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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy **Date:** May 2021

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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	10.449	4.882	7.702	8.426	-	8.426	-	-	-	-	-	-
2801: <i>Anti-Tamper</i>	1.326	1.404	1.450	1.397	-	1.397	-	-	-	-	-	-
3414: <i>Anti-Tamper Technology Support</i>	9.123	3.478	6.252	7.029	-	7.029	-	-	-	-	-	-

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)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	4.882	7.810	9.372	-	9.372
Current President's Budget	4.882	7.702	8.426	-	8.426
Total Adjustments	0.000	-0.108	-0.946	-	-0.946
• Congressional General Reductions	-	-0.108			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	-0.851	-	-0.851
• Rate/Misc Adjustments	0.000	0.000	-0.095	-	-0.095

Change Summary Explanation

The FY2022 funding request was reduced by \$0.301 million to account for the availability of prior year execution balances and \$0.645 million for miscellaneous programmatic and rate adjustments.

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy **Date:** May 2021

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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
2801: <i>Anti-Tamper</i>	1.326	1.404	1.450	1.397	-	1.397	-	-	-	-	-	-
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Anti Tamper Support	1.404	1.450	1.397	0.000	1.397
Articles:	-	-	-	-	-
FY 2021 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 Special Program operational environments to enable Anti-Tamper implementation and execution by SYSCOM's programs, incorporating AT requirements.					
FY 2022 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 Special Access Program operational environments to enable Anti-Tamper implementation and execution by SYSCOM's programs.					
FY 2022 OCO Plans:					
N/A					
FY 2021 to FY 2022 Increase/Decrease Statement:					

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Decrease between FY 2021 and FY 2022 is to account for the availability of prior year execution balances.					
Accomplishments/Planned Programs Subtotals	1.404	1.450	1.397	0.000	1.397

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 2022 Navy												Date: May 2021			
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 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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	1.079	1.095	Nov 2019	1.131	Nov 2020	1.093	Nov 2021	-		1.093	-	-	-
Subtotal			1.079	1.095		1.131		1.093		-		1.093	-	-	N/A
Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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	0.247	0.309	Nov 2019	0.319	Nov 2020	0.304	Oct 2021	-		0.304	-	-	-
Subtotal			0.247	0.309		0.319		0.304		-		0.304	-	-	N/A
Project Cost Totals			1.326	1.404		1.450		1.397		-		1.397	-	-	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy **Date: May 2021**

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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Proj 2801	FY 2020				FY 2021				FY 2022			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Anti Tamper												
Product Development	Anti Tamper Technology Development Plan											
Intelligence Analysis	Anti Tamper Technology Development Intelligence Analysis											
Anti Tamper Steering Group	▲		▲		▲		▲		▲		▲	

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
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
<i>Proj 2801</i>				
Product Development: Anti Tamper Technology Development Plan	1	2020	4	2022
Intelligence Analysis: Anti Tamper Technology Intelligence Analysis	1	2020	4	2022
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 1-2020	1	2020	1	2020
Anti Tamper Steering Group: Anti Tamper Technology Steering Group 3-2020	3	2020	3	2020
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

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy										Date: May 2021		
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
3414: <i>Anti-Tamper Technology Support</i>	9.123	3.478	6.252	7.029	-	7.029	-	-	-	-	-	-
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Anti Tamper Technology Development	3.478	6.252	7.029	0.000	7.029
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 2021 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 2022 Base Plans: Continue development of new and novel technologies that will become reverse engineering countermeasures for					

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Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p>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.</p> <p>FY 2022 OCO Plans: N/A</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Increase from FY 2021 to FY 2022 will be used to extensively evaluate the technology prototypes and provide increased technical information and feedback to the technology developers.</p>					
Accomplishments/Planned Programs Subtotals	3.478	6.252	7.029	0.000	7.029

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 2022 Navy **Date:** May 2021

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 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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	6.445	2.400	Oct 2019	4.376	Oct 2020	4.920	Oct 2021	-		4.920	-	-	-
Subtotal			6.445	2.400		4.376		4.920		-		4.920	-	-	N/A

Remarks
Increase from FY 2021 to FY 2022 will be used to extensively evaluate the technology prototypes and provide increased technical information and feedback to the technology developers.

Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 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	2.678	1.078	Oct 2019	1.876	Oct 2020	2.109	Oct 2021	-		2.109	-	-	-
Subtotal			2.678	1.078		1.876		2.109		-		2.109	-	-	N/A

Remarks
Increase from FY 2021 to FY 2022 will be used to extensively evaluate the technology prototypes and provide increased technical information and feedback to the technology developers.

Project Cost Totals	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
	9.123	3.478	6.252	7.029	-	7.029	-	-	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy **Date: May 2021**

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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Proj 3414	FY 2020				FY 2021				FY 2022			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Anti Tamper Support												
Contract Awards		▲				▲				▲		
Technology Development												
	Anti Tamper Technology Development											
Lab Support												
	Anti Tamper Technology Lab Support											
Gap Analysis	▲				▲				▲			

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
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 2020	2	2020	2	2020
Contract Awards: Anti Tamper Technology Contract Award 2021	2	2021	2	2021
Contract Awards: Anti Tamper Technology Contract Award 2022	2	2022	2	2022
Technology Development: Anti Tamper Technology Development	2	2020	4	2022
Lab Support: Anti Tamper Technology Lab Support	1	2020	4	2022
Gap Analysis: Anti Tamper Technology Gap Analysis 2020	1	2020	1	2020
Gap Analysis: Anti Tamper Technology Gap Analysis 2021	1	2021	1	2021
Gap Analysis: Anti Tamper Technology Gap Analysis 2022	1	2022	1	2022