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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy										Date: March 2019		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 Program Element (Number/Name) PE 0604286M I (U)Marine Corps Additive Manufacturing Tech Dev							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	0.000	6.168	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.168
2741: Additive Manufacturing	0.000	6.168	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.168

Note

These efforts transitioned to PE 0604289M in FY19.

A. Mission Description and Budget Item Justification

This program element supports cost associated with the research and development of Marine Corps Systems Command policy, acquisition process modifications, and prototyping to support the USMC Additive Manufacturing (AM) Initiative under the direction of DC I&L.

The USMC Additive Manufacturing Initiative is an initiative intended to give Marine units access to additive manufacturing techniques to allow them the opportunity to exercise innovation in the resolution of issues affecting unit combat readiness. This PE will support of the development of procedures to enable the approval and manufacturing of items requested from Marines. This involves the development of Marine Corps Policy, an approval process, engineering analysis and testing, establishment of facilities to produce prototype additive manufactured parts and development of training to support the Marine Corps use of additive manufacturing. This initiative incorporates development of strategic partnerships with other DoN Systems Commands and field activities to develop DoN standards, processes and other associated acquisition activities to support future use of additive manufacturing in DoN acquisition and readiness areas.

The Next Generation Logistics (NexLog) project supports cost associated with the research and development, experimentation and limited, rapid fielding of emerging logistics capabilities necessary to enable the Fleet Marine Forces to execute the Marine Corps Operating Concept and inform logistics policies. These emerging logistics capabilities include development of autonomous ground, surface and sub-surface materiel distribution systems; development of operational and tactical, in-field digital fabrication capabilities; and, the development of sensor-driven logistics information technology. This element also supports development of strategic partnerships with DoN Systems Commands and field activities in order to leverage their capabilities and align DoN standards and processes, while furthering the use of additive manufacturing, and other emerging logistics technologies, to increase warfighter readiness, capability, survivability and effectiveness.

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Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy I BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 Program Element (Number/Name) PE 0604286M I (U)Marine Corps Additive Manufacturing Tech Dev			
B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	6.200	0.000	0.000	-	0.000
Current President's Budget	6.168	0.000	0.000	-	0.000
Total Adjustments	-0.032	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.204	0.000			
• SBIR/STTR Transfer	-0.236	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
Change Summary Explanation					
Decrease from FY19 to FY20 is due to the completion of large scale Additive Manufacturing efforts. Completed efforts were to prototype the additive manufacturing and robotic assembly of structures using large format additive manufacturing printers, articulating robotic manipulators and crowd sourcing efforts with Local Motors to develop concepts for a Modular Logistics Vehicle and a Small Unmanned Cargo Delivery System.					

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy										Date: March 2019		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0604286M / (U)Marine Corps Additive Manufacturing Tech Dev				Project (Number/Name) 2741 / Additive Manufacturing			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
2741: Additive Manufacturing	0.000	6.168	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.168
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This project supports cost associated with the research and development of Marine Corps Systems Command policy, acquisition process modifications, prototyping, and future logistics innovations to support the USMC Additive Manufacturing (AM) Initiative under the direction of DC I&L.												
The USMC Additive Manufacturing Initiative is an initiative intended to give Marine units access to additive manufacturing techniques to allow them the opportunity to exercise innovation in the resolution of issues affecting unit combat readiness. This effort supports the development of procedures to enable the approval and manufacturing of items requested from Marines. This involves the development of Marine Corps Policy, an approval process, engineering analysis and testing, establishment of facilities to produce prototype additive manufactured parts and development of training to support the Marine Corps use of additive manufacturing. It also includes research and development of autonomous ground cargo delivery systems, tactical employment of in field digital manufacturing, and sensor driven logistics information technology. This initiative incorporates development of strategic partnerships with other DoN Systems Commands and field activities to develop DoN standards, processes and other associated acquisition activities to support future use of additive manufacturing in DoN acquisition and readiness areas.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Expeditionary Logistics - Legacy Equipment and System Readiness Support Articles: FY 2019 Plans: -In FY19 this effort transitions to PE 0604289M beginning in FY19. FY 2020 Base Plans: N/A FY 2020 OCO Plans: N/A								3.896	0.000	0.000	0.000	0.000
								-	-	-	-	-
Title: Expeditionary Logistics - Expeditionary Manufacturing and Repair Processes Articles: FY 2019 Plans: -In FY19 this effort transitions to PE 0604289M beginning in FY19. FY 2020 Base Plans:								2.272	0.000	0.000	0.000	0.000
								-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
N/A						
FY 2020 OCO Plans:						
N/A						
Accomplishments/Planned Programs Subtotals		6.168	0.000	0.000	0.000	0.000
C. Other Program Funding Summary (\$ in Millions)						
N/A						
Remarks						
D. Acquisition Strategy						
The AM program utilizes a non-traditional acquisition strategy, due to AM being a set of enabling technologies vice a conventional platform for milestone-driven acquisition. It will incorporate strategic partnerships with other DoN activities, as well as the Joint Staff and services. For that reason, these AM investments are designed to explore future capabilities where AM may resolve gaps in logistical readiness, provide a warfighting solutions, and to mitigate AM-related risk within existing programs of record. Beginning in FY 19, this effort was realigned to PE 0604289M/Expeditionary Logistics.						
E. Performance Metrics						
N/A						

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy												Date: March 2019			
Appropriation/Budget Activity 1319 / 4						R-1 Program Element (Number/Name) PE 0604286M / (U)Marine Corps Additive Manufacturing Tech Dev					Project (Number/Name) 2741 / Additive Manufacturing				
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
AM Guidebook development	MIPR	NSWC : Carderock, MD	0.000	0.630	Jun 2018	0.000		0.000		-		0.000	0.000	0.630	-
AM Prototype Parts and Redesign	MIPR	Army : Picatinny Arsenal, NJ	0.000	3.984	Jun 2018	0.000		0.000		-		0.000	0.000	3.984	-
AM Structure Design	MIPR	Army/ERDC : Vicksburg, MS	0.000	1.304	Jun 2018	0.000		0.000		-		0.000	0.000	1.304	-
Subtotal			0.000	5.918		0.000		0.000		-		0.000	0.000	5.918	N/A
Remarks The AM program utilizes a non-traditional acquisition strategy due to AM being a set of enabling technologies vice a conventional platform for milestone-driven acquisition. The funding distribution above reflects research and development efforts for additive manufacturing enabling technologies.															
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Support AM Manuf. and Repair Product	MIPR	NSWC : Carderock, MD	0.000	0.200	Jun 2018	0.000		0.000		-		0.000	0.000	0.200	-
Travel	Various	Various : Various	0.000	0.050	Aug 2018	0.000		0.000		-		0.000	0.000	0.050	
Subtotal			0.000	0.250		0.000		0.000		-		0.000	0.000	0.250	N/A
Remarks The AM program utilizes a non-traditional acquisition strategy, due to AM being a set of enabling technologies vice a conventional platform for milestone-driven acquisition. The funding distribution above reflects research and development efforts for additive manufacturing enabling technologies.															
			Prior Years	FY 2018	FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			0.000	6.168		0.000		0.000		-		0.000	0.000	6.168	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy														Date: March 2019																											
Appropriation/Budget Activity 1319 / 4														R-1 Program Element (Number/Name) PE 0604286M / (U)Marine Corps Additive Manufacturing Tech Dev										Project (Number/Name) 2741 / Additive Manufacturing																	
Proj 2741														FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
														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
														AM Technologies																											
2020OSD - 0604286M - 2741																																									

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604286M / (U)Marine Corps Additive Manufacturing Tech Dev	Project (Number/Name) 2741 / Additive Manufacturing

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2741				
Additive Manufacturing Technologies	2	2018	4	2024