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**Department of Defense
Fiscal Year (FY) 2024 Budget Estimates**

March 2023



Office of the Secretary Of Defense
Defense-Wide Justification Book Volume 1 of 2
Defense Production Act Purchases

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Office of the Secretary Of Defense • Budget Estimates FY 2024 • Procurement

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Department of Defense
 FY 2024 President's Budget
 Exhibit P-1 FY 2024 President's Budget
 Total Obligational Authority
 DoD Component Summary
 (Dollars in Thousands)

Mar 2023

<u>Appropriation Summary</u>	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment*	FY 2023 Total Enactment	FY 2024 Request
Defense Production Act Purchases	1,238,327	372,906		372,906	968,605
Total Defense-Wide	1,238,327	372,906		372,906	968,605
Grand Total Department of Defense	1,238,327	372,906		372,906	968,605

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Defense-Wide
 FY 2024 President's Budget
 Exhibit P-1 FY 2024 President's Budget
 Total Obligational Authority
 Defense Summary
 (Dollars in Thousands)

Mar 2023

<u>Appropriation Summary</u>	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment ⁺	FY 2023 Total Enactment	FY 2024 Request
Defense Production Act Purchases	1,238,327	372,906		372,906	968,605
Total Defense-Wide	1,238,327	372,906		372,906	968,605

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Department of Defense
 FY 2024 President's Budget
 Exhibit P-1 FY 2024 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

Mar 2023

Organization: Procurement, Defense-Wide	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment ⁺	FY 2023 Total Enactment	FY 2024 Request
Secretary of Defense, OSD	1,238,327	372,906		372,906	968,605
Total Defense-Wide	1,238,327	372,906		372,906	968,605

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Defense-Wide
 FY 2024 President's Budget
 Exhibit P-1 FY 2024 President's Budget
 Total Obligational Authority
 0360D BA Summary
 (Dollars in Thousands)

Mar 2023

Appropriation: Defense Production Act Purchases	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment ⁺	FY 2023 Total Enactment	FY 2024 Request
<u>Budget Activity</u>					
01. Defense Production Act Purchases	1,238,327	372,906		372,906	968,605
Total Defense Production Act Purchases	1,238,327	372,906		372,906	968,605

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Defense-Wide
 FY 2024 President's Budget
 Exhibit P-1 FY 2024 President's Budget
 Total Obligational Authority
 0360D Detail
 (Dollars in Thousands)

Mar 2023

Appropriation: 0360 Defense Production Act Purchases				FY 2022 Actuals		FY 2023 Less Supplementals Enactment		FY 2023 Supplementals Enactment	
Line No	Item Nomenclature	Ident Code	Se c	Quantity	Cost	Quantity	Cost	Quantity	Cost*
Budget Activity 01: Defense Production Act Purchases									
Defense Production Act Purchases									
1	Defense Production Act Purchases	A	U		1,238,327		372,906		
					1,238,327		372,906		
	Total Defense Production Act Purchases				1,238,327		372,906		
	Total Defense Production Act Purchases				1,238,327		372,906		

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Defense-Wide
 FY 2024 President's Budget
 Exhibit P-1 FY 2024 President's Budget
 Total Obligational Authority
 0360D Detail
 (Dollars in Thousands)

Mar 2023

Appropriation: 0360 Defense Production Act Purchases

				FY 2023 Total Enactment		FY 2024 Request	
Line		Ident	Se				
No	Item Nomenclature	Code	c	Quantity	Cost	Quantity	Cost
Budget Activity 01: Defense Production Act Purchases							
Defense Production Act Purchases							
1	Defense Production Act Purchases	A	U		372,906		968,605
					<u>372,906</u>		<u>968,605</u>
	Total Defense Production Act Purchases				372,906		968,605
					<u>372,906</u>		<u>968,605</u>
	Total Defense Production Act Purchases				372,906		968,605

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Line Item Table of Contents (by Appropriation then Line Number)

Appropriation 0360D: Defense Production Act Purchases

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Line Item Table of Contents (Alphabetically by Line Item Title)

Line Item Title	Line Item Number	Line #	BA	BSA	Page
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Exhibit P-40, Budget Line Item Justification: PB 2024 Office of the Secretary Of Defense **Date:** March 2023

Appropriation / Budget Activity / Budget Sub Activity: 0360D: Defense Production Act Purchases / BA 01: Defense Production Act Purchases / BSA 10: Defense Production Act Purchases	P-1 Line Item Number / Title: TITLE3 / Defense Production Act Purchases
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 0902199D8Z	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	69.207	1,238.327	372.906	968.605	-	968.605	767.807	556.484	567.059	325.857	Continuing	Continuing
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	69.207	1,238.327	372.906	968.605	-	968.605	767.807	556.484	567.059	325.857	Continuing	Continuing
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	69.207⁽¹⁾	1,238.327	372.906	968.605	-	968.605	767.807	556.484	567.059	325.857	Continuing	Continuing

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

New Start (Y/N): No

Title III of the Defense Production Act (DPA) provides the President broad authorities to ensure the timely availability of domestic industrial base capabilities essential for the national defense. DPA, Title III is an important authority to utilize economic incentives to create, maintain, protect, expand, or restore domestic sources for critical components, critical technology items, and industrial resources. The DPA is authorized by 50 U.S.C. Sections 4501-4568.

This budget includes a project portfolio that will appropriately utilize DPA Title III authorities to strengthen domestic industrial base capabilities essential to national defense. The multi-year projects in this budget will incentivize domestic sources to establish, strengthen, and expand domestic industrial base capabilities in key areas such as strategic radiation-hardened microelectronics and the rare earths supply chain.

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Exhibit P-40, Budget Line Item Justification: PB 2024 Office of the Secretary Of Defense **Date:** March 2023

Appropriation / Budget Activity / Budget Sub Activity: 0360D: Defense Production Act Purchases / BA 01: Defense Production Act Purchases / BSA 10: Defense Production Act Purchases	P-1 Line Item Number / Title: TITLE3 / Defense Production Act Purchases
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 0902199D8Z	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	1 / Defense Production Act Purchases				- / 69.206	- / 1,238.327	- / 372.906	- / 968.605	- / -	- / 968.605
P-40	Total Gross/Weapon System Cost				- / 69.207	- / 1,238.327	- / 372.906	- / 968.605	- / -	- / 968.605

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

This program element supports the Department's priority to build a resilient Joint Force and defense ecosystem via building enduring advantages. This is executed by sustaining and expanding domestic industrial capabilities to ensure the Defense industrial base can meet the needs of the current and future warfighter.

Strategic overview:

The Defense Production Act Purchases (DPAP) program element line executes under the authorities provided by the Defense Production Act (DPA) Title III and is one component of a broader DoD investment strategy to build and strengthen the defense industrial base and secure U.S. supply chains. Residing within the Manufacturing, Capacity Expansion and Investment Prioritization (MCEIP) Directorate, within the Office of the Assistant Secretary of Defense for Industrial Base Policy (OASD(IBP)), DPAP investments are used discretely and in tandem with other DoD investment programs, such as MCEIP's Industrial Base Analysis and Sustainment (IBAS), to ensure collaborative and non-duplicative investment against critical defense industrial base and U.S. supply chain issues. The DPAP program element supports MCEIP office priorities through investment in prime and sub-tier suppliers to mitigate supply chain risks and eliminate production capacity bottlenecks. MCEIP investments are driven by strategy starting with the National Security Strategy and National Defense Strategy, working to build a resilient Joint Force and defense ecosystem by building enduring advantages. DPA Title III investments are also supporting Department of Defense modernization priorities and recommendations from interagency reports in response to Executive Order 14017 (E.O. 14017), including prior assessments as directed by this executive order. Examples of this would be investments in Critical Chemicals and the Hypersonics industrial base to support the Departments' kinetic capabilities; investments in radiation hardened electronics, advanced packaging and other electronics areas to support of the Department's microelectronics requirements; investments in the rare earth supply chain and other mining activities to support the supply of strategic and critical materials; investments in castings and forgings; and investments in energy storage and battery supply chain. MCEIP investments are further synchronized across the department through coordination with other research and development programs, such as the OSD Manufacturing Technology program, residing in the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)).

Program Element Summary:

The FY 2024 budget reflects the Department resourcing the DPA Fund so the DPAP program element can address critical shortfalls in the domestic industrial base in areas such as critical chemicals, hypersonic applications, turbine engines and rocket motors, electronics, space, rare earths, and small unmanned aerial systems. Specified numbers for each initiative are estimates that are subject to change based on ongoing market research and the acquisition process. The total budget also supports execution and administration costs.

- FY 2024: \$968.605 million
- Critical Chemicals Supply Chain (\$157.295 million)
 - Biomanufacturing Critical Chemicals (\$200.000 million)
 - Hypersonics Industrial Base (\$37.647 million)
 - Manufacturing Industrial Base Sub-Tier Facilitization (\$236.000 million)
 - Strategic Radiation Hardened Microelectronics (\$27.811 million)
 - Microelectronics Packaging Capabilities (\$85.758 million)
 - Strategic and Critical Materials (\$47.641 million)

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Exhibit P-40, Budget Line Item Justification: PB 2024 Office of the Secretary Of Defense		Date: March 2023
Appropriation / Budget Activity / Budget Sub Activity: 0360D: Defense Production Act Purchases / BA 01: Defense Production Act Purchases / BSA 10: Defense Production Act Purchases		P-1 Line Item Number / Title: TITLE3 / Defense Production Act Purchases
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 0902199D8Z	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<ul style="list-style-type: none"> - Casting and Forgings (\$5.000 million) - Energy Storage and Batteries (\$120.000 million) - Space Industrial Base (\$20.000 million) - Small Unmanned Aerial Systems (\$11.453 million) - Program Management and Administrative Support (\$20.000 million) <p>FY 2023: \$372.906 million</p> <ul style="list-style-type: none"> - Critical Chemicals Supply Chain (\$108.000 million) - Biomanufacturing Critical Chemicals (\$60.000 million) - Hypersonics Industrial Base (\$44.242 million) - Strategic Radiation Hardened Microelectronics (\$31.452 million) - Microelectronics Packaging Capabilities (\$43.019 million) - Strategic and Critical Materials (\$25.000 million) - Casting and Forgings (\$38.000 million) - Program Management and Administrative Support (\$23.193 million) <p>FY 2022: \$1,238.327million</p> <ul style="list-style-type: none"> - Adversarial Aggression Supply Chain Risk Mitigation (\$600.000 million) - Inflation Reduction Act Supply Chain Risk Mitigation (\$250.000 million) - Critical Chemicals Supply Chain (\$42.900 million) - Hypersonics Industrial base (\$52.103 million) - Strategic Radiation Hardened Microelectronics (\$137.000 million) - Microelectronics Packaging Capabilities (\$27.342 million) - Strategic and Critical Materials (\$57.0 million) - Casting and Forgings (\$5.0 million) - Space Industrial Base (\$34.085 million) - Small Unmanned Aerial Systems (\$5.330 million) - Program Management and Administrative Support (\$27.567 million) <p>Descriptions are provided below for the essential, transformational initiatives using the authorities established in Title III of the Defense Production Act. The single or multi-year cost phasing of each of the initiatives is addressed in the P5 exhibit. As most DPAP funds are non-expiring, the "Prior Years" funding indicates only unobligated prior year funds (FY 2021 and earlier) that are planned to be obligated towards each line effort in FY 2023. The prior year funds listed for "Program Administrative and Management Support" reports all prior year funds utilized for execution and administration costs in FY 2023.</p> <p>Project Descriptions:</p> <p>National Security Space Industrial and Supply Base (NSS ISB) Risk Mitigation Program:</p> <p>This line of effort was developed to formulate a systematic process to identify, fund, and mitigate shortfalls in the space industrial and supply base. The objective is to ensure access to critical technologies and capabilities in the quality, quantity, and timeframes required to support U.S. Government space programs. Projects in this effort are addressing cross-platform, multi-agency/Service requirements. Projects are developed in response to risk mitigation determinations and prioritized critical requirements of stakeholders in DoD and other agencies, as represented through the Department's Space Industrial Base Working Group.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2024 Office of the Secretary Of Defense		Date: March 2023
Appropriation / Budget Activity / Budget Sub Activity: 0360D: Defense Production Act Purchases / BA 01: Defense Production Act Purchases / BSA 10: Defense Production Act Purchases		P-1 Line Item Number / Title: TITLE3 / Defense Production Act Purchases
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 0902199D8Z	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>- NSS ISB - Radiation-Hardened Digital/Analog Production & Qualification: This project funds work at the 45nm and 14 nanometer (nm) nodes. It is imperative that government organizations responsible for national security, e.g., intelligence acquisition, missile early warning, missile defense, and other space requirements maintain a strong industrial base to supply technology necessary to design, develop, and fabricate secure, radiation hardened, high reliability, and DoD space qualified Application Specific Integrated Circuits (ASIC), Application Specific Standard Products (ASSP), such as very high speed data switches, and Multi-Core General Purpose Processors (MCGPP) at the 45nm technology node or smaller to support onboard processing and other critical applications. The objective of this project is to enhance the Radiation Hardened by Design flow, optimize selected circuit designs to reduce power and increase performance, and complete the design, fabrication, testing, and qualification of certain critical devices to include the MC-GPP. In addition to achieving an estimated improvement in performance of > 25% for power and performance for some specific designs, the proposed effort will support life-time acquisition buys of these critical circuits for some identified systems with attendant reductions in system technical, cost, and schedule risks. Multiple awards were made toward this effort in FY 2019 through FY 2022. Additional funding will be applied to this effort in FY 2023.</p> <p>- NSS ISB - Infrared Sensor Substrates (Cadmium Zinc Telluride / Mercury Cadmium Telluride): The purpose of this effort is to establish and maintain a high-quality production capability for Mercury Cadmium Telluride (MCT) epitaxy grown on Cadmium Zinc Telluride (CZT) substrates via molecular beam epitaxy (MBE) at key US-owned and operated foundries to assure the necessary supply of infrared focal plane arrays (IRFPAs) to NSS agencies when needed. The primary goal is ensure domestic availability of these detectors, and demonstrate on-shore MCT detectors are equivalent in performance to IRFPAs utilizing off-shore substrates. Additional awards were made toward this effort in prior years and have been funded utilizing prior year and FY 2021 funds. Additional FY 2022 funds are planned to be obligated toward this effort in FY 2023.</p> <p>- NSS ISB - Copper Solder Columns: This project will sustain and expand the capabilities of a sole domestic supplier of copper-reinforced solder columns that are the preferred interconnect for high-pin count integrated circuits for use in rugged environments. The project will decrease lead-time dramatically by reducing downtime, resolving production bottlenecks, and eliminating the use of foreign suppliers for reliability test, positively impacting schedule for systems with ASIC design and manufacture in their critical path.</p> <p>Adversarial Aggression Supply Chain Risk Mitigation:</p> <p>This line of effort utilizes funds appropriated by the Additional Ukraine Supplemental Appropriations Act to deter adversarial aggression, while being prepared to prevail in conflict when necessary. Focused actions include mitigating defense industrial base (DIB) constraints to enable faster munition production to resupply U.S. stocks transferred to Ukraine and mitigate supply chain disruptions for critical materials amidst adversarial aggression. U.S. inventory levels for certain munitions have been significantly reduced, hence it is critical that we increase production capacity to quickly replenish U.S. inventories. Several industrial base constraints and obsolescence issues limit the speed at which the U.S. Department of Defense (DoD) can replenish inventories of munitions provided to Ukraine.</p> <p>- Missile & Munitions Production: The DoD has identified several issues where Title III of the DPA is the most expedient and cost-effective solution to address a DIB constraint. Many of these constraints are shared across multiple munitions and missile systems. Examples of constraints include limited specialized testing equipment and capacity constraints for specialized missile components, such as precision ball bearings, solid rocket motors, and forging production equipment for artillery shells. The Program anticipates obligating approximately \$100 million to mitigate these shortfalls.</p> <p>- Strategic and Critical Materials: The adversarial aggression against Ukraine has resulted in global supply chain disruptions and skyrocketing prices for strategic and critical materials necessary for national defense and economic security. For instance, Russia is a major producer and exporter of metals and materials such as titanium, steel, aluminum, magnesium, and other key industrial inputs that are necessary for production of defense systems, essential civilian market items, and advanced technologies. Ukraine is also a significant producer of strategic and critical materials, such as noble gases used in semiconductor production (neon, krypton) and boron carbide powder used in U.S. military armor supply chains. The Program anticipates obligating approximately \$500 million to expand domestic capacity for these resources.</p> <p>Inflation Reduction Act Supply Chain Risk Mitigation:</p> <p>The Inflation Reduction Act (IRA), signed into law on August 16, 2022, appropriated \$500 million of supplemental funding for the "enhanced use of the Defense Production Act." The DoD received \$250 million of the IRA Supplemental, which will be applied to expanding capabilities for domestic mining, mineral processing, and related industrial sectors for large-capacity batteries. These industrial capabilities will build enduring advantages that will help ensure a resilient defense ecosystem.</p> <p>Industrial Base Risk Mitigation Projects:</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2024 Office of the Secretary Of Defense		Date: March 2023
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 0902199D8Z	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

- Critical Chemicals Supply Chain: Multiple efforts are being scoped to address critical shortfalls in the domestic industrial capability to produce materials for DoD missiles and munitions, as well as other critical capabilities such as body armor. In January 2019, the President signed four Presidential Determinations addressing vulnerabilities in the supply chain for critical chemicals for DoD munitions, including: precursor materials, inert materials, energetic materials, and advanced manufacturing techniques for producing the materials. Relying on foreign sources, especially China, for these critical chemicals poses a risk to the Department's readiness to deter and defeat adversaries. Multiple efforts have been executed to date, including second source qualification for ammonium perchlorate, Extended Range Munition Capabilities, Aminoguanidine Bicarbonate, Black Powder, and a Chemical Manufacturing Innovation Pilot utilizing FY 2022 and prior year funds. Multiple projects are anticipated to be awarded in FY 2023 and beyond. The current priority for the MCEIP is to onshore the top ten mission critical chemicals currently produced overseas as well as modernize the Defense Industrial Base for chemicals from the WWII era manufacturing to a more flexible, more versatile industrial base that can pivot quickly to meet new demands. The Program is also planning to invest \$2.4 million in inspection and process control technology for microfluid devices that aid in advanced manufacturing of critical chemicals for DoD and commercial applications. These investments also include a one-time \$10 million transfer from the Army in FY 2024 for the manufacturing capacity of copolymer aramids, which can be used in fire and ballistic resistant fibers.

- Biomanufacturing Critical Chemicals: MCEIP will utilize FY 2023 and 2024 funds to support domestic, modular bio-manufacturing of multiple materials critical to the Department.

- Hypersonics Industrial Base: MCEIP is actively working with stakeholders to identify gaps in the industrial capability to produce components for hypersonic systems and scale production from prototype levels to the required capacity. In FY 2020, the President authorized the use of the DPA Title III authorities to execute industrial base projects that support high/ultra-high temperature composites for hypersonic, strategic missile and launch systems. \$25.0 million of FY 2022 funds has been allocated to these projects with \$15.541 million obligated in FY 2022 and the remainder was obligated in FY 2023. Additional projects are anticipated to be executed in FY 2023 to expand required industrial capabilities needed to build hypersonic weapons in areas such as high temperature composites, advanced propulsion systems, and navigation and guidance components.

- Manufacturing Industrial Base Sub-Tier Facilitization: MCEIP will utilize FY 2024 funds to support domestic manufacturing industrial base's sub-tier capabilities in areas such as solid rocket motors, gas turbine engines, precision ball bearings, guidance control and actuation subsystems.

- Strategic Radiation Hardened Microelectronics: The purpose of this effort is to provide assured capabilities to produce or acquire strategic radiation hardened (SRH) trusted microelectronics in compliance with Department of Defense Instruction 5200.44 to supply critical microelectronic components for necessary radiation environments involved with the acquisition of delivery systems for nuclear weapons. These investments are necessary to support the Departments priority to deter strategic attacks against the United States, Allies, and partners. The first set of projects provide production, engineering, and sustainment services in support of SRH microelectronics fabrication via a Defense Microelectronics Activity (DMEA)-accredited Trusted Supplier using a Trusted flow. \$58 million has been obligated against multiple contracts between FY 2019 through FY 2022 and an additional \$30 million was obligated in early FY 2023. Further efforts are being developed to execute in FY 2023 and FY 2024 to ensure the sustainment and advancement of this critical industrial capability. Another effort was initiated in FY 2021 to sustain partially depleted silicon-on-insulator (PDSOI) semiconductor (SCs) capabilities. This supports nuclear modernization systems (Sentinel Program, LRSO, etc.), which require radiation hardened microelectronics (nuclear modernization is DoD's #1 priority); PDSOI is also the most advanced space qualified Complementary Metal-Oxide Semiconductor (CMOS) technology to date. \$117 million has been obligated to date to accomplish this, and planned DPA investments will occur over the next 2-3 years to qualify the new source for use in space and non-nuclear systems.

- Microelectronics Packaging Capabilities: The challenges facing the electronics industrial base are wide-reaching and significant. Commercial industry has trended toward yearly product refreshes and updating technology nodes frequently, leaving legacy DoD systems that must be maintained for decades with severe obsolescence issues. On the opposite end of the spectrum, new systems that desire to integrate the newest technologies face challenges obtaining assured and/or trusted supply as much of the electronics manufacturing supply chain has gone overseas. In addition, domestic suppliers that exist are reluctant to work with unique DoD requirements as it would negatively affect their commercial runs and overall business viability. Advanced packaging and printed circuit boards is the immediate focus of this effort, however MECIP, in concert with its stakeholders, is continuing to identify and vet efforts to serve DoD's need for electronic materials, digital/analog/mixed signal integrated circuits, discrete components, displays, power electronic components, electro-optical/IR components, radio frequency components, and other cross-cutting technologies. The President authorized the use of DPA Title III authorities in FY 2023 and projects are anticipated to use FY 2022, FY 2023, and FY 2024 funds.

- Strategic and Critical Materials: MCEIP is working to strengthen mining and processing capabilities required to support capabilities across the entire defense infrastructure. This includes materials such as cobalt, lithium, graphite, and platinum, as well as rare earth elements (REEs). The intent is to alleviate the Department's reliance on foreign markets for these critical minerals and materials. Important defense

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Exhibit P-40, Budget Line Item Justification: PB 2024 Office of the Secretary Of Defense		Date: March 2023
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 0902199D8Z	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>applications for the end product of these supply chains include REE permanent magnets, jet fighter engines, missile guidance systems, antimissile defense, space-based satellites, communication systems, and batteries. Efforts have been awarded in FY 2020 and 2021 to bolster the domestic industrial base to support the separation and processing of REE and domestic production capability for Neodymium Iron Boron (NdFeB) rare earth permanent magnets. Additional efforts are anticipated in FY 2023.</p> <ul style="list-style-type: none"> - Casting and Forgings: MCEIP plans to invest in the shipbuilding industrial base to support casting and forging requirements to support shipbuilding and other system requirements. Shipbuilding component efforts are planned to be funded with \$5.0 of FY 2022 funds. \$10.0 million of FY 2023 funds will be used to invest in domestic aluminum castings and \$15.0 million of FY 2023 funds will be used to invest in heavy forging capabilities. MCEIP is also initiating a casting and forging partnership program, starting with a \$5.0 million investment in FY 2024. - Energy Storage and Batteries: MCEIP is planning to make investments to support the Department's requirements to procure and field large capacity batteries. Projects are anticipated to be executed in FY 2024. - Space Industrial Base: MCEIP is actively working with stakeholders to identify gaps in the National Security Space industrial supply base. Projects are anticipated to be executed in FY 2024. - Small Unmanned Aerial Systems (sUAS): In June 2019, the President issued a Presidential Determination authorizing the use DPA Title III to strengthen the domestic industrial base for sUAS. The sUAS domestic industrial base has struggled to compete commercially in the midst of dominant foreign competition, and DPA Title III is currently assessing where investments would best remedy the domestic industrial base shortfall and result in an economically viable domestic supplier. MCEIP is working with stakeholders across USG to determine an appropriate investment strategy to enable the domestic industrial base to meet requirements. \$13.8 million was obligated toward 9 projects in FY 2021. \$5.33 million was obligated to one project in FY 2022. Multiple other projects are anticipated to be awarded in FY 2024. <p>The following projects that were reported in the FY 2023 President's Budget Request are no longer reported here because they were fully obligated at the end of FY 2022 and only utilized prior year funds.</p> <ul style="list-style-type: none"> - NSS ISB – Space Qualified Solar Cell Supply Chain: The purpose of these projects is to ensure a domestic capability to supply this critical power supply component for national security space assets. Projects involve ensuring a viable domestic source for space qualified germanium substrates and high-performance photovoltaic cells, panels, and systems. The projects help domestic photovoltaic manufacturing and integration companies maintain their performance lead over foreign competitors by expanding production of AIAA S-111 space-qualified photovoltaic solar cells with improved cost and performance efficiencies. Performance improvements include characterizing high-efficiency inverted metamorphic (IMM) solar cells grown on Gallium Arsenide substrates as a drop-in replacement for ZTJ triple-junction solar cells and completing the qualification of the IMM solar cells to the AIAA S-111A standard. Other improvements on high-efficiency XTJ Prime triple-junction solar cells grown on Germanium substrates include increasing the cell Beginning-of-Life efficiency and reducing End-of-Life cost per watt. Multiple awards were made in FY 2019 through FY 2021 and all of the reported funds have been obligated to contracts. - NSS ISB - Next Generation Reaction Wheel Assemblies (RWA): This project addresses a need for a multiple-phase Next-Generation scalable Reaction Wheel (NGRW) to provide a systematic comprehensive, low cost/risk investment affording potential for high return on investment. The goal is to generate or revive a domestic competitor, or to expand the existing vendor's product line, with a focus on smaller wheels using advanced technologies. In addition, the effort explores encouraging a business partnership to maintain a second source in the U.S. Also, the project will investigate using another product controlled by a U.S. company. A study phase was completed in prior years, and the execution phase was awarded in FY 2020. Additional FY 2021 funds were also applied toward these efforts. - NSS ISB – Fibers and Composites: These projects are intended to ensure the domestic industrial base can provide key qualified fibers and composites that are critical to NSS, such as rocket nozzle throats, light weight structures, and lightweight, resilient shielding and interconnects. Current items of interest include fibers, fabrics, and components made out of rayon, polyacrylonitrile (PAN), and carbon nanotubes. These efforts mitigate key risks factors such as reliance on foreign sources and very limited or no domestic suppliers. \$2.8 million was applied to this effort. - NSS ISB – ROIC Foundry Improvement and Sustainment: This project is a follow-on to a prior read-out integrated circuit (ROIC) project that focused on maintaining minimal, yet adequate, production capabilities at domestic foundries to ensure a necessary supply of strategic ROICs for Government space programs while simultaneously improving product design and processes. \$1.8 million of prior year funds have been obligated to this effort. - NSS ISB - Next-Generation Star Trackers System: This project is for a Next Generation Star Tracker System (NGSTS) that uses advanced domestically produced Complementary Metal Oxide Semiconductor (CMOS) detectors with a capability that meets the specifications of the DPA Title III Advanced CMOS Capability Project. This involves adherence to the Staring Technology for Enhanced Linear Line-of-site 		

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Exhibit P-40, Budget Line Item Justification: PB 2024 Office of the Secretary Of Defense		Date: March 2023
Appropriation / Budget Activity / Budget Sub Activity: 0360D: Defense Production Act Purchases / BA 01: Defense Production Act Purchases / BSA 10: Defense Production Act Purchases		P-1 Line Item Number / Title: TITLE3 / Defense Production Act Purchases
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: 0902199D8Z	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>Angular Recognition (STELLAR) specification. A NGSTS with CMOS technology is needed to meet military and civil US Government (including National Security Space) and commercial market demands for the foreseeable future and will reassert the viability and competitiveness of the domestic industrial base. \$3.5 million of additional funding was added to the project in FY 2021.</p> <p>- NSS ISB – Access to Field Programmable Gate Arrays (FPGAs) for Space Applications: The DoD and Intelligence Community have identified FPGAs as a critical enabling technology across a wide variety of present and future systems. Advanced, commercially available FPGAs are manufactured off-shore and are considered vulnerable to tampering and insertion of malicious software and/or hardware. This project seeks to improve the security posture and reduce the risk associated with FPGA technology by addressing security concerns in the design, development, fabrication, and supply lifecycle of FPGA devices. The objective of this effort is to develop and demonstrate an approach to gain access to advanced, assured, and space qualified reprogrammable FPGA technology to support DoD/IC applications including satellite and strategic missile systems. Regarding this effort, "assured" is defined as assurance of the integrity and availability, of a product wherein that product will reliably operate as intentionally designed and not contain any malicious hardware and/or software that will compromise the intended application, e.g., exfiltration of sensitive data, etc. A study phase was completed, and the execution phase was awarded in FY 2021. MCEIP is working to determine whether a next phase will be executed.</p> <p>- AN-SSQ Series Sonobuoys Production Capability: The purpose of this effort is to ensure the availability of qualified AN/SSQ-101B sonobuoys. The domestic industrial base for AN/SSQ series sonobuoys was deemed at risk of not being able to produce the needed classes and quantities of sonobuoys and would require assistance to establish the required production lines. \$8.0 million was obligated to this effort.</p> <p>- Next Generation Soldier Protection: The purpose of this project is to create a manufacturing capacity to produce lightweight, high-strength, inherently fire-resistant co-polymer aramid fibers to provide lightweight force protection for Soldiers and air, ground, and naval platforms and bases. Examples include lighter and stronger body armor, helmets, pelvic protection, enhanced combat vehicle survivability, enhanced aviation platform survivability, and integrated base protection. A next generation of co-polymer aramid fibers would provide a step-change increase in tenacity over existing fibers, a key attribute for enabling lighter-weight ballistic protection. This project was awarded in FY 2019 and additional funding was obligated to this contract in FY 2020 and FY 2021. A total of \$50.0 million was obligated to this project.</p> <p>- Activated Carbon Capacity Expansion: The objective of this project is to expand domestic production capacity of activated carbon, which is used by the DoD to protect against many Chemical, Biological, Radiological, and Nuclear (CBRN) agents that could be used during acts of war or terrorism. Copper-silver-zinc-molybdenum-triethylenediamine (ASZM-TEDA) impregnated activated carbon is the only grade of carbon deemed acceptable by the DoD for collective and personal CBRN protection systems and devices. An additional \$5.3 million was obligated to this project in FY 2022, bringing the total investment to \$32.1 million.</p> <p>- Modernization Production of the Adenovirus Vaccine (MPAV): Funds used to cover costs related to a prior year project close-out. \$0.444 million was obligated in FY 2018, and an additional \$0.20 million was obligated in FY 2021 to close out the project.</p>		
Footnotes:		
<p>(1) Because DPA Title III funds are non-expiring, the "Prior Years" funding indicates only unobligated prior year funds (FY 2021 and earlier) brought forward into FY 2023 that are planned to be obligated towards efforts. This same logic is applied to all lines of effort listed.</p>		

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Exhibit P-5, Cost Analysis: PB 2024 Office of the Secretary Of Defense **Date:** March 2023

Appropriation / Budget Activity / Budget Sub Activity: 0360D / 01 / 10	P-1 Line Item Number / Title: TITLE3 / Defense Production Act Purchases	Item Number / Title [DODIC]: 1 / Defense Production Act Purchases
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ID Code (A=Service Ready, B=Not Service Ready) : **MDAP/MAIS Code:**

Resource Summary	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	69.206	1,238.327	372.906	968.605	-	968.605
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	69.206	1,238.327	372.906	968.605	-	968.605
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	69.206	1,238.327	372.906	968.605	-	968.605

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Millions)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2022			FY 2023			FY 2024 Base			FY 2024 OCO			FY 2024 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Hardware - National Security Space (NSS) Industrial & Supply Base (ISB) Risk Mitigation Program Cost																		
Non Recurring Cost																		
NSS ISB: Fibers and Composites	-	-	0.000	-	-	0.080	-	-	0.000	-	-	0.000	-	-	-	-	-	0.000
NSS ISB: Radiation-Hardened Digital/ Analog Production & Qualification	-	-	0.000	-	-	17.118	-	-	0.000	-	-	0.000	-	-	-	-	-	0.000
NSS ISB: Infrared Sensor Substrates (Cadmium Zinc Telluride / Mercury Cadmium Telluride)	-	-	0.000	-	-	5.106	-	-	0.000	-	-	0.000	-	-	-	-	-	0.000
NSS ISB: Copper Solder Columns	-	-	0.000	-	-	11.781	-	-	0.000	-	-	0.000	-	-	-	-	-	0.000
<i>Subtotal: Non Recurring Cost</i>	-	-	<i>0.000</i>	-	-	<i>34.085</i>	-	-	<i>0.000</i>	-	-	<i>0.000</i>	-	-	<i>-</i>	-	-	<i>0.000</i>
<i>Subtotal: Hardware - National Security Space (NSS) Industrial & Supply Base (ISB) Risk Mitigation Program Cost</i>	-	-	<i>0.000</i>	-	-	<i>34.085</i>	-	-	<i>0.000</i>	-	-	<i>0.000</i>	-	-	<i>-</i>	-	-	<i>0.000</i>
Hardware - Industrial Base Risk Mitigation Cost																		
Recurring Cost																		
Program Management and Administrative Support	-	-	1.831	-	-	27.567	-	-	23.193	-	-	20.000	-	-	-	-	-	20.000

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Exhibit P-5, Cost Analysis: PB 2024 Office of the Secretary Of Defense													Date: March 2023					
Appropriation / Budget Activity / Budget Sub Activity: 0360D / 01 / 10						P-1 Line Item Number / Title: TITLE3 / Defense Production Act Purchases						Item Number / Title [DODIC]: 1 / Defense Production Act Purchases						
ID Code (A=Service Ready, B=Not Service Ready) :									MDAP/MAIS Code:									

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2022			FY 2023			FY 2024 Base			FY 2024 OCO			FY 2024 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
<i>Subtotal: Recurring Cost</i>	-	-	1.831	-	-	27.567	-	-	23.193	-	-	20.000	-	-	-	-	-	20.000
Non Recurring Cost																		
Strategic Radiation Hardened Microelectronics	-	-	33.620	-	-	137.000	-	-	31.452	-	-	27.811	-	-	-	-	-	27.811
Advanced Packaging & Printed Circuit Boards	-	-	0.000	-	-	27.342	-	-	43.019	-	-	85.758	-	-	-	-	-	85.758
Critical Chemicals Supply Chain	-	-	0.000	-	-	42.900	-	-	108.000	-	-	157.295	-	-	-	-	-	157.295
Biomanufacturing Critical Chemicals	-	-	0.000	-	-	0.000	-	-	60.000	-	-	200.000	-	-	-	-	-	200.000
Hypersonics Industrial Base	-	-	9.439	-	-	52.103	-	-	44.242	-	-	37.647	-	-	-	-	-	37.647
Manufacturing Industrial Base Sub-Tier Facilitization	-	-	-	-	-	-	-	-	-	-	-	236.000	-	-	-	-	-	236.000
Strategic and Critical Materials	-	-	24.316	-	-	57.000	-	-	25.000	-	-	47.641	-	-	-	-	-	47.641
Castings and Forgings	-	-	0.000	-	-	5.000	-	-	38.000	-	-	5.000	-	-	-	-	-	5.000
Energy Storage and Batteries	-	-	-	-	-	0.000	-	-	0.000	-	-	120.000	-	-	-	-	-	120.000
Space Industrial Base	-	-	0.000	-	-	0.000	-	-	0.000	-	-	20.000	-	-	-	-	-	20.000
Small Unmanned Aerial Systems	-	-	0.000	-	-	5.330	-	-	0.000	-	-	11.453	-	-	-	-	-	11.453
<i>Subtotal: Non Recurring Cost</i>	-	-	67.375	-	-	326.675	-	-	349.713	-	-	948.605	-	-	-	-	-	948.605
<i>Subtotal: Hardware - Industrial Base Risk Mitigation Cost</i>	-	-	69.206	-	-	354.242	-	-	372.906	-	-	968.605	-	-	-	-	-	968.605
Hardware - Adversarial Aggression Supply Chain Risk Mitigation Cost Cost Cost																		
Non Recurring Cost																		
Missile & Munitions Production	-	-	-	-	-	100.000	-	-	-	-	-	-	-	-	-	-	-	-
Strategic and Critical Materials	-	-	-	-	-	500.000	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	-	-	-	600.000	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Hardware - Adversarial Aggression</i>	-	-	-	-	-	600.000	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2024 Office of the Secretary Of Defense												Date: March 2023					
Appropriation / Budget Activity / Budget Sub Activity: 0360D / 01 / 10						P-1 Line Item Number / Title: TITLE3 / Defense Production Act Purchases						Item Number / Title [DODIC]: 1 / Defense Production Act Purchases					
ID Code (A=Service Ready, B=Not Service Ready) :												MDAP/MAIS Code:					

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2022			FY 2023			FY 2024 Base			FY 2024 OCO			FY 2024 Total		
	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ M)	Qty (Each)	Total Cost (\$ M)
Supply Chain Risk Mitigation Cost Cost Cost																		
Hardware - Inflation Reduction Act Supply Chain Risk Mitigation Cost																		
Non Recurring Cost																		
Critical Minerals and Materials	-	-	-	-	-	250.000	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	-	-	-	250.000	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Hardware - Inflation Reduction Act Supply Chain Risk Mitigation Cost	-	-	-	-	-	250.000	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	-	-	69.206	-	-	1,238.327	-	-	372.906	-	-	968.605	-	-	-	-	-	968.605