

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force **Date:** March 2023

Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0603790F I NATO Research and Development
---------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------

COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	4.114	4.295	2.208	0.000	2.208	4.490	4.602	4.697	4.867	0.000	29.273
64NATO: Nato Coop R&D	-	4.114	4.295	2.208	0.000	2.208	4.490	4.602	4.697	4.867	0.000	29.273
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Funds are used for air, space, and cyber international cooperative research, and development (ICR&D) agreements with North Atlantic Treaty Organization (NATO) member states, major non-NATO allies and friendly foreign countries. Each of the approved ICR&D projects are required to have a concluded international agreement (IA), prior to funds being released, that implements the provisions of Title 10 U.S. Code, Section 2350a. This legislation (Title 10 U.S. Code, Section 2350a) authorizes funds to significantly improve U.S. and allied conventional defense capabilities by leveraging the best defense technologies, eliminating costly duplication of R&D efforts, accelerating the availability of defense systems, and promoting US and allied interoperability or commonality. These funds will not be used for government civilian salaries, permanent construction, or spent overseas. This program element funds the implementation of DAF ICR&D agreements in (1) Basic Research (2) Applied Research (3) Advanced Technology Development (4) Advanced Component Development and Prototypes (5) System Development and Demonstration and (6) RDT&E Management Support. The FY 2024 funding request was reduced by \$2.175 million to account for the availability of prior year execution balances.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary (\$ in Millions)	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	4.114	4.295	4.383	0.000	4.383
Current President's Budget	4.114	4.295	2.208	0.000	2.208
Total Adjustments	0.000	0.000	-2.175	0.000	-2.175
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	-2.175	0.000	-2.175

C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: International Cooperative Research and Development	4.114	4.295	2.208	0.000	2.208

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force	Date: March 2023
----------------------------------------------------------------------------	-------------------------

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603790F / NATO Research and Development
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------

C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Description: Supports bi- and multi-lateral international agreements that meet DAF RDT&E objectives and goals. Each of the projects receiving NATO R&D funding must meet 2 or more of the following requirements: enhance warfighter capabilities; increase coalition interoperability; accelerate the availability of defense systems; strengthen strategic partnerships; gain access to the best technologies, capabilities, techniques, and/or facilities/ test ranges; build or sustain partnerships/influence with strategically important nations; and eliminate duplication of R&D efforts.</p> <p>FY 2023 Plans: FY 2023 cooperative projects involve RDT&E efforts in Artificial Intelligence, directed energy, hypersonics, Autonomy, human performance, information systems, aerospace systems, munitions, materials and manufacturing, sensors, local area airbase / airfield defense, machine learning, space situational awareness, missile warning, military satellite communications, global positioning systems, responsive space capabilities, cyber network defense, sensors ,information assurance, and space vehicles. These projects include but are not limited to: High Power Electromagnetics Advanced Weapon non-Kinetic Initiative, Gyromagnetic NLTTL Arctic Systems (GNATS); Disturbed Ionospheres; High Atmospheric Eye Safe Laser (HAESL); Critical Infrastructure Resiliency and Prediction (CIRCAT); Dynamic Material Analysis Fatigue Life; Quantum, Photonic, & Electromagnetic Enabling Technology (QPEET), "Near-Ground-Turbulence Impact Study", Corrosion Modelling and Accelerated Testing, Phased-Array HPM System, Functional Probiotic to Improve Warfighter Performance During, Deployment Stress, Material Advances in Human wearables for physiological Sensing and Augmentation Military applications of laser produced particle beams, Risk Reduction for Flown Full Scale Composite Component Testing, Pilot Performance and Exposure Tracking, Nanomaterial Sensors, Protected Tactical Services (PTS), Wideband Global SATCOM, Low Earth Orbit Space Domain Awareness, and Deep Space Radar. Bilateral and Multilateral cooperative efforts are with the following countries: Australia, Austria, Estonia, Latvia, Lithuania, Belgium, Netherlands, Italy, Israel, India, France, Germany, Sweden, Finland, Norway, Luxembourg, Switzerland, Japan, Republic of Korea, Singapore, New Zealand, Canada, and Chile.</p> <p>FY 2024 Base Plans: FY 2024 cooperative projects involve RDT&E efforts in directed energy, hypersonics, autonomy, human performance, information systems, aerospace systems, munitions, materials and manufacturing, sensors, machine learning, space situational awareness, missile warning, military satellite communications, global positioning systems, responsive space capabilities, cyber network defense, sensors, quantum communication, deep space imaging, synthetic aviation fuel, information assurance, and space vehicles. These projects include but are not limited to: Nanomaterial Sensors, Protected Tactical Services (PTS), Wideband Global SATCOM,</p>					

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Air Force	Date: March 2023
----------------------------------------------------------------------------	-------------------------

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603790F / NATO Research and Development
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Low Earth Orbit Space Domain Awareness, Deep Space Radar, FALQON: Entanglement-Based Quantum PNT and SATCOM, AEGIS 3D: Autonomous Engine Genome with In-Situ Sensors from 3D Printing, Diamond: Low-SWaP Magnetometers for GPS-Denied Navigation, DASIE: Distributed Live Mirror Telescope, PiPET: Pilot Performance and Exposure Tracking, Nanomaterial Sensors, and Synthetic Aviation Fuels for Air Force Propulsion Systems. Bilateral and Multilateral cooperative efforts are with the following countries: Australia, Brazil, Canada, Estonia, France, Germany, India, Israel, Netherlands, New Zealand, Norway, Singapore, South Korea, Spain, Sweden, United Kingdom.</p> <p>FY 2024 OCO Plans: \$0 are planned for FY 2024 OCO Plan.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreased due to under execution in FY 2022 when 7 projects did not conclude the international agreement for approved projects to receive funding from this PE.</p>					
Accomplishments/Planned Programs Subtotals	4.114	4.295	2.208	0.000	2.208

D. Other Program Funding Summary (\$ in Millions)
N/A

Remarks

E. Acquisition Strategy
A principal goal of the NATO Cooperative R&D program is to effectively utilize the resources invested by the US and our allies in air, space, and cyber ICR&D projects. This program element provides the critical funding incentive needed to pursue air, space and cyber related ICR&D agreements and helps to (a) leverage USAF and allied resources through cost sharing and economies of scale; (b) exploit the best US and allied technologies for equipping coalition forces; (c) demonstrate areas of commonality or interoperability with our allies; and (d) accelerate the availability of defense technology and systems. Candidate projects are reviewed against DAF goals, DoD objectives, and warfighter needs prior to being approved. An international agreement defining project objectives, responsibilities, and costs is required prior to release of funds. To obtain these funds and ensure service commitment, projects are selected from existing or new RDT&E programs funded in the Future Years Defense Plan (FYDP). At a minimum, approved ICR&D projects must show that the project office is matching approved funding and allied funding will be equal to the total US DoD funding. Additional funding outside NATO Cooperative R&D program is the responsibility of the project/program office.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0603790F / NATO Research and Development	Project (Number/Name) 64NATO / Nato Coop R&D

	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
NATO Coop R&D																												
FY 2024 Projects - Call Letter		■																										
FY 2024 Projects - nomination package development		■	■																									
FY 2024 Projects - Review panel				■																								
FY 2024 Projects - Approved Project Letter to the MAJCOMs				■																								
FY 2024 Projects - International Agreement Development					■																							
FY 2024 Projects - International Agreement is staffed, negotiated, and concluded						■	■	■	■																			
FY 2024 Projects - RDT&E cooperative project work										■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Air Force		Date: March 2023
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0603790F / NATO Research and Development	Project (Number/Name) 64NATO / Nato Coop R&D

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
NATO Coop R&D				
FY 2024 Projects - Call Letter	2	2022	2	2022
FY 2024 Projects - nomination package development	2	2022	3	2022
FY 2024 Projects - Review panel	4	2022	4	2022
FY 2024 Projects - Approved Project Letter to the MAJCOMs	4	2022	4	2022
FY 2024 Projects - International Agreement Development	1	2023	1	2023
FY 2024 Projects - International Agreement is staffed, negotiated, and concluded	2	2023	1	2024
FY 2024 Projects - RDT&E cooperative project work	1	2024	2	2028