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

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603790N / NATO Research and Deve
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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	89.906	9.280	7.697	6.880	-	6.880	10.154	9.997	9.465	9.655	Continuing	Continuing
2293: <i>NATO Cooperative R &amp; D</i>	89.906	9.280	7.697	6.880	-	6.880	10.154	9.997	9.465	9.655	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

In accordance with Title 10 United States Code, Section 2350a, this Program Element (PE) provides funding for research and development (R&D) programs with approved allies under international agreements. These funds can only be applied to work efforts in the U.S.. The Under Secretary of Defense, Acquisition and Technology and Logistics (USD, AT&L) must approve each international agreement. The program provides funds for multiple projects under separately approved international agreements as well as funds that support the establishment of such agreements. Each international agreement is summarized in a separate Summary Statement of Intent (SSOI) that also states why the project serves to increase the defense capabilities of the U.S. The SSOI is used to obtain project approval by the Department of the Navy and the Office of the Secretary of Defense.

The North Atlantic Treaty Organization (NATO) R&D cooperative programs differ from other Research, Development, Test and Evaluation (RDT&E) programs because issuance of funding from this PE coincides with the signature of international agreements. These signatures occur throughout the fiscal year and often encounter unexpected delays during the staffing and negotiation phases of agreement processing prior to signature.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
Previous President's Budget	9.652	7.697	8.793	-	8.793
Current President's Budget	9.280	7.697	6.880	-	6.880
Total Adjustments	-0.372	0.000	-1.913	-	-1.913
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.372	0.000			
• Program Adjustments	0.000	0.000	-1.908	-	-1.908
• Rate/Misc Adjustments	0.000	0.000	-0.005	-	-0.005

**Change Summary Explanation**

The FY 2021 funding request was reduced by \$1.908 million to account for the availability of prior year execution balances.

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

**Appropriation/Budget Activity**  
1319: *Research, Development, Test & Evaluation, Navy / BA 4: Advanced Component Development & Prototypes (ACD&P)*

**R-1 Program Element (Number/Name)**  
PE 0603790N / *NATO Research and Deve*

The FY 2020 to FY 2021 decrease of \$0.817 million is due to decreased developmental test and evaluation costs associated with FY 2021 international agreements.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Navy										<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603790N / NATO Research and Deve				<b>Project (Number/Name)</b> 2293 / NATO Cooperative R & D			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
2293: NATO Cooperative R & D	89.906	9.280	7.697	6.880	-	6.880	10.154	9.997	9.465	9.655	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

In accordance with Title 10 United States Code, Section 2350a, this Program Element (PE) provides funding for research and development (R&D) programs with approved allies under international agreements. These funds can only be applied to work efforts in the U.S. The Under Secretary of Defense, Acquisition and Technology and Logistics (USD, AT&L) must approve each international agreement. The program provides funds for multiple projects under separately approved international agreements as well as funds that support the establishment of such agreements. Each international agreement is summarized in a separate Summary Statement of Intent (SSOI) that also states why the project serves to increase the defense capabilities of the U.S. The SSOI is used to obtain project approval by the Department of the Navy and the Office of the Secretary of Defense.

The North Atlantic Treaty Organization (NATO) R&D cooperative programs differ from other Research, Development, Test and Evaluation (RDT&E) programs because issuance of funding from this PE coincides with the signature of international agreements. These signatures occur throughout the fiscal year and often encounter unexpected delays during the staffing and negotiation phases of agreement processing prior to signature.

This NATO Research and Development funding provides funding for U.S. efforts under established International agreements (IAs) intended to address CNO priorities and identified interoperability gaps, as well as activities to support the identification and implementation of those agreements.

- Projects depend on commitment of U.S. and Ally, and are subject to imprecise staffing timelines (funding typically provided when international agreement is signed, often later in the FY)
- Funds must be identified/committed early (1-2 years prior) to indicate support during processing (in Summary Statement of Intent)
- These funds only constitute a portion of U.S. project funding

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

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
<b>Title:</b> NATO Cooperative R & D	9.280	7.697	6.880	0.000	6.880
<b>Articles:</b>	-	-	-	-	-
<b>FY 2020 Plans:</b>					
FY 2020 Base Plans:					
-Continue to support approved Cooperative projects FY19.					
-Plan and support approved FY20 Cooperative projects.					
Projects include, but are not limited to:					
-Advanced Surveillance Technology [U.S. and Australia]					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Navy	<b>Date:</b> February 2020
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<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603790N / NATO Research and Deve	<b>Project (Number/Name)</b> 2293 / NATO Cooperative R & D
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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
<ul style="list-style-type: none"> <li>-Advanced Structural Monitoring Techniques (ASMT) [U.S. and Australia]</li> <li>-Air Vehicle Technologies Amendment One [U.S. and Israel]</li> <li>-Anti-Ship Threat Countermeasures (ASTC) [FVEY]</li> <li>-Biomimetic Threat Detection System (BTDS) [U.S. and United Kingdom]</li> <li>-Collaborative Situational Awareness Development (CSA DEV) Amendment One [U.S. and Italy]</li> <li>-Electromagnetic Silencing [U.S. and United Kingdom]</li> <li>-Helo Seat Damper [U.S. and Canada]</li> <li>-International Programs Opportunities Engagement Tool (iPoet) [U.S.]</li> <li>-Maritime C2/Operations PA [U.S. and Australia]</li> <li>-Next Generation Amphibious Technologies (NGAT) [U.S. and Japan]</li> <li>-Project Hammerhead [U.S. and Israel]</li> <li>-Submarine Superiority [U.S. and Australia]</li> <li>-Superconducting Quantum Small Electromagnetic Sensor System Research and Development (Super QSES) [U.S. and Australia]</li> <li>-VLF Radar PA [U.S. and United Kingdom]</li> </ul> <p><b>FY 2021 Base Plans:</b></p> <ul style="list-style-type: none"> <li>-Continue to support approved Cooperative projects from prior Fiscal Years.</li> <li>-Plan and support approved FY21 Cooperative projects.</li> </ul> <p>Projects may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>-Advanced Surveillance Technology(AST) Amendment 1 [U.S. and Australia]</li> <li>-Advanced Structural Monitoring Techniques (ASMT) Amendment 1 [U.S. and Australia]</li> <li>-Anti-Ship Threat Countermeasures (ASTC) [FVEY]</li> <li>-DYSMAS Mines [U.S. and Germany]</li> <li>-Electromagnetic Propagation (EM Prop) [U.S. and United Kingdom]</li> <li>-International Programs Opportunities Engagement Tool (iPoet) [U.S.]</li> <li>-Lightweight Transparent Armor (LWTA) [U.S. and United Kingdom]</li> <li>-Next Generation Amphibious Technologies (NGAT) [U.S. and Japan]</li> <li>-Open Cognitive Computing Framework [U.S. and Finland]</li> <li>-Submarine Superiority [U.S. and Australia]</li> <li>-Tactical Air Responsive Microsat Delivery [U.S. and Multiple]</li> <li>-VLF Radar PA [U.S. and United Kingdom]</li> </ul> <p><b>FY 2021 OCO Plans:</b></p>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Navy	<b>Date:</b> February 2020
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<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603790N / NATO Research and Deve	<b>Project (Number/Name)</b> 2293 / NATO Cooperative R & D
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
N/A					
<b><i>FY 2020 to FY 2021 Increase/Decrease Statement:</i></b> The FY 2021 funding request was reduced by \$1.908 million to account for the availability of prior year execution balances.					
The FY 2020 to FY2021 decrease of \$0.817 million is due to decreased developmental test and evaluation costs associated with FY 2021 international agreements.					
<b>Accomplishments/Planned Programs Subtotals</b>	9.280	7.697	6.880	0.000	6.880

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
1319 / 4				PE 0603790N / NATO Research and Deve				2293 / NATO Cooperative R & D							
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Evaluation	C/FP	NAVSEA : Washington Navy Yard, DC	26.876	0.669	Dec 2018	0.750	Dec 2019	0.514	Nov 2020	-		0.514	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	NSWC : West Bethesda, MD	13.621	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	NUWC : Newport, RI	2.761	0.300	Dec 2018	0.250	Dec 2019	0.250	Nov 2020	-		0.250	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	NIWC : San Diego, CA	6.171	1.000	Jan 2019	0.701	Jan 2020	1.000	Feb 2021	-		1.000	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	NAVAIR : Patuxent River, MD	4.029	0.353	Dec 2018	0.349	Dec 2019	0.350	Dec 2020	-		0.350	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	NRL : Washington, DC	3.876	1.644	Nov 2018	1.723	Nov 2019	0.800	Jan 2021	-		0.800	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	NAWC : Point Mugu, CA	7.100	0.000		0.459	Dec 2019	0.400	Dec 2020	-		0.400	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	Miscellaneous : Washington Navy Yard	16.893	1.500	Apr 2019	1.300	May 2020	1.000	Apr 2021	-		1.000	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	MARCOR : Washington, DC	1.200	0.000		0.000		0.000		-		0.000	0.000	1.200	-
Developmental Test and Evaluation	C/FP	NSWCCD : Carderock, MD	2.935	0.594	Apr 2019	0.275	Apr 2020	0.500	Feb 2021	-		0.500	0.000	4.304	-
Developmental Test and Evaluation	C/FP	ONR : Arlington, VA	2.475	0.710	Mar 2019	0.725	Mar 2020	0.500	Mar 2021	-		0.500	0.000	4.410	-
Developmental Test and Evaluation	C/FP	USMC : Quantico, VA	0.000	0.500	May 2019	0.350	May 2020	0.300	Dec 2020	-		0.300	0.000	1.150	-
Developmental Test and Evaluation	C/FP	NSWC : Indian Head, MD	0.250	0.000		0.000		0.000		-		0.000	0.000	0.250	-
Developmental Test and Evaluation	C/FP	NSWC : Panama City, FL	0.250	0.200	Oct 2018	0.200	Oct 2019	0.200	Nov 2020	-		0.200	0.000	0.850	-
Developmental Test and Evaluation	C/FP	GSA : Washington, DC	0.400	0.400	Mar 2019	0.200	Mar 2020	0.466	Nov 2020	-		0.466	0.000	1.466	-
Developmental Test and Evaluation	C/FP	DISA : Ft Meade MD	0.000	1.410	Dec 2018	0.415	Dec 2019	0.200	Oct 2020	-		0.200	0.000	2.025	-



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**Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy** **Date:** February 2020

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FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
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

<b>Proj 2293</b>	
International Agreements	

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**Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603790N / NATO Research and Deve	<b>Project (Number/Name)</b> 2293 / NATO Cooperative R & D
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2293</b>				
International Agreements	1	2019	4	2025