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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Office of the Secretary Of Defense **Date:** April 2022

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605797D8Z I <i>Maintaining Technology Advantage</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	20.244	24.735	26.807	35.414	-	35.414	36.211	36.450	34.681	35.878	-	-
043: <i>Technology Innovation Base</i>	0.000	3.624	7.930	17.260	-	17.260	15.276	15.895	14.676	15.473	-	-
138: <i>S&T Protection</i>	9.230	8.793	6.344	5.740	-	5.740	7.809	7.610	7.285	7.431	-	-
139: <i>Joint Acquisition Protection Exploitation Cell (JAPEC)</i>	5.379	6.508	6.512	6.953	-	6.953	7.771	7.666	7.643	7.795	-	-
158: <i>Program and Technology Protection</i>	5.635	5.810	6.021	5.461	-	5.461	5.355	5.279	5.077	5.179	-	-

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build Sustainable and Long-Term Advantage, and Build a Resilient Joint Force and Defense Ecosystem.

This Program Element provides funding to support efforts to maintain the Department of Defense's (DoD)'s technology advantage. Maturing and implementing the Office of the Under Secretary of Defense (Research and Engineering)'s (OUSD(R&E)) technology priorities requires a healthy and capable National Security Innovation Base (NSIB). Additionally, the targeting of U.S. capabilities by our strategic competitors creates the potential to degrade core U.S. military technological advantages through unwanted technology transfer from the innovation base. The technology transfer, including unclassified technology, threatens DoD's ability to maintain the technology advantage required to support the lethality and survivability of the Joint Force.

The DoD is executing a plan to maintain DoD's technology advantage:

- (1) The DoD is promoting strategic technology investments to promote and protect DoD access to new and innovative technology. These investments provide OUSD(R&E)'s ability to determine strategies for future investments to establish and maintain a robust academic and industrial base capable of creating breakthroughs in key areas of basic research, fostering transition and decreasing time to market, and harvesting technologies within the U.S. innovation ecosystem or with likeminded allies.
- (2) Ensure the Department's strategic technology investments are protected against unwanted technology transfer by developing and maintaining the tools and techniques that enable the U.S. engage in technology transfer at the time, place, and parties of our choosing.
- (3) The DoD must combat adversaries' attempts to thwart the U.S. NSIB and associated technology security mechanisms to control technology transfer.

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The Department will support these three efforts by developing the appropriate suite of analytic tools, a data acquisition strategy, and protection activities across the science and technology (S&T) enterprise and programs to address the threat over the long term. S&T protection focuses on ensuring the integrity of the research enterprise through development of policy and conducting adequate due diligence on researchers. Program Protection Planning includes protection of critical program information, critical components and mission functions, and integrates high level security policies and practical expertise to specific RDA practices, systems engineering activities, secure cyber resilient engineering activities, software assurance activities and risk reduction activities. Through this initiative the Department is maturing system security engineering methodologies to protect controlled unclassified information, to include controlled technical information on contractor networks; improve mitigation of supply chain risk management risks; enhance the use of software assurance capability; improve integration of cybersecurity into the engineering processes through secure cyber resilient engineering; mature processes to identify Critical Program Information integration of defense exportability features; expand software assurance capabilities provided by the Joint Federated Assurance Center (JFAC), established in Sec 937 of the National Defense Authorization Act (NDAA) for 2014; and improve program protection planning. FY 2021 and FY 2022 program growth adds the Technology Innovation Base (TIB) effort to develop near- and long-term strategies and employs mechanisms to retain the U.S. advantage in current and emerging modernization technology priorities by addressing the capabilities of the innovation base to develop, test, manufacture, and sustain them. This project provides support to technology priority leaders in identifying innovation base needs; characterizing and assessing priority technology investments, identifying and mitigating issues and risks impacting the innovation base, and exploiting opportunities to advance technology development, testing, and manufacturing.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	25.561	25.889	0.000	-	0.000
Current President's Budget	24.735	26.807	35.414	-	35.414
Total Adjustments	-0.826	0.918	35.414	-	35.414
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	1.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.821	-			
• Other reprogramming	-0.005	-	-	-	-
• FFRDC	-	-0.082	-	-	-
• Adjustments to Budget Year	-	-	28.263	-	28.263
• Economic Assumption	-	-	1.010	-	1.010
• INV-001 Underexecution Review	-	-	-2.959	-	-2.959
• Defense Advanced Battery Supply Chain	-	-	2.600	-	2.600
• Distributed Manufacturing Enabled by Modular Bioindustrial and Reusable (MEMBR) Assets	-	-	4.500	-	4.500

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Appropriation/Budget Activity	R-1 Program Element (Number/Name)
0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 6: RDT&E Management Support</i>	PE 0605797D8Z / <i>Maintaining Technology Advantage</i>

• Hypersonic Weapons Components	-	-	2.000	-	2.000
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Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 043: *Technology Innovation Base*

Congressional Add: *Securing American Science and Technology Program*

Congressional Add Subtotals for Project: 043

Congressional Add Totals for all Projects

	FY 2021	FY 2022
	-	1.000
Congressional Add Subtotals for Project: 043	-	1.000
Congressional Add Totals for all Projects	-	1.000

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

The FY 2023 funding request was reduced by \$2.959 million to account for the availability of prior year execution balances.

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense **Date:** April 2022

Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605797D8Z / <i>Maintaining Technology Advantage</i>				Project (Number/Name) 043 / <i>Technology Innovation Base</i>			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
043: <i>Technology Innovation Base</i>	0.000	3.624	7.930	17.260	-	17.260	15.276	15.895	14.676	15.473	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Technology Innovation Base (TIB) effort develops near- and long-term strategies and employs mechanisms to retain the U.S. advantage in current and emerging modernization technology priorities by addressing the capabilities of the innovation base to develop, test, manufacture, and sustain them. This project provides support to technology priority leaders in identifying innovation base needs; characterizing and assessing priority technology investments, identifying and mitigating issues and risks impacting the innovation base, and exploiting opportunities to advance technology development, testing, and manufacturing. One of TIB's main objectives is to create balance between promotion of the innovation base while protecting the technology from interference or exploitation by competitors. This balance will aid the Department's advancing critical and emergent technologies ahead of competitor nations and actors while sustaining a healthy, resilient, and globally competitive innovation base. This portfolio of activity extends efforts initiated in response to FY 2019 National Defense Authorization Act (NDAA) Section 1793.

This project uses a three-step approach: (1) Assess, (2) Protect/Promote; and (3) Monitor. In the first step, TIB uses emerging technology assessments to translate technology needs to manufacturing and innovation base requirements in order to identify innovation base issues, risks, and opportunities. TIB created an assessment methodology that incorporates four types of studies to provide a full overview of the technology from a manufacturing and innovation base point of view. The results of the assessments are used to generate innovation-base inputs to technology roadmaps, develop an investment plan addressing the needs of the innovation base, and create technology and innovation base protection and promotion strategies (second step of the approach). TIB leverages DoD and Federal Government tools and initiatives to implement the strategies. In the third step, TIB uses data analytics to measure the success of mitigation and exploitation strategies, establish trends in the markets, and identify the need for additional assessments or changes in investments and strategies. For technology protection, TIB manages the Office of the Under Secretary of Defense (Research and Engineering) (OUSD(R&E)) responsibilities for the Committee on Foreign Investment in the United States (CFIUS) reviews. TIB does the initial screening of all CFIUS cases to determine OUSD(R&E) equities and request subject matter experts review in foreign acquisition transactions with a potential negative impact to national security. TIB is the focal point for OUSD(R&E) export control activities. TIB manages the activities necessary to provide technical advice to the Defense Technology Security Administration regarding export control regulations and license review policy. This includes prioritization of critical technologies for inclusion in the Commerce Control List and the U.S. Munitions List and the processing of export license applications involving emergent technologies.

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

Title: Technology Innovation Base	FY 2021	FY 2022	FY 2023
	3.624	6.930	17.260
FY 2022 Plans:			
<ul style="list-style-type: none"> • Create and implement short-term and long-term strategies to protect and maintain U.S. technology advantage by growing and retaining critical technologies and the innovation base supporting their development, test, manufacturing, and sustainment. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense		Date: April 2022
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605797D8Z / <i>Maintaining Technology Advantage</i>	Project (Number/Name) 043 / <i>Technology Innovation Base</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> • Industry outreach – including industry days and workshops to define requirements to advance emergent technologies through open-market models and industry-government collaboration. • Manufacturing challenges to find solutions to facilitate tech transfer from the labs to the production lines, improve manufacturing process, take advantage of new capabilities related to additive manufacturing and/or the integration of new materials. • Assess market trends and execute financial analysis to determine opportunities for US industry – competition, collaboration with allies, reduction of foreign dependencies. • Assess, promote, protect, and monitor critical technologies and their supply chain. • Manage technology innovation base assessments performed by other DoD and USG Agencies, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Center (UARCs), or industry. • Conduct deep dive assessments in 5G, Autonomy, Cyber, Hypersonics, Biotechnology, Fully Networked Command, Control & Communications (FNC3), and Industrial Base Workforce to identify and address national security innovation base risks, issues, and opportunities related to DoD to include but not limited to: <ul style="list-style-type: none"> - Tools, technologies or techniques associated with development, testing, or manufacturing - Financial health of key industrial partners and suppliers - Workforce need for scientists, engineers, technicians - Single source materials, critical pockets of expertise, impacts to environmental events, exploitation by foreign actors to secure or deter critical elements of the innovation base • Create Technology/Innovation Base Protection strategies for each technology priority area; including management of R&E Committee on Foreign Investment in U.S. transaction, export control assessments, and intellectual property. • Monitor the defense innovation base and the performance of the protect/promote activities including CFIUS transactions and Export Control licenses. <p>FY 2023 Plans:</p> <ul style="list-style-type: none"> • Create and implement short-term and long-term strategies to protect and maintain U.S. technology advantage by growing and retaining critical technologies and the innovation base supporting their development, test, manufacturing, and sustainment. • Conduct Industry outreach – including industry days and workshops to define requirements to advance emergent technologies through open-market models and industry-government collaboration. • Sponsor Manufacturing challenges to find solutions to facilitate tech transfer from the labs to the production lines, improve manufacturing process, take advantage of new capabilities related to additive manufacturing and/or the integration of new materials. • Assess market trends and execute financial analysis to determine opportunities for US industry – competition, collaboration with allies, reduction of foreign dependencies. • Assess, promote, protect, and monitor critical technologies and their supply chain. 			

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Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605797D8Z / <i>Maintaining Technology Advantage</i>	Project (Number/Name) 043 / <i>Technology Innovation Base</i>

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

	FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> • Manage technology innovation base assessments performed by other DoD and USG Agencies, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Center (UARCs), or industry. • Conduct deep dive assessments to identify and address national security innovation base risks, issues, and opportunities related to DoD to include but not limited to: <ul style="list-style-type: none"> - Tools, technologies or techniques associated with development, testing, or manufacturing - Financial health of key industrial partners and suppliers - Workforce need for scientists, engineers, technicians - Single source materials, critical pockets of expertise, impacts to environmental events, exploitation by foreign actors to secure or deter critical elements of the innovation base • Create Technology/Innovation Base Protection strategies for each technology priority area; including management of R&E Committee on Foreign Investment in U.S. transaction, export control assessments, and intellectual property. • Monitor the defense innovation base and the performance of the protect/promote activities. • Identify and address new, emerging manufacturing capabilities and technology base gaps that are critical to fielding modernization priorities and other US technological advantage areas, including workforce, engineering and prototyping infrastructure and facilities. • Assessment and strategy development for the hypersonics industrial base. • Support the BioTech technology protection efforts for the Modular Bioindustrial and Reusable (MEMBR) efforts. • Conduct foundational assessments of the Defense Advanced Battery Supply Chain. <p>FY 2022 to FY 2023 Increase/Decrease Statement: FY 2023 increase is part of the long term plan to reach capabilities to support seven assessments per year. Sustained funding level expected to be reached in FY 2024. Reflects DoD sustainment assessment funding level to identify and address new, emerging manufacturing capabilities and technology base gaps that are critical to fielding modernization priorities and other US technological advantage areas, including workforce, engineering and prototyping infrastructure and facilities. It also reflects the commitment to balance protection and promotion to advance the emergent technologies and develop a healthy innovation base; including the implementation of a protection strategy that considers critical elements like CFIUS, export controls, and intellectual property. Additional increases support 1) continued assessment and strategy development for the hypersonics industrial base in conjunction with projects in PEs 0605518N (Conventional Prompt Strike (Navy)), 0603680D8Z (Defense Manufacturing Science and Technology Program), 0607210D8Z (Industrial Base Analysis and Sustainment Support), 0603680F (Manufacturing Technology Program (Air Force)), and 0902199D8Z (Title III/Defense Production Act Purchases) to reduce the cost of hypersonics weapons materials and production in ongoing development programs; 2) fund the Biotechnology protection efforts for the Modular Bioindustrial and Reusable (MEMBR) efforts in conjunction with funds in PEs 0603680D8Z (Defense Manufacturing Science and Technology Program), 0605797D8Z (Maintaining Technology Advantage), 0902199D8Z (Title III/Defense Production Act Purchases), and 00602128D8Z (Promotion and Protection Strategies); 3) conduct foundational</p>			

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Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605797D8Z / <i>Maintaining Technology Advantage</i>	Project (Number/Name) 043 / <i>Technology Innovation Base</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
assessments of the Defense Advanced Battery Supply Chain along with funding for DoD battery projects in PEs 0603342D8Z (Defense Innovation Unit (DIU)), 0605798D8Z (Defense Technology Analysis), 0603680D8Z (Defense Wide Manufacturing Science and Technology), 0607210D8Z (Industrial Base Analysis and Sustainment Support), 0603724N (Navy Energy Program), 0603462A (Next Generation Combat Vehicle Advanced Technology, and 0901212N (Service-Wide Support (Not Otherwise Accounted For)). The Biotechnology protection funds (item 2 above) will be transferred to P138 (PE 0605797D8Z) in subsequent revisions to the R-2.			
Accomplishments/Planned Programs Subtotals	3.624	6.930	17.260

	FY 2021	FY 2022
Congressional Add: Securing American Science and Technology Program	-	1.000
FY 2022 Plans: This Congressional add will enable expansion of engagements and data-driven analysis to mitigate unwanted technology transfer and foreign influence.		
NOTE: Congressional add will be executed in P138 in FY 2022.		
Congressional Adds Subtotals	-	1.000

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

N/A

Remarks

D. Acquisition Strategy

N/A

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Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605797D8Z / <i>Maintaining Technology Advantage</i>	Project (Number/Name) 138 / <i>S&T Protection</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
138: <i>S&T Protection</i>	9.230	8.793	6.344	5.740	-	5.740	7.809	7.610	7.285	7.431	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

As the Department develops advanced technologies, it must use a rigorous, repeatable methodology to protect technology advantage beyond current Program Protection Planning policy. The production of Technology Area Protection Plans (TAPPs) will generate consistent and balanced protection of critical technology, provide foundational guidance for communicating about the technology to particular audiences, and inform protection and controls integrated with technology promotion activities. This will encompass the lifecycle of basic and applied research, advanced technology development, prototyping, and technology transition to programs. The Department will establish policy to protect critical technology in science and technology (S&T) investments through program protection. The implementation of these policies and TAPPs will have broad impacts across DoD and interagency-wide activities associated with critical technologies, including export controls, Committee on Foreign Investment in the United States (CFIUS) mitigations, Foreign Investment Risk Review Modernization Act (FIRRMA) decisions, international agreements, counterintelligence and law enforcement priorities, and development of protection practices with DoD research performers (e.g., the DoD and national laboratories, academia, small businesses, and the broader innovation base).

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

	FY 2021	FY 2022	FY 2023
Title: Science and Technology (S&T) Protection	8.793	6.344	5.740
Description: This project supports efforts to maintain DoD's technology advantage by establishing activities to promote and ensure accountability for mitigating adversary exploitation of technologies critical to national security objectives. This project will develop and oversee S&T policy and practices for informed horizontal protection of emerging and critical technology areas.			
FY 2022 Plans: The program will continue efforts to address S&T protection activities: - Oversee S&T protection policy guidance and track implementation. - Develop modules to promote DoD research. - Oversee TAPPs for each modernization initiative/critical technology area. - Deliver/deploy S&T protection curriculum to S&T/Acquisition program and Protection (IC/CI/Security) work force.			
FY 2023 Plans: - Oversee TAPPs for each modernization initiative/critical technology area. - Develop risk review guidelines to mitigate foreign influence in department S&T efforts - Develop data-driven models and analytical assessment capabilities to proactively identify and prioritize protection and exploitation opportunities to maintain the DoD's technology advantage			

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Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605797D8Z / <i>Maintaining Technology Advantage</i>	Project (Number/Name) 138 / <i>S&T Protection</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>- Develop and implement proactive analytic tools supporting the biomanufacturing NSIB to identify strategic competitor programs and entities posing an increased risk of unwanted technology transfer in support of the Modular Bioindustrial and Reusable (MEMBR) efforts. The Biotechnology technology protection funds currently listed in P043 (0605797D8Z) will be transferred to P138 (PE 0605797D8Z) in subsequent revisions to the R-2 to fund these efforts.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: FY 2023 decrease to account for the availability of prior year execution balances.</p>				
Accomplishments/Planned Programs Subtotals		8.793	6.344	5.740
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense										Date: April 2022		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605797D8Z / <i>Maintaining Technology Advantage</i>				Project (Number/Name) 139 / <i>Joint Acquisition Protection Exploitation Cell (JAPEC)</i>			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
139: <i>Joint Acquisition Protection Exploitation Cell (JAPEC)</i>	5.379	6.508	6.512	6.953	-	6.953	7.771	7.666	7.643	7.795	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The DoD established a joint analysis capability (Joint Acquisition Program and Exploitation Cell (JAPEC)) to conduct comprehensive assessments of controlled unclassified technical information losses, and engage acquisition, intelligence, counterintelligence, and law enforcement sources, to determine consequences and appropriate preventative/mitigation actions against unwanted technology transfer. The JAPEC requires the ability to detect and characterize past technology losses, conduct damage assessments of lost information, and provide various insights with predictive value to support and promote activities. Together with supporting organizations, the JAPEC enables comprehensive, detailed assessments of U.S. military technological vulnerability, as well as inform the development and application of effective policies, countermeasures, and enforcement actions to preserve U.S. technical superiority in all warfighting domains. JAPEC must also reach out to select Allies and Partners in order to develop protection efforts across the extended supply chains resulting from the partnerships created by the global S&T community.

JAPEC, and supporting organizations, require an analytic capability to synchronize, integrate, coordinate and inform the DoD efforts in order to protect the acquisition and investment in sensitive U.S. technologies from adversaries and better exploit opportunities to combat adversary activities. JAPEC will conduct trend analysis of protection efforts for the Department's critical acquisition programs and technologies, incorporate findings into protection processes and activities, and analyze losses, to determine consequences and appropriate requirements, acquisition, programmatic, and strategic courses of action to include deterring our strategic competitors and identifying opportunities to promote our innovation base.

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

	FY 2021	FY 2022	FY 2023
Title: Joint Acquisition Protection Exploitation Cell (JAPEC)	6.508	6.512	6.953
Description: Integrate controlled unclassified information, to include Controlled Technical Information (CTI), protection efforts across the DoD to proactively mitigate losses resulting from unwanted technology transfer and exploit opportunities to combat adversaries that may threaten U.S. military advantage.			
FY 2022 Plans: The program will continue efforts to combat strategic competitor technology transfer activities: - Continued partnering and development of international (bilateral/multilateral) protection practices with select allies. - Leverage exploitation opportunities to support promote and protect efforts. - Begin development of data informed exploitation opportunities to combat adversaries that may threaten U.S. military advantage. - Begin development of Critical Program and Technology protection performance measures. - Continued development and operationalization of critical program and technology enhanced protection.			

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Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605797D8Z / <i>Maintaining Technology Advantage</i>	Project (Number/Name) 139 / <i>Joint Acquisition Protection Exploitation Cell (JAPEC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Continue to integrate with national CI and LE efforts to combat unwanted strategic competitor activities. <p><i>FY 2023 Plans:</i></p> <ul style="list-style-type: none"> - Continue development and measurement of protection performance measures. - Continue development of data informed exploitation opportunities to combat adversaries that may threaten U.S. military advantage. - Expand partnering and development of international (bilateral/multilateral) protection practices with select allies into multiple DoD modernization areas. - Continued development and operationalization of critical program and technology enhanced protection. - Continue to integrate with national CI and LE efforts to combat unwanted strategic competitor activities. <p><i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> The increase in funding from FY 2022 to FY 2023 reflects the Department need to develop and provide data driven decisions to identify exploitation opportunities.</p>				
Accomplishments/Planned Programs Subtotals		6.508	6.512	6.953
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605797D8Z / <i>Maintaining Technology Advantage</i>				Project (Number/Name) 158 / <i>Program and Technology Protection</i>			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
158: <i>Program and Technology Protection</i>	5.635	5.810	6.021	5.461	-	5.461	5.355	5.279	5.077	5.179	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The Department of Defense (DoD) must address cybersecurity and supply chain risks to DoD networks, weapons systems, and information stored and processed on both the DoD and the Defense Industrial Base (DIB) unclassified contractor information networks that support DoD programs. Increased reliance on the internet as a vehicle for sharing information, globalization of the supply chain, and advanced persistent threats (APTs) that can evade commercially available security tools and defeat generic security best practices, drives the need for diligent program protection planning and execution. Activities carried out include supporting implementation of DoDI 5000.83, Technology and Program Protection to Maintain Technological Advantage. Program Protection Planning includes protection of classified and unclassified controlled technical information, critical program information, critical components and critical mission functions, and integrates high level security policies and practical expertise to specific acquisition and S&T practices, secure cyber resilient engineering activities, and risk reduction activities. Through this initiative the Department is maturing system security engineering methodologies to protect controlled unclassified information, to include controlled technical information on contractor information networks; improve mitigation and management of information communication technology supply chain risk management risks, improve integration of cybersecurity into the engineering processes through secure cyber resilient engineering methods, improve software assurance practices, mature processes to identify and protect Critical Program Information, mature processes to integrate defense exportability features, and improve program protection planning. Activities carried out, support implementation of DoD Instruction 5200.44 Trusted Systems and Networks with the use of proven mitigation techniques and tools, the ongoing refinement of risk management processes, and creation of needed technology; implementation of DoD Instruction 5200.39 Critical Program Information (CPI) Identification and Protection Within Research, Development, Test, and Evaluation (RDT&E) and DoDD 5200.47 Anti Tamper to identify and protect Critical Program Information; and implementation of DoD Instruction 8582.01 Security of Unclassified DoD Information on Non-DoD Information Systems for Safeguarding Controlled Unclassified Information on contractor owned networks.

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

	FY 2021	FY 2022	FY 2023
Title: Program and Technology Protection	5.810	6.021	5.461
Description: This project provides system security engineering and secure cyber resilient engineering policy, guidance and technical implementation assessments to inform and reduce risks in sharing and storing Controlled Technical Information and data, improve mitigation of supply chain risk management risks, improve integration of cybersecurity into the engineering processes, integrate defense exportability and anti-tamper practices, mature processes to identify Critical Program Information and improve program protection planning. Activities carried out support engineering implementation of DoD instruction 5000.83, Technology and Program Protection to Maintain Technological Advantage; DoD Instruction 5200.44 Trusted Systems and Networks with the use of proven mitigation techniques and tools, the ongoing refinement of risk management processes; implementation of DoD Instruction 5200.39 Critical Program Information (CPI) Identification and Protection Within Research,			

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense		Date: April 2022		
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605797D8Z / <i>Maintaining Technology Advantage</i>	Project (Number/Name) 158 / <i>Program and Technology Protection</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>Development, Test, and Evaluation (RDT&E) and DoDD 5200.47E Anti Tamper to identify and protect Critical Program Information; and implementation of DoD Instruction 8582.01 Security of Unclassified DoD Information on Non-DoD Information Systems for Safeguarding Controlled Unclassified Information on contractor owned networks.</p> <p>FY 2022 Plans: Continue to:</p> <p>Provide support to Independent Technical Review Assessment and Cyber Vulnerability Review Assessment teams in conduct of broad program protection planning activities to assess:</p> <ul style="list-style-type: none"> - Conduct of criticality analyses to determine supply chain risk management protections. - Conduct of Critical Program Information analysis to determine anti-tamper protections. - Conduct of secure cyber resilient engineering activities to determine technical cyber risks. - Conduct of Program Protection planning activities, and track progress to protections of capability, systems and technologies. <p>Advance the state of the practice of systems security engineering and secure cyber resilient engineering:</p> <ul style="list-style-type: none"> - Continue development of methodologies to identify and mitigate system security risk, to include cybersecurity and supply chain risk. - Initiate activities to support EO 14028, Improving the Nation's Cybersecurity. - Continue to develop courseware, refine guidance, provide training, and outreach with government and industry. - Continue to refine guidance, tools and mitigation approaches to mitigate capability, system and technology risks. <p>Safeguard Controlled Unclassified Information, including Controlled Technical Information:</p> <ul style="list-style-type: none"> - Continue to refine implementation and guidance of marking and dissemination of distribution of technical information. - continue to refine safeguarding information protection methods for contractor unclassified information networks. <p>Safeguard Critical Program Information:</p> <ul style="list-style-type: none"> - Continue to refine implementation, guidance and tools to identify Critical Program Information. - Continue to refine Anti-Tamper protections methods to safeguard Critical Program Information. <p>Defense exportability features integration:</p>				

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Continue to mature processes, methods and guidance for defense exportability features integration. - Continue to develop and refine defense exportability protection methods to improve planning for the exportability of U.S. Defense systems. <p>FY 2023 Plans: Continue to:</p> <p>Provide support to Independent Technical Review Assessment and Cyber Vulnerability Review Assessment teams in conduct of broad program protection planning activities to assess:</p> <ul style="list-style-type: none"> - Conduct of criticality analyses to determine supply chain risk management protections. - Conduct of Critical Program Information analysis to determine anti-tamper protections. - Conduct of secure cyber resilient engineering activities to determine technical cyber risks. <p>Advance the state of the practice of systems security engineering and secure cyber resilient engineering:</p> <ul style="list-style-type: none"> - Continue activities to support EO 14028, Improving the Nation’s Cybersecurity. - Continue development of methodologies to identify and mitigate system security risk, to include cybersecurity and supply chain risk. - Continue to develop courseware, refine guidance, provide training, and outreach with government and industry. - Continue to refine guidance, tools and mitigation approaches to mitigate capability, system and technology risks. <p>Safeguard Controlled Unclassified Information, including Controlled Technical Information:</p> <ul style="list-style-type: none"> - Continue to refine implementation and guidance of marking and dissemination of distribution of technical information. - continue to refine safeguarding information protection methods for contractor unclassified information networks. <p>Safeguard Critical Program Information:</p> <ul style="list-style-type: none"> - Continue to refine implementation, guidance and tools to identify Critical Program Information. - Continue to refine Anti-Tamper protections methods to safeguard Critical Program Information. <p>Defense exportability features integration:</p>			

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Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605797D8Z / <i>Maintaining Technology Advantage</i>	Project (Number/Name) 158 / <i>Program and Technology Protection</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
<ul style="list-style-type: none"> - Continue to mature processes, methods and guidance for defense exportability features integration. - Continue to develop and refine defense exportability protection methods to improve planning for the exportability of U.S. Defense systems. <p><i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> FY 2023 decrease to account for the availability of prior year execution balances.</p>			
Accomplishments/Planned Programs Subtotals	5.810	6.021	5.461

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

N/A

Remarks

D. Acquisition Strategy

N/A