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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603739N / <i>Navy Logistic Productivity</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	4.245	0.643	0.899	4.712	-	4.712	6.059	1.036	0.973	0.993	Continuing	Continuing
0356: <i>NADACS inventory</i>	0.000	0.000	0.000	4.000	-	4.000	5.000	0.000	0.000	0.000	0.000	9.000
3223: <i>Logistics R&D</i>	4.245	0.643	0.899	0.712	-	0.712	1.059	1.036	0.973	0.993	Continuing	Continuing

A. Mission Description and Budget Item Justification

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

Includes development and evaluation of incentive systems for improving the productivity of civilian and military personnel. Identifies barriers to increased productivity and evaluates the effect of removing them. Develops techniques for easing the introduction of new technology to the work place. Identifies and evaluates methods for improving the quality of work-life.

Excludes civilian and military manpower and their related costs and military construction costs which are included in appropriate Management and Support elements in this program.

B. Program Change Summary (\$ in Millions)	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	0.669	0.899	1.426	-	1.426
Current President's Budget	0.643	0.899	4.712	-	4.712
Total Adjustments	-0.026	0.000	3.286	-	3.286
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.026	0.000			
• Program Adjustments	0.000	0.000	3.285	-	3.285
• Rate/Misc Adjustments	0.000	0.000	0.001	-	0.001

Change Summary Explanation

FY 2024 net increase of \$3.286 million provided in Project 0356 supports rapid fielding of Naval Autonomous Data Collection System (NADACS).

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity				Project (Number/Name) 0356 / NADACS inventory			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
0356: NADACS inventory	0.000	0.000	0.000	4.000	-	4.000	5.000	0.000	0.000	0.000	0.000	9.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Stable annual funding is required to facilitate implementation and execution of a robust, flexible Logistics R&D program that will provide the means for Naval Supply Systems Command (NAVSUP) to effectively pursue solutions to mission-related capability and technology gaps. The NAVSUP Logistics R&D program has an established infrastructure and business process for ensuring that R&D funds are applied to projects that address high priority enterprise needs established in accordance with OPNAV goals and the NAVSUP Commander's Guidance.

From a process perspective, Logistics R&D investments are governed by a NAVSUP enterprise-wide Executive Steering Group (ESG) chaired by the NAVSUP Vice Commander, and comprised of SES and Command leadership representatives. The ESG ratifies capability and technology gaps identified by all activities within the enterprise, and then assesses and prioritizes all proposed Logistics R&D initiatives in accordance with their potential for filling the established gap and generating return on investment.

The established Logistics R&D business management process has currently identified capability/technology gaps in the following general areas: 1) the need to develop formalized food service management techniques that focus on increased efficiency of new and existing systems and facilities. 2) the need to modernize quality of life (QOL) services to improve overall services, offer additional desired features and reduce total ownership costs, 3) the need to assess clothing protection for the warfighter in areas of thermal/flame threats, protective footwear, and physical (hearing, vibration, etc.) clothing/accessories, 4) the need to develop logistics data access and information sharing through enhanced Graphical User Interfaces (GUI) and web-based data services, 5) the need to develop a capability that allows Integrated Logistics Support (ILS) repair and modernization tools, 6) the need to leverage breakthrough technologies to improve supply chain processing. This modest R&D investment will establish a NAVSUP Logistics R&D Program to explore additional technologies and significantly increase potential cost savings.

The Naval Autonomous Data Collection System (NADACS) is an Enterprise level, multi-source, digital tracking tool that supports asset visibility, accountability & auditability. The system directly supports both Congressional and Departmental dictates that require Navy to improve its ability to maintain and track material, assets and equipment with a high degree of accuracy and accountability.

NADACS uses a variety of handheld readers, fixed readers, Mesh networking, and sensors to collect asset and combine data from barcoding, Radio Frequency identification (RFID) and Internet of Things (IOT) sensors to provide locational and health information of assets which can then be compared with on-hand inventory records.

NAVSUP will be employing cellular 5G capabilities with Satellite Communication (SATCOM) along with other communication transport methods to move data from point of collection to the NADACS database, and then providing end users with a 'Web Browser' picture to assess and manage the asset picture. NADACS is based on government owned software coupled with specialty and commercially available hardware to create a complete system. For commercial hardware, the system is hardware agnostic, encouraging use of available hardware while maintaining a high degree of competition.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy	Date: March 2023
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Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity	Project (Number/Name) 0356 / NADACS inventory
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Title: Storage Location RFID Tech Expansion</p> <p align="right">Articles:</p> <p>Description: Warehouse and indoor/outdoor storage location RFID Technology expansion.</p> <p>FY 2023 Plans: This funding was provided beginning in FY24.</p> <p>FY 2024 Base Plans: \$0.760M to investigate robust RFID tagging material/options for tagging warehouse items as well as ground support equipment, MHE and other mobile equipment used at FLCs, Shipyards and Air Stations. Tags will include current paper to expand to rigid, encased, tamper-resistant and all-weather.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY24 funding increased \$0.760 million for warehouse and indoor/outdoor storage location RFID Technology expansion as part of Rapid Fielding of NADACS.</p>	0.000	0.000	0.760	0.000	0.760
	-	-	-	-	-
<p>Title: Alternative Data Gateway for Logistics Data</p> <p align="right">Articles:</p> <p>Description: Alternative data gateway for logistics data.</p> <p>FY 2023 Plans: This funding was first provided for FY24.</p> <p>FY 2024 Base Plans: \$0.900M to explore multiple fixed and mobile gateways for data collection. Leverage emerging 5G cellular technology, Iridium SBD modems and high speed WiFi.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY24 funding increased \$0.900 million for an alternative data gateway for logistics data as part of Rapid Fielding of NADACS.</p>	0.000	0.000	0.900	0.000	0.900
	-	-	-	-	-
<p>Title: Asset Tracking in a Box,</p>	0.000	0.000	2.100	0.000	2.100

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Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity	Project (Number/Name) 0356 / NADACS inventory
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p align="right"><i>Articles:</i></p> <p>Description: Asset tracking in a box, addition of "Fetch Robot"</p> <p>FY 2023 Plans: Funds first provided for FY24.</p> <p>FY 2024 Base Plans: \$2.100M to develop multiple types of devices: Sensors (RFID, mess tags, etc.), Collectors (readers, mesh network, Bluetooth, etc.), Communication Gateways (mesh, WiFi, Bluetooth, 5G hotspot, etc.) to connect to NADACS. Explore using "Fetch Robot" as an automated vehicle sensors for RFID tag data collection.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY24 funding increased \$2.100 million for Asset Tracking in a Box and the addition of "Fetch Robot" as part of Rapid Fielding of NADACS.</p>	-	-	-	-	-
<p>Title: Integrate FACET with NADACS GUI</p> <p align="right"><i>Articles:</i></p> <p>Description: Integrate FACET with NADACS GUI</p> <p>FY 2023 Plans: Funding first provided for FY24.</p> <p>FY 2024 Base Plans: \$0.240M to develop software integration with FACET and NADACS. This will enable users to have a centralized location for multiple warehousing processes.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY24 funding increased \$0.240 million for integration of FACET with the NADACS GUI as part of Rapid Fielding of NADACS.</p>	0.000 -	0.000 -	0.240 -	0.000 -	0.240 -
Accomplishments/Planned Programs Subtotals	0.000	0.000	4.000	0.000	4.000

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

N/A

Remarks

D. Acquisition Strategy

NAVSUP R&D executed through firm fixed price negotiated contracts and NAVSUP support. Performance-based reviews conducted quarterly by the Project Management Office.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity	Project (Number/Name) 0356 / NADACS inventory
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Rapid Fielding of Naval Autonomous Data Collection System	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Warehouse and Storage Location RFID Tech Expansion																												
Contract Award										▲				▲														
Development/Functional Testing											▬				▬													
Implementation												▲																
<hr/>																												
Alternative Data Gateway for Logistics Data																												
Contract Award										▲				▲														
Development/Functional Testing											▬				▬													
Implementation												▲				▲												
<hr/>																												
Asset Tracking in a Box "Fetch Robot"																												
Contract Award										▲				▲														
Development/Functional Testing											▬				▬													
Implementation												▲				▲												
<hr/>																												
Integrate FACET with NADACS GUI																												
Contract Award										▲				▲														
Development/Functional Testing											▬				▬													
Implementation												▲				▲												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Rapid Fielding of Naval Autonomous Data Collection System</i>				
Warehouse and Storage Location RFID Tech Expansion: Contract Award: FY2024 Contract Award	2	2024	2	2024
Warehouse and Storage Location RFID Tech Expansion: Contract Award: FY2025 Contract Award	2	2025	2	2025
Warehouse and Storage Location RFID Tech Expansion: Development/Functional Testing: FY2024 Development/Functional Testing	3	2024	3	2024
Warehouse and Storage Location RFID Tech Expansion: Development/Functional Testing: FY2025 Development/Functional Testing	3	2025	3	2025
Warehouse and Storage Location RFID Tech Expansion: Implementation: FY2024 Implementation	4	2024	4	2024
Warehouse and Storage Location RFID Tech Expansion: Implementation: FY2025 Implementation	4	2024	4	2024
Alternative Data Gateway for Logistics Data: Contract Award: FY2024 Contract Award	2	2024	2	2024
Alternative Data Gateway for Logistics Data: Contract Award: FY2025 Contract Award	2	2025	2	2025
Alternative Data Gateway for Logistics Data: Development/Functional Testing: FY2024 Development/Functional Testing	3	2024	3	2024
Alternative Data Gateway for Logistics Data: Development/Functional Testing: FY2025 Development/Functional Testing	3	2025	3	2025
Alternative Data Gateway for Logistics Data: Implementation: FY2024 Implementation	4	2024	4	2024
Alternative Data Gateway for Logistics Data: Implementation: FY2025 Implementation	4	2025	4	2025
Asset Tracking in a Box "Fetch Robot": Contract Award: FY2024 Contract Award	2	2024	2	2024
Asset Tracking in a Box "Fetch Robot": Contract Award: FY2025 Contract Award	2	2025	2	2025
Asset Tracking in a Box "Fetch Robot": Development/Functional Testing: FY2024 Development/Functional Testing	3	2024	3	2024

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Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity	Project (Number/Name) 0356 / NADACS inventory
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Asset Tracking in a Box "Fetch Robot": Development/Functional Testing: FY2025 Development/Functional Testing	3	2025	3	2025
Asset Tracking in a Box "Fetch Robot": Implementation: FY2024 Implementation	4	2024	4	2024
Asset Tracking in a Box "Fetch Robot": Implementation: FY2025 Implementation	4	2025	4	2025
Integrate FACET with NADACS GUI: Contract Award: FY2024 Contract Award	2	2024	2	2024
Integrate FACET with NADACS GUI: Contract Award: FY2025 Contract Award	2	2025	2	2025
Integrate FACET with NADACS GUI: Development/Functional Testing: FY2024 Development/Functional Testing	3	2024	3	2024
Integrate FACET with NADACS GUI: Development/Functional Testing: FY2025 Development/Functional Testing	3	2025	3	2025
Integrate FACET with NADACS GUI: Implementation: FY2024 Implementation	4	2024	4	2024
Integrate FACET with NADACS GUI: Implementation: FY2025 Implementation	4	2024	4	2024

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Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity				Project (Number/Name) 3223 / Logistics R&D			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3223: Logistics R&D	4.245	0.643	0.899	0.712	-	0.712	1.059	1.036	0.973	0.993	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Digital Logistics	0.000	0.246	0.195	0.000	0.195
Articles:	-	-	-	-	-
Description: Digital Logistics					
FY 2023 Plans:					
Asset tracking in a box (\$100k)					
Multiple types of devices:					
Sensors (RFID, mess tags, etc.)					
Collectors (readers, mesh network, Bluetooth)					

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Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity	Project (Number/Name) 3223 / Logistics R&D
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

Communications gateways (mesh, wifi, Bluetooth, 5G hotspot, etc.) to connect to NADACS

Alternative data gateway for logistics data (\$66k)
NADACS currently has fixed and mobile gateways that support data collection. This effort would modify the mobile gateway from GSM standard to 3GPP Ver 16, 5G US standard.

Warehouse/Storage location RFID technology expansion (\$80k)
Current RFID tagging is currently limited to paper or foam back tags. This effort would investigate the use of alternative RFID tagging for detailed asset tracking in warehouse/storage locations. Effort would include tag, tag printers, as well as S/W/data process development. Type of tags would include rigid, encased and tamper resistant.

FY 2024 Base Plans:
Asset tracking in a box (\$79k)
Multiple types of devices:
Sensors (RFID, mess tags, etc.)
Collectors (readers, mesh network, Bluetooth)
Communications gateways (mesh, wifi, Bluetooth, 5G hotspot, etc.) to connect to NADACS

Alternative data gateway for logistics data (\$52k)
NADACS currently has fixed and mobile gateways that support data collection. This effort would modify the mobile gateway from GSM standard to 3GPP Ver 16, 5G US standard.

Warehouse/Storage location RFID technology expansion (\$64k)
Current RFID tagging is currently limited to paper or foam back tags. This effort would investigate the use of alternative RFID tagging for detailed asset tracking in warehouse/storage locations. Effort would include tag, tag printers, as well as S/W/data process development. Type of tags would include rigid, encased and tamper resistant.

FY 2024 OCO Plans:
N/A

FY 2023 to FY 2024 Increase/Decrease Statement:

FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY 2023 to FY 2024 decrease due to reduced level of effort for asset tracking in a box, alternative data gateway for logistics data, and warehouse/storage location RFID technology expansion.					

<p>Title: Readiness Through Logistics Solutions</p> <p align="right">Articles:</p> <p>Description: DESCRIPTION: Supply chain improvements are required to support logistics efficiency and Fleet readiness through logistics solutions technological improvements. Develop technological capabilities that improve Naval Logistics in part or in its record (from manufacture, storage, delivery, use, maintenance, and disposal).</p> <p>FY 2023 Plans: N/A</p> <p>FY 2024 Base Plans: N/A</p> <p>FY 2024 OCO Plans: N/A</p>	0.131	0.000	0.000	0.000	0.000
	-	-	-	-	-

<p>Title: Supply Chain Optimization</p> <p align="right">Articles:</p> <p>Description: Enable innovation in our supply chain processes in the areas of data sciences, logistics IT application development, and quality engineering through incorporation of Science, Technology, Engineering, and Math (STEM) projects performed by interns and academia.</p> <p>Perform market research on emerging supply chain technologies and methods that could be adopted to support the DoN/DoD material supply chain.</p> <p>Developed a new functionality (software supporting data structure and migration of current data) within Ordinance Information System (OIS) that provides visibility of serialized assets use and requirements.</p> <p>FY 2023 Plans: Reverse Engineering (\$114k) NLP funding will support research and development related to reverse engineering Navy Supply platforms which have been identified as either unsupported (no known or available source) or current support is posing a risk to</p>	0.131	0.114	0.090	0.000	0.090
	-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>fleet readiness. Funding will be used for a small business to reverse engineer/reverse manufacture an item and develop a technical data package for future fleet requirements.</p> <p>FY 2024 Base Plans: Reverse Engineering (\$90k) NLP funding will support research and development related to reverse engineering Navy Supply platforms which have been identified as either unsupported (no known or available source) or current support is posing a risk to fleet readiness. Funding will be used for a small business to reverse engineer/reverse manufacture an item and develop a technical data package for future fleet requirements.</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 to FY 2024 decrease due to level of effort for reverse engineering efforts.</p>					
<p>Title: Clothing Protection for the Warfighter</p> <p align="right">Articles:</p> <p>Description: Identify challenges to effectively manage durability and safety aspects of common work/combat uniforms for the warfighter. Eliminate risk of hazardous factors such as fire, weather, and general wear/tear to maximize readiness and strength in Fleet uniforms. Assist with specifications associated with permanent press finish related to the rollout of the Navy's Type III uniform.</p> <p>FY 2023 Plans: Alternatives to PFAS for Water and Stain Repellent Treatments for Navy Textiles (\$85k) The NDAA for FY20 added PFAS to the toxic chemical list and the NDAA for FY22 directed a study of DoD procurement of PFAS containing items, to include shoes and clothing. There is pending federal legislation to further restrict usage of PFAS. The objective of the R&D effort is to investigate suitable PFAS alternatives for durable water repellent (DWR) and stain repellent treatments used in Navy clothing and equipment items. The NCTRF will assess PFAS-free fabric treatments by evaluating the repellency efficacy and degradative effects on material performance or comfort. The improved shipboard cold weather jacket is a developmental item that can be used to assess PFAS-free DWR treatment efficacy. Additionally, NCTRF will evaluate the performance of non-PFAS repellent treated chem-bio protective garment materials developed by Army DEVCOM Soldier Center. PFAS is used as abbreviation for perfluoroalkyl substances and polyfluoroalkyl substances.</p> <p>Product Lifecycle Management System (\$179k)</p>	0.381 -	0.539 -	0.427 -	0.000 -	0.427 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
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Currently, USN uniform and material data is spread among different databases and folders creating hours of research for NCTRF employee. USMC has successfully executed a beta test of PLM system, the Navy (alongside Army and Air Force) has an opportunity to cost share and create an organized and intuitive system for tracking and comparison as well as configuration management of pattern, testing, and design to facilitate uniform development. With an overall cost savings in the millions of dollars in the long term sustainment efforts as it aligns with uniform development

Shipboard Cold Weather Clothing (CWC) System Development Follow-On (\$100k)
To address the Navy's lack of shipboard CWC system, the FY21-FY22 development effort will deliver a recommendation for the shipboard CWC system components, prototypes for system components, findings from system assessment in a laboratory environment, and a draft Operational Requirements Document (ORD). Follow-on funding is required to execute a fit evaluation for the CWC system and a wear evaluation. Using the fit evaluation data, NCTRF will finalize garment technical data and designs for a wear evaluation. A user evaluation in a relevant operational environment is needed to validate the improved shipboard cold weather jacket and the shipboard CWC system performance.

Validating the reduction of size blur with new proposed sizing system (\$85k)
The need for size standardization within the Navy and across services has led to multi-year programs focusing on developing new sizing systems and conducting fit tests. Approximately four years ago the Navy teamed up with an industry partner and is now in its final phase. The industry partner, along with NCTRF, will conduct a fit test to evaluate and rate the efficacy of their recommended female sizes, shapes and statures of key style uniforms. In order for the Navy to move forward with the new sizing system with confidence that we are optimizing the tariff and limiting the possibility of size blur additional analysis is needed. This R&D effort will utilize the of the raw data collected during the fit test and conduct our own statistical analysis to validate the results provided by industry and further develop optimized tariffs that will ensure maximum differentiation of unique sizes with minimum SKUs.

Lifecycle of a Uniform (\$45k)
The lifecycle of a uniform is a frequently fielded question by NCTRF. This relates to sailor allowance as well as the overall ROI in updates or improvements of uniforms. This effort would be looking at further understanding the use of sustainable approaches with uniforms for the future but in order to do that an establish baseline on the actual service and wear of a uniform will be a necessary data point as to understand. NCTRF can simulate durability but the actual timeline of a uniform service life has yet to be captured and understood. This effort will

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>research all the sister areas approach to service life as well and also account for an actual or estimated service life of a navy uniform.</p> <p>3D Materials Library (\$45k) Through two consecutive R&D efforts, we have been successful in acquiring a COTS 3D software that is utilized to virtually sew together patterns to create true-to-life virtual prototypes. Through our research we have found that the key factor in ensuring that the virtual prototypes are exactly comparable to physical prototypes, is the detailed fabric characteristics are necessary. The next step in implementing 3D fully to streamline the development process is to have a full 3D material library. As technology advances, having accurate 3D prototyping services is becoming more in demand than ever. Having a cross-service 3D material library will further benefit our internal and external customers by providing a more affordable and sustainable development process.</p> <p>FY 2024 Base Plans: Alternatives to PFAS for Water and Stain Repellent Treatments for Navy Textiles (\$67k) The NDAA for FY20 added PFAS to the toxic chemical list and the NDAA for FY22 directed a study of DoD procurement of PFAS containing items, to include shoes and clothing. There is pending federal legislation to further restrict usage of PFAS. The objective of the R&D effort is to investigate suitable PFAS alternatives for durable water repellent (DWR) and stain repellent treatments used in Navy clothing and equipment items. The NCTRF will assess PFAS-free fabric treatments by evaluating the repellency efficacy and degradative effects on material performance or comfort. The improved shipboard cold weather jacket is a developmental item that can be used to assess PFAS-free DWR treatment efficacy. Additionally, NCTRF will evaluate the performance of non-PFAS repellent treated chem-bio protective garment materials developed by Army DEVCOM Soldier Center. PFAS is used as abbreviation for perfluoroalkyl substances and polyfluoroalkyl substances.</p> <p>Product Lifecycle Management System (\$140k) Currently, USN uniform and material data is spread among different databases and folders creating hours of research for NCTRF employee. USMC has successfully executed a beta test of PLM system, the Navy (alongside Army and Air Force) has an opportunity to cost share and create an organized and intuitive system for tracking and comparison as well as configuration management of pattern, testing, and design to facilitate uniform development. With an overall cost savings in the millions of dollars in the long term sustainment efforts as it aligns with uniform development</p> <p>Shipboard Cold Weather Clothing (CWC) System Development Follow-On (\$79k)</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy	Date: March 2023
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Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity	Project (Number/Name) 3223 / Logistics R&D
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>To address the Navy's lack of shipboard CWC system, the FY21-FY22 development effort will deliver a recommendation for the shipboard CWC system components, prototypes for system components, findings from system assessment in a laboratory environment, and a draft Operational Requirements Document (ORD). Follow-on funding is required to execute a fit evaluation for the CWC system and a wear evaluation. Using the fit evaluation data, NCTRF will finalize garment technical data and designs for a wear evaluation. A user evaluation in a relevant operational environment is needed to validate the improved shipboard cold weather jacket and the shipboard CWC system performance.</p> <p>Validating the reduction of size blur with new proposed sizing system (\$67k) The need for size standardization within the Navy and across services has led to multi-year programs focusing on developing new sizing systems and conducting fit tests. Approximately four years ago the Navy teamed up with an industry partner and is now in its final phase. The industry partner, along with NCTRF, will conduct a fit test to evaluate and rate the efficacy of their recommended female sizes, shapes and statures of key style uniforms. In order for the Navy to move forward with the new sizing system with confidence that we are optimizing the tariff and limiting the possibility of size blur additional analysis is needed. This R&D effort will utilize the of the raw data collected during the fit test and conduct our own statistical analysis to validate the results provided by industry and further develop optimized tariffs that will ensure maximum differentiation of unique sizes with minimum SKUs.</p> <p>Lifecycle of a Uniform (\$37k) The lifecycle of a uniform is a frequently fielded question by NCTRF. This relates to sailor allowance as well as the overall ROI in updates or improvements of uniforms. This effort would be looking at further understanding the use of sustainable approaches with uniforms for the future but in order to do that an establish baseline on the actual service and wear of a uniform will be a necessary data point as to understand. NCTRF can simulate durability but the actual timeline of a uniform service life has yet to be captured and understood. This effort will research all the sister areas approach to service life as well and also account for an actual or estimated service life of a navy uniform.</p> <p>3D Materials Library (\$37k) Through two consecutive R&D efforts, we have been successful in acquiring a COTS 3D software that is utilized to virtually sew together patterns to create true-to-life virtual prototypes. Through our research we have found that the key factor in ensuring that the virtual prototypes are exactly comparable to physical prototypes, is the detailed fabric characteristics are necessary. The next step in implementing 3D fully to streamline the development process is to have a full 3D material library. As technology advances, having accurate 3D</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity	Project (Number/Name) 3223 / Logistics R&D

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
prototyping services is becoming more in demand than ever. Having a cross-service 3D material library will further benefit our internal and external customers by providing a more affordable and sustainable development process. FY 2024 OCO Plans: N/A FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 to FY 2024 decrease due to reduced level of effort for Alternatives to PFAS for Water and Stain Repellent Treatments for Navy Textiles, Product Lifecycle Management System, Shipboard Cold Weather Clothing (CWC) System Development Follow-On, Validating the reduction of size blur with new proposed sizing system, Lifecycle of a Uniform and 3D Materials Library.					
Accomplishments/Planned Programs Subtotals	0.643	0.899	0.712	0.000	0.712

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

N/A

Remarks

D. Acquisition Strategy

NAVSUP R&D executed through firm fixed price negotiated contracts and NAVSUP support. Performance-based reviews conducted quarterly by the Project Management Office.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity	Project (Number/Name) 3223 / Logistics R&D
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Digital Logistics	C/FFP	NAVSUP AIT : Norfolk, VA	0.000	0.000		0.246	Jun 2023	0.195	Jun 2024	-		0.195	Continuing	Continuing	Continuing
Readiness through Logistics Solutions	C/FFP	Various : Various	1.700	0.131	Dec 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Supply Chain Optimization	C/FFP	Various : Various	0.466	0.131	Dec 2021	0.114	Apr 2023	0.090	Apr 2024	-		0.090	Continuing	Continuing	Continuing
Clothing Protection for the Warfighter	C/FFP	NCTRF : Natick, MA	2.079	0.381	Oct 2021	0.539	Mar 2023	0.427	Mar 2024	-		0.427	Continuing	Continuing	Continuing
Subtotal			4.245	0.643		0.899		0.712		-		0.712	Continuing	Continuing	N/A
Project Cost Totals			4.245	0.643		0.899		0.712		-		0.712	Continuing	Continuing	N/A

Remarks
 In previous plans, NAVSUP forecast budget requirements based on projections rooted in the current year's capability gaps. As our priorities and Strategic Guidance evolves so do our budget requirements. Through leveraging new technologies, NAVSUP will enhance efforts for supply ashore and distant support. We will strengthen our supply chain information technology and management solutions for supply and financial requirements. We will collaborate with partners to improve the quality-of-life experiences and expand services to deployed forces. NAVSUP will continue to build an ethical and effective workforce dedicated to the mission by developing new technological programs that are advantageous to the warfighter. We will reduce risk and minimize vulnerabilities to protect against disruptions to supply chain and business systems. All of our actions will follow a culture of moral excellence to successfully execute the current and future missions of NAVSUP.

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy

Date: March 2023

Appropriation/Budget Activity
1319 / 4

R-1 Program Element (Number/Name)
PE 0603739N / Navy Logistic Productivity

Project (Number/Name)
3223 / Logistics R&D

Logistics R&D	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Supply Chain Optimization																												
Contract Award		◆				◆				◆				◆				◆				◆						
Developmental/Functional Testing			—				—				—				—				—									
Implementation				■				■				■				■				■					■			
Readiness through Logistics Solutions																												
Contract Award		◆																										
Developmental/Functional Testing			—																									
Implementation				■																								
3D Virtual Design Software Improvement																												
Contract Award							◆				◆				◆				◆				◆					
Developmental/Functional Testing								—				—				—				—				—				
Implementation									■			■				■				■				■				
Digital Logistics																												
Contract Award							◆				◆				◆				◆				◆					
Developmental/Functional Testing								—				—				—				—				—				
Implementation									■			■				■				■				■				
Clothing Protection for the Warfighter																												
Contract Award	◆					◆				◆				◆				◆				◆						
Developmental/Functional Testing		—					—				—				—				—				—					
Implementation			■					■				■				■				■				■				

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity	Project (Number/Name) 3223 / Logistics R&D
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Logistics R&D				
Supply Chain Optimization: Contract Award: FY 2022 Contract Award	2	2022	2	2022
Supply Chain Optimization: Contract Award: FY 2023 Contract Award	2	2023	2	2023
Supply Chain Optimization: Contract Award: FY 2024 Contract Award	2	2024	2	2024
Supply Chain Optimization: Contract Award: FY 2025 Contract Award	2	2025	2	2025
Supply Chain Optimization: Contract Award: FY 2026 Contract Award	2	2026	2	2026
Supply Chain Optimization: Contract Award: FY 2027 Contract Award	2	2027	2	2027
Supply Chain Optimization: Developmental/Functional Testing: FY 2022 Developmental/Functional Testing	3	2022	3	2022
Supply Chain Optimization: Developmental/Functional Testing: FY 2023 Developmental/Functional Testing	3	2023	3	2023
Supply Chain Optimization: Developmental/Functional Testing: FY 2024 Developmental/Functional Testing	3	2024	3	2024
Supply Chain Optimization: Developmental/Functional Testing: FY 2025 Developmental/Functional Testing	3	2025	3	2025
Supply Chain Optimization: Developmental/Functional Testing: FY 2026 Developmental/Functional Testing	3	2026	3	2026
Supply Chain Optimization: Implementation: FY 2022 Implementation	4	2022	4	2022
Supply Chain Optimization: Implementation: FY 2023 Implementation	4	2023	4	2023
Supply Chain Optimization: Implementation: FY 2024 Implementation	4	2024	4	2024
Supply Chain Optimization: Implementation: FY 2025 Implementation	4	2025	4	2025
Supply Chain Optimization: Implementation: FY 2026 Implementation	4	2026	4	2026
Supply Chain Optimization: Implementation: FY 2027 Implementation	4	2027	4	2027
Readiness through Logistics Solutions: Contract Award: FY 2022 Contract Award	2	2022	2	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity	Project (Number/Name) 3223 / Logistics R&D
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Readiness through Logistics Solutions: Developmental/Functional Testing: FY 2022 Developmental/Functional Testing	3	2022	3	2022
Readiness through Logistics Solutions: Implementation: FY 2022 Implementation	4	2022	4	2022
3D Virtual Design Software Improvement: Contract Award: FY 2023 Contract Award	3	2023	3	2023
3D Virtual Design Software Improvement: Contract Award: FY 2024 Contract Award	3	2024	3	2024
3D Virtual Design Software Improvement: Contract Award: FY 2025 Contract Award	3	2025	3	2025
3D Virtual Design Software Improvement: Contract Award: FY 2026 Contract Award	3	2026	3	2026
3D Virtual Design Software Improvement: Contract Award: FY 2027 Contract Award	3	2027	3	2027
3D Virtual Design Software Improvement: Developmental/Functional Testing: FY 2023 Developmental/Functional Testing	3	2023	3	2023
3D Virtual Design Software Improvement: Developmental/Functional Testing: FY 2024 Developmental/Functional Testing	3	2024	3	2024
3D Virtual Design Software Improvement: Developmental/Functional Testing: FY 2025 Developmental/Functional Testing	3	2025	3	2025
3D Virtual Design Software Improvement: Developmental/Functional Testing: FY 2026 Developmental/Functional Testing	3	2026	3	2026
3D Virtual Design Software Improvement: Developmental/Functional Testing: FY 2027 Developmental/Functional Testing	3	2027	3	2027
3D Virtual Design Software Improvement: Implementation: FY 2023 Implementation	4	2023	4	2023
3D Virtual Design Software Improvement: Implementation: FY 2024 Implementation	4	2024	4	2024
3D Virtual Design Software Improvement: Implementation: FY 2025 Implementation	4	2025	4	2025
3D Virtual Design Software Improvement: Implementation: FY 2026 Implementation	4	2026	4	2026
3D Virtual Design Software Improvement: Implementation: FY 2027 Implementation	4	2027	4	2027
Digital Logistics: Contract Award: FY 2023 Contract Award	3	2023	3	2023
Digital Logistics: Contract Award: FY 2024 Contract Award	3	2024	3	2024
Digital Logistics: Contract Award: FY 2025 Contract Award	3	2025	3	2025
Digital Logistics: Contract Award: FY 2026 Contract Award	3	2026	3	2026
Digital Logistics: Contract Award: FY 2027 Contract Award	3	2027	3	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity	Project (Number/Name) 3223 / Logistics R&D
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Digital Logistics: Developmental/Functional Testing: FY 2023 Developmental/Functional Testing	3	2023	3	2023
Digital Logistics: Developmental/Functional Testing: FY 2024 Developmental/Functional Testing	3	2024	3	2024
Digital Logistics: Developmental/Functional Testing: FY 2025 Developmental/Functional Testing	3	2025	3	2025
Digital Logistics: Developmental/Functional Testing: FY 2026 Developmental/Functional Testing	3	2026	3	2026
Digital Logistics: Developmental/Functional Testing: FY 2027 Developmental/Functional Testing	3	2027	3	2027
Digital Logistics: Implementation: FY 2023 Implementation	4	2023	4	2023
Digital Logistics: Implementation: FY 2024 Implementation	4	2024	4	2024
Digital Logistics: Implementation: FY 2025 Implementation	4	2025	4	2025
Digital Logistics: Implementation: FY 2026 Implementation	4	2026	4	2026
Digital Logistics: Implementation: FY 2027 Implementation	4	2027	4	2027
Clothing Protection for the Warfighter: Contract Award: FY 2022 Contract Award	1	2022	1	2022
Clothing Protection for the Warfighter: Contract Award: FY 2023 Contract Award	1	2023	1	2023
Clothing Protection for the Warfighter: Contract Award: FY 2024 Contract Award	1	2024	1	2024
Clothing Protection for the Warfighter: Contract Award: FY 2025 Contract Award	1	2025	1	2025
Clothing Protection for the Warfighter: Contract Award: FY 2026 Contract Award	1	2026	1	2026
Clothing Protection for the Warfighter: Contract Award: FY 2027 Contract Award	1	2027	1	2027
Clothing Protection for the Warfighter: Developmental/Functional Testing: FY 2022 Developmental/Functional Testing	2	2022	2	2022
Clothing Protection for the Warfighter: Developmental/Functional Testing: FY 2023 Developmental/Functional Testing	2	2023	2	2023
Clothing Protection for the Warfighter: Developmental/Functional Testing: FY 2024 Developmental/Functional Testing	2	2024	2	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy **Date:** March 2023

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603739N / Navy Logistic Productivity	Project (Number/Name) 3223 / Logistics R&D
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Clothing Protection for the Warfighter: Developmental/Functional Testing: FY 2025 Developmental/Functional Testing	2	2025	2	2025
Clothing Protection for the Warfighter: Developmental/Functional Testing: FY 2026 Developmental/Functional Testing	2	2026	2	2026
Clothing Protection for the Warfighter: Developmental/Functional Testing: FY 2027 Developmental/Functional Testing	2	2027	2	2027
Clothing Protection for the Warfighter: Implementation: FY 2022 Implementation	3	2022	3	2022
Clothing Protection for the Warfighter: Implementation: FY 2023 Implementation	3	2023	3	2023
Clothing Protection for the Warfighter: Implementation: FY 2024 Implementation	3	2024	3	2024
Clothing Protection for the Warfighter: Implementation: FY 2025 Implementation	3	2025	3	2025
Clothing Protection for the Warfighter: Implementation: FY 2026 Implementation	3	2026	3	2026
Clothing Protection for the Warfighter: Implementation: FY 2027 Implementation	3	2027	3	2027