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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605024N / <i>Anti-Tamper Technology Support</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	15.331	7.702	8.426	7.271	-	7.271	10.375	10.151	9.562	9.755	Continuing	Continuing
2801: <i>Anti-Tamper</i>	2.730	1.450	1.397	1.582	-	1.582	1.611	1.607	1.640	1.673	Continuing	Continuing
3414: <i>Anti-Tamper Technology Support</i>	12.601	6.252	7.029	5.689	-	5.689	8.764	8.544	7.922	8.082	Continuing	Continuing

A. Mission Description and Budget Item Justification

Develops new and novel Anti-Tamper technologies for all Department of Navy weapon and combat systems. The technologies to be developed will be new countermeasures to prevent reverse engineering of critical U.S. military systems. The technologies include secure processing, sensors, architecture components, and enabling technologies.

This program is funded under SYSTEM DEVELOPMENT AND DEMONSTRATION because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirement prior to full-rate production decision.

B. Program Change Summary (\$ in Millions)	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023 Base</u>	<u>FY 2023 OCO</u>	<u>FY 2023 Total</u>
Previous President's Budget	7.702	8.426	0.000	-	0.000
Current President's Budget	7.702	8.426	7.271	-	7.271
Total Adjustments	0.000	0.000	7.271	-	7.271
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	0.000	-	0.000
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	7.271	-	7.271

Change Summary Explanation

FY 2023 funding request was reduced by \$1.939 million to account for the availability of prior year execution balances.

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

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605024N / <i>Anti-Tamper Technology Support</i>	Project (Number/Name) 2801 / <i>Anti-Tamper</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
2801: <i>Anti-Tamper</i>	2.730	1.450	1.397	1.582	-	1.582	1.611	1.607	1.640	1.673	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Anti-Tamper Program - Perform as the Navy Technical Process Owner for the Anti-Tamper (AT) systems engineering activity that is intended to prevent and/or delay the exploitation of critical technologies in U.S. Systems. Manage the research, design, development, implementation, and testing of AT measures. Coordinate with Department of Defense AT Executive Agent and implement Department of Navy AT policy in conjunction with the Deputy Assistant Secretary Navy. Manage Security and Information Security requirements commensurate with the requirements of ALL Navy Programs throughout their lifecycles.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Anti Tamper Support	1.450	1.397	1.582	0.000	1.582
Articles:	-	-	-	-	-
FY 2022 Plans:					
Continue championing new technology with a focused and disciplined approach of development, assessment, evaluation, and transition to meet Navy program AT requirements. Maintain role in Anti-Tamper policy development for implementation and execution by the SYSCOMs incorporating Navy program AT requirements. Provide secure facilities, networks, computers, video/telephone conference and support personnel for collateral and classified operational environments to enable Anti-Tamper implementation and execution by SYSCOM's programs, incorporating AT requirements.					
FY 2023 Base Plans:					
Continue championing new technology with a focused and disciplined approach of development, assessment, evaluation, and transition to meet Navy program AT requirements. Maintain role in Anti-Tamper policy development for implementation and execution by the SYSCOMs incorporating Navy program AT requirements. Provide secure facilities, networks, computers, video/telephone conference and support personnel for collateral and classified operational environments to enable Anti-Tamper implementation and execution by SYSCOM's programs, incorporating AT requirements.					
FY 2023 OCO Plans:					
N/A					
FY 2022 to FY 2023 Increase/Decrease Statement:					

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605024N / <i>Anti-Tamper Technology Support</i>	Project (Number/Name) 2801 / <i>Anti-Tamper</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Increase will be used to meet Anti-Tamper support demands and SYSCOM AT policy implementation.					
Accomplishments/Planned Programs Subtotals	1.450	1.397	1.582	0.000	1.582

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

N/A

Remarks

D. Acquisition Strategy

The program will fund project to provide secure facilities, networks, computers, video/telephone conference and support personnel for collateral and Special Program operational environments.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy												Date: April 2022			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 5				PE 0605024N / Anti-Tamper Technology Support				2801 / Anti-Tamper							
Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	WR	NAWCWD : China Lake, CA	2.174	1.131	Nov 2020	1.093	Nov 2021	1.240	Nov 2022	-		1.240	Continuing	Continuing	Continuing
Subtotal			2.174	1.131		1.093		1.240		-		1.240	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCWD : China Lake, CA	0.556	0.319	Nov 2020	0.304	Oct 2021	0.342	Oct 2022	-		0.342	Continuing	Continuing	Continuing
Subtotal			0.556	0.319		0.304		0.342		-		0.342	Continuing	Continuing	N/A
Project Cost Totals			2.730	1.450		1.397		1.582		-		1.582	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605024N / <i>Anti-Tamper Technology Support</i>	Project (Number/Name) 2801 / <i>Anti-Tamper</i>
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FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Proj 2801	
Product Development: Anti Tamper Technology Development Plan	
Intelligence Analysis: Anti Tamper Technology Intelligence Analysis	
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2021	
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2021	
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2022	
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2022	
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2023	
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2023	
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2024	
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2024	
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2025	
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2025	
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2026	

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605024N / <i>Anti-Tamper Technology Support</i>	Project (Number/Name) 2801 / <i>Anti-Tamper</i>
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	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2026	■																											
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2027	■																											
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2027	■																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605024N / <i>Anti-Tamper Technology Support</i>	Project (Number/Name) 2801 / <i>Anti-Tamper</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2801				
Product Development: Anti Tamper Technology Development Plan	1	2021	4	2027
Intelligence Analysis: Anti Tamper Technology Intelligence Analysis	1	2021	4	2027
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2021	1	2021	1	2021
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2021	3	2021	3	2021
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2022	1	2022	1	2022
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2022	3	2022	3	2022
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2023	1	2023	1	2023
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2023	3	2023	3	2023
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2024	1	2024	1	2024
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2024	3	2024	3	2024
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2025	1	2025	1	2025
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2025	3	2025	3	2025
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2026	1	2026	1	2026
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2026	3	2026	3	2026
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2027	1	2027	1	2027
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2027	3	2027	3	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy										Date: April 2022		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605024N / <i>Anti-Tamper Technology Support</i>				Project (Number/Name) 3414 / <i>Anti-Tamper Technology Support</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
3414: <i>Anti-Tamper Technology Support</i>	12.601	6.252	7.029	5.689	-	5.689	8.764	8.544	7.922	8.082	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops new and novel Anti-Tamper technologies for all Department of Navy weapon and combat systems. The technologies to be developed will be new countermeasures to prevent reverse engineering of critical U.S. military systems. The technologies include secure processing, sensors, architecture components, and enabling technologies. Low technology readiness level projects will be tested for maturation and implemented to protect US technologies. Government laboratory expertise will mature in Anti Tamper technologies and techniques. Integration of various techniques will enhance the strength of the protection scheme which limits the opportunities to exploit our technological advantage on the battlefield.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Anti Tamper Technology Development	6.252	7.029	5.689	0.000	5.689
Articles:	-	-	-	-	-
Description: This project develops new and novel Anti-Tamper technologies for all Department of Navy weapon and combat systems. The technologies to be developed will be new countermeasures to prevent reverse engineering of critical U.S. military systems. The technologies include secure processing, sensors, secure architecture components, and enabling technologies.					
FY 2022 Plans: Continue development of new and novel technologies that will become reverse engineering countermeasures for Department of the Navy (DoN) weapon and combat systems. The project will include awarding technology development contracts and securing engineering support from DoN engineering facilities. Test and perform technical evaluations of low technical readiness level projects for implementation to protect US technologies. Extensively evaluate the technology prototypes and demonstration units in the labs, which will provide increased technical information and feedback to the technology developers.					
FY 2023 Base Plans: Continue development of new and novel technologies that will become reverse engineering countermeasures for Department of the Navy (DoN) weapon and combat systems. The project will include awarding technology development contracts and securing engineering support from DoN engineering facilities. Test and perform technical evaluations of low technical readiness level projects for implementation to protect US technologies.					

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605024N / <i>Anti-Tamper Technology Support</i>	Project (Number/Name) 3414 / <i>Anti-Tamper Technology Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Extensively evaluate the technology prototypes and demonstration units in the labs, which will provide increased technical information and feedback to the technology developers.					
<i>FY 2023 OCO Plans:</i> N/A					
<i>FY 2022 to FY 2023 Increase/Decrease Statement:</i> The decrease in funding in FY23 is to account for availability of prior year execution balances.					
Accomplishments/Planned Programs Subtotals	6.252	7.029	5.689	0.000	5.689

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

N/A

Remarks

D. Acquisition Strategy

This is a non-ACAT program. The strategy will be to issue technology development contracts and use Department of Navy (DoN) labs for technology development, along with using DoN engineering organizations for engineering support.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605024N / <i>Anti-Tamper Technology Support</i>	Project (Number/Name) 3414 / <i>Anti-Tamper Technology Support</i>
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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Primary Hardware Dev	WR	NAWCWD : China Lake, CA	8.845	4.376	Oct 2020	4.920	Oct 2021	4.004	Oct 2022	-		4.004	Continuing	Continuing	Continuing
Subtotal			8.845	4.376		4.920		4.004		-		4.004	Continuing	Continuing	N/A

Remarks
The decrease in funding in FY23 is to account for availability of prior year execution balances.

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation	WR	NAWCWD : China Lake, CA	3.756	1.876	Oct 2020	2.109	Oct 2021	1.685	Oct 2022	-		1.685	Continuing	Continuing	Continuing
Subtotal			3.756	1.876		2.109		1.685		-		1.685	Continuing	Continuing	N/A

Remarks
The decrease in funding in FY23 is to account for availability of prior year execution balances.

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.601	6.252	7.029	5.689	-	5.689	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605024N / <i>Anti-Tamper Technology Support</i>	Project (Number/Name) 3414 / <i>Anti-Tamper Technology Support</i>
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	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Gap Analysis: Anti Tamper Technology Gap Analysis 2025																																
Gap Analysis: Anti Tamper Technology Gap Analysis 2026																																
Gap Analysis: Anti Tamper Technology Gap Analysis 2027																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy		Date: April 2022
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605024N / <i>Anti-Tamper Technology Support</i>	Project (Number/Name) 3414 / <i>Anti-Tamper Technology Support</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Proj 3414</i>				
Contract Awards: Anti Tamper Technology Contract Award 2021	2	2021	2	2021
Contract Awards: Anti Tamper Technology Contract Award 2022	2	2022	2	2022
Contract Awards: Anti Tamper Technology Contract Award 2023	2	2023	2	2023
Contract Awards: Anti Tamper Technology Contract Award 2024	2	2024	2	2024
Contract Awards: Anti Tamper Technology Contract Award 2025	2	2025	2	2025
Contract Awards: Anti Tamper Technology Contract Award 2026	2	2026	2	2026
Contract Awards: Anti Tamper Technology Contract Award 2027	2	2027	2	2027
Technology Development: Anti Tamper Technology Development	2	2021	4	2027
Lab Support: Anti Tamper Technology Lab Support	1	2021	1	2027
Gap Analysis: Anti Tamper Technology Gap Analysis 2021	1	2021	1	2021
Gap Analysis: Anti Tamper Technology Gap Analysis 2022	1	2022	1	2022
Gap Analysis: Anti Tamper Technology Gap Analysis 2023	1	2023	1	2023
Gap Analysis: Anti Tamper Technology Gap Analysis 2024	1	2024	1	2024
Gap Analysis: Anti Tamper Technology Gap Analysis 2025	1	2025	1	2025
Gap Analysis: Anti Tamper Technology Gap Analysis 2026	1	2026	1	2026
Gap Analysis: Anti Tamper Technology Gap Analysis 2027	1	2027	1	2027