Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy											Date: February 2020	
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 0604289M *I (U)Expeditionary Logistics*							
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	5.890	19.420	0.000	-	0.000	1.257	8.224	7.455	8.726	Continuing	Continuing
2741: *Additive Manufacturing*	0.000	5.890	1.971	0.000	-	0.000	1.257	3.268	2.399	3.569	Continuing	Continuing
2743: *Next Generation Logistics (NexLog)*	0.000	0.000	2.449	0.000	-	0.000	0.000	4.956	5.056	5.157	Continuing	Continuing
9999: *Congressional Adds*	0.000	0.000	15.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	15.000

Note

In FY 2019 efforts in this PE transferred from PE 0604286M.

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.

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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy	Date: February 2020
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 0604289M *I (U)Expeditionary Logistics*

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	6.073	4.420	9.972	-	9.972
Current President's Budget	5.890	19.420	0.000	-	0.000
Total Adjustments	-0.183	15.000	-9.972	-	-9.972
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	15.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.067	0.000			
• SBIR/STTR Transfer	-0.116	0.000			
• Program Adjustments	0.000	0.000	-1.000	-	-1.000
• Rate/Misc Adjustments	0.000	0.000	-8.972	-	-8.972

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2019	FY 2020
Project: 9999: *Congressional Adds*		
Congressional Add: *Construction robotics*	0.000	5.000
Congressional Add: *Large-scale 3D printing robotic system*	0.000	10.000
Congressional Add Subtotals for Project: 9999	0.000	15.000
Congressional Add Totals for all Projects	0.000	15.000

Change Summary Explanation

The FY 2021 funding request was reduced by $2.096M to account for the availability of prior year execution balances.

The decrease of $19.420M from FY 2020 to FY 2021 is primarily due to FY20 congressional adds for Construction robotics and Large-scale 3D printing robotic system efforts. Decrease also reflects the completion of Unmanned Logistics System (ULS) development projects and Data Driven Logistics Sensor Driven Logistic efforts.

Funding in this line item has been reprioritized while ensuring the Marine Corps continues to evolve toward a Force that is aligned with the National Defense Strategy.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604289M / *(U)Expeditionary Logistics*	Project (Number/Name) 2741 / *Additive Manufacturing*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
2741: *Additive Manufacturing*	0.000	5.890	1.971	0.000	-	0.000	1.257	3.268	2.399	3.569	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports costs 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 Deputy Commandant Installations & Logistics. This PE is the DoD's sole investment in the 3D printing of buildings, bridges and metal landing crafts and other large scale constructs. 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. 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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Additive Manufacturing	5.890	1.971	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2020 Plans: - Complete efforts to identify and develop Additive Manufacturing (AM) requirements, verification methods, and technical data needed to acquire AM manufactured components. - Complete fabrication of prototype hardware, fixtures, and jigs that facilitate design processes and procedures for test and performance verification. - Complete system engineering efforts to identify and develop AM fabrication requirements, field repair procedures, and technical data needed to effectively repair AM manufactured components. - Complete prototype testing to verify component design and reliability attributes. - Complete certification studies to assess potential performance/integration issues with expeditionary repaired AM parts.					
FY 2021 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604289M / *(U)Expeditionary Logistics*	**Project (Number/Name)** 2741 / *Additive Manufacturing*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
N/A ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Decrease of $1.971M from FY20 to FY21 reflects the completion of the system engineering efforts to identify and develop AM fabrication requirements. Funding in this line item has been reprioritized while ensuring the Marine Corps continues to evolve toward a Force that is aligned with the National Defense Strategy.					
Accomplishments/Planned Programs Subtotals	5.890	1.971	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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604289M / *(U)Expeditionary Logistics*	Project (Number/Name) 2741 / *Additive Manufacturing*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AM Guidebook development	MIPR	NSWC : Dahlgren, VA	0.000	0.200	Feb 2019	0.100	Feb 2020	0.000		-		0.000	Continuing	Continuing	Continuing
AM Guidebook development	MIPR	NAVSEA/PSU-ARL : State College, PA	0.000	0.350	Feb 2019	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
AM Guidebook development	MIPR	NSWC : Carderock, MD	0.000	0.250	Mar 2019	0.000		0.000		-		0.000	0.000	0.250	-
AM Training Material	MIPR	JHU-APL : Carderock, MD	0.000	0.250	Mar 2019	0.200	Feb 2020	0.000		-		0.000	0.000	0.450	-
AM Technical Data Package Development	MIPR	NAVAIR : Pax River, MD	0.000	0.100	Feb 2019	0.100	Mar 2020	0.000		-		0.000	0.000	0.200	-
AM Process Qualification and Certification	MIPR	Army/ERDC : Vicksburg, MS	0.000	0.400	Feb 2019	0.000		0.000		-		0.000	0.000	0.400	-
AM Prototype Parts and Redesign	MIPR	Army/ERDC : Vicksburg, MS	0.000	0.400	Mar 2019	0.200	Feb 2020	0.000		-		0.000	0.000	0.600	-
AM Develop USMC Fleet Wide Repository	MIPR	NIWC-Pacific : San Diego, CA	0.000	0.250	Feb 2019	0.100	Mar 2020	0.000		-		0.000	0.000	0.350	-
AM Expeditionary Laboratory and Training Facility	Various	NAWC : Orlando, FL	0.000	0.638	Feb 2019	0.200	Mar 2020	0.000		-		0.000	0.000	0.838	-
AM Structure Design	MIPR	Army/ERDC : Vicksburg, MS	0.000	0.500	Feb 2019	0.190	Mar 2020	0.000		-		0.000	0.000	0.690	-
AM 3D printing of littoral ship to shore	RO	NIWC-Pacific : San Diego, CA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
AM Development of Aluminum Group 4 UAS	RO	NIWC-Pacific : San Diego, CA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
		Subtotal	0.000	3.338		1.090		0.000		-		0.000	Continuing	Continuing	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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604289M / *(U)Expeditionary Logistics*	Project (Number/Name) 2741 / *Additive Manufacturing*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AM Identification of Legacy Part	C/FFP	GE : Columbus, OH	0.000	0.250	Mar 2019	0.000		0.000		-		0.000	0.000	0.250	-
AM Identification of New Part	MIPR	JHU-APL : Columbia, MD	0.000	0.400	Feb 2019	0.200	Mar 2020	0.000		-		0.000	Continuing	Continuing	Continuing
AM Identify Cases for Prototypes	MIPR	NSWC : Dahlgren, VA	0.000	0.300	Mar 2019	0.200	Apr 2020	0.000		-		0.000	0.000	0.500	-
AM Program Acquisition Strategy and Sustainment	MIPR	NAVSEA : Navy Yard, Washington DC	0.000	0.702	Feb 2019	0.200	Feb 2020	0.000		-		0.000	0.000	0.902	-
AM Research Advances 3D Printer Technology	MIPR	NSWC-CD : Carderock, MD	0.000	0.250	Feb 2019	0.150	Jan 2020	0.000		-		0.000	0.000	0.400	-
AM Identification Advanced Prototyping Lab/ Workspace	MIPR	NAVSEA : Navy Yard, Washington DC	0.000	0.600	Feb 2019	0.100	Jan 2020	0.000		-		0.000	0.000	0.700	-
Travel	Various	Various : Various	0.000	0.050	Jan 2019	0.031	Jan 2020	0.000		-		0.000	0.000	0.081	-
		Subtotal	0.000	2.552		0.881		0.000		-		0.000	Continuing	Continuing	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 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	5.890		1.971		0.000		-		0.000	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604289M / *(U)Expeditionary Logistics*	**Project (Number/Name)** 2741 / *Additive Manufacturing*

Proj 2741

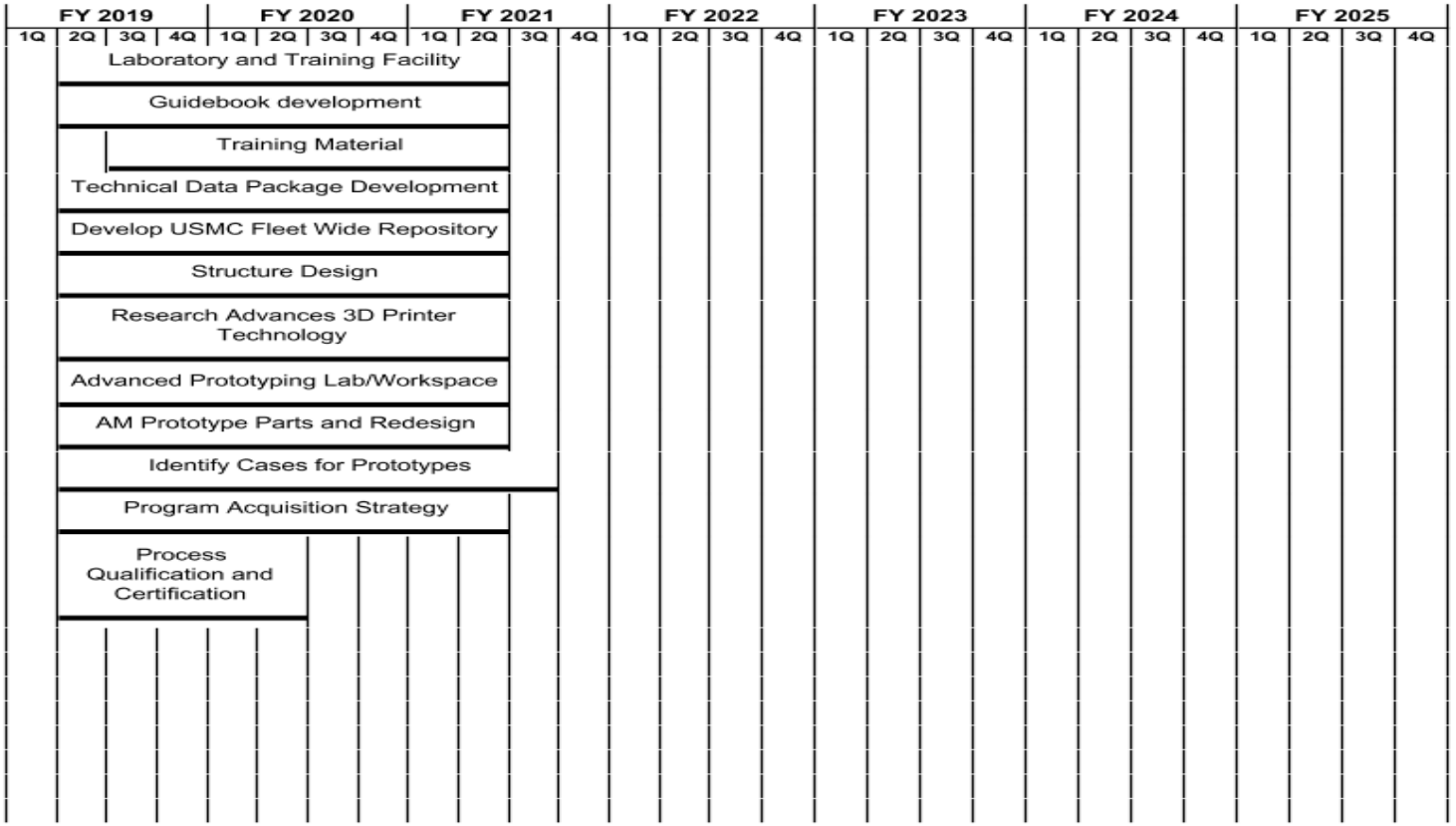

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604289M / *(U)Expeditionary Logistics*	**Project (Number/Name)** 2741 / *Additive Manufacturing*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2741				
Laboratory and Training Facility	2	2019	2	2021
Guidebook development	2	2019	2	2021
Training Material	3	2019	2	2021
Technical Data Package Development	2	2019	2	2021
Develop USMC Fleet Wide Repository	2	2019	2	2021
Structure Design	2	2019	2	2021
Research Advances 3D Printer Technology	2	2019	2	2021
Advanced Prototyping Lab/Workspace	2	2019	2	2021
AM Prototype Parts and Redesign	2	2019	2	2021
Identify Cases for Prototypes	2	2019	3	2021
Program Acquisition Strategy	2	2019	2	2021
Process Qualification and Certification	2	2019	2	2020

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604289M / *(U)Expeditionary Logistics*	Project (Number/Name) 2743 / *Next Generation Logistics (NexLog)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
2743: *Next Generation Logistics (NexLog)*	0.000	0.000	2.449	0.000	-	0.000	0.000	4.956	5.056	5.157	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

This is a new Project in FY 2020.

A. Mission Description and Budget Item Justification

The Next Generation Logistics (NexLog) project supports costs 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, but are not limited to, the development of intelligent distribution systems such autonomous Unmanned Logistics System (ULS) operating in the ground, air, surface and sub-surface domains. The development of enabling technologies that will increase the speed needed to detect an impending support requirement as well as the speed of response to satisfy that requirement. This involves the deployment of sensor technologies, collection of clean, properly tagged data, and the ability to electronically mine and monitor that sensor data for anomalies and micro-patterns that will provide logistics intelligence augmentation, thereby increasing Marine Air-Ground Task Force (MAGTF) lethality.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Unmanned Logistics Systems	0.000	1.199	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: This Unmanned Logistics System (ULS) thrust area directly supports DoD and USMC directed innovation efforts that enable critical and emerging operational efforts to include Expeditionary Advance Basing Operations (EABO) and Littoral Operations in a Constrained Environment (LOCE). The current and emerging projects in this thrust area also better enable speed and Operating Force lethality while reducing MAGTF risk and acting as a force multiplier. ULS capabilities also lightens the MAGTF loads, and allows commanders to control the timing of delivery of mission critical, time sensitive supplies and equipment. Specifically, this project thrust area explores a number of promising Joint and OSD coordinated projects to include, but not limited to Unmanned Logistics Systems in the Surface, Ground, Air and Sub-Surface domains. ***FY 2020 Plans:*** - Initiate and complete ULS-Ground development projects that include development of unmanned electric vehicles that have an ever increasing range, high payload capacity and are ruggedized for use in support of combat scenarios. Also, in the ULS-Ground domain are projects that explore emerging capabilities that can be applied to current inventory assets through autonomous applique kits.					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604289M / *(U)Expeditionary Logistics*	**Project (Number/Name)** 2743 / *Next Generation Logistics (NexLog)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
- Initiate and complete ULS-Surface include Pipefish, which fills the bulk fuel supply, mobility, and distribution gaps between large tankers and requirements at the points of need both at sea and ashore at a low operating cost and risk level. - Initiate and complete ULS-Surface projects including the Autonomous Littoral Connector, which provides a low cost autonomous resupply platform utilizing legacy LCM-8 landing craft integrated with autonomous technology being utilized on the Sea Hunter program, delivering critical supplies to the Operating Forces at a significantly reduced risk while increasing the force's reach. - Initiate and complete exploration of numerous ULS-Air domain projects to included ULS-Air Small, Medium and Large Platforms that help explore autonomous technologies emerging from industry and the DoD Lab environment to provide an organic, highly autonomous, aerial distribution capability within sustainment and maneuver units. ULS-Air provides rapid, responsive, and flexible sustainment options in support of dispersed and semi-independent operations critical to the most likely future operating environment. - Initiate and complete exploration into other autonomous enabling capabilities to include artificial intelligence, sensing capability, autonomic response and integrated fast turn, emerging commercial technologies. ***FY 2021 Base Plans:*** N/A ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY20 to FY21 funding decreased by $1.199M. Funding in this project has been reprioritized while ensuring the Marine Corps continues to evolve toward a Force that is aligned with the National Defense Strategy.					
Title: Data Driven Logistics Autonomous Learning and Innovation	0.000	1.250	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: This Data Driven Logistics (D2L) thrust area directly supports DoD and USMC directed innovation efforts that enable critical and emerging operational efforts to include Expeditionary Advance Basing Operations (EABO) and Littoral Operations in a Constrained Environment (LOCE). The current and emerging projects in this thrust area also better enable speed and Operating Force lethality while reducing MAGTF risk and ensuring					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604289M / *(U)Expeditionary Logistics*	**Project (Number/Name)** 2743 / *Next Generation Logistics (NexLog)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
increased artificial intelligence, augmented reality integration, improved command and control, focused analytics, greater data accuracy and more responsive processes. ***FY 2020 Plans:*** - Initiate and complete the Support Data Driven Logistic Sensor Driven Logistic Projects such as Joint Operational Energy Command and Control (JOEC2), shot round counter and the Personal Combat Assistant and Reporting Device (PCARD) system, whose development may ultimately provide sensored technologies at the tactical edge. Additionally, JOEC2 and shot round counter enables supply monitoring of battlefield consumption rates for ammunition and bulk fuel accountability, visibility, and energy command and control from the tactical edge to the enterprise, providing logistical information in real-time from the individual Marine through the highest echelon, enabling logistics units to be proactive vice reactive in the provision of needed sustainment. These emerging capabilities help to create a central hub for data that permits the application of analytical and data-driven algorithms that can have operational and strategic affects with future efforts that may be leveraged by fires, medical, and drones. - Initiate and complete other D2L efforts include sensor driven logistics, augmented reality, logistics artificial intelligence pilots and condition based maintenance efforts meant to increase predictive maintenance, focus resources and provide assets at the critical points to avoid backlogs and Operating Force burdens. ***FY 2021 Base Plans:*** N/A ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY20 to FY21 funding decreased by $1.250M. Funding in this project has been reprioritized while ensuring the Marine Corps continues to evolve toward a Force that is aligned with the National Defense Strategy.					
Accomplishments/Planned Programs Subtotals	0.000	2.449	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604289M / *(U)Expeditionary Logistics*	**Project (Number/Name)** 2743 / *Next Generation Logistics (NexLog)*

D. Acquisition Strategy

NexLog will incorporate strategic partnerships with other DoN activities, as well as the Joint Staff and services. For that reason, these investments are designed to explore future capabilities that may resolve gaps in logistical readiness, provide warfighting solutions, and mitigate Log-related risk within existing programs of record. Ensure the USMC can meet the logistics challenges of future operating environments.

-Accelerate measurable transition outcomes
-Grow logistics innovation network and partnerships
-Promote warfighter-driven logistics innovation
-Mature the innovation skillset

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604289M / *(U)Expeditionary Logistics*	Project (Number/Name) 2743 / *Next Generation Logistics (NexLog)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ULS-Ground	MIPR	TBD : TBD	0.000	0.000		0.349	Jan 2020	0.000		-		0.000	Continuing	Continuing	Continuing
Data Driven Logistic Sensor Driven Logistic Projects	MIPR	TBD : TBD	0.000	0.000		0.600	Jan 2020	0.000		-		0.000	Continuing	Continuing	Continuing
Data Driven Logistics Asset Management/ Inventory Security Projects	MIPR	TBD : TBD	0.000	0.000		0.300	Jan 2020	0.000		-		0.000	Continuing	Continuing	Continuing
Data Driven Logistics Artificial Intelligence, and Capabilities Based Mainenance	MIPR	TBD : TBD	0.000	0.000		0.350	Jan 2020	0.000		-		0.000	Continuing	Continuing	Continuing
Travel	Various	TBD : TBD	0.000	0.000		0.050	Jan 2020	0.000		-		0.000	Continuing	Continuing	Continuing
ULS - Air	MIPR	TBD : TBD	0.000	0.000		0.800	Jan 2020	0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		2.449		0.000		-		0.000	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		2.449		0.000		-		0.000	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604289M / *(U)Expeditionary Logistics*	**Project (Number/Name)** 2743 / *Next Generation Logistics (NexLog)*

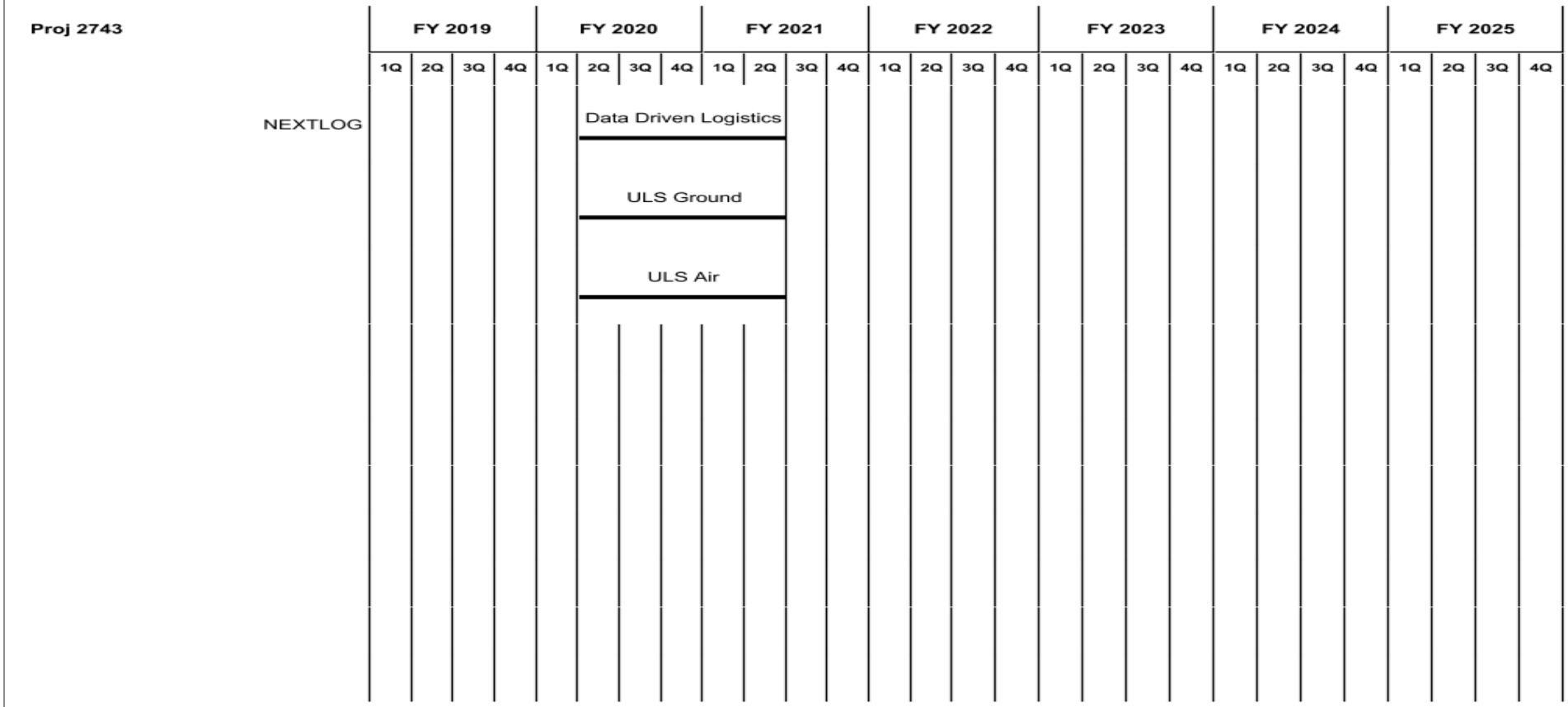

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604289M / *(U)Expeditionary Logistics*	**Project (Number/Name)** 2743 / *Next Generation Logistics (NexLog)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2743				
NEXTLOG: Data Driven Logistics	2	2020	2	2021
NEXTLOG: Unmanned Logistics Systems Ground	2	2020	2	2021
NEXTLOG: Unmanned Logistics Systems Air	2	2020	2	2021

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604289M / *(U)Expeditionary Logistics*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	0.000	15.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	15.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the costs associated with the research and development of expeditionary logistics capabilities such as the Expeditionary Fabrication (XFAB) Facility and Tactical Fabrication (TACFAB) suite in support of Expeditionary Advanced Base Operations and Distributed Operations. The project supports the investment to develop the digital infrastructure required to support the implementation of 3D printing; the 3D printing of expeditionary capabilities such as buildings, bridges, ship-to-shore landing crafts and other large scale constructs; the characterization of material that can be used for repair parts and potential feedstock to include the use of discarded materials on the battlefield; engineering analysis and testing; and innovation/problem solving training to enable Marines to leverage advanced manufacturing technologies. The Expeditionary Logistics Initiative will give Marine units access to additive manufacturing techniques to allow them the opportunity to exercise innovation to resolve issues affecting unit combat readiness in austere environments. This effort supports the development of procedures to enable the approval and manufacturing of items requested from Marines and incorporates the development of strategic partnerships with other DoN Systems Commands and field activities to exploit additive manufacturing technologies in support of our Naval Forces.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020
Congressional Add: Construction robotics ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** -Initiate efforts to develop a prototype large-scale expendable landing crafts, perform construction structure design, and conduct construction material development research.	0.000	5.000
Congressional Add: Large-scale 3D printing robotic system ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** -Initiate efforts to develop a large-scale robotic mobile manufacturing system prototype capable of 3D printing large objects and structures in expeditionary/austere environments, develop the digital infrastructure required to share the technical data needed to exploit AM technologies in garrison and deployed environments, and provide support to Marine units employing 3D technologies in varying battlefield environments.	0.000	10.000
Congressional Adds Subtotals	0.000	15.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604289M / *(U)Expeditionary Logistics*	**Project (Number/Name)** 9999 / *Congressional Adds*

C. Other Program Funding Summary ($ in Millions)

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 incorporates strategic partnerships with other DoN activities, as well as the Joint Staff, other Services, and government laboratories. For that reason, these AM investments are designed to explore future capabilities where AM may resolve gaps in logistical readiness, provide warfighting solutions, establish the digital infrastructure required to share the technical data required to exploit AM across the DoD, and to mitigate AM-related risk within existing programs of record.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604289M / *(U)Expeditionary Logistics*	**Project (Number/Name)** 9999 / *Congressional Adds*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AM Large-Scale Expendable landing craft - CR	C/FFP	NIWC PAC : San Diego, CA	0.000	0.000		1.540	Mar 2020	0.000		-		0.000	0.000	1.540	-
AM Construction Structure Design - CR	WR	Army / ERDC : Vicksburg, MS	0.000	0.000		0.500	Mar 2020	0.000		-		0.000	0.000	0.500	-
AM Construction Materiel Development Research - CR	C/FFP	DIU / WHS : Washington, DC	0.000	0.000		1.500	Mar 2020	0.000		-		0.000	0.000	1.500	-
AM Ship-to-shore landing craft (refueler variant) - CR	C/FFP	NIWC PAC : San Diego, CA	0.000	0.000		0.535	Sep 2020	0.000		-		0.000	0.000	0.535	-
AM Mobile Recycling Facility - RS	WR	ARL : Aberdeen, MD	0.000	0.000		0.200	May 2020	0.000		-		0.000	0.000	0.200	-
Mobile Large-Scale Additive Manufacturing System - RS	C/FFP	NIWC PAC : San Diego, CA	0.000	0.000		5.000	Jun 2020	0.000		-		0.000	0.000	5.000	-
Develop USMC Digital Repository - RS	WR	NIWC PAC : San Diego, CA	0.000	0.000		2.000	Jun 2020	0.000		-		0.000	0.000	2.000	-
AM Expeditionary Battlefield Decoys - RS	TBD	TBD : TBD	0.000	0.000		0.200	Aug 2020	0.000		-		0.000	0.000	0.200	-
Digital Repository - MBE Environment - RS	C/FFP	NAWC-TSD : Orlando, FL	0.000	0.000		0.500	Sep 2020	0.000		-		0.000	0.000	0.500	-
		Subtotal	0.000	0.000		11.975		0.000		-		0.000	0.000	11.975	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Ship-to-Shore landing craft modeling and simulation - CR	MIPR	DTIC : TBD	0.000	0.000		0.500	Jul 2020	0.000		-		0.000	0.000	0.500	-
Digital Repository - DLA JAMMEX - RS	Reqn	DTIC : Omaha, NB	0.000	0.000		0.250	Sep 2020	0.000		-		0.000	0.000	0.250	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604289M / *(U)Expeditionary Logistics*	Project (Number/Name) 9999 / *Congressional Adds*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Interim Digital Repository - RS	Reqn	NIWC Lant : Charleston, SC	0.000	0.000		0.300	Sep 2020	0.000		-		0.000	0.000	0.300	-
AM Fleet Support - 3D printing, construction, and Ship-to-Shore connectors - RS	WR	NIWC PAC : San Diego, CA	0.000	0.000		0.250	Sep 2020	0.000		-		0.000	0.000	0.250	-
AM Fleet Support - 3D printing training and integration - RS	WR	NSWC CD : Carderock, MD	0.000	0.000		0.400	Sep 2020	0.000		-		0.000	0.000	0.400	-
AM Fleet Support - Materiel characterization and prototype eval - RS	Reqn	NAVSEA : Washington, DC	0.000	0.000		0.250	Sep 2020	0.000		-		0.000	0.000	0.250	-
AM Identification Advanced Prototyping Lab/ Workspace - RS	MIPR	DTIC : TBD	0.000	0.000		0.150	Sep 2020	0.000		-		0.000	0.000	0.150	-
		Subtotal	0.000	0.000		2.100		0.000		-		0.000	0.000	2.100	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AM Large-Scale Expendable landing craft - CR	C/FFP	NIWC PAC : San Diego, CA	0.000	0.000		0.425	Sep 2020	0.000		-		0.000	0.000	0.425	-
Mobile Large-Scale Additive Manufacturing System - RS	WR	Army / ERDC : Vicksburg, MS	0.000	0.000		0.500	Jun 2020	0.000		-		0.000	0.000	0.500	-
		Subtotal	0.000	0.000		0.925		0.000		-		0.000	0.000	0.925	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		15.000		0.000		-		0.000	0.000	15.000	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604289M / *(U)Expeditionary Logistics*	Project (Number/Name) 9999 / *Congressional Adds*	

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604289M / *(U)Expeditionary Logistics*	**Project (Number/Name)** 9999 / *Congressional Adds*

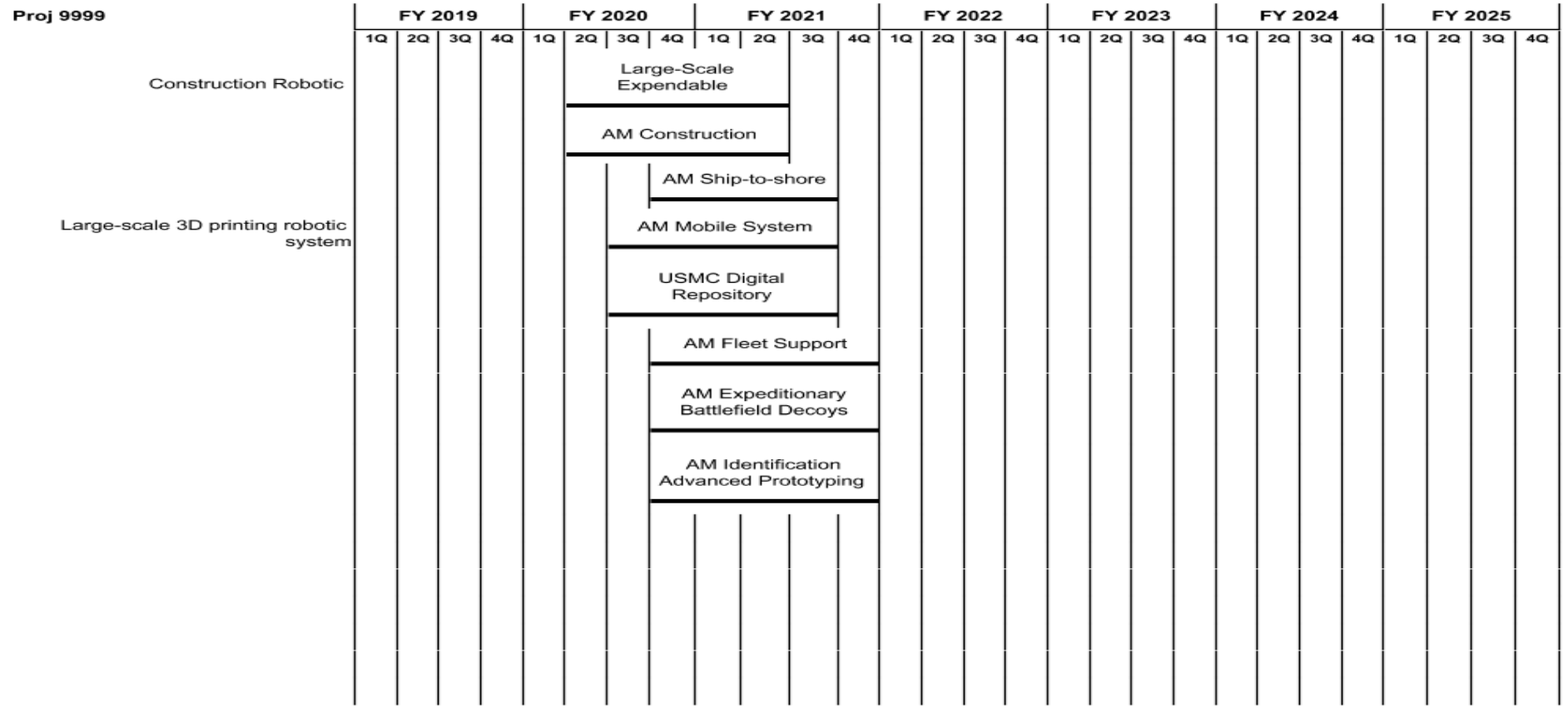

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0604289M / *(U)Expeditionary Logistics*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9999				
Construction Robotic: Large-Scale Expendable	2	2020	2	2021
Construction Robotic: AM Construction	2	2020	2	2021
Construction Robotic: AM Ship-to-shore	4	2020	3	2021
Large-scale 3D printing robotic system: AM Mobile System	3	2020	3	2021
Large-scale 3D printing robotic system: USMC Digital Repository	3	2020	3	2021
Large-scale 3D printing robotic system: AM Fleet Support	4	2020	4	2021
Large-scale 3D printing robotic system: AM Expeditionary Battlefield Decoys	4	2020	4	2021
Large-scale 3D printing robotic system: AM Identification Advanced Prototyping	4	2020	4	2021