Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy											Date: May 2017	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604311N *I LPD-17 Class Systems Integration*							
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
Total Program Element	32.806	0.730	0.580	0.689	-	0.689	0.968	0.890	0.834	0.850	Continuing	Continuing
2283: *LPD-17 Class System Integration*	32.806	0.730	0.580	0.689	-	0.689	0.968	0.890	0.834	0.850	Continuing	Continuing

A. Mission Description and Budget Item Justification

The LPD 17 Class ships are functional replacements for 41 ships of four classes of amphibious ships. These new ships embark, transport, and land elements of Marine landing forces in an assault by helicopters, landing craft, and amphibious vehicles. Tactics, techniques, and tools for naval expeditionary warfare continue to evolve. The LPD 17 Class configuration must continue to adapt to this evolutionary process, because these ships are expected to be in service until almost 2050. The LPD 17 design includes system configurations that reduce operating and support costs and facilitate operational performance improvements. System engineering and integration efforts that began in FY97 will develop further reductions in life cycle costs and will integrate performance upgrades in a rapid, affordable manner. Possible research and development investigations include improvements in Hull, Mechanical and Electrical systems, advanced sensors, advanced computers, advanced command and control software, advanced information system technologies, and ship based logistics support. Cost reduction and improved performance will be accomplished through sustained modeling and simulation efforts, resolutions of equipment obsolescence issues, prototype development, continued personnel reduction efforts, system performance tradeoff evaluations, and naval expeditionary warfare system engineering. Feedback from the Fleet for integrating system configurations will be accomplished through Naval Surface Warfare Centers (Philadelphia, Dahlgren, Port Hueneme, Panama City). These efforts will result in well defined specifications and drawings in system in system integration design packages that provide technical baseline for follow on ship procurements.

B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	0.747	0.580	0.862	-	0.862
Current President's Budget	0.730	0.580	0.689	-	0.689
Total Adjustments	-0.017	0.000	-0.173	-	-0.173
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.017	0.000			
• Program Adjustments	0.000	0.000	-0.180	-	-0.180
• Rate/Misc Adjustments	0.000	0.000	0.007	-	0.007

Change Summary Explanation

FY 2016 funding requests reflects a reduction of $.017 due to execution realignments.

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The FY 2018 funding request was reduced by $0.180 million to account for the availability of prior year execution balances.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604311N / *LPD-17 Class Systems Integration*	Project (Number/Name) 2283 / *LPD-17 Class System Integration*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
2283: *LPD-17 Class System Integration*	32.806	0.730	0.580	0.689	-	0.689	0.968	0.890	0.834	0.850	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The LPD 17 Class ships are functional replacements for 41 ships of four classes of amphibious ships. These new ships embark, transport, and land elements of Marine landing forces in an assault by helicopters, landing craft, and amphibious vehicles. Tactics, techniques, and tools for naval expeditionary warfare continue to evolve. The LPD 17 Class configuration must continue to adapt to this evolutionary process, because these ships are expected to be in service until almost 2050. The LPD 17 design includes system configurations that reduce operating and support costs and facilitate operational performance improvements. System engineering and integration efforts that began in FY97 will develop further reductions in life cycle costs and will integrate performance upgrades in a rapid, affordable manner. Possible research and development investigations include improvements in Hull, Mechanical and Electrical systems, advanced sensors, advanced computers, advanced command and control software, advanced information system technologies, and ship based logistics support. Cost reduction and improved performance will be accomplished through sustained modeling and simulation efforts, resolutions of equipment obsolescence issues, prototype development, continued personnel reduction efforts, system performance tradeoff evaluations, and naval expeditionary warfare system engineering. Feedback from the Fleet for integrating system configurations will be accomplished through Naval Surface Warfare Centers (Philadelphia, Dahlgren, Port Hueneme, Panama City). These efforts will result in well defined specifications and drawings in system in system integration design packages that provide technical baseline for follow on ship procurements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Systems Engineering/Integration	0.730	0.580	0.689	0.000	0.689
Articles:	-	-	-	-	-
Description: Continued Naval Expeditionary Warfare Systems Engineering efforts and integration efforts for unique LPD 17 Class systems, including efforts to resolve obsolescence issues impacting the class.					
FY 2016 Accomplishments: Developed Fiber Optic Monitoring System prototype. Continued HES-C A/C plant development/procurement for installation in LPDs 26-28. Continued Reliability and Obsolescence studies for shipboard equipment. Tasks included Transparent Armored Window replacement studies, SSDG Lube Oil & Fuel Oil Filter class design improvement studies.					
FY 2017 Plans:					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604311N / *LPD-17 Class Systems Integration*	**Project (Number/Name)** 2283 / *LPD-17 Class System Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Continue development of Fiber Optic Cable Plant Monitoring System under SBIR Phase II and transition to Phase III. Continue HES-C A/C plant development/procurement for installation in LPDs 26-28. Continue SSDG Lube Oil & Fuel Oil Filter class design improvement studies. Initiate shipboard studies for LPD 28 HM&E obsolescence and new commercial systems. Develop design, qualification, and testing projects to evaluate: expanded use of commercial systems for cost savings; and machinery/engineering control system integration with new systems and networks; MPDE Exhaust duct temperature studies and structural analysts for class improvements. Initiate shipboard tests for Additive Manufacturing (3D Printing) of HM&E parts. Continue Reliability and Obsolescence studies. ***FY 2018 Base Plans:*** Continue LPD 28 HM&E obsolescence, reliability, and new system integration studies. Studies to be conducted by HII and system vendors, with review and acceptance through the Naval Surface Warfare Centers. Leverage LXR designs where possible for potential obsolescence backfit solutions on the LPD 17 class. Conduct Environmental Qualification Testing for new systems installed on LPD 28. ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.730	0.580	0.689	0.000	0.689

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• SCN/5300: *Completion of Prior Year Shipbuilding Programs*	61.352	45.060	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2,050.608
• SCN/3036: *LPD-17*	550.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	17,500.430

Remarks

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Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604311N / *LPD-17 Class Systems Integration*	**Project (Number/Name)** 2283 / *LPD-17 Class System Integration*

D. Acquisition Strategy

FY16 and out: continue developmental sole source efforts

E. Performance Metrics

N/A