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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Defense Logistics Agency **Date:** May 2021

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603712S / <i>Logistics Research and Development Technology (Log R&D)</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	63.866	17.402	10.235	12.418	-	12.418	-	-	-	-	Continuing	Continuing
EMM: <i>Enhancing Analysis, Modeling, and Decision Support (formerly Analytic & Decision Support)</i>	12.512	2.611	2.729	2.782	-	2.782	-	-	-	-	Continuing	Continuing
GLTD: <i>Improving Logistics Processes (formerly Logistics Process)</i>	23.070	2.437	4.044	5.116	-	5.116	-	-	-	-	Continuing	Continuing
04: <i>Emergent Logistics R&D Requirements (formerly Innovative Products & Services for DLA Customers)</i>	28.284	12.354	3.462	4.520	-	4.520	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Defense Logistics Agency (DLA) is responsible for providing to the Military Services, and other Federal Agencies, as well as combined and allied forces the full spectrum of logistics, acquisition and technical services. DLA sources and provides virtually 100 percent of the consumable items the military services need to operate – including food, uniforms, fuel and energy, medical supplies, construction and barrier materials and equipment, and more than 85 percent of the military’s spare parts. DLA also provides logistics services including logistics information data, manages the reutilization of military equipment, and documents automation and production services. DLA’s Logistics Research and Development (Log R&D) program helps ensure that advanced logistics concepts and business processes are used to accomplish the agency’s mission with the leanest possible infrastructure. Log R&D identifies the best commercial business practices and tailors them, as necessary, into the most effective business processes for the agency. Log R&D develops and demonstrates high risk, high payoff technology that provides a significantly higher level of support at the lowest possible costs.

The DLA Log R&D program is organized into three Strategic Focus Areas (SFAs):

- **Enhancing Analysis, Modeling, and Decision Support (EAMD):** R&D efforts to develop decision support tools, such as modeling, simulation, and other analytics to improve operational strategy decision-making, forecasting, and procurement, which support more effective and efficient responses to emerging market and customer requirements.
- **Improving Logistics Processes (ILP):** R&D efforts to develop and implement advanced technology in logistics processes over and above current baseline systems.
- **Emergent Logistics R&D Requirements (ELR):** R&D efforts to support emergent Logistics R&D requirements that arise out of the budget cycle. These out of cycle requirements always occur. This SFA begins new projects in a timely manner without disrupting ongoing projects by funds reallocation. This SFA scope includes all DLA supply chains and logistics processes.

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DLA's focus for this budget cycle highlights advanced capabilities in digital and technical data modernization, management and analytics to fulfill the DLA role in the DoD Digital Engineering Strategy and improve sharing of data with the industrial base and supported organizations. Investment explores technologies to lower the Agency's material acquisition and operations costs and improve weapons systems support. This effort spans across both DLA R&D Program Elements and multiple Strategic Focus Areas, impacting across the DoD Joint Defense Manufacturing Technology Panel and DLA Enterprise logistics processes.

B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	17.402	10.235	10.355	-	10.355
Current President's Budget	17.402	10.235	12.418	-	12.418
Total Adjustments	0.000	0.000	2.063	-	2.063
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Inflation for Civilian Pay	-	-	0.010	-	0.010
• Inflation for Non-Pay/Non-Fuel Purchases	-	-	-0.356	-	-0.356
• Decrease for Travel	-	-	-0.026	-	-0.026
• Internal Realignment from DRAS2 PE 0605090S	-	-	0.930	-	0.930
• Internal Realignment from ManTech PE 0603680S	-	-	1.500	-	1.500
• Retired Pay Accrual	-	-	0.005	-	0.005

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 04: *Emergent Logistics R&D Requirements (formerly Innovative Products & Services for DLA Customers)*

Congressional Add: *Energy Readiness Program for Fuel Conversion*

Congressional Add: *Energy Readiness Program for Liquid Hydro-carbon Fuel*

Congressional Add Subtotals for Project: 04

Congressional Add Totals for all Projects

	FY 2020	FY 2021
	5.000	-
	5.000	-
Congressional Add Subtotals for Project: 04	10.000	-
Congressional Add Totals for all Projects	10.000	-

Change Summary Explanation

FY 2021:

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<p>-SBIR/STTR Transfer: Due to an error while coding FY 2021 Enactment, the SBIR/STTR transfer is not reflected in the exhibit totals. Programs were indeed taxed and the funding was transferred to the SBIR PE 0605502S. For LOG R&D, the SBIR/STTR transfer is \$0.355M.</p> <p>FY 2022:</p> <ul style="list-style-type: none">-Decrease for Travel: Defense-Wide activities are directed to maximize their travel funding through the use of technology, such as video teleconference, and cost-efficient transportation options.-Internal Realignment from DRAS2 PE 0605090S: DRAS2 was still under development when the program was terminated. Since the system was not complete, it did not reach its intended purpose of replacing the existing DRAS system. The DRAS2 Program Cancellation Acquisition Decision Memorandum is dated April 9, 2020. Due to coding error, the funding increase was moved to the Emergent Logistics R&D Requirements Strategic Focus Area (SFA). Upon enactment, funding will move to the Enhancing Analysis, Modeling, and Decision Support SFA in order to support DLA Strategic Plan priorities in digital business transformation and data analytics.-Internal Realignment from ManTech PE 0603680S: Funding moved from ManTech to LOG for requirements.-Retired Pay Accrual: Agency Contribution Assumption FY 22 rate was increased by 1.1%.		

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Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603712S / <i>Logistics Research and Development Technology (Log R&D)</i>				Project (Number/Name) EMM / <i>Enhancing Analysis, Modeling, and Decision Support (formerly Analytic & Decision Support)</i>			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
EMM: <i>Enhancing Analysis, Modeling, and Decision Support (formerly Analytic & Decision Support)</i>	12.512	2.611	2.729	2.782	-	2.782	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Strategic Focus Area (SFA) funds developments in advanced analytical tools, modeling, and simulation of logistics and supply chain processes. These tools will improve DLA forecasting and procurement strategy decisions and lead to faster and more flexible responsiveness to emerging market and customer requirements. This SFA consists of two programs:

The Strategic Distribution & Disposition (SDD) Program collaborates with DLA Distribution and Disposition Services to identify legacy capabilities that are inadequate for emerging worldwide distribution and disposition requirements. A key objective of the SDD Program is to anticipate, assess, and meet the current and future Warfighter requirements by leveraging R&D to infuse innovation into solutions. Long-term objectives include mitigating the DoD Supply Chain Management high risk issues identified by the Government Accountability Office (GAO), 2018 (Inventory Management, Material Distribution and Asset Visibility).

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
Title: Enhancing Analysis, Modeling, and Decision Support	2.611	2.729	2.782
FY 2021 Plans: The Strategic Distribution and Disposition (SDD) program will continue to provide applied research, analytical and decision support to DLA Distribution and Disposition Services and provide support to the Distribution Modernization Program (DMP). Additionally, SDD will continue to engage with Industry, Department of Defense (DoD) sponsored Federally Funded Research and Development Centers (FFRDCs) and University-Affiliated Research Center Laboratories (UARCs) leveraging subject-matter expertise in key areas of research such as Blockchain, Artificial Intelligence, Machine Learning, Internet of Things (IoT), Augmented Reality, and Autonomous/Robotics systems. SDD will continue to incorporate Integrate Project Teams (IPT) for project collaboration and Integrated System Engineering concepts (test and evaluation) into Distribution projects.			
FY 2022 Plans: The Strategic Distribution and Disposition (SDD) program will continue to provide applied research, analytical and decision support to DLA Distribution and Disposition Services and provide support to the Distribution Modernization Program (DMP). Additionally, SDD will continue to engage with Industry, Department of Defense (DoD) sponsored Federally Funded Research and Development Centers (FFRDCs) and University-Affiliated Research Center Laboratories (UARCs) leveraging subject-matter			

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Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603712S / <i>Logistics Research and Development Technology (Log R&D)</i>	Project (Number/Name) EMM / <i>Enhancing Analysis, Modeling, and Decision Support (formerly Analytic & Decision Support)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
<p>expertise in key areas of research such as 5G Networks, Sensor Internet of Things (IoT), Blockchain, Quantum Computing, Artificial Intelligence/Machine Learning (AI/ML), Augmented Reality (AR), Automated Storage and Retrieval Systems (AS/RS), Performance Management, Automated Inventory, 3D Warehouse Mapping, and Autonomous/Robotics systems. SDD will continue to incorporate Integrate Project Teams (IPT) for project collaboration and Integrated System Engineering concepts (test and evaluation) into Distribution projects.</p> <p><i>FY 2021 to FY 2022 Increase/Decrease Statement:</i> No significant change; however, the Internal Realignment from DRAS2 to LOG R&D of approximately \$0.930 million was intended to increase funding for the Strategic Distribution and Disposition (SDD) program in FY 2022 in order to support DLA Strategic Plan priorities in digital business transformation and data analytics. Due to a coding error, the funding increase was incorrectly moved to the Emergent Logistics R&D Requirements Strategic Focus Area (SFA). Upon enactment, the coding will be corrected and moved to the SDD program.</p>			
Accomplishments/Planned Programs Subtotals	2.611	2.729	2.782

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

N/A

Remarks

D. Acquisition Strategy

The DLA R&D program is executed through Delivery Orders placed on Indefinite Delivery/Indefinite Quantity Contracts that resulted from competitive Broad Agency Announcements and through interagency agreements with the Military Services when it is cost effective and/or provides some technical advantage, e.g. improves the probability of successful transition. DLA also has a continuously open Broad Agency Announcement for Emerging Technologies.

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Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603712S / <i>Logistics Research and Development Technology (Log R&D)</i>				Project (Number/Name) GLTD / <i>Improving Logistics Processes (formerly Logistics Process)</i>			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
GLTD: <i>Improving Logistics Processes (formerly Logistics Process)</i>	23.070	2.437	4.044	5.116	-	5.116	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Improving Logistics Processes (ILP) Strategic Focus Area (SFA) encompasses R&D efforts within the Weapon System Sustainment (WSS) and Acquisition Modernization Research (AMR) programs to support DLA business functional units through applied research and development of advanced technologies to improve business processes and operational methods, leverage the application of leading edge logistics “out-of-the box” concepts using disruptive technology business tools, and support DLA’s technological transformation effort. To qualify for R&D funding, the R&D effort must develop and apply technology and processes over and above current baseline IT systems and continuous improvements efforts.

Although all DLA processes are in scope, the strategic focus for this budget cycle is in Procurement, Planning, Technical Quality and the Major Subordinate Commands.

Innovative process changes and new technologies will be researched in these areas to drive improvements to internal costs, reduce award delays, and improve material availability, supply chain security, demand forecasting and logistical planning. This will be accomplished through the use of artificial intelligence/machine learning, blockchain technology, and research of emerging commercial best practices and technologies.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
Title: Improving Logistics Processes (ILP)	2.437	4.044	5.116
FY 2021 Plans: The Weapon System Sustainment (WSS) program will continue research of artificial intelligence / machine learning (AI/ML) to enhance predictive analytics capabilities through improved metadata management and data quality, and advancements in quantum computing. Research will include application of commercial AI/ML capabilities to improve demand forecasts. In addition, WSS will begin a multi-pronged effort to enhance supply chain risk management using emergent technologies to improve risk assessment, market intelligence, and illumination of supply chain threats.			
The Acquisition Modernization Research (AMR) program will officially be established in FY 2022. Current efforts are funded under the Weapons Systems Sustainment Program and focus on DLA Acquisition efforts to provide enhanced market intelligence research capabilities, contract quality, and best value acquisitions. A comprehensive groundwork study will be conducted to			

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Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603712S / <i>Logistics Research and Development Technology (Log R&D)</i>	Project (Number/Name) GLTD / <i>Improving Logistics Processes (formerly Logistics Process)</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
<p>identify areas where additional research is needed to support modernization. WSS will conduct a project to develop supporting technology for market intelligence and expansion of previously developed capabilities to additional supply chains.</p> <p>FY 2022 Plans: The Weapon System Sustainment (WSS) program will continue assessment of artificial intelligence / machine learning, quantum-computing capabilities, and begin research into edge computing. WSS will conduct use cases for data analytics improvements, and AI/ML application such as adaptive training and improvements to key processes supporting warfighter readiness. Efforts to improve supply chain risk management identified in FY 2021 will continue.</p> <p>The Acquisition Modernization Research (AMR) program will continue efforts to expand market intelligence capabilities to all DLA supply chains, develop a minimum viable product for a contract quality control system, and pursue best value acquisition practices. In addition, AMR will prioritize and begin pursuit of research areas identified in the FY 2021 groundwork study.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: \$0.500 million from Battery Network, \$0.500 million from Forgings, and \$0.500 million from Advanced Microcircuit Emulation programs is realigned from the ManTech Program Element to the Log R&D Program Element for increased investments in Data Management and Predictive Analytics.</p>				
Accomplishments/Planned Programs Subtotals		2.437	4.044	5.116
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
The DLA R&D program is executed through Delivery Orders placed on Indefinite Delivery/Indefinite Quantity Contracts that resulted from competitive Broad Agency Announcements and through interagency agreements with the Military Services when it is cost effective and/or provides some technical advantage, e.g. improves the probability of successful transition. DLA also has a continuously open Broad Agency Announcement for Emerging Technologies.				

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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
04: <i>Emergent Logistics R&D Requirements (formerly Innovative Products & Services for DLA Customers)</i>	28.284	12.354	3.462	4.520	-	4.520	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Emergent Logistics R&D Strategic Focus Area (SFA) includes R&D efforts to develop new products and services for DLA customers in two programs:

The Energy Readiness Program (ERP) roadmap helps to achieve the operational energy strategy goals of increasing sources of supply, developing and implementing alternative fuels under the ERP.

The Supply Chain Management (SCM) program addresses emergent and out of budget cycle requirements and opportunities within DLA's supply chains. A key objective of the SCM Program is to collaborate with customers (DLA J-Codes and Major Subordinate Commands (MSCs)) to identify capability shortfalls that can be addressed through major research efforts. These R&D efforts strive to develop technology mitigation strategies that address current and anticipated problems within DLA's supply chains.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022
Title: Emergent Logistics R&D Requirements	2.354	3.462	4.520
FY 2021 Plans:			
The Energy Readiness Program (ERP) will continue to focus on providing additional alternatives for military unique fuels, working with the Service customers to improve specifications and standards for fuel quality, engage in modeling and simulation of the energy supply chain and identifying alternative energy sources for Military Customers. ERP will focus on determining R&D solutions for ongoing issues affecting fuel and fuel additive quality and operational requirements (e.g. thermal stability, storage stability, ignition capability). The program will continue to assist the military services in the qualification and certification of alternative fuels to meet military specification requirements; this will be parallel to the availability of military resources necessary to complete these efforts.			
The Supply Chain Management (SCM) program will investigate emergent commercial technologies, like distributed ledger blockchain technology, to pilot and produce a business case for developing a more informed supply chain for a DLA Major Subordinate Command. Additionally, SCM will produce a groundwork study that identifies the requirements, gaps, costs, and			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
<p>benefits of pursuing a supply chain digital twin for supply chain resilience and risk mitigation at DLA. Finally, SCM will pilot Augmented Reality (AR) applications and continue to address emergent and out of budget cycle requirements and opportunities including Other Transaction Authority (OTA) efforts as they arise.</p> <p>FY 2022 Plans: The Energy Readiness Program (ERP) will continue with focus on providing additional alternatives for military unique fuels, working with the Service customers to improve specifications and standards for fuel quality, engage in modeling and simulation of the energy supply chain and identifying alternative energy sources for Military Customers. ERP will focus on determining R&D solutions for ongoing issues affecting fuel and fuel additive quality and operational requirements (e.g. thermal stability, storage stability, ignition capability). The program's efforts to assist the military services in the qualification and certification of alternative fuels to meet military specification requirements will diminish proportionate with the military's decreased resources necessary to complete these efforts.</p> <p>SCM will initiate efforts to provide DLA the ability to perform system-wide supply chain optimization, scenario evaluation, and risk assessment through a supply chain digital twin - a model of an end-to-end supply chain that is continuously updated with digital data. Additionally, SCM will complete R&D efforts in support of a blockchain pilot and continue to address emergent and out of budget cycle requirements and opportunities including Other Transaction Authority (OTA) efforts as they arise.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: The increase is due to the Internal Realignment from DRAS2 to LOG R&D of \$0.930 million; however, due to a coding error, the funding increase intended for the Strategic Distribution and Disposition (SDD) program under the Enhancing Analysis, Modeling, and Decision Support Strategic Focus Area (SFA) was incorrectly moved to the Emergent Logistics R&D Requirements SFA. Upon enactment, the coding will be corrected and moved to the SDD program.</p>			
Accomplishments/Planned Programs Subtotals	2.354	3.462	4.520

	FY 2020	FY 2021
Congressional Add: Energy Readiness Program for Fuel Conversion	5.000	-
FY 2020 Accomplishments: Committed funds for "Scale-up and Optimization of Advanced Pyrolysis Oil from Woody Biomass Material for Refining to Military and Commercial Transportation Fuels" initiative.		
Congressional Add: Energy Readiness Program for Liquid Hydro-carbon Fuel	5.000	-

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	FY 2020	FY 2021
FY 2020 Accomplishments: Continued work with University of Maine for research in the “Biomass Conversation to Liquid Hydrocarbon Fuels, Chemicals and Nanocellulose” program.		
Congressional Adds Subtotals	10.000	-

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

N/A

Remarks

D. Acquisition Strategy

The DLA R&D program is executed through Delivery Orders placed on Indefinite Delivery/Indefinite Quantity Contracts that resulted from competitive Broad Agency Announcements and through interagency agreements with the Military Services when it is cost effective and/or provides some technical advantage, e.g. improves the probability of successful transition. DLA also has a continuously open Broad Agency Announcement for Emerging Technologies.