Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy										DATE: February 2011	
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 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	421.994	226.288	286.784	-	286.784	327.014	336.043	177.549	121.434	Continuing	Continuing
3096: *Littoral Combat Ship*	103.508	75.675	100.157	-	100.157	173.912	201.162	74.653	41.570	Continuing	Continuing
3129: *LCS Mission Package Development*	157.905	109.048	141.715	-	141.715	143.134	129.902	102.896	79.864	Continuing	Continuing
4018: *Littoral Combat Ship Construction*	96.847	41.565	44.912	-	44.912	9.968	4.979	-	-	0.000	198.271
9999: *Congressional Adds*	63.734	-	-	-	-	-	-	-	-	0.000	63.734

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 will be 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 will use 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 will operate with focused-mission packages that deploy manned and unmanned vehicles to execute a variety of missions, including littoral anti-submarine warfare (ASW), anti-surface warfare (SUW) and mine countermeasures (MCM). LCS will also possess 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, 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 Surface Fleet by operating in environments where it is less desirable to employ larger, multi-mission ships. LCS will have the capability to 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 will be 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 will have the capability to operate cooperatively with the U.S. Coast Guard and Allies.

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy	DATE: February 2011
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B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	422.746	226.288	183.419	-	183.419
Current President's Budget	421.994	226.288	286.784	-	286.784
Total Adjustments	-0.752	-	103.365	-	103.365
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	7.150	-			
• SBIR/STTR Transfer	-5.040	-			
• Program Adjustments	-	-	111.500	-	111.500
• Section 219 Reprogramming	-2.849	-	-	-	-
• Rate/Misc Adjustments	-	-	-8.135	-	-8.135
• Congressional General Reductions Adjustments	-0.013	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 9999: *Congressional Adds*		
Congressional Add: *Revised Acquisition Strategy*	59.751	-
Congressional Add: *MIW Modules Prog - Cong*	3.983	-
Congressional Add Subtotals for Project: 9999	63.734	-
Congressional Add Totals for all Projects	63.734	-

Change Summary Explanation

FY12 increases reflect funding to support LCS Training (Seaframe, Mission Module, and LCS Irregular Warfare Module), LCS SUW and MCM Mission Modules, Mission Module Non Line of Sight (NLOS) Restructuring, and LCS Production support.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3096: *Littoral Combat Ship*	103.508	75.675	100.157	-	100.157	173.912	201.162	74.653	41.570	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, 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 2010	FY 2011	FY 2012
Title: LCS Class Design Services	21.343	-	-
Articles:	0		
Description: Provides for Class Design Services efforts and a contract to both industry design teams for continued design refinement of the Flight 0 and Flight 0+ baseline configurations and design development of both designs for the future LCS Class ships.			
FY 2010 Accomplishments: Award Class Design Services contracts for both LCS industry teams. Conduct Industry Systems Engineering design activities supporting the completion and transition to detailed design of the Flight 0+ and FY10 Block Buy baselines, including all required reporting documentation. Translate the Flight 0+ and FY10 Block Buy baseline design drawings and associated documentation,			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
any systems/component standardization along with information obtained as a result of the Post Delivery Test and Trials into new design baselines, which incorporate production, assembly and fabrication lessons learned from the previous Seaframes as well as operator feedback from the Seaframe and Mission Package Crews obtained during the Testing and Trials Period. Develop, review, and approve changes identified by the industry and/or government team. Maintain configuration management of multiple LCS baselines.			
Title: LCS Program Management ***Articles:*** ***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 2010 Accomplishments:*** Supported the delivery of USS Freedom to the Navy in December 2009. Continue contract administration of transition to new design baselines for Flight 0+ and awarded two FY10-15 Block Buy ship contracts, one to each contractor team. Completed development of all required Milestone B documentation. Continue to manage execution of USS Independence and USS Freedom formal Developmental and Operational Testing, including integration efforts with Mission Packages. Conduct contract administration of the development of new design baselines for future ships, including supporting affordability business cases. Finalized the LCS acquisition strategy supporting the Navy's decision to continue with both designs in a dual-award. Finalized strategy and planning activities for follow on ships contract awards. Finalized all Milestone B activities. ***FY 2011 Plans:*** Continue contract administration for all Flight 0+ ships. Revise the Acquisition Strategy to support the Navy decision to continue with both designs. Update Milestone B documents to reflect the revised acquisition strategy to include all required DoD and Service reviews of products and continue preparations for a Milestone B Defense Acquisition Board. Develop a total program acquisition and contracting plan to support future year planning. Continue to manage execution of USS Independence and USS Freedom formal Developmental and Operational Testing. Continue to manage the development of two LCS TDPs. ***FY 2012 Plans:*** Continue contract administration for all Flight 0+ ships. Continue to manage execution of USS Independence and USS Freedom formal Developmental and Operational Testing. Continue management of LCS TDP development.	6.000 0	2.320 0	2.311 0
Title: LCS System-of-Systems Development, Engineering & Experimentation ***Articles:***	32.900 0	10.294 0	14.725 0

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Description: Provides for LCS Program systems engineering in support of Flight 0, Flight 0+ and new FY10 Block Buy baseline design, development, certification, production (including ship system design and integration) combat system and C4I design, integration, and test, aviation (manned and unmanned) integration, modular MCM, ASW, and 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 2010 Accomplishments:*** Flight 0 baseline: Conduct systems engineering to develop solutions for emergent issues during completion of USS Independence and Acceptance Trials including multiple certifications, and for emergent issues during USS Freedom post delivery tests and trails including FY10 Continuous Maintenance Availability (CMAV), early deployment and RIMPAC10. Complete engineering for SH-60B datalink integration. Manage integration with SUW Mission Package components and conduct Independent Verification and Validation (IV&V) and systems engineering for emergent integration issues. Flight 0+ baseline: Conduct systems engineering to develop solutions for Flight 0+ baseline for design and production issues highlighted in USS Freedom and USS Independence testing and LCS 3 and 4 production, including, for example, Hydrogen Sulfide elimination from USS Independence AFFF by biocide injection, development of new helo handling for LCS 3, MIDE seals transition to production, 11m RHIB latch solution development, and topside design analyses. Conduct systems engineering efforts in support of multiple certifications issues for new baseline. Continued management of Flight 0+ baseline transition into production. Develop facilities support plans for CONUS LCS locations. FY10 Block Buy baseline: Complete and obtain approval for all required systems engineering Milestone B (MS B) documentation, (including the conduct of aluminum corrosion and fatigue materials testing (including full scale testing) required to obtain a Technology Readiness Level of 6. Develop, approve and document the technical baseline for the FY10 Block Buy of 20 ships (updates to ICD, SPD, Build Specification, ECPs, JTDs, RFDs) and support the source selection via systems engineering reviews/ analyses. At Post award, manage the development, approval and transition to detailed design and production of the both baselines. ***FY 2011 Plans:*** Flight 0 baseline: Conduct systems engineering to develop solutions for emergent issues during USS Independence and USS Freedom post delivery tests and trails including Seaframe Developmental Testing and USS Freedom Final Contract Trials (FCT) and Post			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Shakedown Availability (PSA). Manage integration with SUW MP on USS Freedom and MCM on USS Independence and conduct Independent Verification and Validation (IV&V) and systems engineering for emergent integration issues. Flight 0+ and FY10 Block Buy baselines: Conduct systems engineering to develop solutions for Flight 0+ and FY10 baselines for design/production issues highlighted in USS Freedom and USS Independence testing and LCS 3 and 4 production, risk areas likely to include combat system integration, off-board vehicle communications, and watercraft launch, recovery and handling. Conduct systems engineering efforts in support of multiple certifications issues for new baseline. Continued management of both baselines in transition into production. ***FY 2012 Plans:*** Flight 0 baseline: Conduct systems engineering to develop solutions for emergent issues during USS Independence and USS Freedom post delivery tests and trails including Seaframe Operational and Developmental Testing, TSSTs, and LCS 2 FCT and PSA. Manage integration with SUW MP on USS Independence and MCM on USS Freedom and conduct Independent Verification and Validation (IV&V) and systems engineering for emergent integration issues. Flight 0+ and FY10 Block Buy baselines: Conduct systems engineering to develop solutions for Flight 0+ and FY10 baselines for design/production issues highlighted in LCS Freedom and USS Independence testing and LCS 3, 4, 5 and 6 production, risk areas likely to include network integration, machinery control, and MP Software integration. Conduct systems engineering efforts in support of multiple certifications issues for new baseline. Continued management of both baseline's transition into production.			
Title: LCS Total System Training Architecture ***Articles:*** ***Description:*** Provides for an LCS shore-based training capability to satisfy individual, unit, team and force training to meet Train to Qualify CDD requirements. Leverages DDG 1000 Total Ship Training System efforts, as well as trainers previously procured for LCS. ***FY 2010 Accomplishments:*** Update Trainers to ship as-built configurations to meet train to qualify certification requirements. Begin integration efforts with the LCS Mission Module Trainer and integrate the USS Freedom and USS Independence Trainers. Develop trainers at Surface Warfare Officer's School (SWOS) for LCS training. Complete the USS Independence Trainer variant. ***FY 2011 Plans:***	9.900 0	10.835 0	37.741 0

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Complete enhancements to present USS Freedom and USS Independence configurations. Provide crew training to meet Train to Qualify requirements and provide shore training facility with Navy Continuous Training Environment (NCTE) capability for multiple crews to complete required battle group training from shore facility. ***FY 2012 Plans:*** Develop Virtual Ship Software environment for use on future LCS Trainers and backfit on present trainers. Develop training software in order to meet Train to Qualify CDD KPP. Complete trainer curriculum at SWOS. Transition ONR Sponsor software, Virtual Maintenance Performance Aide (VMPA) Training environment for continued development of training architecture for maintenance and engineering. Funds training essential to achieve LCS designed operational availability with minimally manned rotational crew. Distance Support - Funds 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 CLASSRON/MSD. Includes SIPR distance support development, testing, fielding and training, along with hardware/software. Supports classified applications such as Force Protection requirements, Casualty Reports (CASREPs), and sensitive medical info. Includes development, testing and fielding for support of on-board operations, maintenance, and crew administration and training applications and tools. Provides 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.			
Title: LCS Test & Evaluation	33.365	52.226	45.380
Articles:	0	0	0
Description: Execute formal LCS Test and Evaluation (T&E) program, Developmental Testing and Operational Testing (DT/OT) including Live Fire Test and Evaluation (LFT&E) and procurement of T&E Ordnance. Developmental Test and C4I design, integration, and test, aviation (manned and unmanned) integration, modular MCM, ASW, and 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 2010 Accomplishments:*** Flight 0 baseline: Conduct systems engineering to develop solutions for emergent issues during completion of USS Independence and Acceptance Trials including multiple certifications, and for emergent issues during USS Freedom post delivery tests and trails including FY10 Continuous Maintenance Availability (CMAV), early deployment and RIMPAC10. Complete engineering for SH-60B datalink integration. Manage integration with SUW Mission Package components and conduct systems engineering for emergent integration issues. USS Independence DT commenced with Seaframe certifications, aviation integration events, and initial			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
integration of MCM Mission Package. Electronic Chart Display and Information System - Navy (ECDIS-N) OT was completed on LCS 2. The LCS LFT&E Management Plan was completed. Flight 0+ baseline: Conduct systems engineering to develop solutions for Flight 0+ baseline for design and production issues highlighted in USS Freedom and USS Independence testing and LCS 3 and 4 production, including, for example, Hydrogen Sulfide elimination from USS Independence Aqueous Film Forming Foam (AFFF) by biocide injection, development of new helo handling for LCS 3, Mide Corporation seals transition to production, 11m Rigid Hull Inflatable Boat (RHIB) latch solution development, and topside design analyses. Conduct systems engineering efforts in support of multiple certifications issues for new baseline. Continued management of Flight 0+ baseline transition into production. Develop facilities support plans for CONUS LCS locations. FY10 Block Buy baseline: Complete and obtain approval for all required systems engineering Milestone B (MS B) documentation, (including the conduct of aluminum corrosion and fatigue materials testing (including full scale testing) required to obtain a Technology Readiness Level of 6. Develop, approve and document the technical baselines for the FY10 Block Buy (updates to Interface Control Document (ICD), Specified Performance Document (SPD), Build Specification, Engineering Change Proposal (ECPs), Justification for Technical Determination (JTDs), Request for Deviation (RFDs)) and support the source selection via systems engineering reviews/ analyses. At Post award, manage the development, approval and transition to detailed design and production of the baseline.			
FY 2011 Plans: Flight 0 baseline: Continue 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. Conduct detailed SUW Mission Package (MP) DT on LCS 1. Conduct detailed MCM Mission Package DT on LCS 2.Conduct systems engineering to develop solutions for emergent issues during USS Independence and USS Freedom post delivery tests and trails including Seaframe Developmental Testing and USS Freedom Final Contract Trials (FCT) and Post Shakedown Availability (PSA). Manage integration with SUW MP on USS Freedom and MCM on USS Independence and conduct systems engineering and analysis efforts for emergent integration issues. Update the LCS TEMP to reflect mature Acquisition Strategy and Program schedule. Flight 0+ and FY10 Block Buy baselines: Conduct systems engineering to develop solutions for Flight 0+ and FY10 baselines for design/production issues highlighted in USS Freedom and USS Independence testing and LCS 3 and 4 production, risk areas likely to include combat system integration,			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
off-board vehicle communications, and watercraft launch, recovery and handling. Conduct systems engineering efforts in support of multiple certifications issues for new baseline. Continued management of both baselines to transition into production. ***FY 2012 Plans:*** Flight 0 baseline: Conduct systems engineering to develop solutions for emergent issues during USS Independence and USS Freedom post delivery tests and trials including Seaframe Operational and Developmental Testing, TSSTs, and LCS 2 FCT and PSA. Manage integration with SUW MP on USS Independence and MCM on USS Freedom and conduct Independent Verification and Validation (IV&V) and systems engineering for emergent integration issues. Flight 0+ and FY10 Block Buy baselines: Conduct systems engineering to develop solutions for Flight 0+ and FY10 baselines for design/production issues highlighted in LCS Freedom and USS Independence testing and LCS 3, 4, 5 and 6 production, risk areas likely to include network integration, machinery control, and MP Software integration. Conduct systems engineering efforts in support of multiple certifications issues for new baseline. Continued management of both baselines to transition into production.			
Accomplishments/Planned Programs Subtotals	103.508	75.675	100.157

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 2127: *Littoral Combat Ship*	1,076.669	1,509.335	1,802.093	0.000	1,802.093	1,766.847	1,781.697	1,852.080	1,534.828	Continuing	Continuing
• 1600: *LCS Modules*	80.387	82.951	79.583	0.000	79.583	112.538	158.857	262.383	311.801	Continuing	Continuing
• 4221: *LCS Module Weapons*	0.000	9.808	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• 0443: *Aircraft Procurement, Navy*	90.777	47.484	191.986	0.000	191.986	166.843	191.110	158.060	179.932	Continuing	Continuing
• 5110: *Outfitting/Post Delivery*	2.654	2.787	54.059	0.000	54.059	89.466	112.861	193.147	210.549	Continuing	Continuing
• 1320: *LCS Training*	0.000	0.000	20.709	0.000	20.709	9.050	24.351	12.747	12.021	Continuing	Continuing

D. Acquisition Strategy

The LCS Program takes an evolutionary approach to acquisition that emphasizes competition as the key to achieving affordability. Initially, two industry teams competed against each other with two different LCS designs LCS 1-4, over two flights, Flight 0 and Flight 0+. The revised Acquisition Strategy supports the Navy decision to continue with both designs. The incorporation of lessons learned from the design, construction, and testing of the initial two ships, as well as introduction of improved waterjets and a waterjet tunnel extension on the LM LCS design comprises the Flight 0+ baseline awarded in FY09. A new baseline will be implemented for both designs in the FY10-15 Block Buy.

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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 is planned for February 2011.

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

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LCS 1 & 2 Shore Trainers	C/CPAF	LM, BIW:Various	36.760	10.835	Oct 2010	12.941	Oct 2011	-		12.941	Continuing	Continuing	Continuing
Training Development - Industry	C/FP	TBD:Various	-	-		12.800	Oct 2011	-		12.800	Continuing	Continuing	Continuing
Training Development	WR	NAWC TSD:San Diego, CA	-	-		6.000	Oct 2011	-		6.000	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	-	-		6.000	Oct 2011	-		6.000	Continuing	Continuing	Continuing
		Subtotal	268.304	10.835		37.741		-		37.741			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NSWC/DD:Dahlgren, VA	39.473	2.433	Oct 2010	2.500	Oct 2011	-		2.500	Continuing	Continuing	Continuing
Government Engineering Support	WR	NSWC/PC:Panama City, FL	22.777	0.115	Oct 2010	0.250	Oct 2011	-		0.250	Continuing	Continuing	Continuing
Government Engineering Support	WR	NUWC:Newport, RI	8.807	0.154	Dec 2010	0.100	Oct 2011	-		0.100	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWC AD:Pax River, VA	16.811	1.204	Oct 2010	1.369	Oct 2011	-		1.369	Continuing	Continuing	Continuing
Government Engineering Support	WR	NSWC/CR:Crane, IN	15.940	0.011	Oct 2010	0.100	Oct 2011	-		0.100	Continuing	Continuing	Continuing
Government Engineering Support	WR	NSWC/ SSES:Philadelphia, PA	42.932	3.064	Oct 2010	2.000	Oct 2011	-		2.000	Continuing	Continuing	Continuing
Government Engineering Support	Various	Government Activities:Various	26.901	1.327	Oct 2010	1.500	Oct 2011	-		1.500	Continuing	Continuing	Continuing

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

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPAF	Alion/CSC:Arlington, VA	36.846	2.644	Jan 2011	2.500	Jan 2012	-		2.500	Continuing	Continuing	Continuing
Contractor Engineering Support	C/CPAF	Various:Various	18.086	0.062	Oct 2010	0.100	Oct 2011	-		0.100	Continuing	Continuing	Continuing
		Subtotal	228.573	11.014		10.419		-		10.419			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation	C/CPAF	Alion/CSC:Arlington, VA	8.390	3.500	Jan 2011	5.800	Oct 2011	-		5.800	Continuing	Continuing	Continuing
Test & Evaluation	WR	NSWC/PHD:Port Hueneme, CA	19.571	5.500	Oct 2010	5.500	Oct 2011	-		5.500	Continuing	Continuing	Continuing
Test & Evaluation	WR	NSWC/ SSES:Philadelphia, PA	26.221	5.900	Oct 2010	4.500	Oct 2011	-		4.500	Continuing	Continuing	Continuing
Test & Evaluation	WR	NSWC/PC:Panama City, FL	3.231	2.500	Dec 2010	3.500	Oct 2011	-		3.500	Continuing	Continuing	Continuing
Test & Evaluation	WR	COMOPTEVFOR:Norfolk, VA	5.414	2.300	Oct 2010	3.500	Nov 2011	-		3.500	Continuing	Continuing	Continuing
Test & Evaluation	WR	NSWC/COR:Corona, CA	3.406	2.580	Oct 2010	2.980	Oct 2011	-		2.980	Continuing	Continuing	Continuing
Test & Evaluation	WR	Various:Various	33.982	14.385	Oct 2010	12.018	Nov 2011	-		12.018	Continuing	Continuing	Continuing
Test & Evaluation/CSS	C/CPAF	LM/GD/Various:Various	21.045	11.891	Oct 2010	8.118	Nov 2011	-		8.118	Continuing	Continuing	Continuing
Test & Evaluation	WR	PEO C4I:Charleston, SC	4.268	1.700	Oct 2010	1.540	Nov 2011	-		1.540	Continuing	Continuing	Continuing
T&E Ordnance	WR	IWS 3:Not Specified	5.677	1.250	Oct 2010	2.230	Dec 2011	-		2.230	Continuing	Continuing	Continuing
		Subtotal	131.205	51.506		49.686		-		49.686			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
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 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Business Operations / CAVE (PEO SHIPS)	Various	PEO Ships:Washington, DC	4.629	1.600	Jan 2011	1.600	Dec 2011	-		1.600	Continuing	Continuing	Continuing
Program Management Support- SEAPORT	C/CPAF	Alion/CSC:Arlington, VA	20.393	0.200	Dec 2010	0.200	Dec 2011	-		0.200	Continuing	Continuing	Continuing
Program Management Support	Various	Various:Various	6.030	0.398	Dec 2010	0.400	Dec 2011	-		0.400	Continuing	Continuing	Continuing
Program Management Support - Design	C/CPAF	Various:Arlington, VA	1.938	0.122	Dec 2010	0.111	Dec 2011	-		0.111	Continuing	Continuing	Continuing
DAWDF	Various	Not Specified:Not Specified	0.468	-		-		-		-	0.000	0.468	
		Subtotal	33.458	2.320		2.311		-		2.311			

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	661.540	75.675		100.157		-		100.157			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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*

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3096				
Live Fire Test & Evaluation (LFT&E) / Total Ship Survivability Test (TSST) - Flight 0	1	2010	2	2013
Planning; Post Delivery Developmental Testing (DT)/Operational Testing(OT) - Flight 0	1	2010	2	2013
Flight 0 DT / OT	1	2010	2	2013
LFT&E / Full Ship Shock Trial (FSST)- Flight 0+	1	2010	4	2015
Planning: Post Delivery Developmental Testing / Operational Testing - Flight 0+	2	2011	4	2015
Flight 0+ DT / OT	1	2010	1	2016
Class Design Services	1	2010	1	2011
Combat System & C4I Spiral Development	1	2010	4	2015
Milestone B	2	2011	2	2011
Total Ship Survivability Trial (TSST) LCS 1	4	2012	4	2012
Total Ship Survivability Trial (TSST) LCS 2	1	2013	1	2013

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3129: *LCS Mission Package Development*	157.905	109.048	141.715	-	141.715	143.134	129.902	102.896	79.864	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 littoral. Mission module development includes architectures, interfaces and development of mission module. Mission systems development also includes the procurement of the first mission packages to be used on the Flight 0 Littoral Combat Ships (LCS).

Mine Countermeasures (MCM) Mission Packages (MPs) will provide the Joint Force Commander with the capability to conduct MCM operations, open transit lanes for naval and commercial shipping, and open operating areas for naval forces, enabling Joint Force Entry operations. 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 Minehunting Sonar, Airborne Mine Neutralization System (AMNS), Unmanned Surface Vehicle (USV) with Unmanned Surface Sweep System (USSS), Unmanned Undersea Vehicle (UUV) with Low Frequency Broad Band (LFBB) and Support Containers. The individual systems are combined into four modules: Organic Airborne Mine Countermeasures (OAMCM) Module, Remote Mine Hunting Module, Unmanned Influence Sweep Module, and Coastal Mine Reconnaissance Module. The OAMCM Module provides the long-range, airborne capability to conduct mine hunting and clearing operations in littorals zones, confined straits, choke points, and the Amphibious Objective Area (AOA) quickly. The Remote Mine Hunting Module provides an unmanned semi-submersible, long-endurance mine detection and classification capability to effectively hunt large areas for volume and bottom mines. The Unmanned Influence Sweep Module provides an unmanned surface, long endurance bottom sweep capability to clear large areas of mines that may remain after mine-hunting operations are complete. The Coastal Mine Reconnaissance Module will detect mines in the surface zone and beach zone areas, providing the Joint Force Commander with the information needed to clear mines with non-LCS assets and allow military forces to safely and effectively storm the beaches.
Anti-Submarine Warfare (ASW) Mission Packages will provide ASW capabilities while operating in a contested littoral environment. The current ASW Mission Package is comprised of the Low Frequency Bi-Static, Monostatic, Aviation, Modules. Future ASW Mission Packages will include Escort, Torpedo Defense Mission Modules. The ASW MP will provide LCS with the ability to exploit real time undersea data, using maneuver and deception to enhance detection, classification, identification, targeting and destruction of enemy submarines.

The Surface Warfare (SUW) Mission Package (MP) when embarked provides detection, tracking and engagement of Fast Inshore Attack Craft (FIAC). Countering the FIAC small boat threat gives the Joint Force Commander the ability to maximize striking power, shield high value units and successfully move through a restricted area. The SUW MP uses the Gun Mission Module for close in threats, the Surface to Surface Missile Module (SSMM) for mid-range threats and the embarked MH-60R and/or VTUAV, part of the aviation mission module, are used for threat detection, classification and long range engagement. The Maritime Security Module (MSM), when embarked, provides the LCS with the capability to conduct Level II Visit, Board, Search, and Seizure (VBSS) operations to support maritime interdiction missions. The Irregular Warfare Mission Module, when embarked, provides augmented training and medical capability for Theater Security Cooperation (TSC) missions. The LCS Mission Modules Common Equipment consists of enabling products required by all mission packages to provide common hardware interfaces, computer operating

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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 roll-on/roll-off cabinets/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 2010	FY 2011	FY 2012
Title: System Engineering	2.698	2.619	17.882
Articles:	0	0	0

FY 2010 Accomplishments:
Coordinated with Mission Module (MM) assistant program managers system maturity model with a focus on system and technology readiness levels. Established requirement baselines which lead to technical requirement traceability links into the LCS Mission Package (MP) consolidated Data Object Oriented Requirements System (DOORS) Database. Developed Modeling and Simulation Charter to support LCS MP software development, performance requirement, integration testing, certification testing, and training. Completed development of LCS MM System Engineering Plan, Programmatic Environmental Safety Health Evaluation, Anti- Tamper, Abbreviated Program Protection Plan for MCM, SUW, MVCS, Cost Analysis & Requirements Document, which all in support of MS B documentation development. Completed Preliminary Design Review for SBIR Initiative to reduce mission module weight by employing Composite Containers.

FY 2011 Plans:
Provide system engineering (SE) support for emerging requests from the fleet for new mission requirements. Lead and direct all SE mission module efforts; develop and manage accredited models and simulation tools to support integration, certification, training of all LCS mission packages and hydrodynamic effects encountered by unmanned vehicles as they are launched and recovered from the LCS platforms. Develop Reliability, Availability, and Maintainability-Cost reports. Maintain Requirements Baseline Traceability in Doors. Provide system safety support for mission module test events. Complete all required Certification Test and Evaluation, coordinate Platform IT Risk Approval, finalize Vulnerability Measurement and preparation for connection agreements for MMs for Information Assurance Authority To Operate. Provide configuration Management CCB's and Technical Scope Reviews leading toward ECP development and implementation. Support SBIR transition initiatives. Complete the embarkation/debarkation plans in accordance to the established Holistic Embarkation/Debarkation Guide. Develop plans for transitioning to production efforts.

FY 2012 Plans:
Begin transition of technology from ONR programs including Multi-Vehicle Mission Planner and Supervision of UxV (USV, UAV & UUV) Mission Management by Interactive Teams for combat system commonality, composite containers and light weight

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
structures for reducing mission package weight to the LCS mission modules. Provide oversight and guidance as the Principal for Safety for the LCS Mission Modules (MM). Coordinate and lead all environmental compliance, hazardous material management, and occupation health aspects of the LCS MM Program. Provide Configuration Management for managing Technical Scope Reviews capturing all configurations updates. Evaluate Advanced Change/Study Notice and Engineering Change Proposals to add hardware and software capabilities to the mission modules. Complete development of the mission modules requirements baseline with technical requirements traceability links in the consolidated DOORS database. Conduct system engineering readiness reviews. Identify and control all mission package configurations. Conduct all required SE reviews in accordance with NAVSEA Systems Engineering Technical Reviews Manual. Manage all Information Assurance (IA) tasks providing IA Certification Test and Evaluation for all mission areas. 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 an approach and checklists of required systems engineering tasks required to ensure a successful conduct and approval of the Mission Modules Production Readiness Review. 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.			
Title: Program Management	8.619	4.150	6.403
Articles:	0	0	0
FY 2010 Accomplishments: Continued the program-level program management efforts, including Contract Advisory and Assistance Services (CAAS): business and administrative planning, organizing, directing, coordinating, controlling, and approval actions designated to accomplish overall program objectives which are not associated with specific hardware elements and are not included in systems engineering. Maintained and executed logistic plans, processes and programs to assist in the management and support of Mission Modules (MMs) and Mission Packages (MPs).			
FY 2011 Plans: Continue program management efforts: business and administrative planning, organizing, directing, coordinating, controlling, and approval actions designated to accomplish overall program objectives which are not associated with specific hardware elements and are not included in systems engineering.			
FY 2012 Plans: Continue program management efforts: business and administrative planning, organizing, directing, coordinating, controlling, and approval actions designated to accomplish overall program objectives which are not associated with specific hardware elements and are not included in systems engineering. Provides Integrated Logistics Support for the scheduled test events and for new			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
capabilities of the LCS MMs. Provides validation and verification for technical data. Provides for development of LCS MM specific transportation requirements to Naval support organizations.			
Title: System Test and Evaluation	10.283	34.262	30.051
Articles:	0	0	0
FY 2010 Accomplishments: Conducted SUW Mission Package (MP) developmental testing (DT) and Quick Reaction Assessment in support of USS Freedom Early Deployment. Continued Mission Package certification efforts for MCM and SUW. Participated in Rim of the Pacific (RIMPAC) 10 with SUW MP on LCS-1. Conducted ASW (DT) workups for ASW DT at SHAREM exercise in WESTPAC with fleet. MCM and SUW Form, Fit & Function Test on USS Independence post Industrial Post Delivery Availability (IPDA). Completed MCM Launch, Handling & Recovery test on USS Independence post IPDA.			
FY 2011 Plans: Conduct seaframe to package work-up and integration testing of the MCM MP aboard LCS 2 (USS INDEPENDENCE). Conduct test planning and execution of the MCM MP Developmental Testing (DT) aboard LCS 2 (USS INDEPENDENCE). Conduct test planning and documentation for the MCM MP DT aboard LCS 1 (USS FREEDOM) planned for FY 2012. Pending Congressional budget cuts conduct test planning and documentation for the SUW MP DT aboard LCS 1 (USS FREEDOM) planned for FY 2012. Perform verification and validation of mission module and mission package requirements. Perform and document analysis and evaluation of test results.			
FY 2012 Plans: Conduct seaframe to package check-out and integration testing of the MCM MP aboard LCS 1 (USS FREEDOM). Conduct test planning and execution of MCM MP DT aboard LCS 1 (USS FREEDOM). Conduct test planning and execution of the MCM MP TECHEVAL and IOT&E aboard LCS 2 (USS INDEPENDENCE). Conduct test planning and execution of SUW MP DT aboard LCS 1 (USS FREEDOM). Conduct test planning, preparation and execution of SUW MP TECHEVAL and IOT&E aboard LCS 1 (USS FREEDOM). Maintain the Mission Package Integration Lab. 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 evaluation of test results.			
Title: Integration, Assemble, Test and Checkout	1.052	0.797	8.360
Articles:	0	0	0
FY 2010 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 hardware/software elements			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
into mission equipment and integration with seaframes. Led and performed mission system integration test and checkout tasks to support LCS-1 early deployment and LCS-2 post-delivery activities. ***FY 2011 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 hardware/software elements into mission equipment and integration with seaframes. This effort includes integration management of mission modules with the seaframes, common processing systems, off board communications systems, aviation systems and common and mission package software products. Effort includes integration engineering at the waterfront in support of ships under construction and under 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 hardware/software elements into mission equipment and integration with seaframes. This effort includes integration management of mission modules with the seaframes, common processing systems, off board communications systems, aviation systems and common and mission package software products. Effort includes integration engineering at the waterfront in support of ships under construction and under initial testing. Manage and execute integration, assembly, test and checkout of technology refresh solutions for mission package computing environment, off board communications systems, including the full capability multi-vehicle communication system and the aviation communications systems. Initiate and lead development, integration and testing of the common mission module open architecture and associated architecture products and common mission package software baseline. Lead and manage execution of engineering change proposals required to integrate mission package systems and subsystems into LCS seaframes 1 through 4.			
Title: Training	13.063	7.623	17.255
Articles:	0	0	0
FY 2010 Accomplishments: Continued development of LCS Mission Modules Mine Counter Measure (MCM) team training capability. Added developed simulated fidelity for MCM launch handling and recovery of unmanned vehicles software development for additional training simulation. Conducted the initial Front End Analysis (FEA) with principal recommendation of a "Virtual Ship Centric" approach to integrate training with the LCS Seaframe that will culminate in a shore based training facility where essential tasks are trained using a virtual reality environment. Began FEA Phase II effort to analyze training curriculum development for transition to Navy Schoolhouses. Tested the simulated environment of the Networked Tactical Training System (NTTS) for transition from ONR Rapid Technology Transition (RTT) efforts to operator familiarization training. NTTS provides entry level MCM unmanned vehicles			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
maneuverability training at a reduced cost over Common Mission Package Trainer (CMPT). Continued development of CMPT and began effort to integrate CMPT into seaframe trainers to provide whole ship team training capability when delivered. Mission Module (MM) crews were provided training for MCM, ASW and SUW test events. Provided vendor training to new MM crew members. ***FY 2011 Plans:*** Complete development of and install LCS Mission Modules MCM team training capability to support Train to Certify KPP and begin development of CMPT software for SUW team training. Install and integrate CMPT into LCS Shore Based Training Facility (SBTF), perform initial instructor training on CMPT and integrate SBTF into Navy cooperative training environment to support Joint Synthetic training. Begin integration efforts of current MM training capability into the LCS Shore Based training facility. Begin the technical requirements development to integrate MM simulated training into the LCS Seaframe simulated training environment in preparation for a FY 12 connection. NTTS with MCM unmanned vehicle capability will deliver to the SBTF to replace ONR partial capability demonstration system. Begin training curriculum development. Provides initial training for navy instructors on MM simulated training environment. Provide MM crews training for formal MCM and SUW test events. Provide vendor training to replacement MM crew members in accordance with CSPPs. ***FY 2012 Plans:*** Begin transition to a team trainer capability of meeting Train to Certify KPP for team training certification requirements. Begin transition to SUW Gun Mission Module (GMM) Train to Certify capable system course. Initial classes for CMPT and NTTS will be performed to support Train To Certify KPP. Expand NTTS simulated training capability to include SUW mission and improve CMPT and NTTS MCM training capability as new systems are introduced. Begin new training capability development to incorporate findings from program test events. Complete MCM and SUW formal training curriculum instruction development. Procure and install MK-50 30mm Gun Mission Module (GMM) difference course materials at NSWC Damn Neck. Prepare for transition to FEA virtual ship centric training solution. Build courseware, integrate training, and train the trainers. Provide new MM crews and replacement sailors vendor and formal training in accordance with CSPPs.			
Title: Common Equipment	28.666	19.685	13.104
Articles:	0	0	0
FY 2010 Accomplishments: Mission Data Processing - Installed Mission Package Computing Environment (MPCE) onto LCS-1 and LCS-2 seaframes. Developmental testing of MPCE including Mission Package Operating Environment (MPOE) and Mission Package Services (MPS) software during LCS-1 early deployment. Developmental testing of MPCE during MCM and ASW MP end-to-end testing.			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Off-board Communications - Continued development of Multi-Vehicle Communications System (MVCS) for communications management with off-board vehicles. Installed and validated initial MVCS capability onto LCS 1 and 2. Aviation Interface - Continued development of the Helo Support Function to provide data paths from the mission vehicles via the H-60R/B helicopter to the seaframes. ***FY 2011 Plans:*** Mission Data Processing - Develop, test and validate technology refresh design for MPCE hardware and associated MPOE. Perform shipboard Engineering Change Proposals (ECPs) related to MPCE. Perform Open Architecture engineering initial analyses and studies of Open Architecture products. Define requirements for common mission package software and perform SW architectural studies and evaluate options for implementation. Off-board Communications - Continue Development towards full capability of the MVCS used for the management of off board vehicles. Integrate and test RT-1944/U radio terminal set with the mission modules and seaframes. Perform MVCS ECPs on mission module vehicles and LCS seaframes. Perform engineering design, testing and evaluation of communication systems for over-the-horizon range. Perform evaluation, integration testing and installation of cryptographic systems for unmanned vehicles. Aviation Interface - Continue development of the helo support function and helo support kits for employment on the SH-60B and M-60R helicopters. Perform engineering design, testing and evaluation of unmanned air vehicle sensor and communication payloads. Perform development of mission module aviation systems and subsystems for integration and installations on LCS seaframes and for supporting MP developmental test assets. ***FY 2012 Plans:*** Mission Data Processing - Finalize development, test and validation of technology refresh design for MPCE hardware and associated MPS and Operating Environment. Perform technology refresh implementation and shipboard installations and checkouts. Begin analyses and evaluation of next MPCE technology refresh requirements. Perform ECP's related to MPCE on existing land-based, portable control station and shipboard installed systems. Perform Open Architecture evaluations and initiate implementation. Begin implementation of common mission package software. Off-board Communications - Continue Development towards full capability of the MVCS used for the management of off board vehicles. Integrate and test RT-1944/U radio terminal set with the mission modules and seaframes. Continue developing and performing MVCS ECPs on mission module vehicles and LCS seaframes. 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.			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Aviation Interface - Continue development and begin implementation 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 installations of mission module aviation systems and subsystems on LCS seaframes and on developmental test assets.			
Title: Mine Countermeasures (MCM) Mission Package ***Articles:*** ***FY 2010 Accomplishments:*** Conducted at sea integration (end-to-end) testing on SEAFIGHTER FSF-1. Developed Mission Package Application Software (MPAS) build in support of end-to-end tests. Conducted initial integration with LCS sea frame. MCM MP Form, Fit, and Function Test on USS Independence. Corrected deficiencies observed during testing. Integration of USV and Sweep Systems into MCM MP. ***FY 2011 Plans:*** Conduct RMMV and USV launch, handling, and recovery test on USS Independence and USS Freedom. Conduct Integration Tests of MCM MP on LCS seaframe. Validate and verify test procedures and documentation. Develop MPAS build in Support of MCM MP Developmental Test (DT). Incorporate high priority problem trouble reports (PTRs). Conduct certification of MCM MP to include weapons system certification, Human Systems Integration, Information Assurance, and Safety. Continue development, integration and testing of USV and Sweep systems. Conduct MCM MP DT. ***FY 2012 Plans:*** Find, fix, and repair technical issues identified during integration and developmental testing. Develop next MPAS build in support of TECHEVAL. Conduct MCM MP TECHEVAL. Continue development, integration and testing of USV and Sweep systems. Procure Two Engineering Development Models (EDMs) of the USV and Sweep Systems upon UISS achieving Milestone B. Commence the initial design of Surface Mine Countermeasures Unmanned Undersea Vehicle with Low Frequency Broadband (SMCM UUV w/LFBB) on LCS	12.367 0	13.412 0	22.296 0
Title: Anti-Submarine Warfare (ASW) Mission Package ***Articles:*** ***FY 2010 Accomplishments:***	8.563 0	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Conducted additional at sea (end-to-end) testing to validate correction of deficiencies observed in FY09 AUTEC sea test. Prepared ASW MP #1 to conduct a single developmental test event (1QFY11) focused on the Low Frequency Bi-Static Mission Module employed in an operationally relevant environment.			
Title: Surface Warfare (SUW) Mission Package	66.536	26.500	26.364
Articles:	0	0	0
FY 2010 Accomplishments: Delivered Gun Mission Module (GMM) Engineering Development Model (EDM) #2, conducted environmental test series, and supported LCS1 USS Freedom on early deployment and Rim of Pacific (RIMPAC) test events. Delivered Surface-to-Surface Missile Module (SSMM) EDM #1. Navy/Army closed out the Non-Line of Sight-Launch System (NLOS-LS) Development and Demonstration (SDD) Contract. Conducted NLOS-LS alternative trade study as directed by OPNAV. Developed training and maintenance plans for the GMM. Completed the Maritime Security Module (MSM) design and delivered Engineering Development Model (EDM) MSM Berthing Modules to LCS-1 in support of early deployment. Conducted design and development of MSM Habitability container. Completed final integration test (FIT) check of the SUW MP (GMM AND SSMM) on LCS-2.			
FY 2011 Plans: Finalize GMM EDM #3 Design and Development. Conduct Structural Test Firing of GMM on LCS2 USS Independence. Conduct Development Test (DT) Planning and Execution. Executed revised SSMM as directed by OPNAV N86 based on Alternative Trade Study. Develop, design, engineer, and test Irregular Warfare (IW) training and medical containers.			
FY 2012 Plans: Find, fix, and repair technical issues identified during integration and developmental testing. Conduct regression testing on proposed fixes. Complete the development of GMM SUW MP #3. Provide developmental engineering support for logistical engineering data and technical publications. Conduct inspection acceptance of SUW MP #3. Incorporate all engineering changes required to resolve Developmental Testing issues identified during testing. Conduct work-ups and dry-runs in support of Initial Operational Test & Evaluation (IOT&E). Conduct IOT&E test events in 4th QTR 2012. Continue to develop, design, engineer, test, and certify the Irregular Warfare (IW) training and medical containers. Conduct system analysis and engineering trade studies for SSMM.			
Title: Mission Package Portable Control Station (MP-PCS) (Formally Portable Mission Package Computing Environment)	1.922	-	-
Articles:	0		
FY 2010 Accomplishments: Continued development and configuration of the MP-PCS to support mission package developmental tests. Provided mission processing and communications capability in support of several MCM and ASW MP tests at various test ranges and facilities. Conducted systems engineering, design, development, and integration tasks to support implementation of a MP-PCS core			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
capability. Tracked/coordinated the development and installation of the MP-PCS components within the transportable support containers. Performed software and hardware integration to support MPCE baseline. Revised Information Assurance plan and network topology, conducted system groom, performed test and checkout of MPCE and ancillary systems.			
Title: Pre-Production Engineering	4.136	-	-
Articles:	0		
FY 2010 Accomplishments: Convert existing ASW and SUW MP TDP data to needed format and develop any needed drawings to complete the MP TDP.			
Accomplishments/Planned Programs Subtotals	157.905	109.048	141.715

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 2127 : *Littoral Combat Ship*	1,076.669	1,059.335	1,802.093	0.000	1,802.093	1,766.847	1,781.697	1,852.080	1,534.828	Continuing	Continuing
• 1600 : *LCS Mission Modules*	80.387	82.951	79.583	0.000	79.583	112.538	158.857	262.383	311.801	Continuing	Continuing
• 4221: *LCS Module Weapons*	0.000	9.808	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• 0443 : *Aircraft Procurement, Navy*	90.777	47.484	191.986	0.000	191.986	166.843	191.110	158.060	179.932	Continuing	Continuing
• 5110: *Outfitting/Post Delivery*	2.654	2.787	54.059	0.000	54.059	89.466	112.861	193.147	210.549	Continuing	Continuing
• 1320: *LCS Training*	0.000	0.000	20.709	0.000	20.709	9.050	24.351	12.474	12.021	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.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy			DATE: February 2011
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 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
1.1 System Engineering	WR	NSWC PC:Panama City, FL	1.491	1.491	Dec 2010	9.032	Nov 2011	-		9.032	Continuing	Continuing	Continuing
1.1 System Engineering	WR	NSWC DD:Dahlgren, VA	2.000	0.950	Dec 2010	2.800	Nov 2011	-		2.800	Continuing	Continuing	Continuing
1.1 System Engineering	C/CPFF	Northrop Grumman:Beth Page, NY	4.000	-		2.300	Jan 2012	-		2.300	Continuing	Continuing	Continuing
1.1 System Engineering	WR	SPAWAR PAC:San Diego, CA	1.000	-		1.450	Nov 2011	-		1.450	Continuing	Continuing	Continuing
1.1 System Engineering	WR	NUWC NPT:Newport, RI	0.500	-		1.800	Dec 2011	-		1.800	Continuing	Continuing	Continuing
1.1 System Engineering	C/CPFF	CACI:Fairfax, VA	0.500	2.000	Dec 2010	0.500	Jan 2012	-		0.500	Continuing	Continuing	Continuing
1.4 Integration, Assembly, Test and Check	WR	NAWC AD:Patuxent River, MD	0.075	0.265	Feb 2011	0.794	Nov 2011	-		0.794	Continuing	Continuing	Continuing
1.4 Integration, Assembly, Test and Check	WR	SPAWAR PAC:San Diego, CA	0.705	0.289	Dec 2010	0.235	Nov 2011	-		0.235	Continuing	Continuing	Continuing
1.4 Integration, Assembly, Test and Check	WR	NUWC NPT:Newport, RI	0.350	0.297	Feb 2011	0.297	Dec 2011	-		0.297	Continuing	Continuing	Continuing
1.4 Integration, Assembly, Test and Check	WR	NSWC PC:Panama City, FL	-	-		2.000	Nov 2011	-		2.000	Continuing	Continuing	Continuing
1.4 Integration, Assembly, Test and Check	WR	SUPSHIP Gulfcoast:Pascagoula, MS	0.500	-		1.000	Feb 2012	-		1.000	Continuing	Continuing	Continuing
1.4 Integration, Assembly, Test and Check	WR	SUPSHIP Bath:Bath, ME	0.500	-		1.000	Feb 2012	-		1.000	Continuing	Continuing	Continuing
1.4 Integration, Assembly, Test and Check	WR	NSWC DD:Dahlgren, VA	0.408	1.350	Dec 2010	3.034	Nov 2011	-		3.034	Continuing	Continuing	Continuing
1.12 Common Equipment Development	WR	NSWC PC:Panama City, FL	57.162	10.908	Dec 2010	11.104	Nov 2011	-		11.104	Continuing	Continuing	Continuing
1.12 Common Equipment Development	C/CPFF	Northrop Grumman:Beth Page, NY	15.000	3.727	Jan 2011	-		-		-	Continuing	Continuing	Continuing

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

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
1.12 Common Equipment Development	WR	NUWC NPT:Newport, RI	5.500	2.329	Dec 2010	-		-		-	Continuing	Continuing	Continuing
1.12 Common Equipment Development	WR	NSWC DD:Dahlgren, VA	1.200	0.721	Nov 2010	-		-		-	Continuing	Continuing	Continuing
1.12 Common Equipment Development	WR	NAVAIR PMA266:Patuxent River, MD	2.500	2.000	Nov 2010	2.000	Nov 2011	-		2.000	Continuing	Continuing	Continuing
1.13 MCM MP	WR	NSWC PC:Panama City, FL	103.188	13.412	Feb 2011	16.296	Nov 2011	-		16.296	Continuing	Continuing	Continuing
1.13 MCM MP	WR	NSWC CD:Little Creek, VA	-	-		6.000	Feb 2012	-		6.000	Continuing	Continuing	Continuing
1.14 ASW MP	WR	Various:Various	153.473	-		-		-		-	Continuing	Continuing	Continuing
1.15 SUW MP	WR	NSWC DD:Dahlgren, VA	145.000	20.774	Mar 2011	22.927	Nov 2011	-		22.927	Continuing	Continuing	Continuing
1.15 SUW MP	WR	NSWC PHD:Port Hueneme, CA	4.000	2.000	Feb 2011	2.500	Dec 2011	-		2.500	Continuing	Continuing	Continuing
1.15 SUW MP	WR	SPAWAR PACIFIC:San Diego, CA	0.705	0.500	Feb 2011	0.937	Nov 2011	-		0.937	Continuing	Continuing	Continuing
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	
		Subtotal	511.729	63.013		88.006		-		88.006			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
1.5 Training	WR	NAWC TSD:Orlando, FL	5.033	1.900	Jan 2011	3.000	Jan 2012	-		3.000	Continuing	Continuing	Continuing
1.5 Training	WR	NSWC PC:Panama City, FL	8.000	2.823	Feb 2011	5.715	Nov 2011	-		5.715	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
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 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
1.5 Training	WR	NSWC PHD:Port Hueneme, CA	2.000	0.900	Feb 2011	2.500	Dec 2011	-		2.500	Continuing	Continuing	Continuing
1.5 Training	C/CPFF	AAC:Uniontown, PA	2.000	2.000	May 2011	3.800	Mar 2012	-		3.800	Continuing	Continuing	Continuing
1.5 Training	WR	CSCS:Dahlgren, VA	-	-		1.240	Feb 2012	-		1.240	Continuing	Continuing	Continuing
1.5 Training	WR	CNSF:San Diego, CA	-	-		1.000	Feb 2012	-		1.000	Continuing	Continuing	Continuing
		Subtotal	17.033	7.623		17.255		-		17.255			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
1.3 System Test and Evaluation	WR	NSWC PC:Panama City, FL	12.000	15.165	Feb 2011	16.183	Nov 2011	-		16.183	Continuing	Continuing	Continuing
1.3 System Test and Evaluation	WR	NSWC DD:Dahlgren, VA	15.000	9.500	Feb 2011	4.000	Nov 2011	-		4.000	Continuing	Continuing	Continuing
1.3 System Test and Evaluation	WR	NUWC NPT:Newport, RI	2.300	2.700	Feb 2011	1.200	Dec 2011	-		1.200	Continuing	Continuing	Continuing
1.3 System Test and Evaluation	WR	NSWC PHD:Port Hueneme, CA	1.500	2.500	Feb 2011	6.200	Dec 2011	-		6.200	Continuing	Continuing	Continuing
1.3 System Test and Evaluation	WR	SPAWAR PAC:San Diego, CA	0.683	2.962	Feb 2011	1.068	Nov 2011	-		1.068	Continuing	Continuing	Continuing
1.3 System Test and Evaluation	WR	COMOPTEVFOR:Norfolk, VA	-	1.435	Feb 2011	1.400	Jan 2012	-		1.400	Continuing	Continuing	Continuing
		Subtotal	31.483	34.262		30.051		-		30.051			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Workforce	Various	Various:Various	1.047	-		-		-		-	0.000	1.047	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
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 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
1.2 Program Management	C/CPFF	CACI:Fairfax, VA	21.538	4.150	Feb 2011	6.403	Dec 2011	-		6.403	Continuing	Continuing	Continuing
		Subtotal	22.585	4.150		6.403		-		6.403			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	582.830	109.048		141.715		-		141.715			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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 2012 Navy		DATE: February 2011
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

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3129				
SUW MP#2 Delivery	2	2010	2	2010
RIMPAC 10 w/SUW MP (LCS 1)	3	2010	4	2010
SUW/MCM MP Integration (LCS 1)	4	2010	1	2012
SUW/MCM MP Integration (LCS 2)	1	2011	3	2012
MCM MP DT (LCS 2)	4	2011	1	2012
SUW MP DT (LCS 1)	2	2012	2	2012
SUW MP#3 Delivery	2	2012	2	2012
SUW MP IOT&E (LCS 1)	4	2012	1	2013
MCM MP DT (LCS 1)	1	2012	2	2012
MCM MP Tech Eval (LCS 2)	4	2012	1	2013
SUW MP Tech Eval (LCS 1)	4	2012	1	2013
MCM MP IOT& E (LCS 2)	4	2012	1	2013
SUW MP DT (LCS 2)	1	2013	2	2013
SUW/MCM MP FOT&E	1	2013	4	2016
MCM MP Aviation Systems and Airframe Dynamic Interface Testing (LCS 2)	1	2010	2	2010
MCM Aviation Systems and Airframe Integration (LCS 2)	1	2011	4	2011
MCM MP Aviation Systems and Airframe Dynamic Interface Testing (LCS 1)	1	2011	2	2011
MCM MP Aviation Systems & Airframe Dynamic Interface Testing (LCS 2)	2	2011	3	2011
MCM MP Unmanned Systems DT I & II	3	2013	4	2013
MCM MP Unmanned Systems Operational Assessment	1	2014	2	2014
MCM MP Shipboard System MPCE vs.1.8 Install	2	2010	3	2010

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MCM MP Shipboard System MPCE vs.1.8 INCO	4	2010	2	2011
MCM MP Shipboard System MPCE vs.1.8 Test	3	2011	4	2011
MCM MP Shipboard System MVCS vs. 0.2 SQT SW 2.2	1	2010	2	2010
MCM MP Shipboard System MVCS vs. 2.2 Install	3	2010	4	2010
MCM MP Shipboard System MVCS vs. 2.2.3.2p BUILD	1	2011	2	2011
MCM MP Shipboard System MVCS vs. 2.2.3.2p INSTALL	3	2011	4	2011
MCM MP Shipboard System MVCS vs. 1.0.0 (SW 2.4) INSTALL	1	2012	3	2012
MCM MP Integration T&E (LCS 1)	4	2010	4	2011
MCM MP Integration T&E (LCS 2)	1	2011	3	2012
MCM MP E2E Phase 3 (Surrogate)	2	2010	1	2011
MCM MP OAMCM Operational Testing (LCS 2)	4	2011	2	2012
SUW MP GMM/EDM-2 Performance & Environmental T&E	2	2010	2	2011
SUW MP GMM/EDM-3 Acceptance T&E	1	2012	4	2012
SUW MP GMM-SSMM FIT	2	2010	4	2010
SUW MP GMM Structural Test Fire	3	2012	4	2012
SUW MP ORA/Deployment (LCS 1)	1	2010	3	2010

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
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 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
4018: *Littoral Combat Ship Construction*	96.847	41.565	44.912	-	44.912	9.968	4.979	-	-	0.000	198.271
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. The threats challenging our naval forces in the littorals include mines, attacks by small surface craft, and quiet diesel submarines armed with a variety of anti-ship weapons. Such threats have great potential to be effectively employed by many less capable countries and non-state actors to prevent access, and use, of littoral areas by U.S. forces.

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 12 January 2011:
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
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), 101.8 (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

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Construction	55.125	-	-
Articles:	0		
Description: Provides for the construction, production, test and trials of USS Freedom and USS Independence ships, including execution of Change Orders and procurement of Government Furnished Equipment (GFE). ***FY 2010 Accomplishments:*** Completion of USS Independence.			
Title: Outfitting and Post Delivery	41.722	41.565	44.912
Articles:	0	0	0
Description: Provides for the completion of ship outfitting to include: ship provisioning and fuel initial load out of repair parts, spares, and test equipment in accordance with allowance list ; providing technical manuals and required drawings; installation and validation of PMS and EOSS; crew training and completion of ship system certification requirements. Provides for the integration and testing of the Seaframe and separately acquired mission packages, implementation of instrumentation packages and validation of structural, sea keeping, hydrodynamic performance, emergent support during the execution of Post Delivery Test & Trials (PDT&T), Post-Shakedown Availability (PSA) to incorporate Engineering Change Proposals that allow for correction of trial card deficiencies, and mission critical upgrades, as required. ***FY 2010 Accomplishments:*** For USS Freedom: Conducted OF/PD efforts for the Early Deployment of USS Freedom. Initiated Post Shakedown Availability (PSA) planning efforts to include engineering, work package development, and procurement of long-lead materials. Performed emergent repairs to support the accomplishment of USS Freedom Post Delivery Test and Trials (PDT&T). Completed ship instrumentation and performed data collection and analysis of critical ship performance parameters. Conducted PDT&T events to validate ship system performance against requirements. For USS Independence: Completed initial outfitting of the ship. Performed emergent repairs in support of Industrial USS Independence Post Delivery Test and Trials (PDT&T). Conduct Industrial Post Delivery Availabilities (IPDA I and IPDA II) planning and execution for USS Independence to correct Trial Card discrepancies and incorporate critical safety and mission critical ECPs that must be completed prior to initiation of PDT&T. ***FY 2011 Plans:*** For USS Freedom:			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue PSA Planning efforts to include engineering, work package development, and procurement of materials. Review the projected work package for assignment of additional work items into two separate PSA periods (PSA 1 and PSA 2). Perform emergent repairs in support of PDT&T. Conduct Final Contract Trials (FCT) and provide Technical Support for the INSURV Board. Execute PSA 1 to include drydocking, correction of Trial Card discrepancies. Accomplishment of engineering changes and equipment repairs. For USS Independence: Plan and execute an Industrial Post Delivery Availability (IPDA 3) to accomplish critical work in preparation for possible ship deployment. Begin PSA Planning efforts to include engineering, work package development, and procurement of long-lead materials. Perform emergent repairs in support of PDT&T. ***FY 2012 Plans:*** For USS Freedom: Perform emergent repairs in support USS Freedom Post Delivery Test and Trials. Continue Execute PSA 2execution to complete remaining Trial Card corrections, engineering changes and equipment repairs. Perform emergent repairs in support of IPDA for USS Freedom Post Delivery Test and Trials. For USS Independence: Perform emergent repairs in support of IPDA for USS Independence Post Delivery Test and Trials. Complete Accomplish Final Contract Trials (FCT) and provide Technical Support for the INSURV Board. Correct Trial Card discrepancies and begin. Accomplish PSA execution, including Shock Foundations to include drydocking, correction of shock deficiencies, Trial Card correction, accomplishment of engineering changes and equipment repairs.			
Accomplishments/Planned Programs Subtotals	96.847	41.565	44.912

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 2127: *Littoral Combat Ship*	1,076.669	1,509.335	1,802.093	0.000	1,802.093	1,766.847	1,781.697	1,852.080	1,534.828	Continuing	Continuing
• 1600: *LCS Modules*	80.387	82.951	79.583	0.000	79.583	112.538	158.857	262.383	311.801	Continuing	Continuing
• 4221: *LCS Module Weapons*	0.000	9.808	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• 0443: *Aircraft Procurement, Navy*	90.777	47.484	191.986	0.000	191.986	166.843	191.110	158.060	179.932	Continuing	Continuing
• 5110: *Outfitting/Post Delivery*	2.654	2.787	54.059	0.000	54.059	89.466	112.861	193.147	210.549	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• 1320: *LCS Training*	0.000	0.000	20.709	0.000	20.709	9.050	24.351	12.747	12.021	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 different LCS designs, LCS 1-4, over two flights, Flight 0 and Flight 0+.

The Program office revised the Acquisition Strategy to support the Navy decision to continue with both designs. The incorporation of lessons learned from the design, construction, and testing of the initial two ships, as well as introduction of improved waterjets and a waterjet tunnel extension on the LM LCS design comprises the Flight 0+ baseline awarded in FY09. A new baseline will be implemented for both designs in the FY10-15 Block Buy.

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 is planned for the February 2011.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy			DATE: February 2011
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 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
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	625.000
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	23.648	8.365	Oct 2010	8.412	Oct 2011	-		8.412	0.000	40.425	
Post Delivery ECP	C/CPAF	Lockheed Martin - General Dynamics:Various	29.357	17.600	Oct 2010	0.500	Oct 2011	-		0.500	0.000	47.457	57.457
PSA/PSA Planning/INSURV/ OPTAR	WR	Various:Various	32.731	15.600	Oct 2010	36.000	Oct 2011	-		36.000	0.000	84.331	
		Subtotal	1,365.337	41.565		44.912		-		44.912	0.000	1,451.814	

Remarks

Final Ship Design/Mission Ship System Integration Team costs for LCS 1 and LCS 2 are not true construction costs, and although funds were obligated against the 4018 construction project contracts, these costs were associated with MSSIT/FSD for design completion.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
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 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	SUPSHIP:Various	0.460	-		-		-		-	0.000	0.460	
Other Program Costs	WR	Various:Various	11.000	-		-		-		-	0.000	11.000	
		Subtotal	11.460	-		-		-		-	0.000	11.460	

Remarks

Program Other Costs for USS FREEDOM and USS INDEPENDENCE

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Workforce	Various	Various:Various	0.221	-		-		-		-	0.000	0.221	
		Subtotal	0.221	-		-		-		-	0.000	0.221	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,377.018	41.565		44.912		-		44.912	0.000	1,463.495	

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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 2012 Navy		DATE: February 2011
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

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4018				
Milestone B	2	2011	2	2011
LCS 2 Delivery (Flight 0)	1	2010	1	2010
IPDA LCS 2	1	2010	2	2011
PSA LCS 1	3	2011	3	2012
Transit (XSIT) 1 (Fleet Cost)	1	2012	1	2012
Final Contract Trials	1	2012	1	2012
PSA LCS 2	2	2012	3	2012
Transit (XSIT) 2 (Fleet Cost)	3	2012	4	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
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 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: *Congressional Adds*	63.734	-	-	-	-	-	-	-	-	0.000	63.734
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 and Ship Construction.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011
Congressional Add: Revised Acquisition Strategy ***FY 2010 Accomplishments:*** Design review to include all existing change pages. Design update will include new FY10 block buy baseline changes, both government and contract initiated or in response to technology obsolescence, update and completion of a neutral format 3-D model. Update of all design documentation into an LCS Technical Data Package (TDP). Conduct a continuous independent review and approval by a Navy-led team to ensure LCS TDP is "industry neutral" so that any industry team can build the LCS, including reviews by other contractor/industry teams and special studies for affordability, commonality, and producability. Develop a detailed Interface Control Document (ICD) between the Selected Ship Systems (S3), which is predominately Combat and C4I systems and networks, and the seaframe to enable the seaframe and S3 to be independently procured. Update of industry TDP as necessary from baseline to enable use with FY12 block buy from a second industry source, with S3 provided as GFE.	59.751	-
Congressional Add: MIW Modules Prog - Cong ***FY 2010 Accomplishments:*** Funding is provided to research and study methods to employ mine warfare mission modules independently of the LCS platform.	3.983	-
Congressional Adds Subtotals	63.734	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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*

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Congressional Adds.