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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
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Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	3,503.940	256.455	86.705	118.416	-	118.416	92.021	69.468	53.579	41.030	Continuing	Continuing
3096: Littoral Combat Ship	954.376	160.587	86.705	110.209	-	110.209	75.391	66.168	51.279	40.030	Continuing	Continuing
3129: LCS Mission Package Development	1,012.312	91.000	-	-	-	-	-	-	-	-	-	1,103.312
4018: Littoral Combat Ship Construction	1,537.252	4.868	-	-	-	-	-	-	-	-	-	1,542.120
4506: LCS Training	0.000	-	-	8.207	-	8.207	16.630	3.300	2.300	1.000	Continuing	Continuing

Program MDAP/MAIS Code:
Project MDAP/MAIS Code(s): 374, 443

A. Mission Description and Budget Item Justification

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

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

UNCLASSIFIED

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B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	210.217	88.734	109.146	-	109.146
Current President's Budget	256.455	86.705	118.416	-	118.416
Total Adjustments	46.238	-2.029	9.270	-	9.270
• Congressional General Reductions	-	-0.029			
• Congressional Directed Reductions	-	-2.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	49.000	-			
• SBIR/STTR Transfer	-2.761	-			
• Program Adjustments	-	-	10.000	-	10.000
• Rate/Misc Adjustments	-0.001	-	-0.730	-	-0.730
Change Summary Explanation					
FY14 changes result from Project Unit 3129 transferred to PE 0603596N and congressional SBIR reductions. The Consolidated Appropriations Act of 2014 directed the creation of a separate Program Element (PE) for Project 3129, LCS Mission Package Development, in FY14. This resulted in a transfer of Project 3129's budget from the LCS PE (0603581N) to LCS Mission Modules (PE 0603596N). In order to continue to execute Project 3129 (0603581N) while PE 0603596N was being created, \$49M was reprogrammed back to PE 0603581N until PE 0603596N (3129) was created in FY14.					
In FY16, LCS Total System Training Architecture transferred from Project Unit 3096 to Project Unit 4506.					
The FY 2016 funding request was reduced by \$20 million to account for the availability of prior year execution balances.					
The FY 2016 funding request was increased by \$30 million in order to support the RDTE efforts for the Modified LCS.					

UNCLASSIFIED

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Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP				Project (Number/Name) 3096 / Littoral Combat Ship			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3096: Littoral Combat Ship	954.376	160.587	86.705	110.209	-	110.209	75.391	66.168	51.279	40.030	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 374												
A. Mission Description and Budget Item Justification												
The RDT&E portion of the LCS Program is comprised of design and development efforts required to field the LCS Class Ships, including integration with the Mission Packages (MCM, ASW and SUW) activities both pre and post delivery. It includes the design and development effort required to support the introduction and deployment of a Flight 0+ baseline (LCS 3/4 And Follow) with incorporation of lessons learned from the design and construction of USS Freedom (LCS 1) and USS Independence (LCS 2). Additionally, it includes design, development, issue resolution, certification and testing 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, ship system design and integration, hull platform testing, development of Technical Data Packages (TDPs), total ship system engineering and integration, combat systems and warfare systems certification, and planning and conduct of system testing. These efforts include procurement of combat and warfare system elements and/or simulators to support production representative testing in support of design, development, and certification efforts and ordnance in support of testing. The RDT&E 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. The funding in FY16 for the Modified LCS includes efforts to conduct system engineering efforts to execute system requirements review (SRR) and prepare for future preliminary design review (PDR), including decomposing CDD requirements into system and warfare system element specifications, defining logical and physical interfaces, finalizing warfare system element selections, and conducting analyses to refine acquisition and contracting approaches for the modified LCS systems.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: LCS System-of-Systems Development, Engineering & Experimentation								25.418	18.200	23.705	-	23.705
								Articles: -	-	-	-	-
Description: Provides for LCS Program systems engineering in support of Flight 0, Flight 0+, the FY10 Block Buy baseline design, and future procurement baseline design, development, certification, and production												

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
(including ship system design and integration); combat system and C4I design, integration, and test; aviation (manned and unmanned) integration; modular mine countermeasure (MCM), anti-submarine warfare (ASW), and surface warfare (SUW) mission package (MP) integration; logistics product development; and various systems engineering activities required to perform risk analyses of new design and production technology concepts. FY 2014 Accomplishments: Flight 0 Baseline: Provided systems engineering support for Seaframe and MCM Technical Evaluation (TECHEVAL) and Initial Operational Test and Evaluation (IOT&E) on USS Independence. Provided systems engineering support for the Seaframe and ASW capability integration on USS Freedom. Flight 0+ and FY10 Block Buy Baselines: Provided systems engineering support for Seaframe and SUW MP OT, TECHEVAL, IOT&E, and TSST on USS Fort Worth. Provided systems engineering support for Seaframe DT on USS Coronado. Began planning for TSST on USS Fort Worth and USS Coronado and for FSST on USS Milwaukee and USS Jackson. Conducted the Aluminum Compartmentalization on the Independence Variant to support LFT&E requirements. Provided Seaframe and Mission Systems engineering support to investigate, design, and develop technical solutions for design and production issues identified during USS Independence IOT&E. Provided Seaframe and Mission Systems engineering support for Combat Systems Software Development in support of USS Milwaukee and USS Jackson Builders Sea Trials preparations and execution. Continued support for Navy Classification design site including facility, IDE support, and engineering support for drawing review. Developed technical and performance baseline for future ship procurements based on systems design and testing execution. Conducted studies in support of development of future technical and performance baseline design upgrades. FY 2015 Plans: Flight 0 Baseline: Provide systems engineering support for completion of Seaframe and MCM Technical Evaluation (TECHEVAL) and Initial Operational Test and Evaluation (IOT&E) on USS Independence. Continue systems engineering support for ASW capability integration on USS Freedom. Flight 0+ and FY10 Block Buy Baselines: Provide systems engineering support for Seaframe and SUW MP OT, TECHEVAL, and IOT&E on USS Coronado. Continue engineering support for planning and conduct TSST on LCS 4. Continue FSST planning							

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
on LCS 5 and 6. Provide engineering support for MP/DT and ASW DT on USS Milwaukee. Provide Seaframe and Mission Systems engineering support to investigate, design, and develop technical solutions for design on both Freedom and Independence Class Ships. Finalize technical and performance baseline for future ship procurements based on systems design and testing execution. Continue conducting studies in support of development of future technical and performance baseline design upgrades.						
FY 2016 Base Plans: Flight 0+ and FY10 Block Buy Baselines: Provide systems engineering support for Seaframe and ASW MP IOT&E on USS Milwaukee. Provide systems engineering support for Seaframe and ASW MP DT and ASW MP IOT&E on USS Jackson. Conduct FSST preparation, execution, and repairs on USS Milwaukee and USS Jackson. Provide systems engineering support for Seaframe and MCM MP DT, on USS Detroit. Provide Seaframe and Mission Systems engineering support to certify equipment to include oversight of design changes required for any re-certification. Finalize technical and performance baseline for future ship procurements based on systems design and testing execution. Continue conducting studies in support of development of future technical and performance baseline design upgrades.						
FY 2016 OCO Plans: N/A						
Title: LCS Total System Training Architecture		72.381	19.547	-	-	-
Articles:		-	-	-	-	-
Description: LCS is a minimally-manned ship, and the small crew size, combined with LCS's complex mission, does not allow adequate time for shipboard "on-the-job" training to achieve LCS operational availability. Consequently, LCS uses a Train-to-Qualify (T2Q)/Train- to-Certify (T2C) training process in an off-ship/shore-based virtual ship trainer environment, using simulators, and blended training solutions focused on both tactical and equipment operations and maintenance training. When completed, the LCS shore-based training capability will satisfy individual, team, unit, and force training, with an objective of meeting Capability Development Document (CDD) T2Q Key Performance Parameter (KPP) requirements.						
FY 2014 Accomplishments: Through the Training System Executive Agent (TSEA), Mission Bay Trainer development contract efforts culminated in contract award in Nov 2013 and execution is under way. Awarded a contract for development of Virtual Ship Training System (VSTS) electronic classrooms. Conducted the Combat Systems JDTA and continued to pursue instructor-led and interactive courseware development, coordinated LCS Training						

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Facility Electronic Infrastructure and Infrastructure Integrated Product Team (LTF EII IPT) efforts, completed development of Learning Management System (LMS) installation and configuration requirements, and continued LCS Training Facility (LTF) San Diego Department of Defense (DoD) Information Assurance (IA) Certification and Accreditation (C&A) Package (DIACAP) development/management. Continued development of courseware in support of Hull, Mechanical, and Electrical (HM&E) system operations and preventative maintenance courses. Executing Phase II of the LCS 1 Integrated Tactical Trainer upgrade. FY 2015 Plans: RDTE funding for NAWCTSD goes to Contracting, Research and Engineering, Test and Evaluation, Logistics and Industrial Ops, and Finance management support and travel requirements as the LCS Training System Executive Agent. Funding is provided for completion of VSTS development and development and oversight of Virtual Reality (VR) Deck courseware for the LCS. CSCS is funded as the Training Support Agent (TSA) for fielding LCS 1 and LCS 2 Integrated Tactical Trainers (ITTs) and delivery of instruction. Delivery of instruction tasks include: oversight/management, curriculum maintenance, oversight of simulator maintenance, facility operating costs (phones, building maintenance etc.), and repair parts support for Littoral Combat Ship Training Facility (LTF) Level One trouble tickets. Funding also goes to continued LCS training Facility (LTF) San Diego Department of Defense (DoD) Information Assurance (IA) Certification and Accreditation (C&A) Package (DIACAP) development/management. FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A						
Title: LCS Test & Evaluation Articles: Description: Execute formal LCS Developmental Testing and Operational Testing (DT/OT), including Live Fire Test and Evaluation (LFT&E), and procurement of T&E Ordnance. Execute DT and C4I integration, and test; aviation (manned and unmanned) integration; modular mine countermeasure (MCM), anti-submarine warfare (ASW), and surface warfare (SUW) mission package (MP) integration. FY 2014 Accomplishments: Flight 0 baseline:		62.788 -	48.958 -	56.504 -	- -	56.504 -

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Conducted DT/Rough Water trials on USS Independence. Continued Surface Warfare (SUW), Air Defense (AD) and Mine Counter Measure (MCM) developmental testing on USS Independence.						
Flight 0+ baseline: Conducted Vertical Takeoff Unmanned Aerial Vehicle (VTUAV) Dynamic Interface testing on LCS 3 and LCS 4. Conducted seaframe and SUW DT events for LCS 3 and LCS 4. Conducted Techeval and IOT&E for the Seaframe and SUW MP on LCS 3. Continued planning for LCS 3 and LCS 4 TSST. Conducted TSST on LCS 3. Began planning and pre trial analysis for FSST on LCS 5 and 6. Continued planning for Multi-Compartment Surrogate test (fire and blast) to support LFT&E. Conducted other LFT&E related surrogate tests: Tensile Tearing tests and Intermediate Scale Fire tests related to welded aluminum structures. Began developing Detailed Design Integrated Survivability Assessment Reports (DDISAR) for LCS Freedom and LCS Independence. Planned and conducted sea-based 57mm lethality testing.						
FY 2015 Plans: Flight 0 Baseline: Complete DT/Rough Water Trials on USS Freedom. Complete TECHEVAL and Initial Operability Test and Evaluation (IOT&E) on USS Independence with the MCM MP.						
Flight 0+ Baseline: Conduct SUW MP DT, TECHEVAL, and IOT&E on LCS 4 with the SUW MP. Continue planning for TSST on LCS 4. Continue planning and pre-trial analysis for LCS 5 and LCS 6 FSST. Complete planning for Multi-Compartment Surrogate test to support LFT&E. Continue developing Detailed Design Integrated Survivability Assessment Report (DDISAR) for LCS Freedom and LCS Independence.						
FY 2016 Base Plans: Flight 0+ Baseline: Conduct LCS 4 TSST. Conduct ASW MP/DT on LCS 5 and LCS 6. Continue planning for LCS 5 and LCS 6 FSST. Conduct LCS 5 and LCS 6 FSST. Conduct Multi-Compartment Surrogate test (fire and blast) to support LFT&E. Complete Detailed Design Integrated Survivability Assessment Report (DDISAR) for LCS Freedom and LCS Independence. Begin developing the final Survivability Assessment Report (SAR).						
FY 2016 OCO Plans: N/A						
Title: Modified LCS		-	-	30.000	-	30.000

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles: Description: Modified LCS (M-LCS) will be a more lethal and survivable multi-mission warship focusing on anti-surface warfare and anti-submarine warfare capabilities (SUW/ASW) but maintaining the ability to reconfigure with mission modules for increased capability as desired. M-LCS adds significant capability while maximizing LCS investments made to date in the small surface combatant force. Modifications will likely include over-the-horizon surface-to-surface missile system, upgraded Air Defense weapons and sensors, advanced electronic warfare system and improved decoys, towed array system for ASW and torpedo defense, and 25mm guns. FY 2014 Accomplishments: N/A FY 2015 Plans: N/A FY 2016 Base Plans: Conduct system engineering efforts to execute system requirements review (SRR) and prepare for future preliminary design review (PDR), including decomposing CDD requirements into system and warfare system element specifications, defining logical and physical interfaces, finalizing warfare system element selections, and conducting analyses to refine acquisition and contracting approaches for the modified LCS systems. Conduct ship preliminary design, naval architecture, machinery engineering, trade-off studies, and topside design analysis for both LCS ship variants to integrate warfare system, vulnerability, and recoverability improvements. Fund LCS shipbuilders and prime integrators to assess weight reduction initiatives and design feasibility of improved systems on LCS Class ships no later than FY19. FY 2016 OCO Plans: N/A	-	-	-	-	-
Accomplishments/Planned Programs Subtotals	160.587	86.705	110.209	-	110.209

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 2127: <i>Littoral Combat Ship</i>	1,829.174	1,427.049	1,436.991	-	1,436.991	1,510.341	1,544.144	1,273.343	1,733.929	10,564.968	28,565.740
• 1600: <i>LCS Common Mission Modules Equipment</i>	35.966	30.938	23.500	-	23.500	23.991	14.775	15.844	17.083	Continuing	Continuing

UNCLASSIFIED

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 5110: Outfitting/Post Delivery	68.165	112.016	200.370	-	200.370	191.789	179.514	219.624	122.649	1,506.200	2,683.800
• 1320: LCS Training Equipment	23.426	9.630	59.031	-	59.031	3.117	4.060	18.076	18.466	Continuing	Continuing
• 0944: LCS Class Support Equipment	47.078	25.742	48.399	-	48.399	90.113	84.384	89.685	85.860	Continuing	Continuing
• 1601: LCS MCM Mission Modules	34.885	15.270	85.151	-	85.151	151.019	139.386	144.697	67.338	Continuing	Continuing
• 1602: LCS AWS Mission Modules	-	-	-	-	-	32.681	53.750	54.025	55.013	Continuing	Continuing
• 1603: LCS SUW Mission Modules	19.481	14.750	35.228	-	35.228	35.587	38.040	39.008	40.164	Continuing	Continuing
• 1605: Remote Minehunting System (RMS)	-	-	-	87.627	87.627	68.409	58.457	58.003	37.371	Continuing	Continuing
• 3129: LCS Mission Modules	105.682	176.948	206.149	-	206.149	125.761	57.067	46.582	39.463	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
The LCS program takes an evolutionary approach to acquisition that emphasizes competition as a key to achieving affordability. Initially, two industry teams competed against each other with two distinctly different LCS designs. The decision produced two flights with a vessel from each design: Flight 0 (LCS 1 and LCS 2); and Flight 0+ (LCS 3 and out). The Flight 0+ baseline incorporates lessons learned from the design, construction, and testing of the Flight 0 ships. The Navy conducted a limited competition amongst the existing LCS industry teams or team participants for the award of a contract for the construction of a block buy of up to ten (10) LCS Flight 0+ Class ships, with an objective of competitively awarding a single contract to a single industry team. By Acquisition Decision Memorandum of December 23, 2010, the USD (AT&L) authorized execution of an alternative acquisition strategy for the FY 2010 through FY 2015 procurement of 20 seaframes through two ten-ship block buy contracts. On December 29, 2010, the Navy awarded two contracts for block buys of up to ten ships, beginning with the award to each contractor of one FY 2010 ship and associated non-recurring engineering, the development of the Technical Data Package (TDP), core class services, and associated data. This was followed by the contractual funding of one ship to each contractor in FY 2011 and two ships each funded in FY 2012 through FY 2014. On October 17, 2014 USD(AT&L) approved the Navy's plan to procure three ships in FY 2015 and three ships in FY 2016 by modifying the current block buy contracts. The modification to each of the block buy contracts will complete the previously approved 20 ship block buy and add options for the remaining two FY 2016 ships for a total of 26 LCS. The Navy is developing a follow on Acquisition Strategy for FY 2017 - 2018 which will complete the 32 ship portion of the LCS program. As required by the December 10, 2014 SECDEF Memo on the Littoral Combat Ship Program Way Ahead, the Navy is currently developing an Acquisition Strategy to support design and procurement of Modified LCSs no later than FY 2019.											

UNCLASSIFIED

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E. Performance Metrics The LCS Program achieved Milestone A and Program Initiation in May 2004 and Milestone B in February 2011. The LCS program conducts annual Defense Acquisition Board In-Process Reviews (DAB IPRs). The first Seaframe and Mission Module integrated program DAB IPR was conducted in January 2013 and is held in September thereafter.		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP						Project (Number/Name) 3096 / Littoral Combat Ship			
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LCS 1 & 2 Shore Trainers	C/CPAF	LM, BIW : Various	56.536	-		-		-		-		-	Continuing	Continuing	Continuing
Program Office Support	Various	Various : Various	9.100	10.600	Jul 2014	4.460	Mar 2015	-		-		-	Continuing	Continuing	Continuing
Training Development - Support	WR	NAWC TSD : Orlando, FL	10.413	5.618	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
LCS1 & LCS2 Bridge Part Task Trainers	SS/FFP	Computer Sciences Corp. (CSC) : Falls Church, VA	4.578	-		2.404	May 2015	-		-		-	Continuing	Continuing	Continuing
LCS1 & LCS2 TAO Trainers	C/CPFF	Northrop Grumman Corp. : Falls Church, VA	2.531	3.673	May 2014	2.107	May 2015	-		-		-	Continuing	Continuing	Continuing
LCS Mission Bay Trainer	C/FFP	Cubic Corp : Orlando, FL	3.112	25.171	May 2014	5.576	May 2015	-		-		-	Continuing	Continuing	Continuing
Training Development - Support	WR	Various : Various	8.266	4.995	Nov 2013	1.600	Nov 2014	-		-		-	Continuing	Continuing	Continuing
Training Development - Industry	C/CPAF	Lockheed Martin : Various	10.800	2.500	May 2014	1.000	May 2015	-		-		-	Continuing	Continuing	Continuing
Training Operations	WR	NSWC DD/CSCS : Various	2.340	3.250	Nov 2013	2.400	Nov 2014	-		-		-	-	7.990	-
Distance Support	WR	NAWC TSD : Orlando, FL	4.900	-		-		-		-		-	-	4.900	-
Virtual Ship Training System (VSTS)	C/FFP	TBD : TBD	0.000	9.475	Jul 2014	-		-		-		-	9.170	18.645	-
Deck IVSE	C/FFP	TBD : TBD	0.000	-		-		-		-		-	-	-	-
Combat Systems IVSE	C/FFP	TBD : TBD	0.000	-		-		-		-		-	-	-	-
Readiness Control Officer LCS 1 IVSE	C/FFP	Cubic Corp : Orlando, FL	2.472	-		-		-		-		-	-	2.472	-
Readiness Control Officer LCS 2 IVSE	C/FFP	Cubic Corp : Orlando, FL	0.000	2.503	Dec 2013	-		-		-		-	-	2.503	-
Mission Bay Trainer Haptics IVSE	C/FFP	Cubic Corp : Orlando, FL	0.000	4.596	Mar 2014	-		-		-		-	-	4.596	-

UNCLASSIFIED

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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Plant Technician (EPT) LCS 1 IVSE	C/FFP	Cubic Corp : Orlando, FL	15.483	-		-		-		-		-	-	15.483	-
Engineering Plant Technician (EPT) LCS 2 IVSE	C/FFP	Cubic Corp : Orlando, FL	15.174	-		-		-		-		-	-	15.174	-
Class Design Services	SS/CPAF	LM, GD : Various	48.340	-		-		-		-		-	-	48.340	-
Final Design(Flight 0)	C/CPAF	LM, BIW : Various	175.263	-		-		-		-		-	-	175.263	-
Flight 0 C41	WR	PEO C41 : Various	5.506	-		-		-		-		-	-	5.506	-
SH-60B Datalink	C/CPAF	LM, BIW : Various	2.435	-		-		-		-		-	-	2.435	-
Modified LCS Common Software Architecture	C/BA	Industry : TBD	0.000	-		-		5.000	Mar 2016	-		5.000	-	5.000	-
Modified LCS Software Integration	C/BA	Industry : TBD	0.000	-		-		14.000	Mar 2016	-		14.000	-	14.000	-
Subtotal			377.249	72.381		19.547		19.000		-		19.000	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NSWC/DD : Dahlgren, VA	53.029	6.490	Mar 2014	5.521	Nov 2014	7.229	Nov 2015	-		7.229	Continuing	Continuing	Continuing
Government Engineering Support	WR	NSWC/PC : Panama City, FL	25.682	1.854	Mar 2014	0.451	Feb 2015	0.369	Nov 2015	-		0.369	Continuing	Continuing	Continuing
Government Engineering Support	WR	NUWC : Newport, RI	9.311	0.265	Dec 2013	0.098	Feb 2015	0.457	Nov 2015	-		0.457	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWC AD : Pax River, VA	22.533	1.456	Mar 2014	1.073	Feb 2015	0.752	Nov 2015	-		0.752	Continuing	Continuing	Continuing
Government Engineering Support	WR	NSWC/CR : Crane, IN	16.776	0.625	Jan 2014	0.321	Feb 2015	0.122	Nov 2015	-		0.122	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP						Project (Number/Name) 3096 / Littoral Combat Ship			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NSWC/SSES : Philadelphia, PA	56.745	9.043	Dec 2013	4.000	Feb 2015	6.440	Nov 2015	-		6.440	Continuing	Continuing	Continuing
Government Engineering Support	Various	Government Activities : Various	35.898	6.596	Mar 2014	5.526	Nov 2014	7.436	Nov 2015	-		7.436	Continuing	Continuing	Continuing
Contractor Engineering Support	C/CPAF	Alion/CSC : Arlington, VA	46.613	0.600	Mar 2014	1.210	Feb 2015	0.900	Nov 2015	-		0.900	Continuing	Continuing	Continuing
Contractor Engineering Support	C/CPAF	Various : Various	18.473	-		-		-		-		-	Continuing	Continuing	Continuing
Modified LCS Design	C/BA	Industry : TBD	0.000	-		-		1.500	Mar 2016	-		1.500	-	1.500	-
Modified LCS Design	WR	NSWC/DD : Dahlgren, VA	0.000	-		-		4.000	Nov 2015	-		4.000	-	4.000	-
Modified LCS Design	WR	NSWC/PHD : Port Hueneme, CA	0.000	-		-		0.500	Nov 2015	-		0.500	-	0.500	-
Subtotal			285.060	26.929		18.200		29.705		-		29.705	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation	C/CPAF	Alion/CSC : Arlington, VA	22.290	7.931	Dec 2013	1.623	Feb 2015	1.256	Jul 2016	-		1.256	Continuing	Continuing	Continuing
Test & Evaluation	WR	NSWC/PHD : Port Hueneme, CA	41.441	9.652	Dec 2013	4.285	Oct 2014	3.238	Nov 2015	-		3.238	Continuing	Continuing	Continuing
Test & Evaluation	WR	NSWC/SSES : Philadelphia, PA	43.990	11.911	Dec 2013	13.288	Feb 2015	17.229	Nov 2015	-		17.229	Continuing	Continuing	Continuing
Test & Evaluation	WR	NSWC/PC : Panama City, FL	12.898	2.955	Mar 2014	0.475	Oct 2014	0.480	Nov 2015	-		0.480	Continuing	Continuing	Continuing
Test & Evaluation	WR	COMOPTEVFOR : Norfolk, VA	10.011	2.845	Dec 2013	1.278	Nov 2014	0.834	Nov 2015	-		0.834	Continuing	Continuing	Continuing
Test & Evaluation	WR	NSWC/COR : Corona, CA	10.837	2.950	Jan 2014	3.203	Feb 2015	1.800	Nov 2015	-		1.800	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP						Project (Number/Name) 3096 / Littoral Combat Ship			
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation	WR	Various : Various	54.098	9.274	May 2014	5.404	Oct 2014	0.785	Nov 2015	-		0.785	Continuing	Continuing	Continuing
Test & Evaluation	C/CPAF	LM/GD : Various	45.576	10.745	May 2014	7.949	Apr 2015	30.882	Feb 2016	-		30.882	Continuing	Continuing	Continuing
Test & Evaluation	WR	PEO C4I : Charleston, SC	8.808	2.754	Dec 2013	-		-		-		-	Continuing	Continuing	Continuing
T&E Ordnance	WR	PEO IWS : Various	7.277	0.260	Dec 2013	11.453	Oct 2014	-		-		-	Continuing	Continuing	Continuing
Modified LCS LFT&E	C/BA	Industry : TBD	0.000	-		-		2.000	Mar 2016	-		2.000	-	2.000	-
Subtotal			257.226	61.277		48.958		58.504		-		58.504	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Modified LCS Prog Mgmt Spt	C/CPFF	CSC : Arlington, VA	0.000	-		-		1.500	Nov 2015	-		1.500	-	1.500	-
Modified LCS Prog Mgmt Spt	WR	NSWC/SSES : Philadelphia, PA	0.000	-		-		1.500	Nov 2015	-		1.500	-	1.500	-
Program Management Support- SEAPORT	C/CPAF	Alion/CSC : Arlington, VA	20.593	-		-		-		-		-	Continuing	Continuing	Continuing
Program Management Support	Various	Various : Various	12.212	-		-		-		-		-	Continuing	Continuing	Continuing
Program Management Support - Design	C/CPAF	Various : Arlington, VA	2.036	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			34.841	-		-		3.000		-		3.000	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			954.376	160.587		86.705		110.209		-		110.209	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy

Date: February 2015

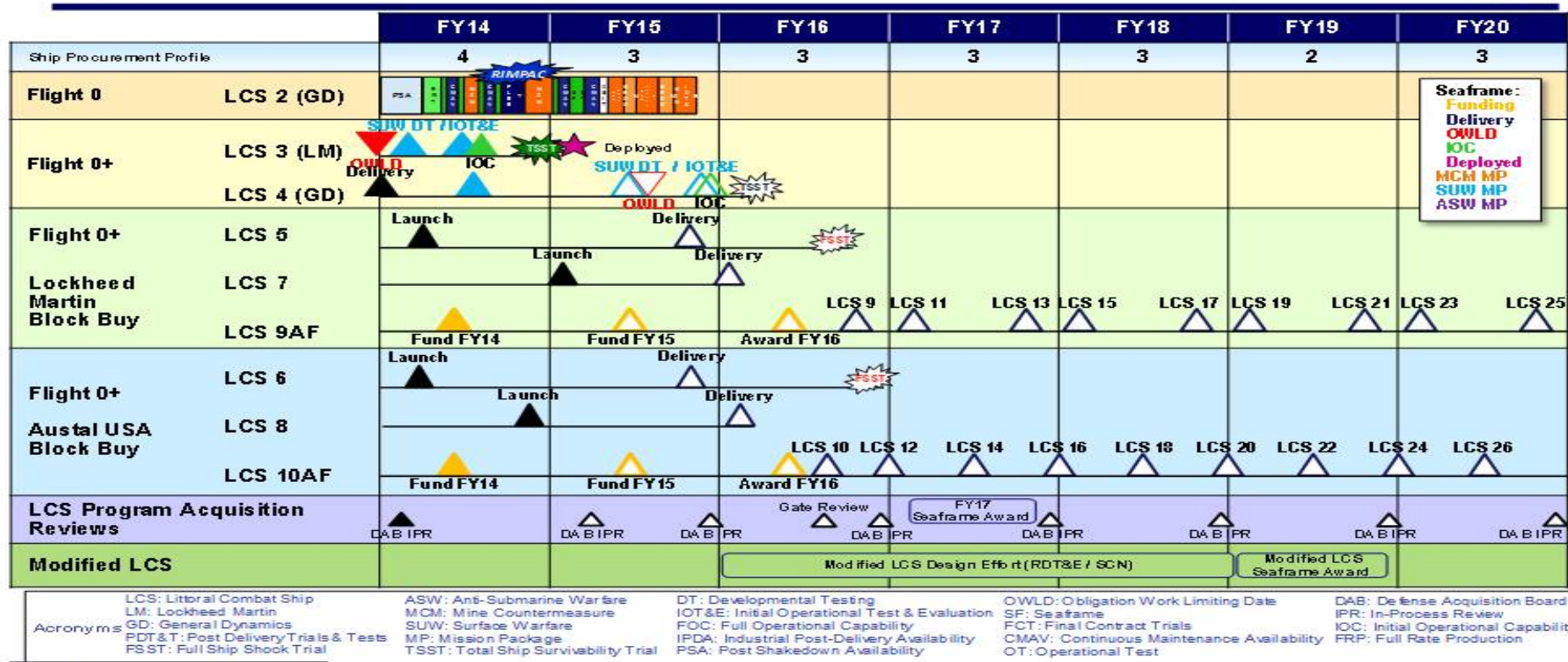
Appropriation/Budget Activity
1319 / 4

R-1 Program Element (Number/Name)
PE 0603581N / (U)LITTORAL COMBAT
SHIP

Project (Number/Name)
3096 / Littoral Combat Ship



LCS Seaframe Program Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP	Project (Number/Name) 3096 / Littoral Combat Ship	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3096				
Post Delivery DT 3- LCS 2: Flight 0: Post Delivery Developmental Testing (DT) with MCM MP	2	2014	3	2014
Post Delivery DT 3- LCS 4: Flight 0: Post Delivery Developmental Testing (DT) with SUW MP	2	2014	3	2015
TECHEVAL- LCS 2: Flight 0: Technical Evaluation(TECHEVAL) with MCM MP	3	2015	3	2015
TECHEVAL - LCS 4: Flight 0: Technical Evaluation(TECHEVAL) with SUW MP	3	2015	3	2015
IOT&E- LCS 2: Flight 0: Initial Operational Test and Evaluation (IOT&E) with MCM MP	4	2015	4	2015
IOT&E - LCS 4: Flight 0: Initial Operational Test and Evaluation (IOT&E) with SUW MP	4	2015	4	2015
Post Delivery DT 4- LCS 2: Flight 0: Post Delivery Developmental Testing (DT)	1	2015	1	2015
TSST - LCS 3: Total Ship Survivability Trial (TSST) LCS 3	4	2014	1	2015
TSST - LCS 4: Total Ship Survivability Trial (TSST) LCS 4	1	2016	1	2016
FSST - LCS 5: LCS 5 FSST	3	2016	4	2016
FSST - LCS 6: LCS 6 FSST	4	2016	1	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP				Project (Number/Name) 3129 / LCS Mission Package Development			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3129: LCS Mission Package Development	1,012.312	91.000	-	-	-	-	-	-	-	-	-	1,103.312
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 443												

A. Mission Description and Budget Item Justification

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

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

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

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP	Project (Number/Name) 3129 / LCS Mission Package Development
Reconnaissance Module (CMRM) will allow detection of minefield patterns and obstacles from an embarked Fire Scout VTUAV, and the Buried Mine Module will allow detection of buried mines. When complete, the MCM mission package will provide full capability against floating, tethered, bottom, and buried mines. The ASW mission package enables LCS to conduct detect-to-engage operations against modern submarines that pose a threat. Specific ASW capabilities include protecting forces in transit, protecting joint operating areas, and establishing ASW barriers. ASW modules developed to provide the warfighter capabilities that can be employed for ASW area search as well as high value unit escort missions. Module components include a torpedo countermeasures system, a Variable Depth Sonar, and a Multi-Function Towed Array. The Aviation Module offers airborne threat localization and engagement capability through a Fire Scout VTUAV and an MH-60R with MK54 torpedoes. The individual systems are combined into three modules: Torpedo Defense Countermeasure; ASW Escort/Large area Clearance; and Aviation Module. The SUW mission package increases firepower and offensive/defensive capabilities against large numbers of highly maneuverable, fast, small craft threats, giving LCS the ability to protect the sea lanes and move a force quickly through a choke point or other strategic waterway. With the SUW mission package embarked, LCS has enhanced detection and engagement capability against enemy small craft and similar littoral surface threats. The SUW mission package is comprised of several modules including the Gun Mission Module (GMM). The GMM is comprised of two high velocity 30mm cannons and is augmented with the ship's 57mm gun to counter close in to mid-range threats. The Aviation Module uses the embarked MH-60R helicopter with Hellfire missile and the MQ-8B Fire Scout Vertical Take-off and Landing Tactical Unmanned Aerial Vehicle (VTUAV) - for the detection, identification, and classification of surface contacts and to engage long range threats. The Maritime Security Module supports the embarkation of a Visit, Board, Search, and Seizure (VBSS) team. The Surface to Surface Missile Module (SSMM) will provide missile coverage for mid-range threats and small boats. The LCS Mission Modules Common Equipment consists of enabling products required by all mission packages to provide common hardware interfaces, computer operating environment, communications systems, aviation interface systems and portable development & integration test-sets. Common hardware interfaces include definition, installation and control of mechanical, electrical and cooling requirements common to all mission packages. The Mission Package Computing Environment (MPCE) provides common services and Operating Environment to support all Mission Package Application Software and Open Architecture Products. The Multi-Vehicle Communications System (MVCS) enables the control and data exchange of simultaneous unmanned mission vehicles and the Seaframes. Aviation interface systems include integration and management of data communications, data processing and physical hardware interfaces such as common equipment and containers used by all mission packages. Development and integration test-sets provide a mobile operating environment installed in the Mission Package Portable Control Stations (MP-PCS) to serve as a surrogate Seaframe during mission package development and integration test events at test ranges. Per the FY14 Appropriations Act, the LCS Mission Modules Program has been assigned its own PE of 0603596N. Prior year funding is located in PE 0603581N. FY14 funding was transferred to the greatest extent practicable.		

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP	Project (Number/Name) 3129 / LCS Mission Package Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2014	FY 2015	FY 2016 Base
Title: System Engineering					FY 2016 OCO
					FY 2016 Total
Articles:			4.859	-	-
			-	-	-
FY 2014 Accomplishments: Supported Capability Production Document (CPD) for SUW Increment III, MCM Increment II/III development. Provided SE guidance to the TSRs, CCBs, RMB, PPP and RAM-C Working group and others as identified in the LCS MM SEP. Coordinated and provide guidance for all LCS MP SETR events including but not limited to the following: PDR, CDR, SRR, TRR. Provided management oversight for the Configuration Control Board including reviewing and approving ECPs. Negotiate connection agreements with Littoral Combat Ship (LCS) Squadron One (LCSRON) Class IA Manager (IAM) allowing mission packages to operate on LCS. Support all Certification Test and Evaluation (CT&E) events conducted which include MPAS, results will be used to develop revised PRA package/risk deficiency database. Updated the LCS Mission Modules Program Protection Plan and the Information Assurance Strategy to support MPCE 2.0 development. Supported the SSSTRP and WSESRB Review of mission packages and prepare the closure of findings. Develop MAR package for risk acceptance. Updated the PMS 420 System Safety Management Plan (SSMP) Plan. Completed mission package Integration System Hazard Analysis (SHA). Update the PMS 420 Hazardous Material Management Program (HMMP) Plan. Identified and manage ESOH mishap risk maintained within the Program Hazard Tracking Database. Coordinate HSI activities across MPs and integrate MPs with seaframe HSI activities. Monitor the implementation of the PMS 420 MM HSI Plan. Updated the following SE documents including: LCS MM SEP; Corrosion Prevention Control Plan (CPCP), PESHE, Life Cycle Signature Support Plan. Continued supporting opportunities for technology transition identified in the S&T Notebook to include at-sea refueling, data mission payload, and lightweight container. Supported and track weight against the Weight Management Plan. Leverage modeling and simulation to support CPD development for mission packages. Continued tracking SE Metrics including requirements and engineering change volatility and LCS MM Systems Readiness Level (SRL) assessment. Continued implementation of M&S Plan to certify the following: NMWS M&S in support of MCM IOT&E; ATRT to support SUW MPAS regression testing; SUW MM Increment I/II modeling; ASW modeling for developmental testing.					
FY 2015 Plans: N/A					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP		Project (Number/Name) 3129 / LCS Mission Package Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A						
Title: Program Management		8.600	-	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: Supported all efforts associated with Milestone C. Continued PM efforts: business and administrative planning, organizing, directing, coordinating, controlling, and approval actions designated to accomplish overall program objectives that are not associated with specific hardware elements or included in systems engineering.						
FY 2015 Plans: N/A						
FY 2016 Base Plans: N/A						
FY 2016 OCO Plans: N/A						
Title: System Test and Evaluation		16.706	-	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: Conducted SUW MP TECHEVAL/IOT&E aboard LCS 1 variant. Completed Planning, and conducted Execution, Data Analysis and Reporting for SUW MP TECHEVAL with increasing stress scenarios to characterize performance of SUW MP against requirements and in preparation and readiness for IOT&E. Completed test planning and OTRR preparation and executed both events for SUW MP IOT&E on LCS 1 variant. Conducted data analysis and reporting for SUW MP TECHEVAL. Conducted SUW MP DT on LCS 2 variant. Began SUW MP SSMM planning. Commenced conduct of SSMM live fire test program and completed GMM live fire test program to include data analysis and report. Conducted MCM MP AMCM Phase B Operational Assessment. Conducted MCM MP Unmanned Systems Operational Assessment. Continued test planning and OTRR preparation to support execution of both events for MCM MP TECHEVAL and IOT&E. Conducted data analysis and reporting for MCM MP TECHEVAL and IOT&E. Continued test planning, conducted initial integration test, transition from engineering to DT testing of the ASW MP on the LCS platform; Performed data analysis of initial ASW MP testing. Conducted National Environmental Policy Act (NEPA) and environmental planning and coordination to support DT/TECHEVAL/IOT&E. Conducted and Support Certification Test and Evaluation to include software certification/assessment testing, reporting, and events such as MPRAs, MRAs, Test Readiness						

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015			
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP		Project (Number/Name) 3129 / LCS Mission Package Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Reviews, WSESRB, etc. and in order to support fleet deployment upon completion of the DT/TECHEVAL/IOT&E events. FY 2015 Plans: N/A FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A						
Title: Integration, Assemble, Test and Checkout		7.612	-	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: Performed Mission Package - Seaframe Integration and Aviation Integration. Seaframe Integration provided services that support the successful integration of the MCM, SUW, and ASW Mission Packages into both variants of LCS seaframes. Mission Package (MP) - Seaframe integration engineering includes: Hardware integration engineering, Software integration engineering, Launch handling & recovery integration engineering, Waterfront integration, Mission Systems and Ship Integration Team (MSSIT), Communications integration, Seaframe studies, and ship modification technical data package development. Aviation Integration: Continued to integrate new capabilities of VTUAV onto LCS, such as weapons and radar. Integrated the larger and higher endurance MQ-8C with LCS. Integrated new Mission Package driven payloads onto the VTUAV. Provided HSF or CV-TSC/PLA functionality as MP solution. Integrated MH-60S SUW enhancements into SUW MP (20mm gun, missiles, radar, data link). Conducted systems engineering for VTUAV and MH-60S ASW enhancements into ASW MP. Conducted systems engineering analysis of alternatives for integrating new Unmanned Aerial Systems into MPs. Continued program level Integration, Assembly, Test & Checkout efforts of ECPs required to correct findings from Developmental and Operational test events. FY 2015 Plans: N/A FY 2016 Base Plans: N/A FY 2016 OCO Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP		Project (Number/Name) 3129 / LCS Mission Package Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A						
Title: Training Systems Development		8.100	-	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: Achieved partial Ready for Training (RFT) at NETC facility for MCM MM training using Common Mission Package Trainer (CMPT) team trainer and Networked Tactical Trainer System (NTTS) part task trainers. Continued Mine Warfare Evaluator (MIWE), Remote Vehicle Operator (RVO) and Remote Sensor Operator (RSO) training precursors to LCS MCM MM Fundamentals and Capstone courses. Updated interim and formal curriculum to incorporate findings from program test events, operations and classroom experience. Updated CMPT MCM and SUW integrated team trainer software for delivery of incremental capability to support MM Fundamentals, MM Operations and MM Planning curriculum. Updated Information Assurance posture as required to support integrated training using Fleet Synthetic Training in the Navy Cooperative Training Environment (NCTE). Continued SUW formal training curriculum instruction development for MM Fundamentals, Capstone and Planning Courses necessary to achieve partial RFT in FY15. Performed vendor and interim training for formal MCM, SUW, and ASW test events. Funded training related detachment travel and provided Vendor and interim formal training to MCM, ASW, and SUW MM replacement Sailors and new MCM and SUW detachments in accordance with CSPPs.						
FY 2015 Plans: N/A						
FY 2016 Base Plans: N/A						
FY 2016 OCO Plans: N/A						
Title: Program Technical Data		0.932	-	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: Updated Program Technical Data packages to incorporate findings from SUW MP and MCM MP OT events. Finalized initial Integrated Logistics Support products in support of SUW MP FY14 IOC. Prepared for the MCM MP IOC late FY 14 / early FY 15. Continued Technical Manual Management Activity to review, produce, and distribute technical documentation for the program. Continued development of MPSF automated inventory						

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP		Project (Number/Name) 3129 / LCS Mission Package Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
management system (IMS) based on pRFID solution. Started integrated logistics overarching support for the ASW MP and the new increments. Provided overarching provision for Program. FY 2015 Plans: N/A FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A						
Title: Common Equipment FY 2014 Accomplishments: Mission Package Computing: Continued MPCE v1.9 hardware production and tech refresh activities. INCO of CMPT #3 on LCS 6. Prepared tech refresh for the shore sites (MPPCS #1 and #2) and for LCS 1and LCS 2. Provided maintenance deliveries for MPS/MPOE. PMS 420 CM delivery of MUS v1.0.1p occurred. Conducted quarterly IPRs. Continued development activities to evolve MPCE software architecture to a Service Oriented Architecture (SOA), MPCE v2.0, in support of the CSA Baseline. Mission Package Communications: Supported MCM MPT TECHEVAL workups with MVCS v1.0.0. Prepared for the delivery of MVCS HW and SW builds v2.6. Supported testing of MVCS v1.0.0 on SMCM UUV and UISS. FY 2015 Plans: N/A FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A		7.200 Articles: -	- -	- -	- -	- -
Title: Mine Countermeasures (MCM) Mission Package FY 2014 Accomplishments: Procured USV EDMs. Finalized design for Surface Mine Countermeasures (SMCM) UUV container and procured EDM support container. Designed and integrated the SMCM UUV into MCM MPs. Conducted MCM		6.800 Articles: -	- -	- -	- -	- -

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015			
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP		Project (Number/Name) 3129 / LCS Mission Package Development		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
mission package TECHEVAL and OPEVAL. Conducted KPP modeling analysis. Resolved hardware PTRs identified during testing through development of ACSNs. Complete the integration of RMMV v4.2.1 with MCM MP Increment I. Prepare for and conduct Systems Engineering Technical Reviews (SETR) (SRR/PDR) for MCM MP Increment III. In support of MCM mission package, incorporated the following items into MPAS: RMMV RGP V4.3 improvements, correction of software PTRs identified during MCM MP testing, and MEDAL EA integration. Performed systems engineering (risk management, information assurance, human systems integration, safety), configuration management, and Integrated Logistics Support efforts. FY 2015 Plans: N/A FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A						
Title: Anti-Submarine Warfare (ASW) Mission Package Articles: FY 2014 Accomplishments: Conducted a System Functional Review (SFR) which defined system requirements and functional performance requirements. Conducted required systems engineering technical reviews to ensure system design meets the total CDD requirement. Conducted component and system level testing and related predictive performance modeling and simulation to establish system and module performance and reliability baselines. Provided developmental engineering support for logistical engineering data and technical documentation. Continued Mission Module development and LCS integration to include Mission Module level at-sea testing. Completed the preliminary ASW System Subsystem Specification (SSS) and draft Mission Module SSS. SSS conditionally approved by Technical Scope Review board on 15 July. Completed DoDAF products and Interface Requirements Specification. Collected data and performed analyses associated with the ASW MP Reliability, Maintainability, and Availability (RMA) program. Successfully completed the Combat Management System (CMS) testing at Lockheed Martin (LM) Moorestown Mission System Integration Center (MSIC). Provided Find/Fix/Repair for technical issues associated with Mission Package Application Software (MPAS) identified during integration and developmental		18.100 1	- -	- -	- -	- -

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Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP	Project (Number/Name) 3129 / LCS Mission Package Development			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
testing and conducted necessary regression testing on proposed fixes. Provided developmental engineering support, equipment, and documentation for logistical engineering data and technical publications to include training (ship's crew and Mission Package Support Facility (MPSF) personnel), maintenance and provisioning. Conducted mission package certification, obtained Information Assurance (IA) approvals (i.e. IATT for LBIT), and conducted land based test events. Supported the planning and preparations for the pre Developmental Test (DT) of ASW MP ADM. Conducted studies and analyses on emerging technologies for incorporation into future ASW MP Increments.						
Completed and executed Ship Control Document #14658 to support modifications required to install the ASW MP Advanced Development Model (ADM) on LCS 1 to conduct testing in 4QFY14.						
Released solicitation requesting white papers on project concepts to support release of a Request for Proposal (RFP) for the Rapid Technology Insertion (RTI) process, which will solicit technology solutions to enhance the successful completion of the primary Littoral Combat Ships (LCS) missions. Reviewed 12 whitepapers submitted in responses to the solicitation.						
Kicked off and completed NAVAIR study.						
FY 2015 Plans: N/A						
FY 2016 Base Plans: N/A						
FY 2016 OCO Plans: N/A						
Title: Surface Warfare (SUW) Mission Package		11.249	-	-	-	-
Articles:		-	-	-	-	-
FY 2014 Accomplishments: SSMM Inc 1 formal technical data package will be finalized. Continued SSMM Increment I development. Initiated developmental testing to categorize modifications to the current MPAS baseline. Initiated modifications to MPAS to support continued SSMM Increment I development. Conducted appropriate systems engineering technical reviews to ensure missile system design meets the total CDD requirement. Continued planning the SSMM Increment I environmental confidence level testing. Continued development of the detailed launcher design that						

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
supports the SSMM Increment I concept. Completed DT/OT/IOT&E for the Gun Mission Module onboard LCS 1 variant. Completed STF and DT of the Gun Mission Module on USS Independence (LCS 2) variant. Participated in RIMPAC on USS Independence (LCS 2). Find/Fix/Repair technical issues associated with GMM and MPAS identified during STF and DT/OT events. Maintained configuration control of SUW MP data, hardware, and software. Collected data and perform analysis associated with the SUW MP Reliability, Maintainability, and Availability (RMA) program. Conducted combat system certification, MP certification, obtain WSESRB/SSSTRP approval, IA approvals, and conduct shipboard test events with each seaframe manufacturer. Supported formal testing of the SUW MP for LCS 1 variant OT events, STF from LCS 2 variant, DT from LCS 2 variant, and OT from LCS 2 variant. FY 2015 Plans: N/A FY 2016 Base Plans: N/A FY 2016 OCO Plans: N/A							
Title: Reliability, Availability and Maintainability Articles:			0.842 -	- -	- -	- -	- -
FY 2014 Accomplishments: Continued to monitor Reliability Growth and update plans as necessary. Continued to refine RAM model assumptions based on actual data and conduct multiple sensitivity analysis to quantify the effect of alternate sparing philosophies (i.e. more onboard spares, complete spare system, etc.) based on mission module availability. Determined the maintenance throughput capability for the mission systems at the Mission Package Support Facility/Mission Module Readiness Center (MPSF/MMRC) depot. Refined modeling of ASW MP. Continued utilizing FRACAS to feed back product and process improvements to the Systems Engineering and ILS organizations. FY 2015 Plans: N/A FY 2016 Base Plans:							

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Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP		Project (Number/Name) 3129 / LCS Mission Package Development	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
FY 2016 OCO Plans:					
N/A					
Accomplishments/Planned Programs Subtotals	91.000	-	-	-	-

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 2127: Littoral Combat Ship	1,829.174	1,427.049	1,436.991	-	1,436.991	1,510.341	1,544.144	1,273.343	1,733.929	10,564.968	28,565.740
• 1600: LCS Common	35.966	30.938	23.500	-	23.500	23.991	14.775	15.844	17.083	Continuing	Continuing
Mission Modules Equipment											
• 5110: Outfitting/Post Delivery	68.165	112.016	200.370	-	200.370	191.789	179.514	219.624	122.649	1,506.200	2,683.800
• 1320: LCS Training Equipment	23.426	9.630	59.031	-	59.031	3.117	4.060	18.076	18.466	Continuing	Continuing
• 0944: LCS Class	47.078	25.742	48.399	-	48.399	90.113	84.384	89.685	85.860	Continuing	Continuing
Support Equipment											
• 1601: LCS MCM Mission Modules	34.885	15.270	85.151	-	85.151	151.019	139.386	144.697	67.338	Continuing	Continuing
• 1602: LCS ASW Mission Modules.	-	-	-	-	-	62.681	53.750	54.025	55.013	Continuing	Continuing
• 1603: LCS SUW Mission Modules	19.481	14.750	35.228	-	35.228	35.587	38.040	39.008	40.164	Continuing	Continuing
• 1605: Remote	-	-	87.627	-	87.627	68.409	58.457	58.003	37.371	Continuing	Continuing
Minehunting System (RMS)											
• 3129: LCS Mission Modules	105.682	176.948	206.149	-	206.149	125.761	57.067	46.582	39.463	Continuing	Continuing
• PE/LI: LCS Training	-	-	8.207	-	8.207	16.630	3.300	2.300	1.000	-	31.437

Remarks

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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP				Project (Number/Name) 3129 / LCS Mission Package Development					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1.1 System Engineering	WR	NSWC PC : Panama City, FL	7.144	0.902	Oct 2013	-		-		-		-	-	8.046	-
1.1 System Engineering	WR	NSWC DD : Dahlgren, VA	7.028	0.475	Oct 2013	-		-		-		-	-	7.503	-
1.1 System Engineering	C/CPFF	Northrop Grumman : Bethpage, NY	11.176	1.664	Oct 2013	-		-		-		-	-	12.840	-
1.1 System Engineering	WR	SPAWAR PAC : San Diego, CA	3.584	0.848	Oct 2013	-		-		-		-	-	4.432	-
1.1 System Engineering	WR	NUWC NPT : Newport, RI	3.507	0.200	Oct 2013	-		-		-		-	-	3.707	-
1.1 System Engineering	C/CPFF	CACI : Fairfax, VA	3.137	0.220	Oct 2013	-		-		-		-	-	3.357	-
1.1 System Engineering	C/CPFF	AAC : Uniontown, PA	6.979	-		-		-		-		-	-	6.979	-
1.1 System Engineering	WR	NSWC PHD : Port Hueneme, CA	1.362	-		-		-		-		-	-	1.362	-
1.1 System Engineering	WR	NSWC Carderock : Bethesda, MD	0.000	0.198	Oct 2013	-		-		-		-	-	0.198	-
1.1 System Engineering	C/CPFF	JHU/APL : Laurel, MD	0.000	0.198	Dec 2013	-		-		-		-	-	0.198	-
1.1 System Engineering	WR	NUWC KPT : Keyport, WA	0.000	-		-		-		-		-	-	-	-
1.1 System Engineering	WR	CDSA Dam Neck : Virginia Beach, VA	0.000	-		-		-		-		-	-	-	-
1.1 System Engineering	WR	NSWC Corona : Corona, CA	0.000	-		-		-		-		-	-	-	-
1.1.7 System Engineering RAM-C Project	WR	Various : Various	1.500	-		-		-		-		-	-	1.500	-
1.4 Integration, Assembly, Test and Check	WR	NAWC AD : Patuxent River, MD	1.620	0.352	Oct 2013	-		-		-		-	-	1.972	-
1.4 Integration, Assembly, Test and Checkout	C/CPFF	Northrop Grumman : Bethpage, NY	0.857	0.176	Oct 2013	-		-		-		-	-	1.033	-
1.4 Integration, Assembly, Test and Check	WR	SPAWAR PAC : San Diego, CA	2.433	-		-		-		-		-	-	2.433	-

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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1.4 Integration, Assembly, Test and Check	WR	NUWC NPT : Newport, RI	1.146	-		-		-		-		-	-	1.146	-
1.4 Integration, Assembly, Test and Check	WR	NSWC PC : Panama City, FL	2.128	0.198	Oct 2013	-		-		-		-	-	2.326	-
1.4 Integration, Assembly, Test and Check	WR	SUPSHIP Gulfcoast : Pascagoula, MS	2.043	-		-		-		-		-	-	2.043	-
1.4 Integration, Assembly, Test and Check	WR	SUPSHIP Bath : Bath, ME	2.050	-		-		-		-		-	-	2.050	-
1.4 Integration, Assembly, Test and Check	WR	NSWC DD : Dahlgren, VA	5.560	0.490	Oct 2013	-		-		-		-	-	6.050	-
1.4 Integration, Assembly, Test and Checkout	WR	NSWC PHD : Port Hueneme, CA	0.850	-		-		-		-		-	-	0.850	-
1.4 Integration, Assembly, Test and Checkout	WR	NSWC Crane : Crane, Indiana	0.000	0.264	Oct 2013	-		-		-		-	-	0.264	-
1.4 Integration, Assembly, Test and Checkout	WR	NSWC Carderock : Bethesda, MD	0.000	0.425	Oct 2013	-		-		-		-	-	0.425	-
1.4 Integration, Assembly, Test and Checkout	C/CPFF	CACI : Fairfax, VA	0.000	0.176	Oct 2013	-		-		-		-	-	0.176	-
1.4 Integration, Assembly, Test and Checkout	Sub Allot	CECOM Bldg 1207 : Various	0.000	0.176	Oct 2013	-		-		-		-	-	0.176	-
1.12 Common Equipment Development	WR	NSWC PC : Panama City, FL	84.326	2.068	Oct 2013	-		-		-		-	-	86.394	-
1.12 Common Equipment Development	C/CPFF	Northrop Grumman : Bethpage, NY	21.728	0.761	Oct 2013	-		-		-		-	-	22.489	-
1.12 Common Equipment Development	WR	NUWC NPT : Newport, RI	8.669	0.215	Oct 2013	-		-		-		-	-	8.884	-
1.12 Common Equipment Development	WR	NSWC DD : Dahlgren, VA	4.608	0.548	Oct 2013	-		-		-		-	-	5.156	-
1.12 Common Equipment Development	WR	NAVAIR PMA266 : Patuxent River, MD	6.500	-		-		-		-		-	-	6.500	-
1.12 Common Equipment Development	C/CPFF	AAC : Uniontown, PA	0.000	0.410	Oct 2013	-		-		-		-	-	0.410	-

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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1.12 Common Equipment Development	WR	PMW 760 : Various	0.000	0.157	Oct 2013	-		-		-		-	-	0.157	-
1.12 Common Equipment Development	WR	SPAWAR PACIFIC : San Diego, CA	0.000	0.471	Oct 2013	-		-		-		-	-	0.471	-
1.12 Common Equipment Development	C/CPFF	ARL/UT : Austin, TX	0.000	0.115	Dec 2013	-		-		-		-	-	0.115	-
1.13 MCM MP	WR	NSWC PC : Panama City, FL	142.161	6.612	Oct 2013	-		-		-		-	-	148.773	-
1.13 MCM MP	WR	NSWC CD : Little Creek, VA	6.000	-		-		-		-		-	-	6.000	-
1.13 MCM MP	Sub Allot	PMS 406 : Various	5.999	2.645	Dec 2013	-		-		-		-	-	8.644	-
1.13 MCM MP	C/CPFF	Lockheed Martin : Riviera Beach, FL	38.540	3.409	Dec 2013	-		-		-		-	-	41.949	-
1.13 MCM MP	C/CPFF	Raytheon : Tewksbury, MA	0.000	-		-		-		-		-	-	-	-
1.14 ASW MP	Sub Allot	PEO IWS5 : Various	10.734	12.846	Oct 2013	-		-		-		-	-	23.580	-
1.14 ASW MP	WR	NUWC NPT : Newport, RI	11.000	4.270	Oct 2013	-		-		-		-	-	15.270	-
1.14 ASW MP	TBD	Various : Various	163.543	-		-		-		-		-	-	163.543	-
1.14 ASW MP	WR	NSWC Dam Neck : Virginia Beach, VA	0.920	0.607	Oct 2013	-		-		-		-	-	1.527	-
1.14 ASW MP	C/CPFF	Northrop Grumman : Bethpage, NY	1.300	0.704	Oct 2013	-		-		-		-	-	2.004	-
1.14 ASW MP	C/CPFF	SPA : Washington, DC	0.000	0.308	Oct 2013	-		-		-		-	-	0.308	-
1.14 ASW MP	Sub Allot	TBD Activity Placeholder : TBD	0.000	-		-		-		-		-	-	-	-
1.14 ASW MP	WR	NSWC PCD : Panama City, FL	0.000	-		-		-		-		-	-	-	-
1.14 ASW MP	WR	NSWC DD : Dahlgren, VA	0.000	-		-		-		-		-	-	-	-
1.14 ASW MP	C/CPFF	CACI : Arlington, VA	0.000	-		-		-		-		-	-	-	-

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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1.14 ASW MP	WR	NUWC KPT : Keyport, WA	0.000	-		-		-		-		-	-	-	-
1.14 ASW MP	WR	SSC PAC : San Diego, CA	0.000	0.154	Oct 2013	-		-		-		-	-	0.154	-
1.14 ASW MP	WR	Lockheed Martin : Riviera Beach, FL	0.000	-		-		-		-		-	-	-	-
1.15 SUW MP	WR	NSWC DD : Dahlgren, VA	199.569	10.428	Oct 2013	-		-		-		-	-	209.997	-
1.15 SUW MP	WR	NSWC PHD : Port Hueneme, CA	11.058	2.810	Oct 2013	-		-		-		-	-	13.868	-
1.15 SUW MP	WR	SPAWAR PACIFIC : San Diego, CA	3.259	-		-		-		-		-	-	3.259	-
1.15 SUW MP	C/CPFF	Northrop Grumman : Bethpage, NY	10.995	6.598	Oct 2013	-		-		-		-	-	17.593	-
1.15 SUW MP	WR	NAWC WD : Ridgecrest, CA	0.000	2.639	Oct 2013	-		-		-		-	-	2.639	-
1.15 SUW MP	WR	NSWC CD : Crane, IN	0.000	0.088	Oct 2013	-		-		-		-	-	0.088	-
1.15 SUW MP	WR	NSWC Corona : Corona, CA	0.000	0.110	Oct 2013	-		-		-		-	-	0.110	-
1.15 SUW MP	WR	NSWC PC : Panama City, FL	0.000	-		-		-		-		-	-	-	-
1.15 SUW MP	WR	PEO IWS 3 : Various	0.000	-		-		-		-		-	-	-	-
1.16 MP-PCS Equipment	WR	Various : Various	3.547	-		-		-		-		-	-	3.547	-
1.19 Pre-Production Engineering	WR	Various : Various	8.425	-		-		-		-		-	-	8.425	-
1.20 Irregular Warfare Module	C/CPFF	Northrop Grumman : Bethpage, NY	0.000	-		-		-		-		-	-	-	-
1.20 Irregular Warfare Module	WR	SPARWAR PAC : San Diego, CA	0.000	-		-		-		-		-	-	-	-
Subtotal			806.985	65.935		-		-		-		-	-	872.920	-

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Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1.1.10 Reliability, Maintainability, and Availability	C/CPFF	CACI : Fairfax, VA	0.000	0.138	Oct 2013	-		-		-		-	-	0.138	-
1.1.10 Reliability, Maintainability, and Availability	WR	NSWC PC : Panama City, FL	0.881	0.208	Oct 2013	-		-		-		-	-	1.089	-
1.1.10 Reliability, Maintainability, and Availability	WR	NUWC, NPT : Newport, RI	0.000	0.091	Oct 2013	-		-		-		-	-	0.091	-
1.1.10 Reliability, Maintainability, and Availability	WR	NSWC, Dahlgren : Dahlgren, VA	1.080	0.091	Oct 2013	-		-		-		-	-	1.171	-
1.1.10 Reliability, Maintainability, and Availability	WR	NUWC KPT : Keyport, WA	0.000	0.298	Oct 2013	-		-		-		-	-	0.298	-
1.5 Training Systems Development	WR	NSWC Corona : Corona, CA	0.000	0.065	Oct 2013	-		-		-		-	-	0.065	-
1.5 Training Systems Development	WR	NAWC TSD : Orlando, FL	14.399	0.770	Oct 2013	-		-		-		-	-	15.169	-
1.5 Training Systems Development	WR	NSWC PC : Panama City, FL	16.753	0.704	Oct 2013	-		-		-		-	-	17.457	-
1.5 Training Systems Development	WR	NSWC PHD : Port Hueneme, CA	6.454	0.660	Oct 2013	-		-		-		-	-	7.114	-
1.5 Training Systems Development	C/CPFF	AAC : Uniontown, PA	10.810	0.669	Oct 2013	-		-		-		-	-	11.479	-
1.5 Training Systems Development	C/CPFF	CACI : Fairfax, VA	0.576	0.330	Oct 2013	-		-		-		-	-	0.906	-
1.5 Training Systems Development	WR	CSCS : Dahlgren, VA	2.083	0.804	Oct 2013	-		-		-		-	-	2.887	-
1.5 Training Systems Development	C/CPFF	Northrop Grumman : Bethpage, NY	1.934	0.442	Oct 2013	-		-		-		-	-	2.376	-
1.5 Training Systems Development	WR	CNSF : San Diego, CA	2.100	0.330	Oct 2013	-		-		-		-	-	2.430	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP				Project (Number/Name) 3129 / LCS Mission Package Development					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1.5 Training Systems Development	WR	NSWC, Dahlgren : Dahlgren, VA	0.000	0.055	Oct 2013	-		-		-		-	-	0.055	-
1.5 Training Systems Development	WR	NUWC, Newport : Newport, RI	0.000	0.026	Oct 2013	-		-		-		-	-	0.026	-
1.5 Training Systems Development	WR	JHU/APL : Laurel, MD	0.000	0.220	Dec 2013	-		-		-		-	-	0.220	-
1.5 Training Systems Development	C/BA	CDSA, Dam Neck : Dam Neck, VA	0.000	-		-		-		-		-	-	-	-
1.6 Program Technical Data	WR	NSWC PC : Panama City, FL	1.361	0.118	Oct 2013	-		-		-		-	-	1.479	-
1.6 Program Technical Data	C/CPFF	Northrop Grumman : Bethpage, NY	0.750	0.118	Oct 2013	-		-		-		-	-	0.868	-
1.6 Program Technical Data	WR	CACI : Fairfax, VA	0.250	0.118	Oct 2013	-		-		-		-	-	0.368	-
1.6 Program Technical Data	WR	NUWC KPT : Keyport, WA	0.000	-		-		-		-		-	-	-	-
Subtotal			59.431	6.255		-		-		-		-	-	65.686	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1.3 System Test and Evaluation	WR	NSWC PCD : Panama City, FL	37.009	6.307	Oct 2013	-		-		-		-	-	43.316	-
1.3 System Test and Evaluation	WR	NSWC DD : Dahlgren, VA	34.513	3.487	Oct 2013	-		-		-		-	-	38.000	-
1.3 System Test and Evaluation	WR	NUWC NPT : Newport, RI	6.200	0.330	Oct 2013	-		-		-		-	-	6.530	-
1.3 System Test and Evaluation	WR	NSWC PHD : Port Hueneme, CA	16.570	3.681	Oct 2013	-		-		-		-	-	20.251	-
1.3 System Test and Evaluation	WR	SPAWAR PAC : San Diego, CA	5.697	0.550	Oct 2013	-		-		-		-	-	6.247	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP				Project (Number/Name) 3129 / LCS Mission Package Development					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1.3 System Test and Evaluation	WR	COMOPTEVFOR : Norfolk, VA	3.083	0.550	Oct 2013	-		-		-		-	-	3.633	-
1.3 System Test and Evaluation	WR	PMA 266 : Patuzent River, MD	0.344	0.154	Oct 2013	-		-		-		-	-	0.498	-
1.3 System Test and Evaluation	C/BA	Silver Ships : Theodore, AL	0.550	0.242	Dec 2013	-		-		-		-	-	0.792	-
1.3 System Test and Evaluation	C/BA	CNSF : Norfolk, VA	0.264	0.110	Oct 2013	-		-		-		-	-	0.374	-
1.3 System Test and Evaluation	C/BA	NAWC WD : Point Mugu, CA	2.420	1.100	Oct 2013	-		-		-		-	-	3.520	-
1.3 System Test and Evaluation	C/BA	NSWC Corona : Corona, CA	0.000	0.220	Oct 2013	-		-		-		-	-	0.220	-
Subtotal			106.650	16.731		-		-		-		-	-	123.381	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Workforce	Various	Various : Various	1.047	-		-		-		-		-	-	1.047	-
1.2 Program Management	C/CPFF	CACI : Fairfax, VA	35.266	2.079	Oct 2013	-		-		-		-	-	37.345	-
1.2 Program Management	WR	NSWC PCD : Panama City, FL	1.453	-		-		-		-		-	-	1.453	-
1.2 Program Management	WR	NSWC DD : Dahlgren, VA	1.480	-		-		-		-		-	-	1.480	-
Subtotal			39.246	2.079		-		-		-		-	-	41.325	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,012.312	91.000		-		-		-		-	-	1,103.312	-
Remarks															

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PE 0603581N: (U)LITTORAL COMBAT SHIP
Navy

R-1 Line #48

R-1 Program Element (Number/Name)
PE 0603581N / (U)LITTORAL COMBAT
SHIP

Page 35 of 50

Proj 3129		FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020								
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q									
MCM MP					UISS CDR ◆	DT- B3																												
					FOT&E																													
SUW MP	MSM/PRR ◆																																	
	DT-B1 Phase 2				DT-B4																													
			DT-C1																															
			OT-C1																															
					SSMM																													
ASW MP	SFR ◆	PDR		EDM/PRA Award ◆																														
Training		CMPT Intg ◆			RFT ◆																													

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP	Project (Number/Name) 3129 / LCS Mission Package Development	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 3129				
MCM MP: MCM MP Increment I DT - B3 (Freedom Variant)	1	2015	2	2015
MCM MP: MCM UISS CDR	4	2014	4	2014
MCM MP: MCM FOT&E	4	2014	4	2017
SUW MP: SUW MP Increment II PRR (MSM)	1	2014	1	2014
SUW MP: SUW MP Increment I & II DT-B1 Phase 2 (Freedom Variant)	1	2014	2	2014
SUW MP: SUW MP Increment I & II DT-B4 (Independence Variant)	4	2014	4	2014
SUW MP: SUW MP Increment I & II TECHEVAL DT-C1	2	2014	2	2014
SUW MP: SUM MP Increment I & II IOT&E OT-C1 (Freedom VArant	2	2014	2	2014
SUW MP: SUW MP SSMM Development	1	2014	3	2016
ASW MP: ASW MP Increment II SFR	1	2014	1	2014
ASW MP: ASW MP Increment II PDR	2	2014	2	2014
ASW MP: ASW MP Increment II EDM/PRA Award	4	2014	4	2014
Training: CMPT - GD Tactical Team Trainer Integration Complete	2	2014	2	2014
Training: MCM Couserware Update to support MCM TECHEVAL AND IOT&E	1	2015	1	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP				Project (Number/Name) 4018 / Littoral Combat Ship Construction			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
4018: Littoral Combat Ship Construction	1,537.252	4.868	-	-	-	-	-	-	-	-	-	1,542.120
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
Project MDAP/MAIS Code: 374												

A. Mission Description and Budget Item Justification

The Littoral Combat Ship (LCS) is a fast, agile, and networked surface combatant with capabilities optimized to defeat asymmetric threats, and assure naval and joint force access into contested littoral regions. It uses open-systems-architecture design, modular weapons, sensor systems, and a variety of manned and unmanned vehicles to expand the battle space and project offensive power into the littoral. LCS operates with focused-mission packages that deploy manned and unmanned vehicles to execute a variety of missions, including littoral anti-submarine warfare (ASW), surface warfare (SUW), and mine countermeasures (MCM). LCS also possesses inherent capabilities, regardless of mission package installed, including Intelligence Surveillance Reconnaissance (ISR), homeland defense, Maritime Interdiction/Interception Operations (MIO), anti-terrorism/force protection (AT/FP), air self-defense, joint littoral mobility, and Special Operating Forces (SOF) and logistic support for movement of personnel and supplies. This relatively small, high-speed surface combatant will complement the U.S. Navy's AEGIS fleet by operating in environments where it is less desirable to employ larger, multi-mission ships. It can deploy independently to overseas littoral regions, remain on station for extended periods of time either with a battle group or through a forward-basing arrangement, and is capable of underway replenishment. It will operate with Carrier Strike Groups, Surface Action Groups, in groups of other similar ships, or independently for diplomatic and presence missions. Additionally, it can operate cooperatively with the U.S. Coast Guard and Allies. The LCS construction phase includes the construction of two LCS Flight 0 Class Ships, one each of two designs, and includes Government Furnished Equipment (GFE) for ships systems, Final System Design (FSD), Detail Design, introduction of final interface requirements for integration with mission packages from the Mission Systems and Ship Integration Team (MSSIT), and Outfitting and Post Delivery (OF/PD).

Data as of Feb 2014:
 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

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015				
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP	Project (Number/Name) 4018 / Littoral Combat Ship Construction				
Other: 7.5 Total Cost*: 653.0							
* Does not include OF/PD and FSD/MSSIT.							
Non End Cost Item: FSD/MSSIT 25.0 (LCS1), 54.0 (LCS2) Non End Cost Item: OF/PD 120.3 (LCS1), 145.6 (LCS2);FSD/MSSIT costs for USS Freedom and USS Independence are not true construction costs and are costs associated with design completion.							
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Outfitting and Post Delivery			4.868	-	-	-	-
Articles:			-	-	-	-	-
Description: Provides for the completion of ship outfitting to include: (a) ship provisioning and fuel, (b) initial load-out of repair parts, spares, and test equipment in accordance with allowance list, (c) provision of technical manuals and required drawings, (d) installation and validation of PMS and EOSS, and (e) crew training and completion of ship system certification requirements. Implements instrumentation packages and validates structural, sea keeping, and hydrodynamic performance. Provides emergent support during the execution of Post Delivery Test & Trials (PDT&T) and Post-Shakedown Availability (PSA). Incorporates Engineering Change Proposals (ECPs) to correct trial card deficiencies, and mission critical upgrades (as required).							
FY 2014 Accomplishments: For USS Independence (LCS 2): Conducted Special Trials (ST) and provided technical support for the Board of Inspection and Survey (INSURV). Completed PSA 2 to accomplish engineering changes, mission critical upgrades, and correction of trial cards and seaframe discrepancies identified during PDT&T.							
FY 2015 Plans: N/A							
FY 2016 Base Plans: N/A							
FY 2016 OCO Plans: N/A							
Accomplishments/Planned Programs Subtotals			4.868	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015	
Appropriation/Budget Activity 1319 / 4				R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP				Project (Number/Name) 4018 / Littoral Combat Ship Construction			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 2127: Littoral Combat Ship	1,829.174	1,427.049	1,436.991	-	1,436.991	1,510.341	1,544.144	1,273.343	1,733.929	10,564.968	28,565.740
• 1600: LCS Modules	35.966	30.938	23.500	-	23.500	23.991	14.775	15.844	17.083	Continuing	Continuing
• 5110: Outfitting/Post Delivery	68.165	112.016	200.370	-	200.370	191.789	179.514	219.624	122.649	1,503.200	2,680.800
• 1320: LCS Training	23.426	9.630	59.031	-	59.031	3.117	4.060	18.076	18.466	Continuing	Continuing
• 0944: LCS Class	47.078	25.742	48.399	-	48.399	90.113	84.384	89.685	85.860	Continuing	Continuing
Support Equipment											
• 1601: MCM Mission Modules	34.885	15.270	85.151	-	85.151	151.019	139.386	144.697	67.338	Continuing	Continuing
• 1602: ASW Mission Modules	-	-	-	-	-	32.681	53.750	54.025	55.013	Continuing	Continuing
• 1603: SUW Mission Modules	19.481	14.750	35.228	-	35.228	35.587	38.040	39.008	40.164	Continuing	Continuing
• 1605: Remote	-	-	87.627	-	87.627	68.409	58.457	58.003	37.371	Continuing	Continuing
Minehunting System (RMS)											
• 3129: LCS Mission	105.682	176.948	206.149	-	206.149	125.761	57.067	46.582	39.463	-	757.652
Package Development											
Remarks											
D. Acquisition Strategy											
The LCS program takes an evolutionary approach to acquisition that emphasizes competition as a key to achieving affordability. Initially, two industry teams competed against each other with two distinctly different LCS designs. The decision produced two flights with a vessel from each design: Flight 0 (LCS 1 and LCS 2); and Flight 0+ (LCS 3 and out). The Flight 0+ baseline incorporates lessons learned from the design, construction, and testing of the Flight 0 ships. The Navy conducted a limited competition amongst the existing LCS industry teams or team participants for the award of a contract for the construction of a block buy of up to ten (10) LCS Flight 0+ Class ships, with an objective of competitively awarding a single contract to a single industry team. By Acquisition Decision Memorandum of December 23, 2010, the USD (AT&L) authorized execution of an alternative acquisition strategy for the FY 2010 through FY 2015 procurement of 20 seaframes through two ten-ship block buy contracts. On December 29, 2010, the Navy awarded two contracts for block buys of up to ten ships, beginning with the award to each contractor of one FY 2010 ship and associated non-recurring engineering, the development of the Technical Data Package (TDP), core class services, and associated data. This was followed by the contractual funding of one ship to each contractor in FY 2011 and two ships each funded in FY 2012 through FY 2014. On October 17, 2014 USD(AT&L) approved the Navy's plan to procure three ships in FY 2015 and three ships in FY 2016 by modifying the current block buy contracts. The modification to each of the block buy contracts will complete the previously approved 20 ship block buy and add options for the remaining two FY 2016 ships for a total of 26 LCS.											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603581N / (U) <i>LITTORAL COMBAT SHIP</i>	Project (Number/Name) 4018 / <i>Littoral Combat Ship Construction</i>
The Navy is developing a follow on Acquisition Strategy for FY 2017 - 2018 which will complete the 32 ship portion of the LCS program. As required by the December 10, 2014 SECDEF Memo on the Littoral Combat Ship Program Way Ahead, the Navy is currently developing an Acquisition Strategy to support design and procurement of Modified LCSs no later than FY 2019. <u>E. Performance Metrics</u> The LCS Program achieved Milestone A and Program Initiation in May 2004 and Milestone B in February 2011. The LCS program conducts annual Defense Acquisition Board In-Process Reviews (DAB IPRs). The first Seaframe and Mission Module integrated program DAB IPR was conducted in January 2013 and is held in September thereafter.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy												Date: February 2015			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP				Project (Number/Name) 4018 / Littoral Combat Ship Construction					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LCS Ship 1 Construction	C/CPAF	Lockheed Martin : Moorestown, NJ	521.000	-		-		-		-		-	-	521.000	521.000
LCS Ship 1 Change Orders	C/CPAF	Lockheed Martin : Moorestown, NJ	0.500	-		-		-		-		-	-	0.500	0.500
LCS Ship 1 GFE	C/CPAF	Lockheed Martin : Moorestown, NJ	12.000	-		-		-		-		-	-	12.000	12.000
LCS Ship 2 Construction	C/CPAF	General Dynamics : Bath, ME	635.000	-		-		-		-		-	-	635.000	635.000
LCS Ship 2 Change Orders	C/CPAF	General Dynamics : Bath, ME	3.500	-		-		-		-		-	-	3.500	3.500
LCS Ship 2 GFE	C/CPAF	General Dynamics : Bath, ME	7.000	-		-		-		-		-	-	7.000	7.000
LCS Ship 1 FSD/MSSIT	C/CPAF	Lockheed Martin : Moorestown, NJ	25.000	-		-		-		-		-	-	25.000	25.000
LCS Ship 2 FSD/MSSIT	C/CPAF	General Dynamics : Bath, ME	54.000	-		-		-		-		-	-	54.000	54.000
Initial Outfitting/Logistics	Various	Various : Various	21.601	-		-		-		-		-	-	21.601	21.601
Test and Trials	WR	Various : Various	40.725	0.400	Dec 2013	-		-		-		-	-	41.125	-
Post Delivery ECP	C/CPAF	Lockheed Martin - General Dynamics : Various	47.857	0.700	Dec 2013	-		-		-		-	-	48.557	57.457
PSA/PSA Planning/ INSURV/OPTAR	WR	Various : Various	157.388	3.768	Mar 2014	-		-		-		-	-	161.156	-
Subtotal			1,525.571	4.868		-		-		-		-	-	1,530.439	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	SUPSHIP : Various	0.460	-		-		-		-		-	-	0.460	-
Other Program Costs	WR	Various : Various	11.000	-		-		-		-		-	-	11.000	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy													Date: February 2015		
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP						Project (Number/Name) 4018 / Littoral Combat Ship Construction			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			11.460	-		-		-		-		-	-	11.460	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Workforce	Various	Various : Various	0.221	-		-		-		-		-	-	0.221	-
Subtotal			0.221	-		-		-		-		-	-	0.221	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,537.252	4.868		-		-		-		-	-	1,542.120	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP	Project (Number/Name) 4018 / Littoral Combat Ship Construction

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 4018																												
LCS 2 PSA 2																												
LCS 2 Final Contract Trials/ Special Trials																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP	Project (Number/Name) 4018 / Littoral Combat Ship Construction

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 4018				
LCS 2 PSA 2	1	2014	2	2014
LCS 2 Final Contract Trials/ Special Trials	4	2014	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy									Date: February 2015								
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP				Project (Number/Name) 4506 / LCS Training								
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost					
4506: LCS Training	-	-	-	8.207	-	8.207	16.630	3.300	2.300	1.000	Continuing	Continuing					
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-							
A. Mission Description and Budget Item Justification																	
LCS is a minimally-manned ship, and the small crew size, combined with LCS's complex mission, does not allow adequate time for shipboard on-the-job training to achieve LCS operational availability. Consequently, LCS uses a Train-to-Qualify (T2Q)/Train-to-Certify (T2C) training process in an off-ship/shore-based virtual ship trainer environment, using simulators, and blended training solutions focused on both tactical and equipment operations and maintenance training. When completed, the LCS shore-based training capability will satisfy individual, team, unit, and force training, with an objective of meeting Capability Development Document (CDD) T2Q Key Performance Parameter (KPP) requirements.																	
RDT&E funds will be used to develop advanced Immersive Virtual Shipboard Environment (IVSE), or Virtual Reality (VR) courseware and associated simulators, enabling the satisfactory achievement of the aforementioned training objectives. Additionally, after fielding of systems and courseware, RDTE funds will be utilized to upgrade training to maintain conformance with LCS hull configurations and approved operational technical manuals and procedures. RDTE funds are also used to test and evaluate training devices to ensure compliance with requirements.																	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total					
Title: LCS Total System Training Architecture								-	-	8.207	-	8.207					
								Articles:					-	-	-	-	-
Description: LCS is a minimally-manned ship, and the small crew size, combined with LCS's complex mission, does not allow adequate time for shipboard "on-the-job" training to achieve LCS operational availability. Consequently, LCS uses a Train-to-Qualify (T2Q)/Train-to-Certify (T2C) training process in an off-ship/shore-based virtual ship trainer environment, using simulators, and blended training solutions focused on both tactical and equipment operations and maintenance training. When completed, the LCS shore-based training capability will satisfy individual, team, unit, and force training, with an objective of meeting Capability Development Document (CDD) T2Q Key Performance Parameter (KPP) requirements.																	
								FY 2014 Accomplishments:									
								FY2014 Accomplishments entered in Project Unit 3096.									
								FY 2015 Plans:									
FY2015 Plans entered in Project Unit 3096.																	
FY 2016 Base Plans:																	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy				Date: February 2015		
Appropriation/Budget Activity 1319 / 4		R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP		Project (Number/Name) 4506 / LCS Training		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
RDTE funding for NAWCTSD goes to Program Management, Contracting, Research and Engineering, Test and Evaluation, Logistics and Industrial Ops, and Finance management support and travel requirements as the LCS Training System Executive Agent. Funding is provided to develop and oversee Deck and other courseware (depending on budget) for LCS in support of PMS 505. CSCS is funded as the Training Support Agent (TSA) for fielding of LCS 1 and LCS 2 Integrated Tactical Trainers (ITTs) and delivery of instruction. Delivery of instruction tasks include: oversight/management, curriculum maintenance, oversight of simulator maintenance, facility operating costs (phones, building maintenance, etc.), and repair parts support for Littoral Combat Ship Training Facility (LTF) Level One trouble tickets. Also goes to continued LCS training Facility (LTF) San Diego Department of Defense (DoD) Information Assurance (IA) Certification and Accreditation (C&A) Package (DIACAP). Contracts are also tied to an OPN funding line to procure associated spares for shore based trainers.						
FY 2016 OCO Plans: N/A						
Accomplishments/Planned Programs Subtotals		-	-	8.207	-	8.207
C. Other Program Funding Summary (\$ in Millions)						
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017
• 1320: LCS Training	-	-	59.031	-	59.031	3.117
						FY 2018
						4.060
						FY 2019
						18.076
						FY 2020
						18.466
						Complete
						Continuing
						Total Cost
						Continuing
Remarks						
D. Acquisition Strategy						
Per the combined LCS Navy Training System Plan (NTSP), the LCS core crew training concept will meet T2Q and T2C requirements incrementally, with expected completion in FY19. In the interim, individual qualifications can be met for LCS crew members through a combination of vendor training, existing Navy training, new LCS courses and trainers that are presently online, and Under Instruction (U/I) time aboard LCS ships, prior to reporting for duty. Shore based T2Q cannot be fully met with the interim LCS training strategy. Full realization will be achieved with the completed standup of the San Diego LCS Training Facility (LTF), which includes the Integrated Tactical Trainers, Bridge, Readiness Control Officer (RCO), Combat Systems and Mission Package Training System (MPTS) part-task trainers, the Common Mission Package Trainer (CMPT), Mission Bay trainer and Virtual Computer Labs to support the T2Q operations and maintenance pipeline courses.						
Initial crew training includes using existing Navy training where appropriate; Original Equipment Manufacturer (OEM) and vendor training where Naval Education and Training Command (NETC) training does not exist; tactical team training using current tactical Shore Based Trainers (SBTs); and the LCS Academy for platform						

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP	Project (Number/Name) 4506 / LCS Training
familiarization training to prepare a ready to sail crew. Replacement crew training continues this training regime, with initial training to be replaced by fielded NETC training as it comes online.		
E. Performance Metrics T2Q will succeed and support mission accomplishment in the long run only if commanders have confidence that the output is valid, reliable, and standardized. To justify that confidence, training outcomes must mirror, and therefore predict, critical mission outcomes. To achieve that result a set of objective, performance-based measures, metrics, and standards is being developed for each watch station and billet requirement. For qualifications to be truly predictive, they must be guaranteed by the application of objective measures that vary little between evaluators. New courses such as the Surface Warfare Officers School (SWOS) LCS Officer of the Deck (OOD), Junior Officer of the Deck (JOOD) and the LCS Shore-Based Trainer Capstone courses have been designed to meet T2Q standards. Ultimately, success of the training acquisition strategy will be objectively validated by accomplishment of PQS by the sailors as determined through the Learning Management System (LMS) and achievement of all requirements in the LCS Training Manual (TRAMAN) as assessed by LCS Squadrons and appropriate Afloat Training Groups (ATG).		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy													Date: February 2015		
Appropriation/Budget Activity 1319 / 4							R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP				Project (Number/Name) 4506 / LCS Training				

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Deck IVSE	C/FFP	TBD : TBD	0.000	-		-		6.000	Feb 2016	-		6.000	-	6.000	-
Subtotal			0.000	-		-		6.000		-		6.000	-	6.000	-

Remarks
Years prior to FY2016 are reflected in 3096 Project Unit.

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Training Operations	WR	NSWC, DD/CSCS : Dahlgren Virginia	0.000	-		-		1.397	Feb 2016	-		1.397	-	1.397	-
Subtotal			0.000	-		-		1.397		-		1.397	-	1.397	-

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Support	C/CPAF	Various : Various	0.000	-		-		0.810	Nov 2015	-		0.810	Continuing	Continuing	Continuing
Subtotal			0.000	-		-		0.810		-		0.810	-	-	-

Remarks
Years prior to FY2016 are reflected in 3096 Project Unit.

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		-		8.207		-		8.207	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy										Date: February 2015																															
Appropriation/Budget Activity 1319 / 4										R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP										Project (Number/Name) 4506 / LCS Training																					
Proj 4506										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
										1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Interactive Virtual Shipboard Environment																																									
																				</																					

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603581N / (U)LITTORAL COMBAT SHIP	Project (Number/Name) 4506 / LCS Training	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 4506				
Interactive Virtual Shipboard Environment: DECK IVSE- Contract Award	2	2016	2	2016
Interactive Virtual Shipboard Environment: DECK IVSE- Development	2	2016	2	2018
Interactive Virtual Shipboard Environment: Combat System Courseware Contract Award	2	2017	2	2017
Interactive Virtual Shipboard Environment: Combat System Courseware Development	2	2017	3	2020