Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy											Date: May 2021	
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 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Cost To Complete**	**Total Cost**
Total Program Element	35.668	0.615	0.941	0.904	-	0.904	-	-	-	-	-	-
2283: *LPD-17 Class System Integration*	35.668	0.615	0.941	0.904	-	0.904	-	-	-	-	-	-

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 amphibious vehicle's tactics, techniques, and tools for naval expeditionary warfare continue to evolve. 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 (HM&E) 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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	0.640	0.945	0.916	-	0.916
Current President's Budget	0.615	0.941	0.904	-	0.904
Total Adjustments	-0.025	-0.004	-0.012	-	-0.012
• Congressional General Reductions	-	-0.004			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.025	0.000			
• Rate/Misc Adjustments	0.000	0.000	-0.012	-	-0.012

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy											Date: May 2021	
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 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Cost To Complete**	**Total Cost**
2283: *LPD-17 Class System Integration*	35.668	0.615	0.941	0.904	-	0.904	-	-	-	-	-	-
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 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 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 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**
Title: Systems Engineering/Integration	0.615	0.941	0.904	0.000	0.904
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 LPD-17 class.					
FY 2021 Plans: Initiate Unmanned System demonstration testing studies and planning of concept of operation (CONOP)s, test procedures, and launch and recovery system research. Initiate phased testing for well deck operations, vehicle stowage, and flight deck operations.					
FY 2022 Base Plans: - Continue Unmanned Systems demonstration planning and testing for well deck operations, vehicle stowage, and flight deck operations. - Continue Hull, Mechanical and Electrical (HM&E) and Amphibious Mission System Obsolescence and Environmental Qualification Testing (EQT).					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
- Complete Caterpillar Ship Service Diesel Caterpillar Ship Service Diesel Generator (CAT SSDG) electronic fuel injection EQT. - Initiate LPD 28 and 29 system integration and test deficiency problem resolution. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Decrease of $0.037 million from FY 2021 to FY 2022 is due to a decrease in program requirements.					
Accomplishments/Planned Programs Subtotals	0.615	0.941	0.904	0.000	0.904

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• 5300: *LPD Flight I Cost to Complete*	0.000	30.578	53.682	-	53.682	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

Continue developmental sole source efforts, improve quality and cost savings engineering studies.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
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*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering and Integration	WR	NSWC Crane : Crane, IN	13.236	0.000		0.000		0.000		-		0.000	-	-	-
Systems Engineering and Integration	C/CPFF	Raytheon Comp : San Diego, CA	2.432	0.000		0.000		0.000		-		0.000	-	-	-
LSD(X) Systems Integration (Next Gen.)	C/CPFF	CSC, Alion Science : Washington, DC	0.549	0.000		0.000		0.000		-		0.000	-	-	-
LSD(X) Systems Integration (Next Gen.)	WR	NSWC Carderock, NSWC Dahlgren : NSWC Beth, MD; NSWC Dahlgren, VA	0.100	0.000		0.000		0.000		-		0.000	-	-	-
DAWF	Various	Various : Various	0.005	0.000		0.000		0.000		-		0.000	-	-	-
Systems Engineering and Integration	C/CPFF	Huntington Ingalls Industries : Pascagoula, MS	2.131	0.515	Dec 2019	0.745	Dec 2020	0.616	Dec 2021	-		0.616	-	-	-
Systems Engineering and Integration	WR	NSWC, Philadelphia : Philadelphia, PA	1.015	0.000		0.000		0.000		-		0.000	-	-	-
Systems Engineering and Integration	C/CPFF	ULTRA Communications : Vista, CA	0.435	0.000		0.000		0.000		-		0.000	-	-	-
Small Business Innovative Research	TBD	TBD : TBD	0.038	0.000		0.000		0.000		-		0.000	-	-	-
Systems Engineering and Integration	Various	ICI : TBD	0.235	0.000		0.000		0.000		-		0.000	-	-	-
Systems Engineering and Integration	WR	NSWC Carderock : Bethesada, MD	0.000	0.040	Dec 2019	0.096	Dec 2020	0.138	Dec 2021	-		0.138	-	-	-
Systems Engineering and Integration	WR	NSWC Panama City : Panama City, FL	0.000	0.060	Dec 2019	0.100	Dec 2020	0.150	Dec 2021	-		0.150	-	-	-
		Subtotal	20.176	0.615		0.941		0.904		-		0.904	-	-	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
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*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OT&E/Interoperability	WR	OPTEVFOR : Norfolk, VA	15.492	0.000		0.000		0.000		-		0.000	-	-	-
		Subtotal	15.492	0.000		0.000		0.000		-		0.000	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	35.668	0.615		0.941		0.904		-		0.904	-	-	N/A

Remarks

Hull, Mechanical, and Electrical obsolescence and reliability improvements, including environmental qualification testing.

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
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*

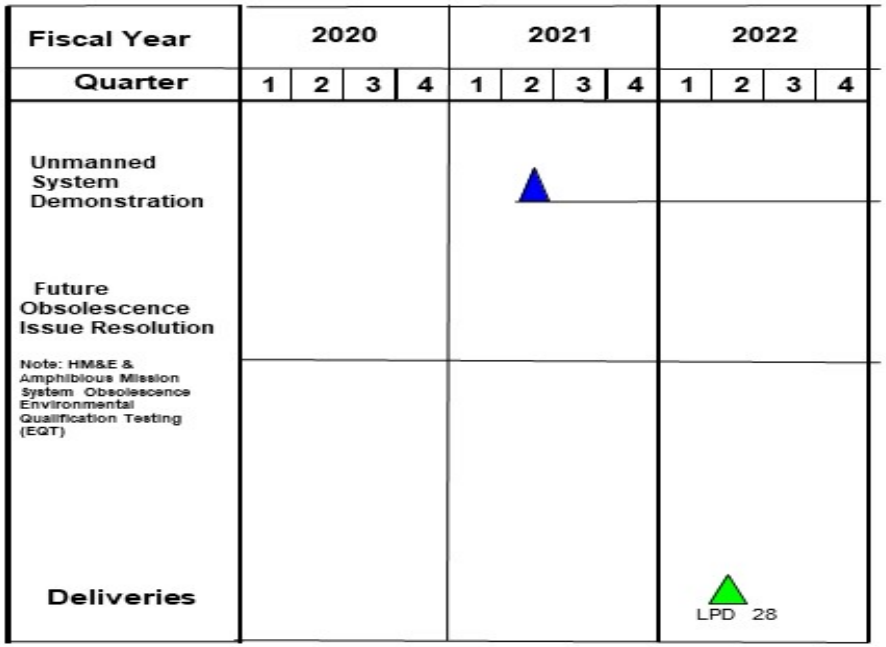

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604311N / *LPD-17 Class Systems Integration*	**Project (Number/Name)** 2283 / *LPD-17 Class System Integration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2283				
Unmanned Demonstration	2	2021	4	2022
Future Obsol. Issue Resolution	1	2020	4	2022
Delivery (LPD 28)	2	2022	2	2022