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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy **Date:** February 2020

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0606942N / <i>Assessments & Evals Cyber Vulnerabilities</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	0.000	42.285	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	42.285
4038: <i>Cyber Vulnerability Evaluation</i>	0.000	42.285	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	42.285

A. Mission Description and Budget Item Justification

The Cyber Vulnerability Assessments and Evaluations program funds for cyber vulnerability assessments of major Navy weapons systems and cyber vulnerability assessments of critical shore infrastructure as directed by Sec. 1647 of the FY16 National Defense Authorization Act (NDAA) and Sec. 1650 of the FY17 NDAA, respectively. Funding will be used for assessments and non-recurring engineering for mitigations related to the Navy's major weapons systems identified in Joint Requirements Oversight Committee Memorandum (JROCM) 039-16 and on prioritized critical shore infrastructure prioritized.

Sec. 1647 of the FY16 NDAA directs the Secretary of Defense to complete an evaluation of the cyber vulnerabilities of each major weapon system of the Department of Defense by not later than December 31, 2019. Funded vulnerability assessments will build upon existing efforts regarding the identification and mitigation of cyber vulnerabilities of major weapons systems, and shall not duplicate similar ongoing efforts such as Task Force Cyber Awakening or conduct redundant assessment on systems that have already been evaluated.

Sec. 1647 assessment will be formalized in Vulnerability Assessment Reports (VARs), Cyber Table Top Exercises (CTTXs), Cyber Risk Analysis (CRAs) and other reporting.

Sec. 1650 of the FY17 NDAA directs the Secretary of Defense to submit a plan for assessing the cyber vulnerability of critical defense infrastructure and begin assessment of this infrastructure during a preliminary pilot program that will assess no fewer than two installations by December, 31 2019. Funded vulnerability assessments will end by calendar year 2020 and will build upon existing mission assurance, blue team, and red team capabilities. As instructed by the Congressional language, the assessments will utilize Department of Energy (DoE) and Department of Defense (DoD) national laboratory partnerships. Assessments will end with the submission of a final report to Congress. Strategies and procedures for mitigating the risk of cyber vulnerabilities should be identified during the course of evaluation.

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B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	48.800	0.000	0.000	-	0.000
Current President's Budget	42.285	0.000	0.000	-	0.000
Total Adjustments	-6.515	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-4.808	0.000			
• SBIR/STTR Transfer	-1.709	0.000			
• Rate/Misc Adjustments	0.002	0.000	0.000	-	0.000

Change Summary Explanation

The funding decrease from FY 2019 to FY 2020 is due to the completion of the one year Cyber Vulnerability assessments of major Navy weapon systems and critical infrastructure.

Technical: Not applicable.
 Schedule: Not applicable.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy										Date: February 2020		
Appropriation/Budget Activity 1319 / 6					R-1 Program Element (Number/Name) PE 0606942N / <i>Assessments & Evals Cyber Vulnerabilities</i>				Project (Number/Name) 4038 / <i>Cyber Vulnerability Evaluation</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
4038: <i>Cyber Vulnerability Evaluation</i>	0.000	42.285	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	42.285
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Cyber Vulnerability Assessments and Evaluations program funds for cyber vulnerability assessments of major Navy weapons systems and cyber vulnerability assessments of critical shore infrastructure as directed by Sec. 1647 of the FY16 National Defense Authorization Act (NDAA) and Sec. 1650 of the FY17 NDAA, respectively. Funding will be used for assessments and non-recurring engineering for mitigations related to the Navy's major weapons systems identified in Joint Requirements Oversight Committee Memorandum (JROCM) 039-16 and on prioritized critical shore infrastructure.

Sec. 1647 of the FY16 NDAA directs the Secretary of Defense to complete an evaluation of the cyber vulnerabilities of each major weapon system of the Department of Defense by not later than December 31, 2019. Funded vulnerability assessments will build upon existing efforts regarding the identification and mitigation of cyber vulnerabilities of major weapons systems, and shall not duplicate similar ongoing efforts such as Task Force Cyber Awakening or conduct redundant assessment on systems that have already been evaluated.

Sec. 1647 assessment will be formalized in Vulnerability Assessment Reports (VARs), Cyber Table Top Exercises (CTTXs), Cyber Risk Analysis (CRAs) and other reporting.

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Program is to support Cyber Vulnerability Evaluations Assessments of E6B and Other Aviation Platforms.

The Cyber Vulnerability Assessments and Evaluations program funds for cyber vulnerability assessments of major Navy weapons systems and cyber vulnerability assessments of critical shore infrastructure as directed by Sec. 1647 of the FY16 National Defense Authorization Act (NDAA) and Sec. 1650 of the FY17 NDAA, respectively. Funding will be used for assessments and non-recurring engineering for mitigations related to the Navy's major weapons systems identified in Joint Requirements Oversight Committee Memorandum (JROCM) 039-16 and on prioritized critical shore infrastructure prioritized.

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Sec. 1650 of the FY17 NDAA directs the Secretary of Defense to submit a plan for assessing the cyber vulnerability of critical defense infrastructure and begin assessment of this infrastructure during a preliminary pilot program that will assess no fewer than two installations by December, 31 2019. Funded vulnerability assessments will end by calendar year 2020 and will build upon existing mission assurance, blue team, and red team capabilities. As instructed by the Congressional language, the assessments will utilize Department of Energy (DoE) and Department of Defense (DoD) national laboratory partnerships. Assessments will end with the submission of a final report to Congress. Strategies and procedures for mitigating the risk of cyber vulnerabilities should be identified during the course of evaluation. The Cyber Vulnerability Assessments and Evaluations program funds for cyber vulnerability assessments of major Navy weapons systems and cyber vulnerability assessments of critical shore infrastructure as directed by Sec. 1647 of the FY16 National Defense Authorization Act (NDAA) and Sec. 1650 of the FY17 NDAA, respectively. Funding will be used for assessments and non-recurring engineering for mitigations related to the Navy's major weapons systems identified in Joint Requirements Oversight Committee Memorandum (JROCM) 039-16 and on prioritized critical shore infrastructure.

Sec. 1647 of the FY16 NDAA directs the Secretary of Defense to complete an evaluation of the cyber vulnerabilities of each major weapon system of the Department of Defense (DoD) by no later than December 31, 2019. Funded vulnerability assessments will build upon existing efforts regarding the identification and mitigation of cyber vulnerabilities of major weapons systems, and shall not duplicate similar ongoing efforts such as Task Force Cyber Awakening or conduct redundant assessment on systems that have already been evaluated.

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Sec. 1647 of the FY16 NDAA directs the Secretary of Defense to complete an evaluation of the cyber vulnerabilities of each major weapon system of the Department of Defense by not later than December 31, 2019. Funded vulnerability assessments will build upon existing efforts regarding the identification and mitigation of cyber

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vulnerabilities of major weapons systems, and shall not duplicate similar ongoing efforts such as Task Force Cyber Awakening or conduct redundant assessment on systems that have already been evaluated.

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

	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p>Title: Cyber Vulnerability Evaluation for Ship Weapons Systems:</p> <p align="right">Articles:</p> <p>FY 2020 Plans: N/A</p> <p>FY 2021 Base Plans: N/A</p> <p>FY 2021 OCO Plans: N/A</p>	4.612	0.000	0.000	0.000	0.000
	-	-	-	-	-
<p>Title: Cyber Vulnerability Assessments of Other Aviation Platforms</p> <p align="right">Articles:</p> <p>FY 2020 Plans: N/A</p> <p>FY 2021 Base Plans: N/A</p> <p>FY 2021 OCO Plans: N/A</p>	2.889	0.000	0.000	0.000	0.000
	-	-	-	-	-
<p>Title: E6B</p> <p align="right">Articles:</p>	2.092	0.000	0.000	0.000	0.000
	-	-	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
FY 2020 Plans: N/A FY 2021 Base Plans: N/A FY 2021 OCO Plans: N/A					
Title: SWS Cyber Evaluations FY 2020 Plans: N/A FY 2021 Base Plans: N/A FY 2021 OCO Plans: N/A	Articles: 3.500 -	0.000 -	0.000 -	0.000 -	0.000 -
Title: Trident System Cyber Hardening FY 2020 Plans: N/A FY 2021 Base Plans: N/A FY 2021 OCO Plans: N/A	Articles: 5.154 -	0.000 -	0.000 -	0.000 -	0.000 -
Title: Cyber Vulnerability Assessments of Information Warfare Weapons Systems FY 2020 Plans: N/A FY 2021 Base Plans:	Articles: 4.808 -	0.000 -	0.000 -	0.000 -	0.000 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
N/A					
FY 2021 OCO Plans: N/A					
Title: Cyber Vulnerability Assessments of Critical Infrastructure	19.230	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The Cyber Vulnerability Assessments and Evaluations program funds cyber vulnerability assessments of critical shore infrastructure as directed by Section 1650 of the FY17 National Defense Authorization Act (NDAA). Funding will be used for assessments of prioritized critical shore infrastructure. Sec. 1650 of the FY17 NDAA directs the Secretary of Defense to submit a plan for assessing the cyber vulnerability of critical defense infrastructure and begin assessment of this infrastructure during a preliminary pilot program that will assess no fewer than two installations by December, 31 2019. Funded vulnerability assessments will end by calendar year 2020 and will build upon existing mission assurance, blue team, and red team capabilities. As instructed by the Congressional language, the assessments will utilize DoE and DoD national laboratory partnerships. Assessments will end with the submission of a final report to Congress. Strategies and procedures for mitigating the risk of cyber vulnerabilities should be identified during the course of evaluation.					
FY 2020 Plans: N/A					
FY 2021 Base Plans: N/A					
FY 2021 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	42.285	0.000	0.000	0.000	0.000

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

N/A

Remarks

D. Acquisition Strategy

N/A