Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Defense Logistics Agency	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	318.962	89.349	46.404	55.366	-	55.366	57.162	56.598	55.833	57.177	Continuing	Continuing
IBA: *Industrial Base & Aging Weapon System Support*	182.989	50.338	36.728	46.625	-	46.625	48.085	47.147	46.154	47.234	Continuing	Continuing
TDM: *3D Tech Data Modernization / Model Based Enterprise*	135.973	39.011	9.676	8.741	-	8.741	9.077	9.451	9.679	9.943	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 and 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 decreased.

DLA R&D established five Lines of Effort (LOEs) in FY 2023. The ManTech R&D Program Element executes from two of the five LOEs: Industrial Base and Aging Weapon System Support; and 3D Technical Data Modernization / Model-Based Enterprise. These LOEs are closely aligned to documented and tracked priorities specified in the most current DLA Strategic Plan, that calls for Digital Business Transformation as one of three critical capabilities to achieve DLA's business goals of enhancing performance, reducing costs, and becoming more predictive and data-driven. This critical capability also seeks to transform systems and processes to improve data transparency, reliability, and security for our employees, customers, and suppliers. DLA's initiatives within this critical capability align with the National Security Strategy (NSS) by emphasizing the importance of harnessing rapid emerging technologies that will transform how we do business.

-In addition to alignment with DLA's top strategic priorities, under Section 2521 of Title 10, US Code, DLA ManTech efforts are collaborated across DOD Military Services and Agencies. As a Principal member of the Joint Defense Manufacturing Technology Panel, DLA's efforts are integrated within the Joint Defense Priorities.

-The Industrial Base and Aging Weapon System Support LOE seeks to implement innovative and proactive technology solutions to ensure a robust, reliable industrial base that provides affordable and previously hard-to-procure critical parts for DOD weapon systems. This LOE aligns to DLA Strategic Plan LOE 1: Warfighter Always, DLA LOE 2: Trusted Mission Partner, DLA LOE 4: Modernized Acquisition and Supply Chain Management, as well as the cross-cutting Critical Capability C: Digital Business Transformation through the following portfolios: DOD Subsistence Supply Chain (Subsistence Network), Castings (Procurement Readiness Optimization Advanced Casting Technology), Forgings (Procurement Readiness Optimization—Forging Advanced System Technology), Batteries (Battery Network), Additive Manufacturing (AM), Advanced Microcircuit Emulation (AME), and the Strategic Materials program was established during FY2025 PBR cycle.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Defense Logistics Agency	Date: March 2024
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 3D Technical Data Modernization / Model Based Enterprise LOE integrates three-dimensional technical data and knowledge-based tools to transform and streamline supply system responsiveness for DLA-managed commodities. Efforts seek to improve and facilitate the exchange of engineering and logistics information among DLA, the Military Services, DLA industry partners and DLA customers. The benefits include shorter product introduction cycles, lower set up-costs for parts production and more economical small batch production. Primarily focused on the DLA Strategic Plan Critical Capability C: Digital Business Transformation, this R&D LOE cuts across DLA Strategic Plan LOE 1: Warfighter Always, DLA LOE2: Trusted Mission Partner, and DLA LOE 4: Modernized Acquisition and Supply Chain Management through portfolios for DOD soldier and individual equipment (Military Unique Sustainment Technology ((MUST)) and Defense Logistics Information Research (DLIR), as well as out of budget cycle or Emerging Requirements (EMR).

DLA's focus for this budget cycle highlights advanced capabilities in digital and technical data modernization, data 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 operation costs and improve weapons systems support. This effort spans across both DLA R&D Program Elements and R&D LOEs, impacting across the DOD Joint Defense Manufacturing Technology Panel and DLA Enterprise logistics processes.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	92.766	46.404	50.397	-	50.397
Current President's Budget	89.349	46.404	55.366	-	55.366
Total Adjustments	-3.417	0.000	4.969	-	4.969
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.217	-			
• Below Threshold Reprogramming	-0.200	-	-	-	-
• Internal Reallocation	-	-	1.000	-	1.000
• Program Increases: Additive Manufacturing Joint Foundational Initiatives & Non-labor Inflation	-	-	7.613	-	7.613
• Program Decrease	-	-	-3.644	-	-3.644

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: IBA: *Industrial Base & Aging Weapon System Support*		
Congressional Add: *Flake Graphite-Based Solutions for Per- and Polyfluorinated Substances (PFAS) Contamination*	5.000	-
Congressional Add: *Steel Performance Initiative*	13.000	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Defense Logistics Agency	Date: March 2024
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)*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add Subtotals for Project: IBA	18.000	-
Project: TDM: *3D Tech Data Modernization / Model Based Enterprise*		
Congressional Add: *AI based market research system*	3.000	-
Congressional Add: *Supply Chain Readiness Improvement Program*	5.000	-
Congressional Add: *Battery Grade Graphite*	3.600	-
Congressional Add: *High performance magnets*	5.000	-
Congressional Add: *Hypersonic radomes and apertures*	5.000	-
Congressional Add: *Nanostructured iron nitride permanent magnets*	7.000	-
Congressional Add Subtotals for Project: TDM	28.600	-
Congressional Add Totals for all Projects	46.600	-

Change Summary Explanation

FY 2025 Internal Reallocation: Industrial Base and Aging Weapon System Support (IBA) baseline was increased by $1.000 million to address Lead-acid, NiCd replacement, Transition Solid State Technology, BATTNET initiative.

FY 2025 Program Increases: Additive Manufacturing Joint Foundational Initiative - Add funds to expand and develop the Joint Additive Manufacturing Model Exchange (JAMMEX) and expand the Joint Additive Manufacturing Acceptability (JAMA) initiative. JAMMEX expansion and development will enhance integration of additive manufacturing across DoD. JAMA expansion will create a common part qualification framework from use by the Military Services to approve more supply chain vendors and broaden the potential vendor base.

FY 2025 Program Decrease: Reduction to fund higher DoD priorities.

In FY 2025, a Strategic Materials (SM) program was formally established within IBA LOE by realigning $500K per year FY 2025- 2029 from the Emerging Requirements (EMR) program baseline for new Strategic Materials (SM) program. (The EMR program funded emerging SM related research in the past two cycles including related to Rare Earth elements.) Due to continuing SM requirements, a modest baseline was established to continue technical research and development in this area. The SM program focus, as directed under EO14017, will be on emerging and rapidly expanding requirements to restore and stabilize strategic and critical materials supply chains that have been compromised by decreased or abandoned domestic production activities or lack of domestic reserves within the United States. Most of these requirements are in the form of research of materials and alloys and development of solutions including cost-efficient production, substitution, domestic qualification, and/or recycling.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency											Date: March 2024	
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603680S / *Manufacturing Technology Program (ManTech)*				Project (Number/Name) IBA / *Industrial Base & Aging Weapon System Support*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
IBA: *Industrial Base & Aging Weapon System Support*	182.989	50.338	36.728	46.625	-	46.625	48.085	47.147	46.154	47.234	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Industrial Base (IB) and Aging Weapon System Support Line of Effort seeks to implement innovative and proactive technology solutions to ensure a robust, reliable industrial base that provides affordable and previously hard-to-procure critical parts for DOD weapon systems through the following objectives:

1. Viable and Responsive Industrial Base: maximize Defense Industrial Base capability and capacity and improve availability, quality, and affordability to support the Warfighter.
2. Obsolescence Solutions: establish a trusted manufacturing capability for qualified microcircuits to support DOD weapon system lifecycles.
3. Advanced Manufacturing: leverage advanced manufacturing capabilities to introduce and integrate additive and advanced manufacturing concepts into the DOD supply chain.

The portfolios within the IB and Aging Weapons System Support LOE include food-service supply chain solutions (Subsistence Network), Castings (Procurement Readiness Optimization—Advanced Casting Technology), Forgings (Procurement Readiness Optimization—Forging Advanced System Technology), Batteries (Battery Network), Additive Manufacturing (AM), Advanced Microcircuit Emulation (AME) and Strategic Materials (SM).

The Subsistence Network (SUBNET) program 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. The SUBNET goals are to utilize innovation and the leverage the latest technologies to maximize the logistics capability and capacity within the subsistence supply chain industrial base. The 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 about two percent of National Stock Numbered Class IX parts but represent about five percent of all backorders, and when only the oldest backorders are considered, up to 10 percent 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 Association 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 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 about two percent of National Stock Number (NSN) Class IX parts but represent about five percent of all backorders, and when only the oldest backorders are considered, up to 10 percent 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 streamline customer purchase requests for AM items and provide the Warfighter an alternate source of supply for designated requirements. This effort responds to DLA's role called out in DOD Instruction 5000.93. Use of AM in DOD is to integrate AM products into the supply chain. R&D is leading the developmental effort for effective AM procurement processes in the DoD enterprise. The AM effort explores innovative technologies and emerging industry trends, as it pursues this alternate means of supply for products that are otherwise non-procurable or susceptible to procurement issues. The AM effort includes collaborative efforts with the Military Services to develop analytical tools to identify viable AM candidates while considering logistics planning factors. The AM effort requires effective management of the digital thread composed of authoritative 3D digital technical, manufacturing and testing data exchanged among designers, engineers, maintainers, logisticians, procurement managers and the vendor base to enable quality assurance acceptability. Potential AM 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.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** IBA / *Industrial Base & Aging Weapon System Support*

Advanced Microcircuit Emulation (AME) program objective is to maintain a reliable and 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. Without the technologies planned on the AME Roadmap, DLA will not be able to support DoD’s requirements for high quality spare parts for critical electronic systems and subsystems, resulting in decreased warfighter readiness and significant cost for weapons system or component redesign.

Strategic Materials (SM) program objectives focus will be on emerging and rapidly expanding requirements to restore and stabilize strategic and critical materials supply chains that have been compromised by decreased or abandoned domestic production activities or lack of domestic reserves within the United States. Most of these requirements are in the form of research of materials and alloys and development of solutions including cost-efficient production, substitution, domestic qualification, and/or recycling.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Industrial Base (IB) and Aging Weapon System Support Line of Effort (LOE)	32.338	36.728	46.625
Description: FY 2023 Accomplishments The Subsistence Network (SUBNET) program championed research, development, test and evaluation on multiple projects to enhance the efficiency, quality, and safety of the DOD subsistence supply chain. The SUBNET program collaborated with community partners (military services, federal agencies, industry, and academia) to leverage the latest technologies and innovations in successfully supporting and executing R&D projects in modernization and readiness analysis of a joint food management system; in-process logistics modeling for microbiological testing of MREs; improving subsistence visibility with barcode standards for Prime Vendors and Military Service stakeholders; investigation of sustainable packaging options for MREs; investigation and determination of per- and polyfluoroalkyl (PFAS) sources throughout the MRE assembly line. The program also advanced Small Business Innovation Research (SBIR) topics in Subsistence and saw promising results with separation, compositing, recycling, and repurposing system; deployable assembly kitting platform for Unitized Group Rations (UGR); robotic automations in dining facilities; technological and operational improvements in cold-weather combat rations heating and hydration modules. The DLA Casting (MAN-PA) R&D program continued research and development efforts focused on ensuring a viable and competitive metal casting industrial base providing affordable and high- quality parts for the Warfighter. Using partnerships to improve the material, manufacture, and procurement of defense parts. Educating the work force on industrial practices to better solicit and procure parts with cast content. These focus areas were supported through multiple projects aimed at improving DLA’s casting procurement agility and supply base to support warfighter readiness, enhancements to assist in reducing lead times and no-bid situations, development of software to utilize knowledge and technics to provide estimates based on design criteria, and identification of cast components from within the technical data package. Some of the projects that have successfully concluded and worked towards implementation included developing a virtual die casting simulation and other tools and resources for workforce development, modeling and simulations for pouring and solidification of castings, developing higher strength castings			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** IBA / *Industrial Base & Aging Weapon System Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
through the use of ceramic components and lattice structure, conformal cooling design for die casting dies and inserts, die casting of high temperature alloys, and developing coatings for dies and tooling to increase quality and reduce cost. The DLA Forging (MAN-PF) R&D program utilized projects focused on sustaining and improving the forging manufacturing industrial base to ensure the DoD continues to have viable sources for the procurement of quality parts with forged content. Improving the manufacturing process and materials to decrease material cost. Expanding and strengthen our collaboration with suppliers, working directing with these suppliers to maintain a viable and competitive forging supply chain. Specific focus was placed on workforce development and resources to ensure a viable future workforce, coatings for dies and materials which will reduce environmental impact from sprayed lubricants, increase product quality and reduce waste and lead time, and utilizing sensors and sensor technology to monitor the forging manufacturing process. The BATTNET program completed four major contracts funded by the FY 2019 Congressional Add, designed to transition viable solid-state electrolyte technologies into cells and batteries for MIL-32383 soldier system batteries. Several cell and battery types, with excellent safety characteristics for military performance requirements, were submitted to US Army DEVCOM C5ISR for evaluation. The program completed an advanced manufacturing technologies project for light weight (37%), bipolar lead-acid batteries, and advanced batteries for the Bradley Fighting Vehicle turret power, which were submitted to US Army DEVCOM GVSC for evaluation. The program finished improving the production capabilities for lithium anodes used on critical MIL-32271 batteries. The program completed first stage manufacturing capabilities for high performance bipolar designs in military aviation MIL-8565 lead-acid requirements. The program launched two projects for addressing manufacturing capabilities - one for emerging DoD-wide nickel-zinc batteries and one for critical ground MIL-32565 and soldier MIL-32383 standard batteries. The program continued to manage nine SBIR Phase 2 projects ($14.5 million) for military battery manufacturing objectives and prepared a new topic DLA 231-D06 on lithium-ion battery management system (BMS) cyber-security. The DLA-Additive Manufacturing (AM) program has continued its JAMA –Joint Additive Manufacturing Acceptability effort, and Military Partner Project Engagement. JAMA III is in its final stages of meeting its goals as well as requirements. The initial QPL-Quality Parts List and QML- Quality Manufacturers list has been developed for review and use as a tool within the enterprise by the Military Services. Preparation is underway for JAMA IV. JAMA IV will target the application of the efforts of JAMA I-III, to verify their ability to function as a resource for use. The requirements and specifications are being developed in collaboration with DLA, Deloitte, and OSD. Military Partner projects with US Army DEVCOM and C5ISR are another focus area that is being successfully executed with the development, testing, and production of the Waveguide and Joint Biological Point Detection System (JBPDS). A phase 2 of the Waveguide endeavor is currently underway. The Advanced Microcircuit Emulation (AME) program continued to develop manufacturing technologies required to achieve its			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** IBA / *Industrial Base & Aging Weapon System Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
goals of providing a reliable and trusted, domestic means of mitigating obsolescence in legacy microcircuits. It transitioned a new capability for re-establishing sourcing for dual port memory microcircuits to full scale production. AME continued its development of additional manufacturing capabilities to support legacy 20-volt and 40-volt analog microcircuits, radiation hardened analog microcircuits. AME continued exploring supporting an emerging supply chain risk in microcircuit cases with using additive manufacturing.			
FY 2024 Plans: The Subsistence Network (SUBNET) program will continue to develop and promote manufacturing improvements with R&D projects that leverage emerging technologies and innovations. The SUBNET program will continue to work Congressional Interest research in per- and polyfluoroalkyl substances in packing material used to assemble MREs, research sustainable packaging options for the MREs, and research other food sterilization methods to include food irradiation, research sensors from production storage to food service, and artificial intelligence in food. The program will also continue to pursue Small Business Innovation Research (SBIR) topics in Subsistence. The Casting program will work to review proposals and award new contracts under the Broad Agency Announcement while maintaining its alignment with the DLA Strategic plan and U.S. Casting Industry Roadmap. These projects will work to alleviate problems in the procurement and manufacture of parts that contain metal castings. These problems include dangerous and labor-intensive processes, accuracy of existing modeling and simulation software and tools to predict end item or finished part performance, complex manufacturing processes, resources for sourcing and/or tooling identification, the use of required but obsolete or antiquated specifications/standards and the continued consolidation of manufacturing facilities and resources within the domestic market coupled with fierce competition from foreign sources. The casting program will continue to monitor projects that were awarded in FY 2023, focused on helping to secure and maintain a viable and vibrant foundry industry as a critical part of the U.S. manufacturing base. The resulting benefits from these projects are an improved manufacturing base, reliable sources of supply with increased spare part availability, and a resulting mission readiness for the DLA and the DoD. The Forging program will continue to monitor awarded projects focused on improving manufacturing processes and alternative forging manufacturing methods. Innovative coatings for materials and forging dies, workforce development with tools and resources to help the industry recruit and retain employees, and sensors and smart manufacturing methods. These projects align with the needs of the DoD and DLA aimed and supporting and fulfilling the needs of the warfighter. The Battery Network (BATTNET) program will continue to execute projects for improving the production readiness, transition, and standardization of soldier and system batteries within the DLA supply chain. Projects will leverage new battery manufacturing technologies for the supply chain that have been developed by industry – advanced electrodes production, low-cost materials			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** IBA / *Industrial Base & Aging Weapon System Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
production or recycling, and advanced performance cells. The program intends to leverage deep-discharge, long cycle life, and safe lithium-ion capabilities with the US Military Services to replace obsolete nickel-cadmium batteries in naval and aviation systems. The Additive Manufacturing (AM) program will use the lessons learned during the Joint Additive Manufacturing Acceptability (JAMA) efforts in the areas of AM parts prioritization, data formats, acceptability criteria, and leverage emerging digital business practices, stemming from the information technology modernization efforts to engage in the testing and prototyping of customer engagement technology peripheral digital services, to address the requirements generated at the convergences of the MILSVC digital experiences and DLA digital operations in order to adjust DLA's business models. DLA R&D AM will also launch the needed test beds to propel the expansion of the DLA' technical data management capability to include vendor 3D models (industry developed) to establish a repeatable process for AM vendor bids. The Advanced Microcircuit Emulation (AME) program will continue to develop its long-term technology roadmap. It will also continue planning for the specific emulation technology implementations to support specific device family groups in consonance with Customer and Agency requirements. Additive Manufacturing for Microcircuit Cases - Phase III project, Small Case 20 Volt Operational Amplifier, Radiation-Hardened Linear microcircuits, and Dual-Voltage Process Development projects are anticipated to be completed. AME will continue to develop capabilities in digital and analog/linear technologies. ***FY 2025 Plans:*** The Subsistence Network (SUBNET) program will continue to develop and promote manufacturing improvements with R&D projects that leverage emerging technologies and innovations. The SUBNET program will continue to support and champion research projects that advance safety and quality of the foods destined for our warfighters, which include but are not limited to: Congressional Interest research in assessing and mitigating per- and polyfluoroalkyl substances in MRE packaging material, sustainable/alternative MRE packaging material sourcing, enhanced food sterilization methods to include food irradiation, subsistence supply chain (farm-to-fork) monitoring studies, and explore artificial intelligence and machine learning research in food production, processing, distribution, and delivery. The program will also continue to pursue various Small Business Innovation Research (SBIR) topics in Subsistence. The DLA Casting (MAN-PA) R&D program will continue to monitor the research projects aiming to alleviate problems in the procurement and the manufacture of DOD weapon system parts. The projects include design tools for manufacturing such as cost modeling and simulation. Process improvements such as light weighting, smart machines and manufacturing, automation and robotics, ergonomics, and sustainability. We will plan for future development in hybrid cast materials, enhanced alloys, and sustainable substitutes, die materials, furnace refractory coatings and digital threat integration and implementation.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** IBA / *Industrial Base & Aging Weapon System Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The DLA Forging (MAN-PF) R&D program will continue to monitor projects focused on improving manufacturing processes and alternative forging manufacturing methods, innovative coatings for materials and forging dies, workforce development with tools and resources to help the industry recruit and retain employees, and sensors and smart manufacturing methods. These projects align with the needs of the DLA and the DoD aimed at supporting and fulfilling the needs of the warfighter. The Battery Network (BATTNET) program will continue to execute projects for improving the production readiness, transition, and standardization of soldier and system batteries within the DLA supply chain. Projects will leverage new battery manufacturing technologies for the supply chain that have been developed by industry – advanced electrodes production, low-cost materials production or recycling, and advanced performance cells. The program intends to leverage deep-discharge, long cycle life, and safe lithium-ion capabilities with the US Military Services to replace obsolete nickel-cadmium batteries in naval and aviation systems. The DLA Additive Manufacturing (MAN-AM) R&D program will continue to explore emerging technology and monitor the current research projects that develop accessibility and acceptability of AM parts. Examine alternative manufacturing options for warfighter readiness. This will enable Military Services the opportunity to utilize innovative manufacturing as a means to decrease issues with the sources of much needed parts in the DoD supply chain. This program will continue to research ways to leverage AM policy, processes for producing parts, and pursue Small Business Innovation Research (SBIR) and Emergent BAA opportunities in Additive Manufacturing. The Advanced Microcircuit Emulation (AME) program will continue to develop its long-term technology roadmap. It will also continue planning for the specific emulation technology implementations to support specific device family groups in consonance with Customer and Agency requirements. The 40 Volt Operational Amplifier project is anticipated to be completed and transitioned to full scale production. The Strategic Materials (SM) program will continue to examine the requirements for research of materials and alloys, development of solutions with cost-efficient production, substitution, domestic qualification, and/or recycling to restore and stabilize strategic and critical materials supply chains that have been compromised by decreased or abandoned domestic production activities or lack of domestic reserves within the United States. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Industrial Base and Aging Weapon System Support (IBA) baseline was increased primarily by $7.500 million in FY 2025 for Additive Manufacturing to expand and develop the Joint Additive Manufacturing Model Exchange (JAMMEX) and expand the Joint Additive Manufacturing Acceptability (JAMA) initiative. JAMMEX expansion and development will enhance integration of additive			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** IBA / *Industrial Base & Aging Weapon System Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
manufacturing across DoD. JAMA expansion will create a common part qualification framework from use by the Military Services to approve more supply chain vendors and broaden the potential vendor base.			
Accomplishments/Planned Programs Subtotals	32.338	36.728	46.625

	FY 2023	FY 2024
Congressional Add: Flake Graphite-Based Solutions for Per- and Polyfluorinated Substances (PFAS) Contamination ***FY 2023 Accomplishments:*** The project objective is to develop graphite-derived PFAS-free aqueous film-forming foams (AFFFs). The SUBNET Program Manager completed and submitted all required documents to the contracting office. Award and kickoff of the project is expected in late August/early September 2023.	5.000	-
Congressional Add: Steel Performance Initiative ***FY 2023 Accomplishments:*** Project continued to develop hybrid and Industry 4.0 manufacturing technologies along with modeling and quantitative nondestructive testing (QNDT) to advance predictive performance design. Providing the DLA and the DoD with a specialty steel casting supply chain capable of supporting equipment supplier with the most globally advanced technology. Eleven projects are currently under way and include fatigue assessment, characterization, microstructure and property evaluation, Artificial Nural Networks (ANN), Internet of Things (IoT), and automated grinding and robotics. These projects are creating a framework and continue to lay the groundwork to collectively develop hybrid and Industry 4.0 manufacturing technologies, modeling and QNDT for the steel casting industry.	13.000	-
Congressional Adds Subtotals	18.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

DLA R&D primarily uses Broad Agency Announcements (BAA) to competitively award contracts to industry and academic organizations for Advanced Technology Development projects. BAAs allow DLA R&D to see a wide range of technical approaches to address an area of interest or specific requirement. Multiple awards can be made so that the chances of a successful R&D outcome are maximized. BAAs are a flexible way to access all parts of the technology supply chain and structure a contract that satisfies the DOD requirements. To save potential offeror time and money, most BAAs include a short white paper submission that allows stakeholders to determine if the level of interest justifies requesting a full cost and technical proposal. Full proposals resulting from the white paper review are evaluated and move through an expedited evaluation and award process. Castings, Subsistence, Emergent Technology and Battery Network currently have open BAAs in FY2025.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** IBA / *Industrial Base & Aging Weapon System Support*

Occasionally, DLA may use Other Transaction Authority (OTA) to rapidly deliver prototype capabilities with design and discovery techniques rather than requirements-based approaches. OTA agreements are especially useful for advancing technology adoption because they reach non-traditional, small business companies with innovative technologies and have the advantage of being able to go from development into production without a follow-on competitive contract.

In 2024, DLA R&D can use The DLA Joint Enterprise Technology Services (JETS) JETS 2.0 multi-award Indefinite Delivery/Indefinite Quantity (IDIQ) contract vehicle. JETS 2.0 will be used to acquire IT services from small and large pre-qualified performers, including R&D Support tasks, with AM SME, AM Tech Specialist, Biologist, Chemist, Food Scientist, and Industrial Engineer labor categories.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency											Date: March 2024	
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603680S / *Manufacturing Technology Program (ManTech)*				Project (Number/Name) TDM / *3D Tech Data Modernization / Model Based Enterprise*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
TDM: *3D Tech Data Modernization / Model Based Enterprise*	135.973	39.011	9.676	8.741	-	8.741	9.077	9.451	9.679	9.943	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The three-dimensional (3D) Technical Data Modernization (TDM) / Model-Based Enterprise (MBE) includes efforts to improve and facilitate the exchange of engineering and logistics information among DLA, the Military Services, industry partners, and customers. This LOE includes the Military Unique Sustainment Technology (MUST), the Defense Logistics Information Research (DLIR), and the Emerging Requirements (EMR) portfolios. A primary focus of this LOE 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. Objectives for this LOE includes:

1. Transform technical data into modern, machine-usable, neutral formats: support DoD's digital modernization efforts and provide significant readiness improvements.
2. Create a model-enabled knowledge base shared among DLA, the Military Services and industry: streamline the delivery of accurate requirements and high-quality material and end-items throughout the supply chain.
3. Quickly develop emergent and breakthrough technologies into military significant capabilities.

The Military Unique Sustainment Technology (MUST) program 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 and maintain 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 improve the joint process from transitioning new item development to DLA sustainment and operations. 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 model driven environment. This approach will result in seamlessly communicating military unique technical requirements throughout the end-to-end supply chain, leading toward a Model Based Enterprise.

The Defense Logistics Information Research (DLIR) program seeks to improve the quality, security, and interoperability of logistics data to further enable and streamline DLA operations ultimately providing higher quality parts for enhanced weapons sustainment. Additionally, DLIR efforts are focusing on assisting Small and Midsize Manufacturers (SMMs) in their adoption of Industry 4.0 and workforce development in the Defense Industrial Base (DIB). DLA must transform its 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).

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** TDM / *3D Tech Data Modernization / Model Based Enterprise*

This transformational shift for DLA is driven by the Model-Based Enterprise (MBE) approach, 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. The Military Services, DLA Logistics Operations, DLA Acquisition, DLA Tech/Quality, and DLA's Major Subordinate Commands (MSCs) are key stakeholders in the DLIR initiatives to modernize the representation and delivery of weapons systems data.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Three-dimensional (3D) Technical Data Modernization (TDM) / Model-Based Enterprise (MBE) (R&D LOE 2)	10.411	9.676	8.741

Description: FY 2023 Accomplishments:

The MUST II program focus has been to integrate the MUST II developed tools into the Digital Model Library (DML) using an Application Program Interface (API) and additional development of the Interim Change Management System (ICMS) tool for capturing and managing Interim Changes (IC) to the technical requirements. The ICMS completed Troop Support internal testing and functional validation. In FY23 MUST II has had successful and continued collaborated with DLA Troop Support Clothing & Textiles, Joint Clothing Textile Modernization Initiative (JCTMI), Military Services Engineering Support Activities, DLA Product Testing Center, and the Industrial Base.

DLIR completed the Digital Rights Management (DRM) project which explored whether commercial DRM tools and techniques can improve the security of DLA technical data, and an analysis of Standard for the Exchange of Product Data (STEP) 242 data transfer accuracy – a study to investigate the transferability of 3D technical data within / between CAD platforms using STEP 242 to enable the transportability of digital artifacts across the DoD Services and Vendor Enterprise. Additionally, DLIR continued efforts to build a Digital Sustainment Platform (DSP) which is a robust platform that enables the model-based sustainment enterprise supporting DLA Technical Data Management Transformation (TDMT) efforts, Supply Chain Risk Management (SCRM), Advanced Manufacturing, and SMMs. DLIR transitioned to Phase III of the Federal Logistics Information System (FLIS) data cleansing efforts where scripted algorithms and machine learning (ML) will be used to identify, scope, and cleanse data errors in the FLIS. DLIR continued to develop a prototype or remote inspection and product testing for Clothing and Textile goods utilizing augmented reality (AR). Finally, DLIR kicked off a process digital twin project to identify bottlenecks and root causes in the DLA Aviation Order-to-Cash (O2C) process and several Congressional Interest Items (CII) to assist SMMs and workforce development within the DIB.

The program executed Congressional add funding to support Strategic Materials and Rare Earth Element related technical projects for: High Performance Magnets, Hypersonic Radomes and Apertures, Nanostructured Iron Nitride Permanent Magnets, Battery Grade Graphite, and received additional direct funding for Isomolded Graphite technology.

FY 2024 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** TDM / *3D Tech Data Modernization / Model Based Enterprise*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The Military Unique Sustainment Technology II (MUST II) program will develop a strategy to integrate Services PLM data as a "front end" to the MUST Knowledge Base. In this vision, MUST Knowledge Base tools and capabilities interface with PLM via Application Programming Interfaces as Items prepare for, and transition to DLA Sustainment. The ICMS tool working prototype and the DML working prototype will be delivered and available for transition into an operational capability. Technical data content in the DML will continue to be expanded and the AI needed to make the DML information available throughout the supply chain will be enhanced. The major effort of integration into Military Services development organizations and the industrial base will be undertaken. The Defense Logistics Information Research (DLIR) program will continue to support DLA's Technical Data Management Transformation (TDMT) efforts to determine IT architecture needs and to ensure DLA's MBE architecture meets/exceeds DOD compliance objectives and integrates with Military Services irrespective of platforms. DLIR will continue collaboration with MxD focusing on cybersecurity and building the digital thread completing the conversions of selected NSNs to 3D, model -based formats, producing first articles, and demonstrating to the cognizant Engineering Support Activity (ESA) that the model -based TDP can be the authoritative TDP. The Emerging Requirements (EMR) program will continue to enable DLA's investigation of new disruptive technology advances that may be implemented in the nearer term, without degrading well established program efforts. ***FY 2025 Plans:*** In the future, MUST II plans to develop more powerful AI based tools to incorporate ICs into the base models, and to extract technical requirements from the digital models. Technical data content in the digital model library (DML) will continue to be expanded and the AI needed to make the DML information available throughout the supply chain will be enhanced. In addition, MUST II will continue to work with the Services to promote the use of data formats compatible with the digital document models and identify process touch points for the Joint Clothing & Textile Manufacturing Initiative (JCTMI). The major effort of integration into Military Services development organizations and the industrial base will be undertaken. The digital document models will become the authoritative source for combat uniform and individual equipment technical requirements and provide common visibility to all stakeholders. These models can be efficiently managed (queried, analyzed, updated) and will be capable of supplying data directly to test plans and manufacturing processes. Joint processes will be reengineered to take advantage of the digital model data. Prototype tools and interfaces will also be developed to improve digital model utility for the industrial base. The Defense Logistics Information Research (DLIR) program will continue to support DLA's Technical Data Management Transformation (TDMT) efforts, complete and transition Federal Logistics Information System (FLIS) data cleansing efforts, expand development of a prototype for remote inspection and product testing for Clothing and Textile goods utilizing augmented reality (AR), complete process digital twin project/s to identify bottlenecks and root causes in DLA processes and several			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** TDM / *3D Tech Data Modernization / Model Based Enterprise*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Congressional Interest Items (CII), to assist SMMs and workforce development within the DIB. Furthermore, DLIR will be pursuing workforce development labs and additional advanced manufacturing concepts. The Emerging Requirements (EMR) program will continue to enable DLA's investigation of new disruptive technology advances that may be implemented in the nearer term, without degrading well established program efforts. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 baseline was reduced to fund higher DoD priorities.			
Accomplishments/Planned Programs Subtotals	10.411	9.676	8.741

	FY 2023	FY 2024
Congressional Add: AI based market research system ***FY 2023 Accomplishments:*** DLIR Completed contract/acquisition package for this congressional add which will conduct an R&D pilot that applies AI to improve the nation's military industrial base, accelerate the contracting processes, and diversify and strengthen the supply chain. Once completed the pilot's data will provide a framework and blueprint to dramatically improve both readiness and resiliency of the Defense Industrial Base (DIB) at scale within the DOD. The project was awarded 27 Sept 2023.	3.000	-
Congressional Add: Supply Chain Readiness Improvement Program ***FY 2023 Accomplishments:*** The DLA Small Business Innovation Program (SBIP) awarded a contract/ acquisition package for this congressional add which will conduct an R&D initiative to develop technical data and innovative manufacturing and qualification methods to improve product availability, quality, performance, and cost competitiveness, etc. for critical weapon system components. Proving this capability through a short-term demonstration will expand the industrial base ready to support DoD weapon systems, increase industrial base capacity to produce critical weapons systems components, and through increased competition Improve availability and provide a reduction in costs for the DoD.	5.000	-
Congressional Add: Battery Grade Graphite ***FY 2023 Accomplishments:*** The DLA Small Business Innovation Program (SBIP) will utilize the 3 phase Small Business Innovation Research Program to award Phase I and Phase II awards for this Congressional Interest Item. Phase I awards will be made in January of 2024, and Phase II awards will be in June of 2024. The purpose of this additional effort is to reestablish domestic production capability of legacy ATJTM isostatically molded graphite using a US supply chain and US manufacturing facility. The project seeks to qualify a new domestic source of raw materials and produce a qualification batch of 8 tons of ATJ graphite. After qualification testing	3.600	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** TDM / *3D Tech Data Modernization / Model Based Enterprise*

	FY 2023	FY 2024
and acceptance by customers, there will be a source of ATJ at a capacity level of up to 3,000 tons per year of isostatically molded graphite as a drop-in replacement for the legacy ATJ material. At the end of this program, the US will again have a domestic source of strategically important large isostatically molded graphite billets used for rocket nozzles and ablative materials produced by a US-owned company.		
Congressional Add: High performance magnets ***FY 2023 Accomplishments:*** DLA Small Business Innovation Program (SBIP) completed contract/acquisition package in January 2024 for this congressional interest item which will conduct a SBIR Phase III project with the intent to leverage ongoing magnet recycling and manufacturing with a focus on qualifying domestic NdFeB Rare Earth Magnet Production Qualification Plans for Defense Industrial Base: Excalibur, Peregrine, JDAM + SDB Programs. Urban Mining Company proposed a Magnet-to-Magnet recycling system that takes waste magnets from end-of-life appliances, reduces them to powder, and finally reforms them into new magnets with magnetic properties like, or better than starting materials. This process could alleviate supply risk in the US by largely operating outside of the conventional magnet supply chain.	5.000	-
Congressional Add: Hypersonic radomes and apertures ***FY 2023 Accomplishments:*** DLA Small Business Innovation Program (SBIP) completed contract/acquisition package in August 2023 for this congressional interest item which will conduct a SBIR Phase III project with the intent to leverage ongoing Hypersonic technology developmental efforts by AFRL, AFWERX, MDA, and DARPA to accelerate manufacturing readiness of Hypersonic radomes/apertures that are essential to achieving the rigorous performance and survivability requirements of Hypersonic weapons, Mentis Sciences, of Manchester, NH, brings significant expertise to bear on several potential solutions. Specifically, Mentis will 1) focus and accelerate the development of Mentis Advanced Pre-Ceramic Composite Radomes and Apertures, 2) leverage Mentis competencies in the: design, development, and production of Ox/Ox preforms and structures; RF Aperture design, characterization, and testing; and aerothermal platform design, testing and analysis to mature material solutions to TRL / MRL 6 requirements and 3) demonstrate capabilities and limits leveraging component testing tech demonstration platform tests at Laser Hardened Materials Evaluation Laboratory (LHMEL), Arnold Engineering Development Complex (AEDC); White Sands Missile Range to advance Hypersonic Ox/Ox Requirements.	5.000	-
Congressional Add: Nanostructured iron nitride permanent magnets ***FY 2023 Accomplishments:*** DLA Small Business Innovation Program (SBIP) completed contract/acquisition package in Jan 2024 for this congressional interest item which will extend Niron Magnetics proposed the use	7.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** TDM / *3D Tech Data Modernization / Model Based Enterprise*

	FY 2023	FY 2024
of Iron Nitride as means of reducing the use of rare earths for the manufacture of high-performance permanent magnets. Iron Nitride is a high performance, completely rare earth free permanent magnet technology. A key differentiator to Niron's magnet technology is powder particle coating by Atomic Layer Deposition (ALD) in a fluidized bed reactor. ALD is a ground-breaking powder conditioning technology that provides two benefits to Niron's iron nitride magnets: 1) passivation of the nanoparticle surface, preventing oxidation, and 2) magnetic isolation of the nanoparticles, improving their ability stay fully magnetized. The unique characteristics of iron nitride include a magnetic strength higher than most grades of NdFeB permanent magnets. The follow-on project continues this work started with the FY22 effort. The intent is to advance the technology and manufacturing readiness of non-rare earth containing iron nitride permanent magnets, for use in military electric components and systems. A four-task program is currently envisaged. The first aims are to identify alloying elements that would maximize iron nitride magnet performance and develop an electric machine design that incorporates iron nitride permanent magnets; The second task is to synthesize iron oxide nano particles (IONPs) for reduction and nitriding at pilot scale (10 kg). The third task is to develop scalable processes to reduce, nitride, and passivate IONPs. The final task is to develop iron nitride permanent magnets with an energy product of 15 MGOe.		
Congressional Adds Subtotals	28.600	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

DLA R&D primarily uses Broad Agency Announcements (BAA) to competitively award contracts to industry and academic organizations for Advanced Technology Development projects. BAAs allow DLA R&D to see a wide range of technical approaches to address an area of interest or specific requirement. Multiple awards can be made so that the chances of a successful R&D outcome are maximized. BAAs are a flexible way to access all parts of the technology supply chain and structure a contract that satisfies the DOD requirements. To save potential offeror time and money, most BAAs include a short white paper submission that allows stakeholders to determine if the level of interest justifies requesting a full cost and technical proposal. Full proposals resulting from the white paper review are evaluated and move through an expedited evaluation and award process. DLIR and MUST programs currently have open BAAs through FY2026 and FY 2025 respectively.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Defense Logistics Agency		Date: March 2024
Appropriation/Budget Activity 0400 / 3	**R-1 Program Element (Number/Name)** PE 0603680S / *Manufacturing Technology Program (ManTech)*	**Project (Number/Name)** TDM / *3D Tech Data Modernization / Model Based Enterprise*

Occasionally, DLA may use Other Transact ion Authority (OTA) to rapidly deliver prototype capabilities with design and discovery techniques rather than requirements-based approaches. OTA agreements are especially useful for advancing technology adoption because they reach non-traditional, small business companies with innovative technologies and have the advantage of being able to go from development into production without a follow-on competitive contract.

In 2024, DLA R&D can use The DLA Joint Enterprise Technology Services (JETS) JETS 2.0 multi-award Indefinite Delivery/Indefinite Quantity (IDIQ) contract vehicle. JETS 2.0 will be used to acquire IT services from small and large pre-qualified performers, including R&D Support tasks, with AM SME, AM Tech Specialist, Biologist, Chemist, Food Scientist, and Industrial Engineer labor categories.