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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 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603790N / NATO Research and Deve
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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	106.834	6.717	5.805	8.041	-	8.041	7.977	7.660	7.795	7.918	Continuing	Continuing
2293: <i>NATO Cooperative R & D</i>	106.834	6.717	5.805	8.041	-	8.041	7.977	7.660	7.795	7.918	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 Sustainment (USD, A&S) 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 Program Element (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. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	6.880	5.805	0.000	-	0.000
Current President's Budget	6.717	5.805	8.041	-	8.041
Total Adjustments	-0.163	0.000	8.041	-	8.041
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.102	0.000			
• SBIR/STTR Transfer	-0.265	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	8.041	-	8.041

Change Summary Explanation

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 / 4					R-1 Program Element (Number/Name) PE 0603790N / NATO Research and Deve				Project (Number/Name) 2293 / NATO Cooperative R & D			
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
2293: NATO Cooperative R & D	106.834	6.717	5.805	8.041	-	8.041	7.977	7.660	7.795	7.918	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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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.

This NATO Research and Development program funds U.S. activities to support the identification and implementation of International Agreements (IAs) intended to address Chief of Naval Operations (CNO) priorities and identified interoperability gaps.

- Projects depend on commitment of U.S. and allies, and are subject to imprecise staffing timelines (funding typically provided when international agreement is signed, often later in the Fiscal Year (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)

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: NATO Cooperative R & D	6.717	5.805	8.041	0.000	8.041
Articles:	-	-	-	-	-
FY 2022 Plans:					
-Continue to support approved Cooperative projects from prior Fiscal Years.					
-Plan and support approved FY22 Cooperative projects.					
Projects may include, but are not limited to:					
-Advanced Structural Monitoring Techniques (ASMT) [U.S. and Australia]					
-Anti-Ship Threat Countermeasures (ASTC) [FVEY]					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<p>-DYSMAS Mines [U.S. and Germany] -Electromagnetic Propagation (EM Prop) [U.S. and United Kingdom] -High Efficiency Eye Safer Fiber Lasers PA [U.S. and Australia] -International Programs Opportunities Engagement Tool (iPoet) [U.S.] -Lightweight Transparent Armor (LWTA) [U.S. and United Kingdom] -Maritime Automatic Surface Ship Classification (MASSC) PA [U.S. and Australia] -Next Generation Amphibious Technologies (NGAT) [U.S. and Japan] -Quantum Enhanced Undersea Surveillance Technology (QuEST) PA [U.S. and Australia] -Sensing Through Obscurant Particles in Degraded Visual Environments (STOP-DVE) PA [U.S. and UK] -Submarine Superiority [U.S. and Australia] -Undersea Surveillance and Communications (USC) PA [U.S. and Sweden] -VLF Receiver PA [U.S. and United Kingdom] -Wavelength Refractive Optical Materials (WROM) PA [U.S. and Israel]</p> <p>FY 2023 Base Plans: -Continue to support approved Cooperative projects from prior Fiscal Years. -Plan and support approved FY23 Cooperative projects.</p> <p>Projects may include, but are not limited to: -Coalition Underwater Mine and IED Defeat (CUMID) PA [U.S., Canada, and Norway] -Compact Common Aperture Dual-Band IR Imaging (CCADBIRI) Band IR Imaging PA [U.S. and Israel] -Electronic Warfare and Spectrum Superiority Development (EWSS-D) PA [U.S. and Israel] -Federated Information Sharing for Tactical Network (FIST) MOU [U.S., Germany, and Norway] -Maritime Automatic Surface Ship Classification (MASSC) PA [U.S. and Australia] -Next Generation Amphibious Technologies (NGAT) PA [U.S. and Japan] -Novel Degraded Visual Environments (Novel DVE) PA [U.S. and UK] -Quantum Enhanced Undersea Surveillance Technology (QuEST) PA [U.S. and Australia] -Submarine Technologies PA [U.S. and UK] -Undersea Technologies Capability Development PA [U.S. and Australia]</p> <p>FY 2023 OCO Plans: N/A</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p>					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
The FY 2023 increase of \$2.236M supports expanded research and development initiatives and cost sharing with international partners Australia and the United Kingdom in electronic and undersea warfare, respectively.					
Accomplishments/Planned Programs Subtotals	6.717	5.805	8.041	0.000	8.041

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 2023 Navy **Date:** April 2022

Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603790N / NATO Research and Deve	Project (Number/Name) 2293 / NATO Cooperative R & D
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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			
Developmental Test and Evaluation	C/FP	NAVSEA : Washington Navy Yard, DC	28.295	0.450	Nov 2020	0.000		1.000	Feb 2023	-		1.000	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	NSWC : West Bethesda, MD	13.621	0.200	Dec 2020	0.000		0.500	Nov 2022	-		0.500	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	NUWC : Newport, RI	3.089	0.697	Dec 2020	0.000		0.300	Dec 2022	-		0.300	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	NIWC : San Diego, CA	7.736	0.339	Feb 2021	0.350	Nov 2021	0.400	Mar 2023	-		0.400	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	NAVAIR : Patuxent River, MD	4.457	0.000		0.284	Dec 2021	0.400	Nov 2022	-		0.400	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	NRL : Washington, DC	7.628	2.428	Jan 2021	3.260	Mar 2022	2.741	Feb 2023	-		2.741	Continuing	Continuing	Continuing
Developmental Test and Evaluation	C/FP	NAWC : Point Mugu, CA	7.610	0.300	Mar 2021	0.000		0.500	Dec 2022	-		0.500	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	3.829	0.000		0.000		0.000		-		0.000	0.000	3.829	-
Developmental Test and Evaluation	C/FP	ONR : Arlington, VA	3.695	0.500	Mar 2021	0.500	Dec 2021	0.800	Mar 2023	-		0.800	0.000	5.495	-
Developmental Test and Evaluation	C/FP	USMC : Quantico, VA	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
Developmental Test and Evaluation	C/FP	NSWC : Indian Head, MD	0.550	0.200	Mar 2021	0.000		0.200	Dec 2022	-		0.200	0.000	0.950	-
Developmental Test and Evaluation	C/FP	NSWC : Panama City, FL	0.450	0.100	Jun 2021	0.300	Feb 2022	0.400	Feb 2023	-		0.400	0.000	1.250	-
Developmental Test and Evaluation	C/FP	GSA : Washington, DC	0.800	0.000		0.000		0.000		-		0.000	0.000	0.800	-
Developmental Test and Evaluation	C/FP	DISA : Ft Meade MD	1.410	0.000		0.000		0.000		-		0.000	0.000	1.410	-
Developmental Test and Evaluation	C/FP	CDSA : Dam Neck, VA	2.730	0.844	Nov 2020	0.238	Nov 2021	0.000		-		0.000	0.000	3.812	-

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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			
Subtotal			87.600	6.058		4.932		7.241		-		7.241	Continuing	Continuing	N/A

Remarks
 The \$2.039M of Product Development increase from FY22 to FY23 is being allocated to specific Product Development efforts and tasks with Australia for electronic warfare under the Electromagnetic Maneuver Warfare Project Agreement (PA), and with the UK for specific submarine technology development efforts and tasks under the Submarine Technologies PA. Both of these efforts are Large Scale Long Duration (LSDL) PAs, a new concept type of international agreement, where the proponent has the flexibility to put in place Technical Task Documents (TTDs) to accomplish specific tasks over the course of the LSDL PA.

Support (\$ 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			
Program Management Support	C/FP	NIPO : Washington Navy Yard	19.234	0.659	Apr 2021	0.873	May 2022	0.800	May 2023	-		0.800	0.000	21.566	-
Subtotal			19.234	0.659		0.873		0.800		-		0.800	0.000	21.566	N/A

			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			106.834	6.717	5.805	8.041	-	8.041	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 / 4	R-1 Program Element (Number/Name) PE 0603790N / NATO Research and Deve	Project (Number/Name) 2293 / NATO Cooperative R & D
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Proj 2293	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
International Agreements																												
Empty grid for data entry																												

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

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

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2293				
International Agreements	1	2021	4	2027