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

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 0207522F / <i>Airbase Air Defense Systems (ABADS)</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	-	0.000	8.721	10.905	0.000	10.905	-	-	-	-	-	-
640410: <i>Tech Maturation & Risk Reduct</i>	-	0.000	8.721	10.905	0.000	10.905	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

Note
C-sUAS development efforts transitioned to ABADS in FY 2021. Prior to that time, C-sUAS efforts were funded in PE 0604287F. ABADS is not a new start effort.

A. Mission Description and Budget Item Justification

Airbase Air Defense Systems (ABADS)
The Air Force Airbase Air Defense Systems (ABADS) program is the principal USAF program to defend against airborne threats to USAF bases, to include but not limited to, small-unmanned aircraft systems (sUAS), rockets, artillery, and mortars (RAM), and other airborne threats. This program protects strategic assets vital to national security while bedded down and while on the move. It also protects personnel and assets whether CONUS or deployed in theater. Airborne threats are increasingly inexpensive, readily available and have been used to target US Service members, Allies and Coalition partners. These threats will evolve continuously as enemy employment adapts and commercially available technology advances are more readily available. The ABADS program will continue to analyze evolving threats and evaluating new capabilities to take on these threats, while also designing an architecture and new systems to bring down life cycle cost to allow fielding of that capability to all 180+AF installations and protect AF assets globally.

ABADS FY2022 funding will further develop Command, Control, Communication, Computers, and Intelligence (C4I) systems. This development will include, but not limited to: artificial intelligence development for operator task automation, closed-loop training system for operator certification and proficiency, track fusion updates, Link 16 capability integration, Advanced Battle Management System (ABMS) inclusion, Universal Command & Control (UC2) implementation, Joint All-Domain Command & Control (JADC2) development, standardize application data models, design physical on premise network for cloud implementation, and Electronic Warfare upgrades, to include but not limited to Ninja capability within Medusa C2.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Air Base Air Defense Sytem capabilities for emergent or unanticipated weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY19 0.00M and in FY20 0.00M was expended for civilian pay expenses in this program element. In FY21 0.00M is forecasted for civilian pay expenses in this program element.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D "Audits: audit of financial statements of Department of Defense components by independent external auditors

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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)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	0.000	8.737	26.575	0.000	26.575
Current President's Budget	0.000	8.721	10.905	0.000	10.905
Total Adjustments	0.000	-0.016	-15.670	0.000	-15.670
• 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	-0.016	-15.670	0.000	-15.670

Change Summary Explanation

Effort realigned from PE 0604287F in the FY2021 budget.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
Title: Airbase Air Defense Systems (ABADS)	0.000	8.721	10.905
Description: Airbase Air Defense Systems (ABADS) The Air Force Airbase Air Defense Systems (ABADS) program will continue to defend against the emerging and growing airborne threats. This program protects strategic assets vital to national security while bedded down and while on the move. This program will continue to adapt quickly to keep pace with enemy employment tactics, commercially available technology and advancements in emerging threats.			
FY 2021 Plans:			
- Developing Command, Control, Communication, Computers, and Intelligence (C4I), to include but not limited to artificial intelligence development for operator task automation, closed-loop training system for operator certification and proficiency, track fusion updates, Link 16 capability integration, Advanced Battle Management System (ABMS) inclusion, Universal Command & Control (UC2) implementation, Joint All-Domain Command & Control (JADC2) development, standardize application data models, design physical on premise network for cloud implementation.			
- Developing Electronic Warfare upgrades, to include but not limited to new Ninja skills from new external agencies for the DoD, and leverage full Ninja capability within Medusa C2.			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
<ul style="list-style-type: none"> - Developing Urgent Need System Upgrades, to include but not limited to false alarm reduction, increase line of bearing accuracy and finalize integration of all components. - Developing advanced sensors and effectors to counter enemy airborne threats. - Developing Digital Engineering and Integration capabilities to include but not limited to, modeling and simulation capability, test range support, system integration labs and contractor support <p>FY 2022 Plans:</p> <ul style="list-style-type: none"> - Will continue further development Command, Control, Communication, Computers, and Intelligence (C4I), to include but not limited to artificial intelligence development for operator task automation, closed-loop training system for operator certification and proficiency, track fusion updates, Link 16 capability integration, Advanced Battle Management System (ABMS) inclusion, Universal Command & Control (UC2) implementation, Joint All-Domain Command & Control (JADC2) development, standardize application data models, design network for cloud implementation. - Will continue further development Electronic Warfare upgrades, to include but not limited to new Ninja skills from new external agencies for the DoD, and leverage full Ninja capability within Medusa C2. - Will continue further development of Urgent Need System Upgrades, and finalize integration of all components. - Will continue to develop advanced sensors and effectors to counter enemy airborne threats. - Will continue to develop Digital Engineering and Integration capabilities to include but not limited to, modeling and simulation capability, test range support, system integration labs and contractor support -Will continue Command and Control (C2) modernization and enhancements. <p>FY 2021 to FY 2022 Increase/Decrease Statement: The final deliveries of C-sUAS urgent need capabilities are wrapping up in early FY21. Multiple Combatant Commanders have identified capability gaps in the delivered equipment and further refined their C-sUAS operational requirements based upon the lessons learned with the current equipment. The increase in RDT&E investment will start filling these gaps and fulfilling the new requirements for C-sUAS.</p>			
Accomplishments/Planned Programs Subtotals	0.000	8.721	10.905

D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2022</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• OPAF 03 0207522F: <i>Airbase Air Defense Systems (ABADS)</i>	0.000	9.108	27.186	-	27.186	-	-	-	-	-	-

Remarks

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E. Acquisition Strategy Implement a "Government-as-the-Integrator" approach by procuring integration services independent of systems being developed through existing integration service contracts within the DoD. The services will establish processes and support tools to enable integration of planned projects. Example integration services include, but are not limited to, establishing a continuous integration/continuous deployment (CI/CD) software pipeline, implementing Agile DevSecOps processes and deploying model-based design. Leverage small business innovative research opportunities to generate new code to produce capabilities for detection and defeat of airborne threats. Leverage urgent need support contracts to develop innovative and incremental changes to systems fielded for C-sUAS and urgent operational needs, and expanding to other airborne threats. Accomplish system verification-fix-verification loops earlier in the lifecycle for planned projects by leveraging independent integration services from systems being developed. Integration services will be acquired from existing integration service contracts within the DoD.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force **Date:** May 2021

Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0207522F / Airbase Air Defense System (ABADS)	Project (Number/Name) 640410 / Tech Maturation & Risk Reduct s (ABADS)
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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			
C-sUAS Joint Serv System Development	Various	Not specified. : TBD	-	-		-		1.704	Jan 2022	-		1.704	-	-	-
C-sUAS New Platform Development	Various	Not specified. : TBD	-	-		-		0.500	Dec 2021	-		0.500	-	-	-
C-sUAS Software Development	Various	Not specified. : TBD	-	0.000		6.984	Jan 2021	3.200	Nov 2021	-		3.200	-	-	-
Subtotal			-	0.000		6.984		5.404		-		5.404	-	-	N/A

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			
C-sUAS Test	Various	Not specified. : TBD	-	0.000		1.737	Jan 2021	1.100	Jan 2022	-		1.100	-	-	-
Subtotal			-	0.000		1.737		1.100		-		1.100	-	-	N/A

Management Services (\$ 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			
C-sUAS Systems Engineer	C/Various	Various : Hanscom, MA	-	-		-		4.201	Mar 2022	-		4.201	-	-	-
C-sUAS Program Management Administration	C/Various	Various : Hanscom, MA	-	-		-		0.200	Jul 2022	-		0.200	-	-	-
Subtotal			-	-		-		4.401		-		4.401	-	-	N/A

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
-	-	0.000	8.721	10.905	-	10.905	-	-	N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0207522F / Airbase Air Defense System (ABADS)	Project (Number/Name) 640410 / Tech Maturation & Risk Reduct s

FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
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

C-sUAS Events	
C-sUAS Joint Service Lead System Development	
C-sUAS Software Development	
C-sUAS Test	
C-sUAS New Platform Development	
C-sUAS Systems Engineering	

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0207522F / Airbase Air Defense System (ABADS)	Project (Number/Name) 640410 / Tech Maturation & Risk Reduct s (ABADS)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
C-sUAS Events				
C-sUAS Joint Service Lead System Development	2	2022	4	2026
C-sUAS Software Development	1	2021	4	2026
C-sUAS Test	1	2021	4	2026
C-sUAS New Platform Development	2	2022	4	2026
C-sUAS Systems Engineering	2	2021	4	2026