM MP with USS Independence. Manage integration with SUW MP on USS Freedom and MCM MP on USS Independence. Execute planned surrogate testing to include blast and fire tests of individual panels and components to support

Exhibit R-2A, **RDT&E Project Justification:** PB 2013 Navy		**DATE:** February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2011**	**FY 2012**	**FY 2013**
LFT&E assessment. Develop solutions to emergent issues as a result of USS Freedom FCT and USS Freedom and USS Independence PSA. Flight 0+ and FY10 Block Buy baselines: Begin advance DT/OT planning for the MCM MP on the LCS 3. Conduct testing to validate that the solutions for emergent issues identified on USS Freedom and USS Independence are integrated into the LCS 3 and LCS 4. Begin planning surrogate testing for the Independence Variant aluminum hull in the areas of multi-hull blast and fire testing and whipping tests to support LFT&E requirements. *FY 2013 Plans:* Flight 0 baseline: Conduct SUW DT, MCM DT, TECHEVAL, and IOT&E for USS Freedom. Conduct Seaframe DT, MCM MP DT, FCT, and PSA for USS Independence. Develop solutions for emergent issues identified during Post Delivery test and trials. Flight 0+ baseline: Conduct DT/OT for the MCM MP on LCS 3, testing the solutions highlighted on USS Freedom and USS Independence, and supporting the integration of these capabilities into their respective Seaframes. Begin planning for the Total Ship Survivability Trial (TSST) for the LCS 3 and LCS 4. Begin advance planning for Full Ship Shock Trials (FSST) on the LCS 5 and LCS 6. Continue planning for Aluminum Compartmentalization and Whipping Tests on the Independence Variant to support LFT&E requirements.			
Accomplishments/Planned Programs Subtotals	52.232	100.157	223.681

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 2127: *Littoral Combat Ship*	1,241.477	1,755.093	1,784.959	0.000	1,784.959	1,819.575	1,881.485	1,012.988	896.027	17,562.449	30,388.374
• 1600 : *LCS Modules*	41.145	63.448	31.319	0.000	31.319	46.037	30.979	14.729	18.595	2,407.630	2,734.269
• 0443: *Aircraft Procurement, Navy*	58.732	191.986	124.573	0.000	124.573	129.003	114.750	124.510	94.990	Continuing	Continuing
• 5110: *Outfitting/Post Delivery*	4.678	49.013	60.053	0.000	60.053	76.393	132.715	133.787	209.986	663.574	1,332.956
• 1320: *LCS Training*	0.000	20.709	20.640	0.000	20.640	32.924	16.513	17.983	23.191	Continuing	Continuing
• 0944: *LCS Class Support Equipment*	0.000	0.000	19.865	0.000	19.865	21.278	35.469	36.640	60.800	Continuing	Continuing
• 0981: *Items Under $5M*	8.244	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.703
• 1601: *MCM Mission Module Equipment*	0.000	0.000	38.932	0.000	38.932	68.926	185.056	219.850	219.852	Continuing	Continuing

Exhibit R-2A, **RDT&E Project Justification:** PB 2013 Navy		**DATE:** February 2012
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 1602: *ASW Mission Module Equipment*	0.000	0.000	0.000	0.000	0.000	0.000	3.436	23.612	44.754	Continuing	Continuing
• 1603: *SUW Mission Module Equipment*	0.000	0.000	32.897	0.000	32.897	37.260	40.098	46.342	67.630	Continuing	Continuing
• 4221: *LCS Module Weapons*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.100	Continuing	Continuing

D. Acquisition Strategy

The LCS program takes an evolutionary approach to acquisition that emphasizes competition as a key to achieving affordability. Initially, two industry teams competed against each other with two distinctly different LCS designs. The decision produced two flights with a vessel from each design: Flight 0 (LCS 1 and LCS 2); and Flight 0+ (LCS 3 and LCS 4). The Flight 0+ baseline incorporates lessons learned from the design, construction, and testing of the Flight 0 ships. The Navy conducted a limited competition amongst the existing LCS industry teams or team participants for the award of a contract for the construction of a block buy of up to ten (10) LCS Flight 0+ Class ships, with an objective of competitively awarding a single contract to a single industry team.

By Acquisition Decision Memorandum of December 23, 2010, the USD (AT&L) authorized execution of an alternative acquisition strategy for the FY 2010 through FY 2015 procurement of 20 seaframes through two ten-ship block buy contracts. On December 29, 2010, the Navy awarded two contracts for block buys of up to ten ships, beginning with the award to each contractor of one FY 2010 ship and associated non-recurring engineering, the development of the Technical Data Package (TDP), core class services, and associated data. This will be followed with the contractual funding of one ship to each contractor in FY 2011 followed by two ships each funded in FY 2012 through FY 2015.

E. Performance Metrics

The LCS Program achieved Milestone A and Program Initiation in May 2004, and underwent a Milestone A update in FY09. Milestone B was achieved in February 2011. Milestone C is planned for mid-2012.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603581N: Littoral Combat Ship (LCS)	PROJECT 3096: Littoral Combat Ship

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LCS 1 & 2 Shore Trainers	C/CPAF	LM, BIW:Various	47.595	8.941	Feb 2012	50.939	Oct 2012	-		50.939	Continuing	Continuing	Continuing
Training Development - Industry	C/FP	TBD:Various	-	8.800	Feb 2012	54.635	Oct 2012	-		54.635	Continuing	Continuing	Continuing
Training Development	WR	NAWC TSD:San Diego, CA	-	3.000	Feb 2012	20.095	Oct 2012	-		20.095	Continuing	Continuing	Continuing
Class Design Services	SS/CPAF	LM, GD:Various	48.340	-		-		-		-	Continuing	Continuing	Continuing
Final Design (Flight 0)	C/CPAF	LM, BIW:Various	175.263	-		-		-		-	Continuing	Continuing	Continuing
Flight 0 C4I	WR	PEO C4I:Various	5.506	-		-		-		-	Continuing	Continuing	Continuing
SH-60B Datalink	C/CPAF	LM, BIW:Various	2.435	-		-		-		-	Continuing	Continuing	Continuing
Distance Support	WR	NAWC TSD:Sand Diego, CA	-	4.900	Feb 2012	2.600	Oct 2012	-		2.600	Continuing	Continuing	Continuing
Subtotal			279.139	25.641		128.269		-		128.269			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NSWC/DD:Dahlgren, VA	41.906	4.500	Oct 2011	8.623	Nov 2012	-		8.623	Continuing	Continuing	Continuing
Government Engineering Support	WR	NSWC/PC:Panama City, FL	22.892	0.250	Feb 2012	2.540	Nov 2012	-		2.540	Continuing	Continuing	Continuing
Government Engineering Support	WR	NUWC:Newport, RI	8.961	0.100	Oct 2011	0.250	Oct 2012	-		0.250	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWC AD:Pax River, VA	18.015	1.369	Feb 2012	3.149	Oct 2012	-		3.149	Continuing	Continuing	Continuing
Government Engineering Support	WR	NSWC/CR:Crane, IN	15.951	0.100	Feb 2012	0.725	Nov 2012	-		0.725	Continuing	Continuing	Continuing
Government Engineering Support	WR	NSWC/ SSES:Philadelphia, PA	45.996	4.000	Oct 2011	8.500	Nov 2012	-		8.500	Continuing	Continuing	Continuing
Government Engineering Support	Various	Government Activities:Various	28.228	2.600	Oct 2011	6.070	Dec 2012	-		6.070	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy			DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603581N: Littoral Combat Ship (LCS)	PROJECT 3096: Littoral Combat Ship

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contractor Engineering Support	C/CPAF	Alion/CSC:Arlington, VA	39.490	2.500	Feb 2012	5.623	Jan 2013	-		5.623	Continuing	Continuing	Continuing
Contractor Engineering Support	C/CPAF	Various:Various	18.148	0.100	Feb 2012	0.225	Jan 2013	-		0.225	Continuing	Continuing	Continuing
		Subtotal	239.587	15.519		35.705		-		35.705			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test & Evaluation	C/CPAF	Alion/CSC:Arlington, VA	11.490	5.800	Feb 2012	7.210	Dec 2012	-		7.210	Continuing	Continuing	Continuing
Test & Evaluation	WR	NSWC/PHD:Port Hueneme, CA	24.771	6.500	Oct 2011	6.370	Nov 2012	-		6.370	Continuing	Continuing	Continuing
Test & Evaluation	WR	NSWC/ SSES:Philadelphia, PA	30.467	6.500	Oct 2011	7.121	Nov 2012	-		7.121	Continuing	Continuing	Continuing
Test & Evaluation	WR	NSWC/PC:Panama City, FL	5.731	3.500	Oct 2011	-		-		-	Continuing	Continuing	Continuing
Test & Evaluation	WR	COMOPTEVFOR:Norfolk, VA	7.714	3.500	Nov 2011	3.872	Nov 2012	-		3.872	Continuing	Continuing	Continuing
Test & Evaluation	WR	NSWC/COR:Corona, CA	5.986	2.980	Oct 2011	4.225	Nov 2012	-		4.225	Continuing	Continuing	Continuing
Test & Evaluation	WR	Various:Various	44.133	13.018	Nov 2011	7.980	Dec 2012	-		7.980	Continuing	Continuing	Continuing
Test & Evaluation/CSS	C/CPAF	LM/GD/Various:Various	32.936	10.118	Nov 2011	14.352	Dec 2012	-		14.352	Continuing	Continuing	Continuing
Test & Evaluation	WR	PEO C4I:Charleston, SC	5.856	2.540	Feb 2012	5.052	Oct 2012	-		5.052	Continuing	Continuing	Continuing
T&E Ordnance	WR	IWS 3:Not Specified	6.927	2.230	Dec 2011	2.000	Dec 2012	-		2.000	Continuing	Continuing	Continuing
		Subtotal	176.011	56.686		58.182		-		58.182			

Exhibit R-3, **RDT&E Project Cost Analysis:** PB 2013 Navy | | | | | | | | | | | | | **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603581N: *Littoral Combat Ship (LCS)*	**PROJECT** 3096: *Littoral Combat Ship*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Business Operations	Various	PEO Ships:Washington, DC	6.229	1.600	Feb 2012	-		-		-	Continuing	Continuing	Continuing
Program Management Support- SEAPORT	C/CPAF	Alion/CSC:Arlington, VA	20.593	0.200	Feb 2012	0.400	Jan 2013	-		0.400	Continuing	Continuing	Continuing
Program Management Support	Various	Various:Various	6.896	0.400	Nov 2011	0.900	Jan 2013	-		0.900	Continuing	Continuing	Continuing
Program Management Support - Design	C/CPAF	Various:Arlington, VA	2.060	0.111	Feb 2012	0.225	Oct 2012	-		0.225	Continuing	Continuing	Continuing
		Subtotal	35.778	2.311		1.525		-		1.525			

			Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
		Project Cost Totals	730.515	100.157	223.681	-	223.681			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		**DATE:** February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603581N: *Littoral Combat Ship (LCS)*	**PROJECT** 3096: *Littoral Combat Ship*

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 3096																												
Live Fire Test & Evaluation (LFT&E) - Flight 0																												
Planning; Post Delivery Developmental Testing (DT)/Operational Testing (OT) - Flight 0																												
Flight 0 DT / OT																												
Live Fire Test & Evaluation (LFT&E) - Flight 0+																												
Planning: Post Delivery Developmental Testing (DT)/Operational Testing (OT) - Flight 0+																												
Flight 0+ DT / OT																												
Milestone B																												
Total Ship Survivability Trial (TSST) LCS 3																												
Total Ship Survivability Trial (TSST) LCS 4																												
Milestone C																												

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603581N: *Littoral Combat Ship (LCS)*	**PROJECT** 3096: *Littoral Combat Ship*

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3096				
Live Fire Test & Evaluation (LFT&E) - Flight 0	1	2011	3	2014
Planning; Post Delivery Developmental Testing (DT)/Operational Testing (OT) - Flight 0	1	2011	3	2014
Flight 0 DT / OT	1	2011	3	2014
Live Fire Test & Evaluation (LFT&E) - Flight 0+	1	2011	4	2017
Planning: Post Delivery Developmental Testing (DT)/Operational Testing (OT) - Flight 0+	1	2011	4	2017
Flight 0+ DT / OT	1	2011	4	2017
Milestone B	2	2011	2	2011
Total Ship Survivability Trial (TSST) LCS 3	3	2014	3	2014
Total Ship Survivability Trial (TSST) LCS 4	1	2015	1	2015
Milestone C	2	2012	2	2012

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy									DATE: February 2012	

APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*				R-1 ITEM NOMENCLATURE PE 0603581N: *Littoral Combat Ship (LCS)*				PROJECT 3129: *LCS Mission Package Development*		

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
3129: *LCS Mission Package Development*	80.654	137.596	195.824	-	195.824	187.327	142.855	99.114	86.034	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Program provides focused war fighting capabilities in littoral mine countermeasures, countering small boat threats and littoral anti-submarine warfare to provide assured access to enable the US Joint Force operations in the littorals. A mission package is a combination of warfare mission modules with specialized crew, support equipment, and vehicles including manned helicopters and unmanned maritime systems. They are packaged in a modular fashion so that they can be quickly swapped out pier side. Mission module development includes architectures, interfaces and integration of mission systems. Mission systems integration also includes the procurement of the first mission packages to be used on the Flight 0 Littoral Combat Ships (LCS). The program has an inventory objective of 24 MCM mission packages, 24 SUW mission packages, and 16 ASW mission packages. Mission package procurement and delivery are aligned with the ship delivery schedule, mission area demand signal from the combatant commanders, and the retirement of legacy platforms. This means that 64 interchangeable mission packages will be available for use among the 55 ships of the LCS class to support global warfighting and peacetime presence requirements.

An incremental development approach to delivering capability allows the continued insertion of mature capabilities throughout the life of the program without the need for modifications to the sea frames. Future mission package increments will be considered when joint warfighting objectives or changing threats create new operational capability requirements that cannot be met by current mission package designs, or when new technological opportunities allow significant progress toward delivering cost effective, enhanced capabilities. Future mission module increments can be tested, constructed, and incorporated into existing mission packages, one of the most important benefits of LCS modular design.

The LCS MCM mission package will counter deep, shallow, and tethered mines in the littoral without putting Sailors in the minefield. When the MCM mission package is embarked, LCS is capable of conducting detect-to-engage operations (hunting, sweeping, and neutralization) against very shallow and deep-water sea mine threats. The MCM mission package provides these capabilities through the use of sensors and weapons deployed from an MH-60S multi-mission helicopter and unmanned off-board vehicles. The MCM package consists of the following systems: Coastal Battlefield Reconnaissance & Analysis (COBRA), Airborne Laser Mine Detection System (ALMDS), Organic Airborne & Surface Influence Sweep (OASIS) System, Remote Multi-Mission Vehicle (RMMV), AQS-20A Mine hunting Sonar, Airborne Mine Neutralization System (AMNS), Unmanned Integrated Sweep System (UISS)(which is comprised of the Unmanned Surface Vehicle (USV) and the Unmanned Surface Sweep System (US3)), Surface Mine Countermeasures (SMCM) Unmanned Undersea Vehicle (UUV) with Low Frequency Broad Band (LFBB), support equipment and support containers. The individual systems are combined into five modules: Organic Airborne Mine Countermeasures (OAMCM) Module, Remote Mine Hunting Module, Unmanned Influence Sweep Module, Coastal Mine Reconnaissance Module and the Buried Mine Module. The Organic Airborne Mine Countermeasures Module provides rapid mine hunting and clearing using the embarked MH-60 helicopter and Mine Countermeasure systems. The Remote Mine Hunting Module uses a Remote Multi-Mission Vehicle (RMMV) and AQS-20A to provide sustained mine hunting and clearing from the surface. The Influence Sweep Module provides endurance bottom sweep capability, the Coastal Mine Reconnaissance Module (CMRM) will allow detection of minefield patterns and obstacles from an embarked Fire

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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Scout VTUAV, and the Buried Mine Module will allow detection of buried mines. When complete, the MCM mission package will provide full capability against floating, tethered, bottom, and buried mines.

The ASW mission package enables LCS to conduct detect-to-engage operations against modern submarines that pose a threat. Specific ASW capabilities include protecting forces in transit, protecting joint operating areas, and establishing ASW barriers.

ASW modules developed for Increment II provide the warfighter capabilities that can be employed for ASW area search as well as high value unit escort missions. Module components include a torpedo countermeasures system, a Variable Depth Sonar, and a Multi-Function Towed Array. The Aviation Module offers airborne threat localization and engagement capability through a Fire Scout VTUAV and an MH-60R with MK54 torpedoes. The individual systems are combined into three modules: Torpedo Defense Countermeasure; ASW Escort/Large area Clearance; and Localization & Engagement.

The SUW mission package increases firepower and offensive/defensive capabilities against large numbers of highly maneuverable, fast, small craft threats, giving LCS the ability to protect the sea lanes and move a force quickly through a choke point or other strategic waterway. With the SUW mission package embarked, LCS has enhanced detection and engagement capability against enemy small craft and similar littoral surface threats.

The SUW mission package is comprised of several modules including the Gun Mission Module (GMM). The GMM is comprised of two high velocity 30mm cannons and is augmented with the ship's 57mm gun to counter close in to mid-range threats. The Aviation Module uses the embarked the MH-60R helicopter with Hellfire missile and the MQ-8B Fire Scout Vertical Take-off and Landing Tactical Unmanned Aerial Vehicle (VTUAV) - for the detection, identification, and classification of surface contacts and to engage long range threats. The Maritime Security Module supports the embarkation of a Visit, Board, Search, and Seizure (VBSS) team. The Irregular Warfare Module provides an expanded medical and training capability. The Surface to Surface Missile Module (SSMM) will provide missile coverage for mid-range threats and small boats.

The LCS Mission Modules Common Equipment consists of enabling products required by all mission packages to provide common hardware interfaces, computer operating environment, communications systems, aviation interface systems and portable development & integration test-sets. Common hardware interfaces include definition, installation and control of mechanical, electrical and cooling requirements common to all mission packages. The Mission Package Computing Environment (MPCE) provides common services and Operating Environment to support all Mission Package Application Software and Open Architecture Products. The Multi-Vehicle Communications System (MVCS) enables the control and data exchange of simultaneous unmanned mission vehicles and the Seaframes. Aviation interface systems include integration and management of data communications, data processing and physical hardware interfaces such as common equipment and containers used by all mission packages. Development and integration test-sets provide a mobile operating environment installed in the Mission Package Portable Control Stations (MP-PCS) to serve as a surrogate Seaframe during mission package development and integration test events at test ranges.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Title: System Engineering	2.585	16.507	13.816
Articles:	0	0	0
FY 2011 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Provided system engineering (SE) support for emerging requests from the fleet for new mission requirements. Lead and directed all SE mission module efforts; developed and managed accredited models and simulation tools to support integration, certification, training of SUW/MCM LCS mission packages and hydrodynamic effects encountered by unmanned vehicles as they are launched and recovered from the LCS platforms. Developed Reliability, Availability, and Maintainability-Cost reports. Maintained Requirements Baseline Traceability in the Dynamic Object Oriented Requirements System - (DOORS). Provided system safety support for mission module test events. Completed all required Certification Test and Evaluation, coordinated Platform IT Risk Approval, finalized Vulnerability Measurement and preparation for connection agreements for Mission Modules (MM) for Information Assurance Authority to Operate. Provided Configuration Management for the Configuration Control Board (CCB) and Technical Scope Reviews leading toward Engineering Change Proposal (ECP) development and implementation. Supported Small Business Innovation Research (SBIR) transition initiatives. Completed the embarkation/debarkation plans in accordance to the established Holistic Embarkation/Debarkation Guide. Developed plans for transitioning to production efforts.			

FY 2012 Plans:

Begin transition of technology from Office of Naval Research (ONR) programs including multi-vehicle mission planner and supervision of Unmanned Vehicles (UxV) (Unmanned Surface Vehicle (USV), Unmanned Aerial Vehicle (UAV) and Unmanned Undersea Vehicle (UUV)). Complete development of the mission modules requirements baseline with technical requirements traceability links in the consolidated DOORS database. Update all ASW System Engineering documentation to reflect ASW MP Increment II requirements. Document all interface requirements between ASW MP and other common components mission package application software (MPAS), mission package operating environment (MPOE), and support containers). Define and document how the ASW MP Increment II will achieve all specified requirements related to the key performance parameters, concept of operations, how design considerations will be addressed and balanced with other program requirements and establish a technical baseline. Update Interface Control Document (ICD) to version 2.0 and update Interface Design Specification (IDS) to version 2.0. Establish a functional architecture to support the common software architecture. Establish Reliability baseline for the MCM/SUW MP. Initiate Reliability Growth Plans for the MCM/SUW MP. Initiate the design of the Common Software Architecture baseline incorporating elements from two advanced study projects, the Unmanned Systems Common Control (USCC) project and the Supervision of UxV Mission Management by Interactive Teams (SUMMIT). The Common Software Architecture (CSA) baseline will support all Mission Packages and will provide a single LCS Mission Package software load for any MP. Conduct the Preliminary Design Review (PDR) of the CSA and build a CSA evaluation prototype based on the USCC architecture. Measure latency, throughput and reliability, and demonstrate proof of concept. Provide oversight and guidance as the Principal for Safety for the LCS MMs. Coordinate and lead all environmental compliance, hazardous material management and occupation health aspects of the LCS MM Program. Provide Configuration Management for the Technical Scope Reviews capturing all configuration updates. Evaluate Advanced Change/Study Notice and ECPs to add hardware and software capabilities to the mission modules. Conduct system engineering readiness reviews. Identify and control all mission package configurations. Conduct all required system engineering (SE) reviews in accordance with NAVSEA systems engineering technical reviews

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
manual. Manage all Information Assurance (IA) tasks, providing IA certification test and evaluation for all MCM/SUW MPs. Provide support for requirements verification and validation. Provide capability to accomplish software readiness monitoring including the development of software specific readiness criteria and integration considerations. Develop documentation and engineering analysis necessary to ensure approval from the Mission Modules Production Readiness Review. *FY 2013 Plans:* Monitor Reliability Growth and update plans as necessary. Conduct the Critical Design Review (CDR) of the Common Software Architecture (CSA), Increment I. CSA Increment I will provide partial functionality to demonstrate mission module off-board control. Incorporate the CSA into the MCM mission package application software (MPAS) and conduct integration and testing of CSA Increment I. Integration and testing results will serve as the basis for development of CSA Increment II (SUW common baseline), which will begin in FY14. Develop or modify end-to-end architecture views for future ASW mission module configuration, changes to the MCM mission module for inclusion of the Surface Mine Countermeasure (SMCM) UUV with Low Frequency Broad Band (LFBB), and changes to the SUW mission module for the revised Surface-to-Surface Missile Module (SSMM) configuration. Conduct system engineering analysis for in-water refueling of off-board mission vehicles. Provide engineering analysis reports to the Systems Engineering Integrated Product Team (IPT). Manage the LCS Mission Modules Dynamic Object Oriented Requirements (DOORs) data base. Maintain and execute the Change Control Board (CCB). Provide management oversight for the Risk Management Board. Provide software development oversight through the software management group. Update Platform IT Risk Approval (PRA) packages. Conduct annual Certification Test and Evaluation (CT&E) events. Conduct system safety Environment, Safety and Occupational Health (ESOH) working group. Prepare Weapons Systems Explosives Safety Review Board (WSESRB) technical data packages. Conduct National Environmental Policy Act (NEPA) and environmental planning and coordination. Capture and track Test Observation Reports (TORs). Conduct weight management analysis and provide oversight. Conduct corrosion prevention and control oversight and manage Corrosion Prevention Act team.			
Title: Program Management *Articles:*	4.096 0	6.403 0	6.108 0
FY 2011 Accomplishments: Continued program management (PM) efforts: business and administrative planning, organizing, directing, coordinating, controlling, and approval actions designated to accomplish overall program objectives that are not associated with specific hardware elements or included in systems engineering. *FY 2012 Plans:*			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Support all efforts associated with Milestone B. Continue PM efforts: business and administrative planning, organizing, directing, coordinating, controlling, and approval actions designated to accomplish overall program objectives that are not associated with specific hardware elements or included in systems engineering. Provide management oversight for the scheduled test events and for new LCS MM capabilities. *FY 2013 Plans:* Support all efforts associated with Milestone C. Continue PM efforts: business and administrative planning, organizing, directing, coordinating, controlling, and approval actions designated to accomplish overall program objectives that are not associated with specific hardware elements or included in systems engineering.			
Title: System Test and Evaluation	19.012	30.051	26.360
Articles:	0	0	0
FY 2011 Accomplishments: Conducted seaframe-to-package work-up and integration testing of the MCM MP aboard LCS 2 (USS INDEPENDENCE). Conducted test planning and execution of the MCM Mission Package (MP) Developmental Testing (DT) aboard LCS 2 (USS INDEPENDENCE). Conducted test planning and documentation for the MCM MP DT aboard LCS 1 (USS FREEDOM) planned for FY 2012. Performed verification and validation of mission module and mission package requirements. Performed and documented analysis and evaluation of test results. *FY 2012 Plans:* Complete test execution and conduct data analysis and test reporting of the MCM MP Developmental Test (DT) aboard LCS 2 (USS INDEPENDENCE). Conduct seaframe-to-mission package check-out, work up, and integration testing of the MCM MP aboard LCS 1 (USS FREEDOM). Conduct test planning, conduct DT and complete data analysis, and test reporting for SUW MP DT aboard LCS 1 (USS FREEDOM). Conduct test planning, test documentation, and begin execution of SUW MP TECHEVAL aboard LCS 1 (USS FREEDOM). Maintain the Mission Package Integration Lab in support of Mission Package software development, testing, and certification for both seaframes . Support incremental testing and evaluation (including environmental and shock) of modules under integration and certification phases, including managing and supporting test assets needed for all mission package testing. Perform verification and validation of mission module and mission package requirements. Perform and document analysis, and evaluate and report test results. Conduct Mission Package certification test events. Final certification will be conducted in conjunction with IOT&E for each MP prior to fleet introduction. Conduct Test planning and documentation for SUW MP Structural Test Fire and DT aboard LCS 2 (USS INDEPENDENCE). *FY 2013 Plans:* Complete SUW MP DT aboard LCS 1 (USS FREEDOM). Complete SUW MP TECHEVAL aboard LCS 1 (USS FREEDOM). Conduct data analysis and test reporting of SUW MP TECHEVAL onboard LCS 1 (USS FREEDOM). Conduct test planning, test execution, data analysis, and reporting for SUW MP IOT&E aboard LCS 1 (USS FREEDOM). Conduct SUW MP TECHEVAL on			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
LCS 1 with increasingly stressing scenarios to characterize performance of SUW MP against CDD requirements. Conduct risk mitigation for SUW MP OPEVAL. Conduct test planning, test execution, data analysis, and reporting for SUW MP Gun Mission Module(GMM) DT on LCS 2 (USS INDEPENDENCE). Test events will include Integrated Tracking Exercise (TRACKEX), 30mm Towed Sled Firing events, and a Layered Defense firing event against small boats and targets utilizing MH-60R, Vertical Takeoff and Landing Tactical Unmanned Aerial Vehicle (VTUAV), 57mm Gun, and 30mm GMMs. Conduct test planning and data analysis for SUW MP Follow On Testing (DT and OT) aboard LCS 4. Conduct test planning, test execution, data analysis, and test reporting for MCM MP DT aboard LCS 1 (USS FREEDOM) and LCS 2 (USS INDEPENDENCE). Conduct DT test planning, documentation, execution, analysis, and reporting of the MCM MP Technical Evaluation (TECHEVAL) and Initial Operational Test and Evaluation (IOT&E) aboard LCS 2 (USS INDEPENDENCE). Conduct test planning and data analysis for MCM MP follow on Testing (DT and OT) aboard LCS 3. Conduct test planning, test execution, data analysis and reporting for OASIS TECHEVAL and IOT&E on the LCS platform. Conduct early test planning and initial integration test of the ASW MP on the LCS platform. Perform data analysis of initial ASW MP testing. Maintain the Mission Package Integration Lab in support of Mission Package software development, testing and certification for both Seaframes. Support incremental testing and evaluation (including environmental and shock) of modules under integration and certification phases, including managing and supporting test assets needed for all mission package testing.			
Title: Integration, Assemble, Test and Checkout Articles:	0.787 0	8.360 0	5.588 0
FY 2011 Accomplishments: Continued program-level Integration, Assembly, Test & Checkout efforts: Technical and functional activities associated with the development and production mission systems, parts, materials and software required to assemble mission modules hardware/software elements into mission equipment and integrated with seaframes. This effort included integration management of common processing systems, off-board communications systems, aviation systems, common and mission package software products and mission modules-to-seaframe integration. Efforts included integration engineering at the waterfront in support of ships under construction and conducting initial testing. *FY 2012 Plans:* Continue program-level Integration, Assembly, Test & Checkout efforts: Technical and functional activities associated with the development and production mission systems, parts, materials, and software required to assemble mission modules hardware/software elements into mission equipment and integrate with sea-frames. This effort includes integration management, common processing systems, off board communications systems, aviation systems, and common and mission package software products and mission modules-to-seaframe integration. Effort includes integration engineering at the waterfront in support of ships under			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
construction and conducting initial testing. Manage and execute integration, assembly, test and checkout of technology refresh solutions for mission package computing environment and off-board communications systems, including the full capability multi-vehicle communication system (MVCS) and the aviation communications systems. Initiate and lead development, integration, and testing of the common MM Open Architecture (OA) and associated architecture products and common mission package software baseline. Lead and manage execution of engineering change proposals (ECPs) required to integrate mission package systems and subsystems into LCS 1 and LCS 2. Provide for waterfront support for embarkation and debarkation of Mission Packages for test events. Effort includes integration engineering at the waterfront in support of ships under construction and conducting initial testing. *FY 2013 Plans:* Provide for water front support for embarkation and debarkation of Mission Packages for test events. Effort includes integration engineering at the waterfront in support of ships under construction and conducting initial testing. Implement MVCS ECPs for LCS 1 and LCS 2 topside alterations. Conduct characterization of Line of Sight (LOS) and Over-the-Horizon (OTH) communications coverage and ranges for LCS 1. Implement Tactical Common Data Link (TCDL) monitor and control ECP on LCS 1. Implement Tactical Common Data Link (TCDL) monitor and control ECP on LCS sea-frames. Continue program level Integration, Assembly, Test & Checkout efforts of ECPs requirement to correct findings from Developmental and Operational test events.			
Title: Training Articles:	7.524 0	16.142 0	14.649 0
FY 2011 Accomplishments: Completed development and installed LCS MCM mission package (MP) team training capability to support MP Train-to-Certify Key Performance Parameter (KPP) and begin development of Common MP Trainer (CMPT) software for SUW team training. Installed and integrated CMPT into LCS Shore Based Training Facility (SBTF), performed initial instructor training on CMPT, and integrated SBTF into Navy cooperative training environment to support Joint Synthetic training. Began integration efforts of current MP training capability into the LCS SBTF. Began the technical requirements development to integrate MP simulated training into the LCS Seaframe simulated training environment in preparation for a FY 12 connection. Network Tactical Training System (NTTS) with MCM unmanned vehicle capability to the SBTF to replace ONR partial capability demonstration system. Began training curriculum development. Provided initial training for navy instructors on MP simulated training environment.			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Provided MP crews training for formal MCM and SUW test events. Provide vendor training to MP crew members in accordance with Crew Schedule Phasing Plans (CSPPs). ***FY 2012 Plans:*** Begin transition from vendor training to a Navy Continuous Training Environment (NCTE) training facility with anticipated FY14 partial Ready-for-Training (RFT) using the CMPT which is capable of meeting Train-to-Certify (T2C) KPP for team training certification requirements. Continue development of CMPT software effort and integrate CMPT into the LCS Training Facility (LTF). After CMPT installation is complete, integrate both CMPT and LTF into the NCTE to support participation in Joint Synthetic Training and numbered fleet commander deployment unit certification events. Conduct Mine Warfare Evaluator (MIWE), Remote Vehicle Operator (RVO) and Remote Sensor Operator (RSO) vendor course pilots and transition to formal classes using CMPT and NTTS to support T2C KPP. Deliver initial NTTS trainer with MCM capability for (Remote Vehicle Operator - RVO and Remote Sensor Operator - RSO) software and hardware to replace ONR partial capability demonstration system. Perform instructor training on NTTS. Continue CMPT software development to include delivery of initial SUW team training capability. Expand CMPT SUW team training capability and begin NTTS development to support Gun Control Operator (GCO) Training. Develop follow-on MCM mission package training capability as new MCM systems are introduced. Begin transition from vendor training to formal SUW Gun Mission Module (GMM) system training course. Complete MCM MP (MP) formal training curriculum (including AQS-20, ALMDS, AMNS, OASIS, and COBRA) and begin SUW formal training curriculum instruction development for MP Fundamentals, Operations and Planning & Tactics Courses necessary to achieve partial RFT in FY14. Update formal curriculum to incorporate findings from program test events. Procure, integrate, and install phase 1 of the GMM course software. Build two of SUW MK50 Mod 0 Modular Gun Weapon System (MGWS) training courseware and integrate training. Fund training-related detachment travel in support of training and test events. Conduct vendor training for formal MCM MP and SUW MP test events. Fund ten contract instructors (five MCM and five SUW) for LTF prior to transition in FY14. Provide MP crews additional training for formal MCM and SUW test events. Provide vendor and interim formal training to MP replacement Sailors, (two MCM and two SUW detachments), in accordance with CSPPs. ***FY 2013 Plans:*** Complete development and deliver the final CMPT software courseware for MCM mission package (MP) and SUW MP (MP Fundamentals, MP Operations and MP Planning and Tactics courses) to support partial RFT for MP team training. Complete and deliver NTTS GCO hardware add-on and software for GCO trainer capability to LTF. Continue transition from vendor training to a training facility with anticipated FY14 initial RFT using CMPT team trainer and NTTS part task trainers. Perform instructor training on NTTS. Complete transition to SUW GMM training course. Update formal curriculum to incorporate findings from program test events, operations and classroom experience. Complete SUW MP formal training curriculum instruction development for MP Fundamentals, Operations and Planning & Tactics Courses. Procure and install phase 2 (final phase) GMM difference			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
course materials. Prepare for transition to Front-End-Analysis (FEA) virtual ship-centric training solution. Continue courseware development, integrate training, and train the trainers. Provide MP crews vendor training for formal MCM, SUW, and ASW MP test events. Conduct 16 contract instructors (7 MCM and 9 SUW) for LTF prior to transition in FY14. Fund training related detachment travel and provide Vendor and interim formal training to mission module replacement Sailors, three MCM and three SUW detachments in accordance with CSPPs.			
Title: Program Technical Data *Articles:*	- 	1.082 0	1.279 0
FY 2012 Plans: Provide Integrated Logistics Support for the scheduled test events and for new capabilities of the LCS MMs. Provides validation and verification for technical data. Provide for development of LCS MM specific transportation requirements to Naval support organizations. Update Program Technical Data packages to incorporate findings from the MCM MP and SUW MP DT test events and MCM MP TECHEVAL and OT events. **FY 2013 Plans:** Update Program Technical Data packages to incorporate findings from SUW MP TECHEVAL test events and SUW MP OT events. Continue Integrated Logistics Support efforts for the scheduled test events. Implement Technical Manual Management Activity to review, produce and distribute technical documentation. Continue development of Maintenance Figure of Merit (MFOM) to maintenance management that incorporates engineering, failure, technical and provisioning into single model that uses criticality factors to assist prioritization of maintenance management.			
Title: Common Equipment *Articles:*	17.456 0	12.892 0	12.230 0
FY 2011 Accomplishments: Mission Data Processing: Developed, tested and validated the redesign of the Mission Package Computing Environment (MPCE) hardware and associated Mission Package Operating Environment (MPOE). Developed shipboard Engineering Change Proposals (ECPs) related to MPCE. Performed Open Architecture engineering initial analyses and studies of Open Architecture products. Off-board Communications: Continued development of capability for the Multi-Vehicle Communications System (MVCS) used for the management of off-board vehicles. Integrated and tested RT-1944/U radio terminal set with the mission modules and seaframes. Performed MVCS ECPs on mission module vehicles and LCS seaframes. Started evaluation, integration testing and installation of cryptographic systems for unmanned vehicles.			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Aviation Interface: Continued development of the helo support function and helo support kits for employment on the SH-60B and M-60R helicopters. These efforts will continue into FY12. ***FY 2012 Plans:*** Mission Data Processing: Finalize development, test and validation of updated MPCE hardware and associated Mission Package Services (MPS) and MPOE. Begin comprehensive system-level analyses and evaluation of next generation MPCE technology requirements. Perform detailed OA evaluations and initiate implementation. Begin implementation of common mission package software program baseline. Provide MPCE technical and test support for the MCM Technical Evaluation on LCS 2. Off-board Communications: Continue development towards full capability of the MVCS Build 1.0, used for the concurrent management of multiple off-board unmanned vehicles. Conduct dock-side testing of RT-1944/U radio terminal set with two Remote Multi-Mission Vehicles (RMMV) and conduct in-port and at-sea seaframes integrations and testing. Conduct Study of MVCS hardware and continue developing and performing MVCS ECPs on Unmanned Integrated Sweep System (UISS) and LCS 2. Continue performing engineering design, testing and evaluation of aerial communication systems for over-the-horizon range. Continue integration testing and installation of cryptographic systems for unmanned vehicles. Initiate Over-the-Horizon (OTH) radio replacement study for the RMMV legacy PRC-117F VHF radio. Provide Off-board Communications technical and test support for the MCM Developmental Test (DT) on LCS 2. Aviation Interface: Continue development and begin integration of the helo support function and helo support kits for employment on the SH-60B and M-60R helicopters. Continue performing engineering design, testing and evaluation of unmanned air vehicle sensor and communications payloads. Continue performing integration and installation of mission module aviation systems and subsystems on LCS seaframes and on developmental test assets. ***FY 2013 Plans:*** Mission Data Processing: Implement plans for the next generation development, test and validation of technology redesign for MPCE hardware and associated MPS and MPOE. Perform ECP's related to MPCE on existing land-based software development/integration labs, and two MPCE Portable Control Stations. Continue OA implementation. Conduct Find/Fix/Repair of software change requests resulting from the MCM TECHEVAL and OT events. Implement changes to MPS and MPOE as a result of formal testing. Provide technical and test support for SUW MP TECHEVAL and DT/OT events. Off-board Communications: Evaluate and complete full capability of the MVCS used for the management of multiple off board vehicles. Integrate and test RT-1944/U radio terminal set with the mission modules and seaframes. Conduct Find/Fix/Repair of software change requests resulting from the MCM TECHEVAL and OT events. Continue developing and performing MVCS ECPs on mission module vehicles and LCS seaframes. Complete engineering design, testing and evaluation of aerial communication			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
systems for OTH range. Based on the FY12 technical study recommendations, evaluate the new OTH radio to replace RMMV's legacy PRC-117F VHF radio. Conduct integration testing and installation of cryptographic systems for unmanned vehicles. Aviation Interface: Complete implementation of the helo support function and helo support kits for employment with the SUW mission packages in support of DT events.			
Title: Mine Countermeasures (MCM) Mission Package Articles:	13.238 0	22.296 0	23.602 0
FY 2011 Accomplishments: Conducted Remote Multi Mission Vehicle (RMMV) and UISS launch, handling, and recovery test on LCS 2. Completed integration tests of MCM mission package (MP) increment 1 on LCS 1 and LCS 2. Validated and verified test plans and test procedures. Developed Mission Package Application Software (MPAS) builds in support of MCM MP DT events. Prioritized and incorporated all high priority, certification limiting Problem Trouble Reports (PTRs). Conducted certification of MCM MP to include weapons system certification, human systems integration, information assurance, and safety. Continued development, integration and testing of UISS and US3. Conducted MCM MP DT events. *FY 2012 Plans:* Continue development, integration and testing of Unmanned Influence Sweep System (UISS). Groom and conduct End-to-End testing to ensure MCM mission package readiness to enter TECHEVAL. Conduct KPP modeling analysis. Integrate COBRA/ VTUAV into MCM mission package. MPAS: In support of MCM MP TECHEVAL, incorporate the following items into MPAS: RMMV RGP V4.1 improvements and correction of software Program Trouble Reports (PTRs) identified during DT events. Deliver next MPAS build in support of TECHEVAL. Resolve hardware PTRs identified during DT through development of Advanced Change Study Notices (ACSNs). Perform Systems Engineering (risk management, information assurance, human systems integration, and safety), Configuration management and Integrated Logistics Support. *FY 2013 Plans:* Complete integration and testing of UISS. Procure two USV EDM. Initial design for Surface Mine Countermeasures (SMCM) UUC container. Design and integration of SMCM UUV into MCM MPs. Groom and conduct End-to-End testing to ensure MCM mission package readiness to enter OPEVAL. Conduct KPP modeling analysis. Resolve hardware PTRs identified during TECHEVAL through development of ACSNs. MPAS: In support of MCM mission package OT, incorporate the following items into MPAS: RMMV RGP V4.2 improvements, correction of software PTRs identified during TECHEVAL. Deliver next MPAS build in support of OT. Perform systems			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
engineering (risk management, information assurance, human systems integration, safety), configuration management and Integrated Logistics Support.			
Title: Anti-Submarine Warfare (ASW) Mission Package *Articles:*	- 	- 	34.367 0
FY 2013 Plans: Conduct a Critical Design Review (CDR) that focuses on the transition of the final system design, development and integration of ASW MP Increment II ASW Escort and Torpedo Defense mission modules. Develop required Engineering Development Model (EDM). Conduct component and system level testing and related predictive performance modeling and simulation to establish system and module performance and reliability baselines. Provide developmental engineering support for logistical engineering data and technical documentation. Manage and administer required Systems Engineering Technical Reviews (SETR), and required systems Certification Reviews. Conduct risk mitigation efforts necessary to cost effectively minimize residual risk to mission module and overall program performance. Conduct technology demonstrations to benchmark technology system performance and related potential to mitigate current risks and acknowledged capability gaps. Provide a common ship-to-air integration and test of Helo Support Function (HSF) Mission Package Application Software (MPAS) to ensure availability of capability for planned ASW Mission Package activities. Establish helicopter interface requirements, integrate, and demonstrate end-to-end capability.			
Title: Surface Warfare (SUW) Mission Package *Articles:*	15.956 0	22.363 0	55.864 0
FY 2011 Accomplishments: Provide find, fix and repair for technical issues associated with Gun Mission Module and Mission Package Application Software (MPAS) identified during integration test events. Conduct environmental test series on GMM MP #2 and incorporate required engineering change proposals (ECP) into the GMM TDP. Integrate 30MM Gun Weapon System (GWS) manufacturer software safety fixes and (MPAS) / Gun Module Remote Control System (GMRCS) hi-priority Computer Program Change Requests (CPCR) for an LCS-1 DT ready software build. Characterize 30MM High Explosive Incendiary (HEI) and Armor Piercing Fin Stabilized Discarding Sabot (APFSDS) ammo necessary for successful completion of DT/OT. Conduct GMM Critical Design Review (CDR). Conduct planning and preparation necessary for DT test event aboard LCS-1 including land-based End-to-End (E2E) integration events, WSESRB/SSSTRP Technical Data Package (TDP), and crew training events. Provide GMM model deliveries and engineering drawing reviews/approvals to facilitate the Production Readiness Review (PRR) and production of GMM MP #3 and MP #4. Provide close-out support of the Non-Line of Sight Launch System (NLOS-LS) integration with the			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Surface-to-Surface Missile Module (SSMM). Provide efforts for SSMM future capabilities in the areas of missile, launcher, and module specifications, investigating restrained firing solutions, defining mechanical/electrical specifications for integration of the missile, launcher, and module, and establishing plans for design architectures and development efforts. In support of SSMM redesign, conduct requirements decomposition and requirements functional alignment in preparations for the SSMM SRR in FY12. *FY 2012 Plans:* In support of the SSMM redesign, conduct System Requirement Review (SRR) including missile, launcher, SSMM and software specifications. Modify the SSMM Increment 1 to address surface missile system requirements and Navy environmental standards. Conduct preliminary Weapon Systems Explosive Safety Review Board (WSESRB) on SSMM Increment 1 and Griffin missile program. Conduct one baseline restrained fire test and two engineering restrained fire test. Procure two Griffin Block IIB missiles in support of sea based barge testing. Procure one full suite of Battle Management System (BMS) hardware that includes three KARNACs and one Command and Control (C2) system. Procure two GMS prototypes to support restrained fire mitigation engineering tests. Modify BMS software based on results from Dynamic Transfer Alignment testing. Provide Find/Fix/Repair for technical issues associated with GMM and Mission Package Application Software (MPAS) identified during integration and developmental testing and conduct necessary regression testing on proposed fixes. Complete environmental testing on Mission Package (MP) #2 and incorporate required Engineering Change Proposals (ECP) into the GMM Technical Data Package (TDP). Provide developmental engineering support, equipment, and documentation for logistical engineering data and technical publications to include training (ship's crew and Mission Package Support Facility (MPSF) personnel), maintenance and provisioning. Conduct combat system certification, mission package certification, obtain WSESRB / Software System Safety Technical Review Panel (SSSTRP) and Information Assurance (IA) approvals, and conduct land based test events with each seaframe manufacturer prior to conducting formal shipboard test events. Groom and update the SUW MP to support Developmental Test (DT) events. Support the planning and preparations for FY13 Operational Test (OT) of SUW MP Increment 1 and LCS 2 STF. *FY 2013 Plans:* Continue design and development of SSMM Increment 1. Conduct a Preliminary Design Review (PDR) that focuses on the SSMM Increment 1. Finalize design modification to the SSMM Increment 1 and procure necessary hardware to support barge shots. Conduct one restrained fire engineering test at the GMS level. Conduct one restrained fire test that includes the GMS mechanical support structure and the BMS electronics.			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Conduct SSMM Increment 1 end-to-end test event that includes SSMM Increment 1 hardware / software, BMS, and MEP. Begin SSMM Increment 1 and missile environmental confidence testing focusing on shock, vibe, Electromagnetic Environmental Effects (E3), temperature and salt spray. Procure ten Griffin B-Block II missiles to support developmental testing, procure seven GMS prototypes to support flight testing, procure three SSMM Increment 1 launch systems to support flight testing and procure four suites of BMS hardware and software to support flight testing. Award the competitive contract for the SSMM Increment 2 missile system. Initiate SSMM Increment 2 missile system design. Conduct appropriate systems engineering technical reviews to ensure missile system design meets the total CDD requirement. Begin planning the SSMM Increment 2 environmental confidence level testing, start development of the detailed launcher design that supports the GMS concept. Generate SSMM Increment 2 MEP requirements and architecture. Find/Fix/Repair technical issues associated with GMM and MPAS identified during STF and DT/OT events. Maintain configuration control of SUW MP data, hardware, and software. Collect data and perform analysis associated with the SUW MP Reliability, Maintainability, and Availability (RMA) program. Conduct combat system certification, MP certification, obtain WSESRB/SSSTRP approval, IA approvals, and conduct land based test events with each seaframe manufacturer prior to conducting shipboard events. Support formal testing of the SUW MP for LCS 1 OT events, STF from LCS 2, DT from LCS 2, and OT from LCS 2. In support of Irregular Warfare Module (IWM), conduct the System Requirements Review, Preliminary Design Review, Critical Design Review and develop an Engineering Development Module. The IWM consists of the following enhancements to the SUW MP: an Afloat Trauma Care (ATC) Medical unit, a Humanitarian Assistance/Health Services Support Medical unit and a Training unit.			
Title: Reliability, Availability and Maintainability ***Articles:***	- 	1.500 0	1.961 0
FY 2012 Plans: Update Reliability, Availability, Maintainability-Cost (RAM-C) plan in support of MS C. Refine RAM model assumptions based on actual data. Implement a reliability growth program that provides assessment to determine changes to the mission module baselines. The reliability growth program metrics and assessments will provide data to qualify and quantify suitability requirements changes and improvements to lower Total Ownership Costs at the mission module level. Develop a Failure Reporting Analysis, Corrective Action System (FRACAS) tailored to the mission module system of systems to include MPCE/MVCS hardware and software failures and modes. Run additional RAM model scenarios incorporating actual performance/reliability/maintainability data from test events and updated mission profiles to include peacetime and wartime analysis. Also establish RAM model			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2011**	**FY 2012**	**FY 2013**
scenarios involving multiple sea-frames employing multiple mission systems simultaneously. Begin data gathering efforts for the ASW MP. ***FY 2013 Plans:*** Continue with RAM efforts to provide multiple excursions that consider multiple MPs and multiple ships within a single area of responsibility (AOR) to identify major contributors to MP RAM model. Continue to refine RAM model assumptions based on actual data. Conduct multiple sensitivity analysis to quantify the effect of alternate sparing philosophies (i.e. more onboard spares, complete spare system, etc.) based on mission module availability. Determine the maintenance throughput capability for the mission systems at the Mission Package Support Facility/Mission Module Readiness Center (MPSF/MMRC) depot. Continue the introduction of the ASW MP into the program RAM model.			
Accomplishments/Planned Programs Subtotals	80.654	137.596	195.824

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 2127 : *Littoral Combat Ship*	1,241.477	1,755.093	1,784.959	0.000	1,784.959	1,819.575	1,881.485	1,012.988	896.027	17,562.449	30,388.374
• 1600 : *LCS Common Mission Modules Equipment*	41.145	63.448	31.319	0.000	31.319	46.037	30.979	14.729	18.595	Continuing	Continuing
• 0443 : *Aircraft Procurement, Navy*	58.732	191.986	124.573	0.000	124.573	129.003	114.750	124.510	94.990	Continuing	Continuing
• 5110: *Outfitting/Post Delivery*	4.678	49.013	60.053	0.000	60.053	76.393	132.715	133.787	209.986	663.574	1,332.956
• 1320: *LCS Training*	0.000	20.709	20.640	0.000	20.640	32.924	16.513	17.983	23.191	Continuing	Continuing
• 0944: *LCS Class Support Equipment*	0.000	0.000	19.865	0.000	19.865	21.278	35.469	36.640	60.800	Continuing	Continuing
• 0981: *Items Under $5M*	8.244	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.703
• 1601: *LCS MCM Mission Modules*	0.000	0.000	38.392	0.000	38.392	68.926	185.056	219.850	219.852	Continuing	Continuing
• 1602: *LCS ASW Mission Modules*	0.000	0.000	0.000	0.000	0.000	0.000	3.436	23.612	44.754	Continuing	Continuing
• 1603: *LCS SUW Mission Modules*	0.000	0.000	32.897	0.000	32.897	37.260	40.098	46.342	67.630	Continuing	Continuing
• 4221: *LCS Module Weapons*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.100	Continuing	Continuing

D. Acquisition Strategy

The LCS Mission Module Acquisition Strategy is employing an incremental procurement approach to allow for the rapid introduction of additional capabilities as system technology matures. This phased plan provides incremental fielding of capability through the introduction of mature programs of record into the respective Mission Packages until the full baseline capability defined in the Capability Development Document (CDD) is reached.

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E. Performance Metrics
  Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy									DATE: February 2012			
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Product Development ($ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 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**
1.1 System Engineering	WR	NSWC PC:Panama City, FL	2.982	2.565	Nov 2011	1.597	Oct 2012	-		1.597	Continuing	Continuing	Continuing
1.1 System Engineering	WR	NSWC DD:Dahlgren, VA	2.950	2.850	Nov 2011	1.228	Oct 2012	-		1.228	Continuing	Continuing	Continuing
1.1 System Engineering	C/CPFF	Northrop Grumman:Beth Page, NY	4.000	5.980	Jan 2012	1.196	Dec 2012	-		1.196	Continuing	Continuing	Continuing
1.1 System Engineering	WR	SPAWAR PAC:San Diego, CA	1.000	1.450	Nov 2011	1.134	Nov 2012	-		1.134	Continuing	Continuing	Continuing
1.1 System Engineering	WR	NUWC NPT:Newport, RI	0.500	1.800	Dec 2011	1.207	Oct 2012	-		1.207	Continuing	Continuing	Continuing
1.1 System Engineering	C/CPFF	CACI:Fairfax, VA	2.500	0.500	Jan 2012	0.137	Dec 2012	-		0.137	Continuing	Continuing	Continuing
1.1 System Engineering	C/CPFF	AAC:Uniontown, PA	-	-		7.317	Jan 2013	-		7.317	0.000	7.317	
1.1 System Engineering	WR	NSWC PHD:Port Hueneme, CA	-	1.362	Jan 2012	-		-		-	0.000	1.362	
1.4 Integration, Assembly, Test and Check	WR	NAWC AD:Patuxent River, MD	0.340	0.794	Nov 2011	0.486	Nov 2012	-		0.486	Continuing	Continuing	Continuing
1.4 Integration, Assembly, Test and Checkout	C/CPFF	Northrop Grumman:Beth Page, NY	-	-		0.857	Dec 2012	-		0.857	0.000	0.857	
1.4 Integration, Assembly, Test and Check	WR	SPAWAR PAC:San Diego, CA	0.994	0.235	Nov 2011	1.204	Nov 2012	-		1.204	Continuing	Continuing	Continuing
1.4 Integration, Assembly, Test and Check	WR	NUWC NPT:Newport, RI	0.647	0.297	Dec 2011	0.202	Oct 2012	-		0.202	Continuing	Continuing	Continuing
1.4 Integration, Assembly, Test and Check	WR	NSWC PC:Panama City, FL	-	2.000	Nov 2011	0.128	Oct 2012	-		0.128	Continuing	Continuing	Continuing
1.4 Integration, Assembly, Test and Check	WR	SUPSHIP Gulfcoast:Pascagoula, MS	0.500	1.000	Feb 2012	0.543	Jan 2013	-		0.543	Continuing	Continuing	Continuing
1.4 Integration, Assembly, Test and Check	WR	SUPSHIP Bath:Bath, ME	0.500	1.000	Feb 2012	0.550	Jan 2013	-		0.550	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy											DATE: February 2012	
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
1.4 Integration, Assembly, Test and Check	WR	NSWC DD:Dahlgren, VA	1.758	3.034	Nov 2011	0.768	Oct 2012	-		0.768	Continuing	Continuing	Continuing
1.4 Integration, Assembly, Test and Checkout	WR	NSWC PHD:Port Hueneme, CA	-	-		0.850	Oct 2012	-		0.850	0.000	0.850	
1.12 Common Equipment Development	WR	NSWC PC:Panama City, FL	68.070	10.892	Nov 2011	5.702	Oct 2012	-		5.702	Continuing	Continuing	Continuing
1.12 Common Equipment Development	C/CPFF	Northrop Grumman:Beth Page, NY	18.727	-		3.001	Dec 2012	-		3.001	Continuing	Continuing	Continuing
1.12 Common Equipment Development	WR	NUWC NPT:Newport, RI	7.829	-		0.840	Nov 2012	-		0.840	Continuing	Continuing	Continuing
1.12 Common Equipment Development	WR	NSWC DD:Dahlgren, VA	1.921	-		2.687	Oct 2012	-		2.687	Continuing	Continuing	Continuing
1.12 Common Equipment Development	WR	NAVAIR PMA266:Patuxent River, MD	4.500	2.000	Nov 2011	-		-		-	Continuing	Continuing	Continuing
1.13 MCM MP	WR	NSWC PC:Panama City, FL	116.600	16.296	Nov 2011	9.265	Oct 2012	-		9.265	Continuing	Continuing	Continuing
1.13 MCM MP	WR	NSWC CD:Little Creek, VA	-	6.000	Feb 2012	-		-		-	Continuing	Continuing	Continuing
1.13 MCM MP	Sub Allot	PMS 406:Various	-	-		14.337	Oct 2012	-		14.337	0.000	14.337	
1.14 ASW MP	Sub Allot	PEO IWS5:Various	-	-		20.547	Nov 2012	-		20.547	0.000	20.547	
1.14 ASW MP	WR	NUWC NPT:Newport, RI	-	-		3.650	Oct 2012	-		3.650	0.000	3.650	
1.14 ASW MP	WR	Various:Various	153.473	-		10.170	Dec 2012	-		10.170	Continuing	Continuing	Continuing
1.15 SUW MP	WR	NSWC DD:Dahlgren, VA	165.774	18.926	Nov 2011	41.194	Oct 2012	-		41.194	Continuing	Continuing	Continuing
1.15 SUW MP	WR	NSWC PHD:Port Hueneme, CA	6.000	2.500	Dec 2011	2.558	Oct 2012	-		2.558	Continuing	Continuing	Continuing
1.15 SUW MP	WR	SPAWAR PACIFIC:San Diego, CA	1.205	0.937	Nov 2011	1.117	Oct 2012	-		1.117	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603581N: Littoral Combat Ship (LCS)	PROJECT 3129: LCS Mission Package Development

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
1.15 SUW MP	C/CPFF	Northrop Grumman:Beth Page, NY	-	-		10.995	Dec 2012	-		10.995	0.000	10.995	
1.16 MP-PCS Equipment	WR	Various:Various	3.547	-		-		-		-	Continuing	Continuing	Continuing
1.19 Pre-Production Engineering	WR	Various:Various	8.425	-		-		-		-	0.000	8.425	
1.1.7 System Engineering RAM-C Project	WR	Various:Various	-	1.500	Oct 2011	1.961	Nov 2012	-		1.961	0.000	3.461	
	Subtotal		574.742	83.918		147.428		-		147.428			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
1.5 Training	WR	NAWC TSD:Orlando, FL	6.933	2.887	Jan 2012	4.917	Jan 2013	-		4.917	Continuing	Continuing	Continuing
1.5 Training	WR	NSWC PC:Panama City, FL	10.823	4.715	Nov 2011	1.215	Oct 2012	-		1.215	Continuing	Continuing	Continuing
1.5 Training	WR	NSWC PHD:Port Hueneme, CA	2.900	2.500	Dec 2011	1.054	Dec 2012	-		1.054	Continuing	Continuing	Continuing
1.5 Training	C/CPFF	AAC:Uniontown, PA	4.000	3.800	Mar 2012	3.010	Jan 2013	-		3.010	Continuing	Continuing	Continuing
1.5 Training	C/CPFF	CACI:Fairfax, VA	-	-		0.576	Nov 2012	-		0.576	0.000	0.576	
1.5 Training	WR	CSCS:Dahlgren, VA	-	1.240	Feb 2012	0.843	Jan 2013	-		0.843	Continuing	Continuing	Continuing
1.5 Training	C/CPFF	Northrop Grumman:Beth Page, NY	-	-		1.934	Dec 2012	-		1.934	0.000	1.934	
1.5 Training	WR	CNSF:San Diego, CA	-	1.000	Feb 2012	1.100	Dec 2012	-		1.100	Continuing	Continuing	Continuing
1.6 Program Technical Data	WR	NSWC PC:Panama City, FL	-	1.082	Dec 2011	0.279	Nov 2012	-		0.279	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy											DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 4: Advanced Component Development & Prototypes (ACD&P)						R-1 ITEM NOMENCLATURE PE 0603581N: Littoral Combat Ship (LCS)					PROJECT 3129: LCS Mission Package Development	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
1.6 Program Technical Data	C/CPFF	Northrop Grumman:Beth Page, NY	-	-		0.750	Dec 2012	-		0.750	0.000	0.750	
1.6 Program Technical Data	WR	CACI:Fairfax, VA	-	-		0.250	Dec 2012	-		0.250	0.000	0.250	
		Subtotal	24.656	17.224		15.928		-		15.928			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
1.3 System Test and Evaluation	WR	NSWC PC:Panama City, FL	27.165	16.183	Nov 2011	10.275	Nov 2012	-		10.275	Continuing	Continuing	Continuing
1.3 System Test and Evaluation	WR	NSWC DD:Dahlgren, VA	24.500	4.000	Nov 2011	5.513	Nov 2012	-		5.513	Continuing	Continuing	Continuing
1.3 System Test and Evaluation	WR	NUWC NPT:Newport, RI	5.000	1.200	Dec 2011	-		-		-	Continuing	Continuing	Continuing
1.3 System Test and Evaluation	WR	NSWC PHD:Port Hueneme, CA	4.000	6.200	Dec 2011	5.852	Oct 2012	-		5.852	Continuing	Continuing	Continuing
1.3 System Test and Evaluation	WR	SPAWAR PAC:San Diego, CA	3.645	1.068	Nov 2011	0.894	Nov 2012	-		0.894	Continuing	Continuing	Continuing
1.3 System Test and Evaluation	WR	COMOPTEVFOR:Norfolk, VA	1.435	1.400	Jan 2012	0.248	Nov 2012	-		0.248	Continuing	Continuing	Continuing
1.3 System Test and Evaluation	WR	PMA 266:Patuxent River, MD	-	-		0.344	Jan 2013	-		0.344	0.000	0.344	
1.3 System Test and Evaluation	C/BA	Silver Ships:Theodore, AL	-	-		0.550	Jan 2013	-		0.550	0.000	0.550	
1.3 System Test and Evaluation	C/BA	CNSF:Norfolk, VA	-	-		0.264	Dec 2012	-		0.264	0.000	0.264	
1.3 System Test and Evaluation	C/BA	NAWC WD:Point Mugu, CA	-	-		2.420	Nov 2012	-		2.420	0.000	2.420	
		Subtotal	65.745	30.051		26.360		-		26.360			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603581N: Littoral Combat Ship (LCS)	PROJECT 3129: LCS Mission Package Development

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Workforce	Various	Various:Various	1.047	-		-		-		-	0.000	1.047	
1.2 Program Management	C/CPFF	CACI:Fairfax, VA	25.688	6.403	Dec 2011	3.175	Nov 2012	-		3.175	Continuing	Continuing	Continuing
1.2 Program Management	WR	NSWC PC:Panama City, FL	-	-		1.453	Oct 2012	-		1.453	Continuing	Continuing	Continuing
1.2 Program Management	WR	NSWC DD:Dahlgren, VA	-	-		1.480	Oct 2012	-		1.480	Continuing	Continuing	Continuing
		Subtotal	26.735	6.403		6.108		-		6.108			

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	691.878	137.596	195.824	-	195.824			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		**DATE:** February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603581N: *Littoral Combat Ship (LCS)*	**PROJECT** 3129: *LCS Mission Package Development*

Exhibit R-4A, **RDT&E Schedule Details:** PB 2013 Navy		**DATE:** February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603581N: *Littoral Combat Ship (LCS)*	**PROJECT** 3129: *LCS Mission Package Development*

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3129				
MCM Aviation Systems and Airframe Integration (LCS 2)	3	2011	4	2012
MCM MP Integration T&E (LCS 2)	1	2011	3	2012
MCM MP Aviation Systems & Airframe Dynamic Interface Testing (LCS 2)	1	2013	2	2013
MCM MP DT (LCS 2)	4	2011	2	2012
MCM MP OAMCM Operational Assessment (LCS 2)	1	2014	2	2014
MCM MP DT (LCS 1)	2	2013	4	2013
MCM MP Shipboard System MVCS vs. 1.0.0 (SW 2.4) INSTALL	3	2012	3	2012
SUW MP GMM/EDM-3 Acceptance T&E	1	2012	1	2013
SUW MP DT (LCS 1)	3	2012	2	2013
SUW MP IOT&E (LCS 1)	4	2012	1	2014
SSMM SRR	4	2012	4	2012
MCM MP Tech Eval (LCS 2)	4	2013	3	2014
SUW MP Tech Eval (LCS 1)	4	2012	1	2014
MCM MP IOT& E (LCS 2)	3	2013	3	2014
SUW MP GMM Structural Test Fire	4	2012	4	2012
ASW MP Integration	1	2013	2	2014
ASW MP PDR	1	2013	1	2013
ASW MP Ship Integration & Test	3	2013	1	2015
MCM MP Unmanned Systems DT I & II	2	2013	3	2013
SSMM PDR	3	2013	3	2013
SUW MP DT (LCS 2)	4	2013	3	2014

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy				DATE: February 2012	

APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603581N: *Littoral Combat Ship (LCS)*	PROJECT 3129: *LCS Mission Package Development*

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
ASW MP CDR/PRR	1	2014	1	2014
MCM MP Unmanned Systems Operational Assessment	1	2014	2	2014
MCM MP FOT&E	4	2014	4	2017
ASW LRIP 1 Award	4	2014	4	2014
ASW MP Developmental Testing	3	2014	1	2016
ASW MP TRR	1	2015	1	2015
ASW LRIP 1 Delivery	4	2015	4	2015
ASW MP IOT&E	2	2016	3	2016
ASW LRIP 2 Award	3	2016	3	2016
ASW LRIP 2 Delivery	3	2017	3	2017
SUW MP FOT&E	4	2014	4	2017
MVCS 2.5 Install	3	2014	3	2014
MVCS 3.0 Install	4	2015	4	2015
MCM MP DT Follow-on (LCS 2)	2	2013	4	2013

Exhibit R-2A, **RDT&E Project Justification:** PB 2013 Navy									**DATE:** February 2012	

APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603581N: *Littoral Combat Ship (LCS)*	**PROJECT** 4018: *Littoral Combat Ship Construction*

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
4018: *Littoral Combat Ship Construction*	46.788	44.912	9.915	-	9.915	4.928	-	-	-	0.000	106.543
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Littoral Combat Ship (LCS) is a fast, agile, and networked surface combatant with capabilities optimized to defeat asymmetric threats, and assure naval and joint force access into contested littoral regions. It uses open-systems-architecture design, modular weapons, and sensor systems, and a variety of manned and unmanned vehicles to expand the battle space and project offensive power into the littoral. LCS operates with focused-mission packages that deploy manned and unmanned vehicles to execute a variety of missions, including littoral anti-submarine warfare (ASW), surface warfare (SUW), and mine countermeasures (MCM). LCS also possesses inherent capabilities, regardless of mission package installed, including Intelligence Surveillance Reconnaissance (ISR), homeland defense, Maritime Interdiction/Interception Operations (MIO), anti-terrorism/force protection (AT/FP), air self-defense, joint littoral mobility, and Special Operating Forces (SOF) and logistic support for movement of personnel and supplies.

This relatively small, high-speed surface combatant will complement the U.S. Navy's AEGIS fleet by operating in environments where it is less desirable to employ larger, multi-mission ships. It can deploy independently to overseas littoral regions, remain on station for extended periods of time either with a battle group or through a forward-basing arrangement, and is capable of underway replenishment. It will operate with Carrier Strike Groups, Surface Action Groups, in groups of other similar ships, or independently for diplomatic and presence missions. Additionally, it can operate cooperatively with the U.S. Coast Guard and Allies.

The LCS construction phase includes the construction of two LCS Flight 0 Class Ships, one each of two designs, and includes Government Furnished Equipment (GFE) for ships systems, Final System Design (FSD), Detail Design, introduction of final interface requirements for integration with mission packages from the Mission Systems and Ship Integration Team (MSSIT), and Outfitting and Post Delivery (OF/PD).

Data as of 9 January 2012:
USS Freedom (LCS 1)
Basic Construction: 521.0
Change Orders: 0.5
GFE: 12.0
Other: 3.5
Total Cost*: 537.0

USS Independence (LCS 2)
Basic Construction: 635.0
Change Orders: 3.5

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603581N: *Littoral Combat Ship (LCS)*	**PROJECT** 4018: *Littoral Combat Ship Construction*

GFE: 7.0
Other: 7.5
Total Cost*: 653.0
Non End Cost Item: FSD/MSSIT 25.0 (LCS1), 54.0 (LCS2)
Non End Cost Item: OF/PD 108.4 (LCS1), 106.4 (LCS2)
FSD/MSSIT costs for USS Freedom and USS Independence are not true construction costs and are costs associated with design completion.
* Does not include OF/PD and early design costs

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2011**	**FY 2012**	**FY 2013**
Title: Outfitting and Post Delivery	46.788	44.912	9.915
Articles:	0	0	0

Description: Provides for the completion of ship outfitting to include: (a) ship provisioning and fuel, (b) initial load-out of repair parts, spares, and test equipment in accordance with allowance list, (c) provision of technical manuals and required drawings, (d) installation and validation of PMS and EOSS, and (e) crew training and completion of ship system certification requirements.

Provides for the integration and testing of the seaframe and mission packages. Implements instrumentation packages and validates structural, sea keeping, and hydrodynamic performance. Provides emergent support during the execution of Post Delivery Test & Trials (PDT&T) and Post-Shakedown Availability (PSA). Incorporates Engineering Change Proposals (ECPs) to correct trial card deficiencies, and mission critical upgrades (as required).

FY 2011 Accomplishments:
For USS Freedom (LCS 1):
Continued PSA planning to include engineering efforts, work package development, and procurement of long-lead materials. Assigned projected work items into one of two separate PSA periods (PSA 1 and PSA 2) for USS Freedom. Performed emergent repairs in support of PDT&T. Conducted PSA 1 to include dry-docking, correction of trial card discrepancies, engineering changes, and equipment repairs.

For USS Independence (LCS 2):
Planned and executed an Industrial Post Delivery Availability (IPDA 3) accomplishing critical work in preparation for possible ship deployment. Began PSA planning to include engineering efforts, work package development, and procurement of long-lead materials. Performed emergent repairs in support of PDT&T.

FY 2012 Plans:
For USS Freedom (LCS 1):
Perform emergent repairs in support of PDT&T. Continue PSA 2, to complete remaining trial card corrections, engineering changes, and equipment repairs.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603581N: *Littoral Combat Ship (LCS)*	**PROJECT** 4018: *Littoral Combat Ship Construction*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
For USS Independence (LCS 2): Perform emergent repairs in support of PSA 1 PDT&T including dry-docking, trial card corrections, engineering changes, and equipment repairs. *FY 2013 Plans:* For USS Freedom (LCS 1): Correct seaframe deficiencies identified during remaining mission package Development and Operational Testing (DT/OT) and emergent repairs. For USS Independence (LCS 2): Provide advance planning, material procurement and kitting, design and engineering, technical support and documentation, testing, logistics support, and production labor for PSA 2. Correct seaframe deficiencies identified during mission package DT/OT and emergent repairs. Complete FCT and provide technical support for the INSURV Board.			
Accomplishments/Planned Programs Subtotals	46.788	44.912	9.915

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 2127: *Littoral Combat Ship*	1,241.477	1,755.093	1,784.959	0.000	1,784.959	1,819.575	1,881.485	1,012.988	896.027	17,452.124	30,278.049
• 1600: *LCS Modules*	41.145	63.448	31.319	0.000	31.319	46.037	30.979	14.729	18.595	Continuing	Continuing
• 0443: *Aircraft Procurement, Navy*	58.732	191.986	124.573	0.000	124.573	129.003	114.750	124.510	94.990	Continuing	Continuing
• 5110: *Outfitting/Post Delivery*	4.678	49.013	60.053	0.000	60.053	76.393	132.715	133.787	209.986	663.574	1,332.956
• 1320: *LCS Training*	0.000	20.709	20.640	0.000	20.640	32.924	16.513	17.983	23.191	Continuing	Continuing
• 0944: *LCS Class Support Equipment*	0.000	0.000	19.865	0.000	19.865	21.278	35.469	36.640	60.800	Continuing	Continuing
• 0981: *Items Under $5M*	8.244	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.703
• 1601: *MCM Mission Module Equipment*	0.000	0.000	38.932	0.000	38.932	68.926	185.056	219.850	219.852	Continuing	Continuing
• 1602: *ASW Mission Module Equipment*	0.000	0.000	0.000	0.000	0.000	0.000	3.436	23.612	44.754	Continuing	Continuing
• 1603: *SUW Mission Module Equipment*	0.000	0.000	32.897	0.000	32.897	37.260	40.098	46.342	67.630	Continuing	Continuing

Exhibit R-2A, **RDT&E Project Justification:** PB 2013 Navy		**DATE:** February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603581N: *Littoral Combat Ship (LCS)*	**PROJECT** 4018: *Littoral Combat Ship Construction*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 4221: *LCS Module Weapons*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.100	Continuing	Continuing

D. Acquisition Strategy

The LCS program takes an evolutionary approach to acquisition that emphasizes competition as a key to achieving affordability. Initially, two industry teams competed against each other with two distinctly different LCS designs. The decision produced two flights with a vessel from each design: Flight 0 (LCS 1 and LCS 2); and Flight 0+ (LCS 3 and LCS 4). The Flight 0+ baseline incorporates lessons learned from the design, construction, and testing of the Flight 0 ships. The Navy conducted a limited competition amongst the existing LCS industry teams or team participants for the award of a contract for the construction of a block buy of up to ten (10) LCS Flight 0+ Class ships, with an objective of competitively awarding a single contract to a single industry team.

By Acquisition Decision Memorandum of December 23, 2010, the USD (AT&L) authorized execution of an alternative acquisition strategy for the FY 2010 through FY 2015 procurement of 20 seaframes through two ten-ship block buy contracts. On December 29, 2010, the Navy awarded two contracts for block buys of up to ten ships, beginning with the award to each contractor of one FY 2010 ship and associated non-recurring engineering, the development of the Technical Data Package (TDP), core class services, and associated data. This will be followed with the contractual funding of one ship to each contractor in FY 2011 followed by two ships each funded in FY 2012 through FY 2015.

E. Performance Metrics

The LCS Program achieved Milestone A and Program Initiation in May 2004, and underwent a Milestone A update in FY09. Milestone B was achieved in February 2011. Milestone C is planned for mid-2012.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy													DATE: February 2012

APPROPRIATION/BUDGET ACTIVITY
1319: *Research, Development, Test & Evaluation, Navy*
BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE
PE 0603581N: *Littoral Combat Ship (LCS)*

PROJECT
4018: *Littoral Combat Ship Construction*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LCS Ship 1 Construction	C/CPAF	Lockheed Martin:Moorestown, NJ	521.000	-		-		-		-	0.000	521.000	521.000
LCS Ship 1 Change Orders	C/CPAF	Lockheed Martin:Moorestown, NJ	0.500	-		-		-		-	0.000	0.500	0.500
LCS Ship 1 GFE	C/CPAF	Lockheed Martin:Moorestown, NJ	12.000	-		-		-		-	0.000	12.000	12.000
LCS Ship 2 Construction	C/CPAF	General Dynamics:Bath, ME	635.000	-		-		-		-	0.000	635.000	635.000
LCS Ship 2 Change Orders	C/CPAF	General Dynamics:Bath, ME	3.500	-		-		-		-	0.000	3.500	3.500
LCS Ship 2 GFE	C/CPAF	General Dynamics:Bath, ME	7.000	-		-		-		-	0.000	7.000	7.000
LCS Ship 1 FSD/MSSIT	C/CPAF	Lockheed Martin:Moorestown, NJ	25.000	-		-		-		-	0.000	25.000	25.000
LCS Ship 2 FSD/MSSIT	C/CPAF	General Dynamics:Bath, ME	54.000	-		-		-		-	0.000	54.000	54.000
Initial Outfitting/Logistics	Various	Various:Various	21.601	-		-		-		-	0.000	21.601	21.601
Test and Trials	WR	Various:Various	32.013	8.412	Oct 2011	2.500	Nov 2012	-		2.500	0.000	42.925	
Post Delivery ECP	C/CPAF	Lockheed Martin - General Dynamics:Various	46.957	0.500	Oct 2011	0.400	Oct 2012	-		0.400	0.000	47.857	57.457
PSA/PSA Planning/INSURV/OPTAR	WR	Various:Various	60.254	36.000	Oct 2011	7.015	Oct 2012	-		7.015	0.000	103.269	
Subtotal			1,418.825	44.912		9.915		-		9.915	0.000	1,473.652	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	SUPSHIP:Various	0.460	-		-		-		-	0.000	0.460	
Other Program Costs	WR	Various:Various	11.000	-		-		-		-	0.000	11.000	

| **Exhibit R-3**, RDT&E Project Cost Analysis: PB 2013 Navy | | | | | | | | | | | | **DATE:** February 2012 |

| **APPROPRIATION/BUDGET ACTIVITY**
1319: *Research, Development, Test & Evaluation, Navy*
BA 4: *Advanced Component Development & Prototypes (ACD&P)* | **R-1 ITEM NOMENCLATURE**
PE 0603581N: *Littoral Combat Ship (LCS)* | **PROJECT**
4018: *Littoral Combat Ship Construction* |

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Subtotal	11.460	-		-		-		-	0.000	11.460	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Acquisition Workforce	Various	Various:Various	0.221	-		-		-		-	0.000	0.221	
		Subtotal	0.221	-		-		-		-	0.000	0.221	

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,430.506	44.912	9.915	-	9.915	0.000	1,485.333	

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy	**DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603581N: *Littoral Combat Ship (LCS)*	**PROJECT** 4018: *Littoral Combat Ship Construction*

Exhibit R-4A, **RDT&E Schedule Details:** PB 2013 Navy		**DATE:** February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603581N: *Littoral Combat Ship (LCS)*	**PROJECT** 4018: *Littoral Combat Ship Construction*

Schedule Details

Events by Sub Project	Start		End	
	Quarter	**Year**	**Quarter**	**Year**
Proj 4018				
Milestone B	2	2011	2	2011
LCS 1 PSA 1	4	2011	1	2012
LCS 1 Final Contract Trials	2	2012	2	2012
LCS 1 PSA 2	4	2012	4	2012
LCS 2 IPDA	2	2011	2	2011
LCS 2 Transit (XSIT) 1 (Fleet Cost)	2	2012	2	2012
LCS 2 PSA 1	4	2012	1	2013
LCS 2 Final Contract Trials	2	2013	2	2013
LCS 2 PSA 2	4	2013	4	2013
LCS 2 Transit (XSIT) 2 (Fleet Cost)	4	2013	4	2013
Milestone C	2	2012	2	2012

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012		

APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603581N: *Littoral Combat Ship (LCS)*	PROJECT 9999: *Congressional Adds*

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
9999: *Congressional Adds*	11.939	10.000	-	-	-	-	-	-	-	0.000	21.939
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Provides resources to support both LCS Mission Package Development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012
Congressional Add: MIW Modules Prog - Cong	11.939	-
FY 2011 Accomplishments: Due to the oil spill in the Gulf of Mexico in 2010, LCS Mission Module testing planned for Panama City Florida had to be moved to the east coast of Florida. Provided funding to cover additional costs associated with the testing disruption, including moving the testing range and delays in performing the actual work as well as increased costs associated with Mine Countermeasures Developmental Testing (DT). Established a next generation LCS test bed, which supports development, demonstration, testing and evaluation of critical technologies to enable rapid introduction of advance warfighting capabilities and workload reduction initiatives required by the LCS mission packages. Deliverables include: a next generation LCS test bed based on Service-Oriented Architecture (SOA); demonstration of the ease of inserting a SOA-based C2 product such as MCM Supervision of Unmanned Vehicle Mission Management by Interactive Teams (SUMMIT) or USW-DSS with documented metrics in Demonstration Report ; and a prototype of SOA-based Unmanned System Control System for future LCS unmanned systems (surface and underwater vehicles).		
Congressional Add: LCS MM SBIR (Cong)	-	10.000
FY 2012 Plans: Continue development of a next generation LCS test bed, which supports development, demonstration, testing and evaluation of critical technologies to enable rapid introduction of advance warfighting capabilities and workload reduction initiatives required by the LCS mission packages. Deliverables include: a next generation LCS test bed based on Service-Oriented Architecture (SOA); demonstration of the ease of inserting a SOA-based C2 product such as MCM Supervision of Unmanned Vehicle Mission Management by Interactive Teams (SUMMIT) or USW-DSS with documented metrics in Demonstration Report ; and a prototype		

Exhibit R-2A, **RDT&E Project Justification:** PB 2013 Navy		**DATE:** February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603581N: *Littoral Combat Ship (LCS)*	**PROJECT** 9999: *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2011**	**FY 2012**
of SOA-based Unmanned System Control System for future LCS unmanned systems (surface and underwater vehicles).		
Congressional Adds Subtotals	11.939	10.000

C. Other Program Funding Summary ($ in Millions)

 N/A

D. Acquisition Strategy

 N/A

E. Performance Metrics

 Congressional Adds.