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 0603680S *I Manufacturing Technology Program (ManTech)*

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	19.736	39.090	62.396	42.834	-	42.834	43.045	43.250	44.016	44.903	Continuing	Continuing
IBMP: *Improving Industrial Base Manufacturing Processes (formerly Material Availability)*	14.157	12.387	30.637	19.608	-	19.608	19.335	19.167	19.435	19.435	Continuing	Continuing
AAA: *Maintaining Viable Supply Sources (formerly High Quality Sources)*	4.302	17.774	26.296	17.840	-	17.840	18.285	18.707	19.244	19.244	Continuing	Continuing
OOO: *Improving Technical and Logistics Information (formerly Industry and Customer Collaboration)*	1.277	8.929	5.463	5.386	-	5.386	5.425	5.376	5.337	6.224	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Defense Logistics Agency (DLA) Manufacturing Technology (ManTech) Program funds the advanced technology development needed to achieve a responsive, efficient domestic industrial base that meets the warfighters' needs in an affordable and timely manner. The ManTech program works with DLA's diverse supply chains to improve manufacturing capability throughout a product's life cycle. It provides the crucial link between invention and application by maturing, scaling up, and validating advanced manufacturing technology in "real world" environments. ManTech developments provide a path to low-risk technology implementation for many small businesses and defense unique suppliers as well as depots and shipyards that are critical to DLA. By anticipating and addressing production and sustainment problems before they occur, readiness levels increase and sustainment costs are lower.

DLA ManTech is aligned into three Strategic Focus Areas (SFA): 1) Improving Industrial Base Manufacturing Processes (IIBM); 2) Maintaining Viable Sources of Supply (MVSS); and 3) Improving Technical and Logistics Information (ITLI).

• The IIBM SFA includes efforts to reduce industrial base material costs and production lead-times, while improving the quality of DLA managed products. This SFA has supply chain focused execution portfolios for food (Subsistence Network), Castings (Procurement Readiness Optimization—Advanced Casting Technology), Forgings (Procurement Readiness Optimization—Forging Advance System Technology), Batteries (Battery Network) and Additive Manufacturing.

• MVSS includes efforts to assure the commercial industrial base can satisfy DLA materiel requirements without relying on foreign sources for microcircuits. This strategic focus area mitigates supply issues caused by the lack of a reliable domestic manufacturing capability to produce products or raw materials needed to build and maintain weapon systems. The major focus of the program is maintaining a reliable, trusted, domestic source for "non-procurable" linear and digital microcircuits. Microcircuit emulation allows the Services to save significant costs by using form, fit and functionally equivalent spare parts rather than redesigning the next-higher-assembly.

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 0603680S *I Manufacturing Technology Program (ManTech)*

• The ITLI SFA includes efforts to improve and facilitate the exchange of engineering and logistics information among DLA, the Military Services, DLA industry partners and DLA customers. It includes the Military Unique Sustainment Technology (MUST) and the Defense Logistics Information Research (DLIR) programs. A primary focus of this SFA is to capitalize on the emerging "Model Based Enterprise" paradigm and the semantic web as an enabler to a logistics system that is smart and connected up and down the supply chain and across all DLA Customers and suppliers. A major focus is to transform DoD engineering data from two-dimensional paper-based products to three-dimensional computer based models, and to develop processes to move from "electronic paper" (i.e. PDF files) to technical data files that can interface directly with industries' engineering systems. The benefits include shorter product introduction cycles, lower set up-costs for parts production and more economical small batch production.

B. Program Change Summary ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	40.511	49.667	40.848	-	40.848
Current President's Budget	39.090	62.396	42.834	-	42.834
Total Adjustments	-1.421	12.729	1.986	-	1.986
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-0.017	-0.030			
• Congressional Rescissions	-	-			
• Congressional Adds	-	15.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.404	-2.241			
• Program Adjustment (AM)	-	-	2.000	-	2.000
• Inflation Adjustment	-	-	-0.014	-	-0.014

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2018	FY 2019
Project: IBMP: *Improving Industrial Base Manufacturing Processes (formerly Material Availability)*		
Congressional Add: *Digital Innovation Design for Reliable Castings Performance*	-	5.000
Congressional Add: *Battery Network for All Solid-State Battery Development*	-	10.000
Congressional Add Subtotals for Project: IBMP	-	15.000
Congressional Add Totals for all Projects	-	15.000

Change Summary Explanation

Directed Federally Funded Research Development Center (FFRDC) reductions of $0.017 million and $0.030 million for 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 0603680S *I Manufacturing Technology Program (ManTech)*

In FY2019, ManTech received a Congressional Add for $5 million to Castings for digital innovation design for reliable castings performance and $10 million in Battery Network for All Solid-State Battery Development, for a total of $15 million.

FY2020 Additive Manufacturing Program increased under the Improving Industrial Base Manufacturing (IIBM) SFA for increased focus and priority in exploring and developing AM technology applications to DoD hard-to-procure parts with existing support agreements with Department of the Army, NAVSEA, NAVAIR, USMC, and Department of Energy, as well as partnering with academia for business model development.

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 0603680S / *Manufacturing Technology Program (ManTech)*	Project (Number/Name) IBMP / *Improving Industrial Base Manufacturing Processes (formerly Material Availability)*	

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
IBMP: *Improving Industrial Base Manufacturing Processes (formerly Material Availability)*	14.157	12.387	30.637	19.608	-	19.608	19.335	19.167	19.435	19.435	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Improving Industrial Base Manufacturing Processes Strategic Focus Area (SFA) is an R&D effort undertaken with DLA's suppliers to reduce material costs, reduce the length and variability of production lead-times, assure DLA managed products meet performance requirements, and continuously improve quality and reliability. Benefits of this SFA include lower material costs, lower inventory levels and more predictable customer wait times, fewer quality deficiencies, and lower customer support costs. This SFA includes within its scope the Subsistence Network, the Battery Network, the Castings/Forging programs and Additive Manufacturing programs.

The Subsistence Network (SUBNET) program is the successor to the Combat Rations Network R&D program. SUBNET focuses on solutions to develop and promote manufacturing improvements in the subsistence supply chain. The program's expanded areas of interest include: combat rations, food equipment, field feeding solutions, food footprint, food innovations, food safety and defense developments, garrison feeding, nutrition and health, storage and packing solutions, surge and sustainment support, and water security. SUBNET forms a community of practice with Military Services, U.S. Department of Agriculture, Natick Soldier Research Development, and Engineering Center; Academia, and Industry to research and promote manufacturing improvements in the Subsistence Supply Chain with the goals of maximizing capability and capacity to produce, and to encourage innovation and modernization needed to leverage the latest technologies. Desired outcomes include: reduced cost, increased efficiencies, improved processes, enhanced quality, and improved surge demand capabilities.

The Casting program works to ensure a stable, reliable, and competitive domestic casting industrial base supporting the weapon system needs of the Department of Defense (DoD) and the Defense Logistics Agency (DLA). The casting program works with industry, universities, and the Casting Industry Associations to identify projects that improve the materials, processes and business practices of the nation's foundry industry. The program aligns projects with strategic issues and identified focus areas within the DLA and DoD. Guidance for these projects comes from the DLA Strategic Plan and input from the casting industry. Weapon system spare parts managed by DLA that contain castings are responsible for a disproportionate share of DLA's backorders or unfilled orders (UFOs). Cast parts are ~2% of National Stock Numbered Class IX parts but represent ~5% of all backorders, and when only the oldest backorders are considered, up to 10% are castings. This program includes tasks that focus on developing new capabilities in the areas of inspection, materials, processes, modeling, and design. Once developed, these capabilities will support the foundry industry, where the technologies will be tested and implemented, most often in conjunction with the casting industry associations. These advancements improve the metal casting supply chains for the DoD and the DLA to better support the warfighter. We will invest in projects aimed at reducing lead-time, reducing cost, and improving quality of castings critical to DoD weapon systems.

The Forging program works to ensure a stable, reliable, and competitive domestic forging industrial base for the weapon system needs of the Department of Defense (DoD) and the Defense Logistics Agency (DLA). Working with industry, universities, and the Forging Industry Associations to identify projects that improve the materials, processes and business practices of the nation's forging industry. The program aligns its projects with strategic issues and focus areas identified within the DLA and

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 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** IBMP / *Improving Industrial Base Manufacturing Processes (formerly Material Availability)*

DoD. Guidance for these projects comes from the DLA Strategic Plan and input from the forging industry. Weapon system spare parts managed by DLA that contain Forgings are responsible for a disproportionate share of DLA's backorders or unfilled orders (UFOs). Forged parts are ~2% of National Stock Number (NSN) Class IX parts but represent ~5% of all backorders, and when only the oldest backorders are considered, up to 10% are forgings. This program includes tasks to develop new capabilities in the areas of inspection, materials, processes, modeling, and design. Once developed these capabilities will support the forging industry, where these technologies will be tested and implemented in conjunction with the forging industry associations. These advancements improve the forging supply chains for the DoD and the DLA to better support the warfighter. We will invest in projects aimed at reducing lead-time, reducing cost, and improving quality of forgings critical to DoD weapon systems.

The Battery Network (BATTNET) program objective is to develop the next generation of battery manufacturing technologies for cost and price efficiency, longer shelf life, and lighter batteries with higher energy. BATTNET conducts R&D initiatives to address sustainment gaps and bridge technical solutions into higher a Manufacturing Readiness Level (MRL) for specific groups of batteries. BATTNET also focuses on projects to develop the production capability for advanced lithium-based non-rechargeable and rechargeable batteries to ensure the prompt and sustained availability, quality, and affordability of Service approved batteries. Desired outcomes include: streamlined inventory and associated cost reductions through standardization and improved distribution practices; resolved obsolescence issues; addressed surge and sustainment issues; enhanced security of supply chain; increased competition and manufacturing base; reduced per unit battery cost; and leveraged Service-level (Army, Navy, Air Force) and other governmental (DOE, DOT, NASA) R&D efforts to insert new technology and practices into the existing DLA battery inventory.

The Additive Manufacturing (AM) program objective is to establish AM as an effective alternative to conventional manufacturing and document the process for AM benefits. DLA is pursing all AM technology as a lead-time and inventory reduction enabler. The AM effort pursues alternate means of supply for products that are otherwise non-procurable or susceptible to procurement issues due to an unresponsive manufacturing vendor base. The AM effort includes the identification of AM candidates among the population of products that are needed but hard to obtain, costly or have long manufacturing lead times. The AM effort requires management of 3D digital technical and manufacturing data. In addition, the AM effort includes the development of the processes that will tie the designers, engineers, maintainers, logisticians, procurement managers and the vendor base into a seamless AM procurement stream. Potential benefits include products that can address an unfulfilled Warfighter readiness need by reducing production lead times, production costs, storage costs, transportation costs and in some cases fuel consumption due to lighter design and material options. DLA R&D will leverage these efforts with Industry, Academia and ongoing Military Service-level agreements (Army, Navy, Marine Corps, Air Force), Oak Ridge National Laboratory (ORNL) and the Department of Energy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
Title: Improving Industrial Base Manufacturing Processes (formerly Material Availability)	12.387	15.637	19.608
FY 2019 Plans: The Subsistence Network (SUBNET) program plans to research and execute short-term innovative projects to improve the subsistence supply chain in FY2019, and continue efforts from FY2018. SUBNET will attend subsistence trade and industry events to leverage technology innovations and promote manufacturing improvements. The program will also pursue Small Business Innovation Research (SBIR) topics in Subsistence. The SUBNET program will work with community partners (military services, industry, and academia) to leverage the latest technologies, encourage innovation and modernization, and promote			

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 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** IBMP / *Improving Industrial Base Manufacturing Processes (formerly Material Availability)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
manufacturing improvements in the subsistence supply chain. The program also plans to collaborate with the Defense Advanced Research Projects Agency on their future projects for synergy and also incorporating them as a potential transition partner. The Casting program plans to research, develop and deploy innovative and technical solutions to ensure a viable and competitive domestic industrial base for the DoD and DLA in support of the needs of the warfighter. The program uses competitively awarded contracts to fulfill these requirements; projects are required to include a business case with specific metrics and a transition plan for success. The Casting program works with industry, academia, and the leading Industry Associations to identify improvements to materials, processes, and business practices of the nation's metal casting industry. The Casting program will continue the execution and monitoring of projects approved and awarded in prior years while maintaining focus on future development and needs. The Forging program will investigate, develop and deploy innovative enterprise and technical solutions to strengthen the forging supply chain and the forging industry. The program will explore alternative forging manufacturing methods, materials and modeling to reduce production lead-time and costs. Enhancements to modeling and simulation software coupled with forging process and post-processing improvements are some projects that align the forging program with fulfilling the needs of the warfighter. The Forging program will, with a Broad Agency Announcement (BAA), solicit industry, academia, and industry associations for new projects in alignment with the strategic focus and future needs of the DoD and DLA. The Battery Network (BATTNET) program will initiate new projects for improving the production readiness, transition, and standardization of soldier and system batteries within the DLA supply chain. The BATTNET program will also leverage new battery manufacturing technologies for the supply chain that have been developed by industry – advanced electrode production, low cost materials production or recycling, advanced performance cells, and deep-discharge lithium-ion capabilities. The program will continue addressing additional requirements for manufacturing and material improvements in the vacuum electron tube supply base. The Additive Manufacturing (AM) program plans to fund technically proficient efforts that accelerate the rapid qualification and certification methodologies for AM items, identify the best AM applications for castings and forging preforms, achieve precise repeatability of part fabrication using an AM technical data package at simultaneous geographic points of need and prove the delivery of AM parts to warfighters deployed at expeditionary sea, land or air bases. Using market research, requests for information/proposals, BAA, DLA R&D will identify the best courses of action to negotiate technical, testing and intellectual property data for AM fabrication to keep these items competitive. The DLA R&D efforts include the proof of concept of using digital thread methodologies to effectively manage manufacturing data and maintain a consistent AM product from design through qualification and acceptance. Collaboration will continue with the Military Service Engineering Support Activities (via Service-			

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 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** IBMP / *Improving Industrial Base Manufacturing Processes (formerly Material Availability)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
level agreements with the Army, Navy, Marine Corps, Air Force) and the Department of Energy by providing funding for AM work identified under the respective agreements. The partnership with Oak Ridge National Laboratory (ORNL) will allow further options with the Big Area AM (BAAM) family of parts. DLA will leverage Military Services and Industry collaboration to develop digital verification and validation (including measures of effectiveness and key performance parameters) of AM technical data and first article testing for polymers and metals, and critical and non-critical items. These efforts seek to increase the number of AM parts qualified for procurement and achieve savings from the associated lead-time, storage costs, transportation costs, in some cases reduction of fuel consumption due to lighter design and material options.			
FY 2020 Plans: The Subsistence Network (SUBNET) program plans to research and execute short-term innovative projects to improve the subsistence supply chain in FY2020 and beyond. SUBNET will attend subsistence trade and industry events to leverage technology innovations and promote manufacturing improvements, continuing to expand and revise its internal Strategic Program Roadmap based upon the latest food supply chain emerging and technological advancements. Through market research, visits to academia Science and Technology Departments, and Broad Agency Announcements (BAA), DLA R&D SUBNET will seek to research and test areas utilizing drones technology, food irradiation and plasma technology for fresh fruits and vegetables shelf-life extension, and block chain use cases in the subsistence supply chain. The program will also continue to pursue Small Business Innovation Research (SBIR) topics in Subsistence. The SUBNET program will work with community partners (military services, industry, and academia) to leverage the latest technologies, encourage innovation and modernization, and promote manufacturing improvements in the subsistence supply chain. The program will also collaborate with the Defense Advanced Research Projects Agency on their future projects for synergy and as a potential transition partner. The Casting program will continue to monitor awarded contracts for projects that research, develop and deploy innovative and technical solutions to ensure a viable and competitive domestic industrial base. These projects focus on improving manufacturing processes and technology that includes robotic and additive manufacturing methods and implementation, new test processes and procedures to evaluate cast materials, computer simulation and modeling to decrease lead-time and increase quality. The Casting program works with Academia, industry, and industry associations to continually identify future development and technical needs in alignment with the DoD and DLA. The Forging program will award contract(s) based on responses to the BAA. The projects included in the contracts will focus on exploring alternative forging manufacturing methods, materials to reduce production lead-time and costs, modeling and simulation software improvements and enhancements and improvements to post processing methods. These projects will be in alignment with the needs of the DoD and DLA aimed and supporting and fulfilling the needs of the warfighter.			

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 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** IBMP / *Improving Industrial Base Manufacturing Processes (formerly Material Availability)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
The Battery Network (BATTNET) program will continue, as well as initiate new projects for improving the production readiness, transition, and standardization of soldier and system batteries within the DLA supply chain. The BATTNET program will also leverage new battery manufacturing technologies for the supply chain that have been developed by industry – advanced electrode production, low cost materials production or recycling, advanced performance cells, and deep-discharge lithium-ion capabilities. The program will continue addressing additional requirements for manufacturing and material improvements in the vacuum electron tube supply base. The Additive Manufacturing (AM) program plans to finance technical efforts from the military services, industry, and academic institutions that have the potential to accelerate the qualification, certification and fabrication methodologies for AM applications and create sources of AM supplies or services for DLA. DLA R&D will identify the best AM applications for castings and forging preforms, achieve precise robustness-repeatability-reproducibility of part fabrication using an AM technical data package in a distributed manufacturing setting and prove the delivery of AM parts to warfighters deployed at expeditionary sea, land or air bases. DLA R&D will fund efforts to expedite creation of digital models and related design and testing information to help establish and expand the DoD digital library of AM parts to solve issues with obsolescence, low volume, long-lead, costly parts. Using market research, requests for information/proposals, Broad Agency Announcements (BAA), DLA R&D will test the best courses of action for machine learning and artificial intelligent solutions to integrate information from several logistics, engineering, legal, and supplier sources to make efficient AM decisions. These efforts seek to increase the number of AM parts qualified for procurement and achieve savings from the associated lead-time, storage costs, transportation costs, in some cases reduction of fuel consumption due to lighter design and material options. Desired outcomes include: rapid cast production and repair of castings using AM, exploration of improved reverse engineering processes for AM purposes, and optimization of polymer and metal AM production to obtain land, air and sea and expeditionary platform spare parts. Overall DLA Enterprise AM efforts will provide alternatives in product realization in order to address unfulfilled Warfighter readiness needs. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY2020 increase is due to change in baseline for a funding increase of $2 million in FY2020 for the Additive Manufacturing Program. This additional funding is for increased focus and priority in exploring and developing AM technology applications to DoD hard-to-procure parts with existing support agreements with Department of the Army, NAVSEA, NAVAIR, USMC, and Department of Energy, as well as partnering with academia for business model development. Additionally, the FY2020 baseline already included a planned $1.507 million increase to begin to automate combat rations visual inspections and prepare for future innovative nanotechnology packaging systems for combat rations.			
Accomplishments/Planned Programs Subtotals	12.387	15.637	19.608

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 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** IBMP / *Improving Industrial Base Manufacturing Processes (formerly Material Availability)*

	FY 2018	FY 2019
Congressional Add: Digital Innovation Design for Reliable Castings Performance ***FY 2019 Plans:*** This project will develop a set of design tools to allow modern engineers to improve casting design. These design tools are based on modern property measurements and validated by testing, allowing engineers to create cast parts that are reliable, high performance and cost efficient for critical DOD applications.	-	5.000
Congressional Add: Battery Network for All Solid-State Battery Development ***FY 2019 Plans:*** Focus on the production development and transition of solid-state electrolyte technology for military lithium-ion batteries that demonstrates a significant increase in available energy density and safety, eliminates the need for toxic flammable electrolyte, and reduces the complexity of battery management systems. Projects will enable improvements to the dismounted warfighter's capability by reducing battery weight for combat operations, as well as significantly increasing operating time of equipment and weapons systems.	-	10.000
Congressional Adds Subtotals	-	15.000

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.

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 0603680S / *Manufacturing Technology Program (ManTech)*	Project (Number/Name) AAA / *Maintaining Viable Supply Sources (formerly High Quality Sources)*	

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
AAA: *Maintaining Viable Supply Sources (formerly High Quality Sources)*	4.302	17.774	26.296	17.840	-	17.840	18.285	18.707	19.244	19.244	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Maintaining Viable Supply Sources (MVSS) Strategic Focus Area (SFA) consists of projects undertaken to assure that the industrial base can respond to DLA requirements and DLA can fill military customers' material requirements reliably and consistently. Benefits include eliminating cancelled requisitions returned to customers as "non-procurable." This strategic focus area includes within its scope the Material Acquisition Electronics (MAE) program.

The Program Roadmap has two major thrusts areas: Digital Microcircuits and Linear/Analog Microcircuits. The program has several projects addressing specific classes of obsolescent microcircuit technologies. Over the past several years, obsolescence in this class of microcircuits has greatly increased and has become a significant concern. These are classes of microcircuits that are expected to become non-procurable in FY2019 and beyond. Without the technologies planned on the MAE Roadmap, DLA will not be able to support DoD's requirements for high quality spare parts for critical electronic systems and subsystems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
Title: Maintaining Viable Supply Sources (formerly High Quality Sources)	17.774	26.296	17.840
FY 2019 Plans: MAE will continue planning for the specific emulation technology implementations to support specific device family groups in consonance with Customer and Agency requirements. It will begin digital microcircuit process development at the 250 nanometer technology node including development of electron-beam lithography techniques. MAE will continue a major new thrust in emulation to address Linear Microcircuits in addition to its traditional focus on Digital. Several efforts will address basic design, manufacturing, electrical test and quality/reliability requirements for establishing a basis for product-oriented developments across the FYDP. MAE will complete and transition 20-Volt operational amplifier emulation capability into full-scale production increasing DLA's ability to re-establish sourcing of non-procurable microcircuit NSNs. MAE will begin 40-Volt operational amplifier and analog switch projects started in FY2018. It will continue applying 350 nanometer emulation technology to specific part families for additional NSNs including Dual-Port Static Random Access Memory (SRAM). MAE will continue to explore using Additive Manufacturing techniques for non-semiconductor aspects of microcircuit manufacturing.			
FY 2020 Plans: MAE will continue planning for the specific emulation technology implementations to support specific device family groups in consonance with Customer and Agency requirements. It will complete and transition TTL-compatible CMOS digital logic emulation into full scale production. It will continue process development at the 250 nanometer technology node and continue process			

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 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** AAA / *Maintaining Viable Supply Sources (formerly High Quality Sources)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
development for Linear/Analog Microcircuits. It will begin additional Linear/Analog emulation projects for types/groups of parts, prioritized based on customer requirements. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 returns the AME program to its baseline after the proposed FY 2019 one-year $9 million investment in equipment to graduate the Advanced Microcircuit Emulation program from soon to be antiquated photolithographic manufacturing techniques to use the more advanced electron beam lithography microcircuit manufacturing methods, which will support at least two future generations of technology over 10 to 15 years.			
Accomplishments/Planned Programs Subtotals	17.774	26.296	17.840

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 0603680S / *Manufacturing Technology Program (ManTech)*	Project (Number/Name) OOO / *Improving Technical and Logistics Information (formerly Industry and Customer Collaboration)*	

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
OOO: *Improving Technical and Logistics Information (formerly Industry and Customer Collaboration)*	1.277	8.929	5.463	5.386	-	5.386	5.425	5.376	5.337	6.224	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Improving Technical and Logistics Information (ITLI) SFA projects improve and facilitate the communication of technical and logistics information among industry, DLA's military customers and DLA. This SFA includes the Military Unique Sustainment Technology (MUST), the Defense Logistics Information Research (DLIR), and the Emergent Manufacturing Technology (EMT) portfolios within its scope.

The Military Unique Sustainment Technology (MUST) program's focus addresses GAO Report 12-707 recommendations for DoD to establish a "knowledge-based approach" to define, communicate, and collaborate on military unique combat uniforms and individual equipment (CUIE) requirements. DLA has the responsibility to manage the technical requirements among the Services and the Defense Industrial Base. Currently there is no common environment for collaborating on new requirements among the stakeholders. The strategic objective of the DLA MUST program is to identify, develop and adopt technologies that can significantly shorten the time needed to transition Combat Uniforms and Individual Equipment from development to operational use from years to months. The Program focuses on technologies that will transform the military CUIE supply chain from an "electronic paper" (i.e. PDF/MS Word) based manual environment, into a knowledge-based automated environment. The resulting approach will be a neutral platform that will seamlessly communicate military unique technical requirements throughout the end-to-end supply chain.

The DLIR program researches core technology to improve the quality, speed, and interoperability of logistics data acquisition and management to enable and streamline DLA operations. DLA must transform business practices and methodologies as the data for weapons systems evolve from traditional formats and delivery methods (such as two-dimensional images and PDF formats) to newer, more innovative methods (such as three-dimensional solid models, object-oriented databases, service-oriented architecture (SOA) and Web 3C standards). This fundamental shift for DLA is driven by the Model-Based Enterprise (MBE) approach, which is influencing the way industry is delivering design and development data for weapon systems to the Military Services and the way the Military Services in turn manage and provide the data to DLA. DLA Logistics Operations, DLA Acquisition, DLA Tech/Quality, and the Defense Standardization Program Office (DSPO) are key stakeholders in the DLIR initiatives to modernize the representation and delivery of weapons systems data.

The EMT program addresses emerging and out of cycle requirements that always occur as DLA strives to maintain readiness of the aging weapon systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
Title: Improving Technical and Logistics Information (formerly Industry and Customer Collaboration	8.929	5.463	5.386

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 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** OOO / *Improving Technical and Logistics Information (formerly Industry and Customer Collaboration)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
FY 2019 Plans: The MUST program plans to transition the MUST Developed Tools to DLA Troop Support Clothing and Textiles (C&T) and applicable Service stakeholders. The tools to be implemented are: 1. Supply Request Package (SRP) Tool for Joint Service and DLA Processes; 2. TexSpec Tool for C&T Product Description and Interim Change management; 3. Product Test Center (PTC) Management Tool for source testing and color shade management; 4. MUSTSize Tool for joint tariff optimization. The DLIR program plans to continue assisting DLA to improve the quality, speed, and interoperability of logistics data across the Enterprise and for the defense industrial base. DLIR will continue promoting and demonstrating the use of methodologies that are computer-aided design(CAD) software-neutral across the military service Engineering Support Activities (ESAs) and Program Management Offices (PMOs) that provide DLA with technical data for Class IX parts. DLIR will also initiate the Connecting the Model-Based Enterprise project working closely with a selected PMO or ESA as it stands up its Product Lifecycle Management (PLM) system to operationally test different methods and processes to obtain technical data packages for selected Class IX weapon system parts resident in the PLM system. The EMT program enables DLA to investigate new disruptive technology advances that may be implemented in the nearer term, without degrading well established program efforts. This program enables the Agency to advance those technologies sooner in order to provide to the warfighter earlier. Small business Innovation Research (SBIR) phase III efforts (which cannot be funded with SBIR funds) are a prime example of activities that will be funded with these funds, examples include emerging magnetic braking technologies, and addressing strategic materials shortage/risk. Efforts will begin in FY2019 to advance Digital Manufacturing by developing a comprehensive approach to take advantage of integrated, computer-based systems of simulation, three-dimensional (3D) visualization, analytics and various collaboration tools to create and manufacture products to support the warfighter. Additionally, any emergent Strategic Materials requirements will be addressed through the EMT program. ***FY 2020 Plans:*** FY2020 will begin a new program in support of the DLA Troop Support Clothing and Textile (C&T) mission. Digital Data Modernization for Manufacturing (D2M2) will develop and implement efficient processes and technologies that enable combat uniform and individual equipment technical data to be seamlessly used throughout the DLA C&T Supply Chain. This will be achieved by working with the Services and the DLA C&T industrial base to refine the processes that are used, define item technical requirements, and effectively communicate them to the industrial base. For example, settings for test equipment would be directly fed into the machine and results would be directly communicated to quality assurance managers. Test results would be more accurate, traceable and timely.			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020
A new broad agency announcement (BAA) will be released for an anticipated FY2020 award. The BAA will identify technical opportunities to develop and use digital data for manufacturing modernization. The DLIR program will continue with the Connecting the Model-Based Enterprise project and initiate the Logistics Interoperability Technology Extension (LITE) project. LITE will enable improved interoperability between DoD internal and external data sources. For example, LITE proposes publishing logistics documents as data instead of PDF by utilizing advanced content interpretation techniques to extract and model the data inside the document. This approach will be based upon open standards to encourage adoption and integration between DLA and non-DLA systems. The EMT program continues to enable DLA's investigation of new disruptive technology advances that may be implemented in the nearer term, without degrading well established program efforts. This program enables the Agency to advance those technologies sooner in order to provide to the warfighter earlier. Small Business Innovation Research (SBIR) phase III efforts (which cannot be funded with SBIR funds) are a prime example of activities that will be funded with these funds, examples include emerging magnetic braking technologies, and addressing strategic materials shortage/risk. Efforts will continue in FY2020 to advance Digital Manufacturing by developing a comprehensive approach to take advantage of integrated, computer-based systems of simulation, three-dimensional (3D) visualization, analytics and various collaboration tools to create and manufacture products to support the warfighter. Additionally, any emergent Strategic Materials requirements will be addressed through the EMT program. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Decrease is due to Military Unique Sustainment Technology (MUST) program phase-out and transition in FY 2019 and stand-up of the MUST II - Digital Data Modernization for Manufacturing (D2M2) program baseline in FY 2020.			
Accomplishments/Planned Programs Subtotals	8.929	5.463	5.386

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 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** OOO / *Improving Technical and Logistics Information (formerly Industry and Customer Collaboration)*

E. Performance Metrics

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