Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Defense Logistics Agency											Date: March 2019	
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*					R-1 Program Element (Number/Name) PE 0603712S / *Logistics Research and Development Technology (Log R&D)*							
COST ($ in Millions)	**Prior Years**	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
Total Program Element	29.634	16.105	18.127	10.817	-	10.817	10.998	11.180	11.328	11.532	Continuing	Continuing
EMM: *Enhancing Analysis, Modeling, and Decision Support (formerly Analytic & Decision Support)*	7.561	1.193	3.758	3.219	-	3.219	3.295	3.368	3.430	3.429	Continuing	Continuing
GLTD: *Improving Logistics Processes (formerly Logistics Process)*	10.403	9.099	3.568	4.013	-	4.013	4.125	4.211	4.277	4.277	Continuing	Continuing
04: *Emergent Logistics R&D Requirements (formerly Innovative Products & Services for DLA Customers)*	11.670	5.813	10.801	3.585	-	3.585	3.578	3.601	3.621	3.826	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. DLAs 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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Defense Logistics Agency	Date: March 2019
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603712S *I Logistics Research and Development Technology (Log R&D)*

B. Program Change Summary ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	10.611	11.778	12.067	-	12.067
Current President's Budget	16.105	18.127	10.817	-	10.817
Total Adjustments	5.494	6.349	-1.250	-	-1.250
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	6.000	7.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.506	-0.651			
• Funds Realignment	-	-	-1.240	-	-1.240
• Inflation Adjustment	-	-	-0.010	-	-0.010

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2018	FY 2019
Project: GLTD: *Improving Logistics Processes (formerly Logistics Process)*		
Congressional Add: *Energy Readiness Program for Liquid Hydrocarbon Fuels*	4.000	-
Congressional Add Subtotals for Project: GLTD	4.000	-
Project: 04: *Emergent Logistics R&D Requirements (formerly Innovative Products & Services for DLA Customers)*		
Congressional Add: *Energy Readiness Program for Liquid Hydrocarbon Fuels*	-	7.000
Congressional Add: *Supply Chain Management Program for Sustainable Product Demonstrations*	2.000	-
Congressional Add Subtotals for Project: 04	2.000	7.000
Congressional Add Totals for all Projects	6.000	7.000

Change Summary Explanation

In FY2018, the Logistics R&D program received a Congressional Add for $4 million for the Energy Readiness Program for Woody Bio Mass conversion to liquid hydrocarbon fuels and $2 million for the Supply Chain Management program for sustainable product demonstrations. In FY2019, the Logistics R&D program received a Congressional Add for $7 million for the Energy Readiness program for liquid hydrocarbon fuels.

The Small Business Innovation Research and Small Technology Transfer Research tax amounted to $0.506 million and $0.651 million in FY2018 and FY2019 respectively.

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Defense Logistics Agency	Date: March 2019
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603712S *I Logistics Research and Development Technology (Log R&D)*

Realigned funding from Log R&D to Operation and Maintenance (O&M) to fund mandatory Program Management Offices (PMO) costs and project transition.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Defense Logistics Agency			Date: March 2019
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603712S / *Logistics Research and Development Technology (Log R&D)*	**Project (Number/Name)** EMM / *Enhancing Analysis, Modeling, and Decision Support (formerly Analytic & Decision Support)*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
EMM: *Enhancing Analysis, Modeling, and Decision Support (formerly Analytic & Decision Support)*	7.561	1.193	3.758	3.219	-	3.219	3.295	3.368	3.430	3.429	Continuing	Continuing

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 Medical Logistics Network (MLN) program supports the Medical Directorate's mission to develop and implement the logistics and medical supply chain business practices that ensure the cost-effective and efficient distribution of medical materiel to the full range of Military Health System operations. A portion of the MLN budget was realigned to other R&D efforts due to no specific projects identified. Assessments are currently being conducted for viable R&D projects for the budgeted amounts.

The R&D Strategic Distribution & Disposition (SDD) Program collaborates with DLA Distribution and Disposition Services to identify capability shortfalls (gaps) that allow the opportunity to address these shortfalls through major applied research efforts and to further improve operational effectiveness and efficiency in support of Warfighter's requirements. A key objective of the SDD Program is to infuse innovative solutions into distribution and disposition operations that address inadequate legacy capabilities and the challenges of future worldwide distribution, disposition, reutilization, and retrograde requirements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
Title: Enhancing Analysis, Modeling, and Decision Support	1.193	3.758	3.219
FY 2019 Plans: The Medical Logistics Network (MLN) program supports the Medical Directorate's mission to develop and implement the logistics and medical supply chain business practices that ensure the cost-effective and efficient distribution of medical materiel to the full range of Military Health System operations. A portion of the MLN budget was realigned to other R&D efforts due to no specific projects identified. Assessments are currently being conducted for viable R&D projects for the budgeted amounts. The Strategic Distribution and Disposition (SDD) program provides applied research, analytical and decision support to DLA Distribution and Disposition Services through advanced analytical tools such as Business Case Analyses (BCAs) that support DLA Distribution and Disposition Services strategic decision making. Additionally, SDD will continue to support the Distribution Modernization Program to identify, evaluate, and test emerging and disruptive technologies that have high potential application			

Exhibit R-2A, RDT&E Project Justification: PB 2020 Defense Logistics Agency		Date: March 2019
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603712S / *Logistics Research and Development Technology (Log R&D)*	**Project (Number/Name)** EMM / *Enhancing Analysis, Modeling, and Decision Support (formerly Analytic & Decision Support)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
to distribution and disposition operations. Furthermore, SDD will engage with Department of Defense (DoD) sponsored Federally Funded Research and Development Centers (FFRDCs) and University-Affiliated Research Center Laboratories (UARCs) to perform applied research in technologies such as blockchain, artificial intelligence, machine learning, Internet of Things (IoT), augmented reality, and autonomous/robotics systems. ***FY 2020 Plans:*** The Medical Logistics Network program continues to support the Medical Directorate's mission to develop and implement the logistics and medical supply chain business practices that ensure the cost-effective and efficient distribution of medical materiel to the full range of Military Health System operations. A portion of the MLN budget was realigned to other R&D efforts due to no specific projects identified. Assessments are currently being conducted for viable R&D projects for the budgeted amounts. The Strategic Distribution and Disposition program continues to provide applied research, analytical and decision support to DLA Distribution and Disposition Services and provide support to the Distribution Modernization Program. 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. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Decrease is due to a FY2020 funding realignment for mandatory program management office (PMO) costs and project transition.			
Accomplishments/Planned Programs Subtotals	1.193	3.758	3.219

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.

E. Performance Metrics

40% of applicable projects (ex. non-studies) will transition.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Defense Logistics Agency			Date: March 2019
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603712S / *Logistics Research and Development Technology (Log R&D)*	Project (Number/Name) GLTD / *Improving Logistics Processes (formerly Logistics Process)*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
GLTD: *Improving Logistics Processes (formerly Logistics Process)*	10.403	9.099	3.568	4.013	-	4.013	4.125	4.211	4.277	4.277	Continuing	Continuing

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) Program to develop and implement advanced technology in the internal DLA logistics processes. 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 area for FY2019 has four thrusts: Procurement, Inventory Management, Planning, and Retail Operations process improvements.

Innovative process changes and new technologies will be researched in these areas to drive improvements to internal costs, reduce award delays, reduce the threat of counterfeit parts, improve demand forecasting, and increase retail operational efficiency. Researching the use of artificial intelligence/Machine Learning blockchain technology, demand forecasting, adoption of Commercial Acquisition Innovation and Integration of maintenance and supply data in DLA processes are major research areas that will be pursued in the coming years.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
Title: Improving Logistics Processes (ILP)	5.099	3.568	4.013
FY 2019 Plans: The Weapon Systems Sustainment (WSS) program will continue working with Procurement to implement long term process improvement plans to include projects in the areas of administrative and production lead time estimation and procurement of commercially available parts (e-commerce). Another main thrust for FY2019 will be the execution of projects to improve retail operations inventory strategy and to research new processes that leverage DLA's capabilities in operational and tactical retail operations. WSS will also leverage condition based maintenance data from the Services to enhance planning for retail operations and depot maintenance logistical support. Initial studies will focus on a single Service. Artificial intelligence / machine learning capability projects will begin in FY2019 and continue for years to come as additional opportunities are identified. Also, machine-learning techniques will be applied to processes for lead-time estimation, demand forecasting, low demand inventory strategies, and retail operation strategies. In addition, the use of blockchain technology in Tech Quality (TQ) processes that monitor vendor risk will be researched as an initial study of using this technology in DLA processes.			
FY 2020 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2020 Defense Logistics Agency		Date: March 2019
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603712S / *Logistics Research and Development Technology (Log R&D)*	**Project (Number/Name)** GLTD / *Improving Logistics Processes (formerly Logistics Process)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
The Weapon Systems Sustainment program will continue to explore new use case studies for disruptive technologies. Additional areas of interest for the application of artificial intelligence / machine learning include the ability to identify returned parts and predict fraudulent activity. WSS will also explore opportunities for blockchain technology based on the findings from the initial study in FY2019. Potential areas of interest include tying financial transactions to physical movement of inventory and electronic contracts. In FY2020, projects started in FY2019 will continue. Artificial intelligence projects, which developed a viable proof of concept in FY2019, will progress to pilot studies for final model design and testing in the process. Projects to develop methods to use condition-based maintenance in DLA processes will continue. WSS will work with additional Services to incorporate the data into DLA's inventory and demand forecasting processes. In addition, WSS projects will continue to study e-commerce methods and develop recommendations for incorporating internet-based purchases into DLA's acquisition process. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** No significant change.			
Accomplishments/Planned Programs Subtotals	5.099	3.568	4.013

	FY 2018	FY 2019
Congressional Add: Energy Readiness Program for Liquid Hydrocarbon Fuels	4.000	-
FY 2018 Accomplishments: Developed and improved upon a production process that converts cellulosic (woody) biomass in to synthetic crude oil. The synthetic crude can be further processed into hydrocarbon fuels suitable for commercial and military use. In FY18, the project successfully accomplished several pilot-plant level production runs of synthetic oil in the goal of validating commercial-scale production capability of the process. Note: The FY2018 $4 million Congressional add is for and was executed by the Emergent Logistics R&D Requirements Strategic Focus Area (SFA) for the Energy Readiness Program.		
Congressional Adds Subtotals	4.000	-

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.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Defense Logistics Agency		Date: March 2019
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603712S / *Logistics Research and Development Technology (Log R&D)*	**Project (Number/Name)** GLTD / *Improving Logistics Processes (formerly Logistics Process)*

E. Performance Metrics

40% of applicable projects (ex. non-studies) will transition.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Defense Logistics Agency			Date: March 2019
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603712S / *Logistics Research and Development Technology (Log R&D)*	**Project (Number/Name)** 04 / *Emergent Logistics R&D Requirements (formerly Innovative Products & Services for DLA Customers)*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
04: *Emergent Logistics R&D Requirements (formerly Innovative Products & Services for DLA Customers)*	11.670	5.813	10.801	3.585	-	3.585	3.578	3.601	3.621	3.826	Continuing	Continuing

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 2018	FY 2019	FY 2020
Title: Emergent Logistics R&D Requirements	3.813	3.801	3.585
FY 2019 Plans: The Energy Readiness Program (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 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 ERP program will investigate and prototype, as appropriate, drone technologies applied to the energy operations. The Supply Chain Management (SCM) program address the emerging capabilities shortfalls that occur in the supply chain through major research opportunities. Initiatives will align strategically and produce benefits such as reduced operating costs, enhanced organizational responsiveness and reliability, network resiliency, and streamlined customer service. Additionally, SCM will complete the Advanced Thermoelectric Technology project to improve the current thermoelectric heater technology so it is more			

Exhibit R-2A, RDT&E Project Justification: PB 2020 Defense Logistics Agency		Date: March 2019
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603712S / *Logistics Research and Development Technology (Log R&D)*	**Project (Number/Name)** 04 / *Emergent Logistics R&D Requirements (formerly Innovative Products & Services for DLA Customers)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
fuel-efficient, has an increased heating range, reduced maintenance requirements, and a longer service life. SCM will also work with DLA HQ Information Operations J6 on Robotic Process Automation (RPA) efforts. ***FY 2020 Plans:*** The Energy Readiness Program 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 program will continue to address the emerging capabilities shortfalls that occur in the supply chain through major research opportunities. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Decrease is due to a FY2020 funding realignment for mandatory program management office (PMO) costs and project transition.			
Accomplishments/Planned Programs Subtotals	3.813	3.801	3.585

	FY 2018	FY 2019
Congressional Add: Energy Readiness Program for Liquid Hydrocarbon Fuels ***FY 2019 Plans:*** Develop innovative technologies to produce hydrocarbon biofuels from cellulosic (plant/ vegetable) matter. This effort will further develop the upscaling of woody biomass-to-fuel processes.	-	7.000
Congressional Add: Supply Chain Management Program for Sustainable Product Demonstrations ***FY 2018 Accomplishments:*** Began the identification of emerging technologies to meet Department of Defense (DoD) requirements through technical data evaluations. Demonstrations across up to five DoD installations will be conducted to prove the technologies in an operational environment for application and transition of successful technologies DoD-wide.	2.000	-
Congressional Adds Subtotals	2.000	7.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2020 Defense Logistics Agency		Date: March 2019
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603712S / *Logistics Research and Development Technology (Log R&D)*	**Project (Number/Name)** 04 / *Emergent Logistics R&D Requirements (formerly Innovative Products & Services for DLA Customers)*

C. Other Program Funding Summary ($ in Millions)

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.

E. Performance Metrics

40% of applicable projects (ex. non-studies) will transition.