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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2023 Air Force **Date:** April 2022

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>
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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	-	2.017	7.110	2.222	0.000	2.222	13.773	18.123	18.507	18.918	Continuing	Continuing
653891: <i>Adv Infrared Counter Measures(Aircm)</i>	-	2.017	7.110	2.222	0.000	2.222	13.773	18.123	18.507	18.918	Continuing	Continuing

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

The Advanced Infrared Countermeasure (AIRCМ) project contains related aircraft self-protection efforts aimed at increasing aircraft survivability against the increasing threat of sophisticated surface-to-air and air-to-air missiles. These missiles may employ sophisticated next-generation Electro-Optics (EO), Infrared (IR), Radio Frequency (RF), dual-mode (i.e. IR and RF), or multi-mode seekers. AIRCM will provide advanced expendable countermeasures and/or techniques that will be functionally compatible with existing dispenser systems and employed across multiple USAF weapons systems. This also includes any and all flare, chaff, decoy, and associated component development and testing that may be demanded or needed in current and future operations regardless of aircraft platform. Similar activities that are supplementary to this effort may be accomplished ad hoc using platform specific funding or through other activities such as joint services or NATO test groups.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY21, \$0.00 was expended for civilian pay expenses in this program element, and in FY22 \$0.00 is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>
Previous President's Budget	2.094	2.110	0.000	0.000	0.000
Current President's Budget	2.017	7.110	2.222	0.000	2.222
Total Adjustments	-0.077	5.000	2.222	0.000	2.222
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	5.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.077	0.000			
• Other Adjustments	0.000	0.000	2.222	0.000	2.222

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**Appropriation/Budget Activity**

3600: *Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)*

**R-1 Program Element (Number/Name)**

PE 0604270F / *Electronic Warfare Development*

**Change Summary Explanation**

FY23: The FY 2022 President's Budget submittal did not reflect FY 2023 through FY 2026 funding. Therefore, an explanation of the change between the two budget positions for FY2023 cannot be made in a relevant manner.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Air Force										<b>Date:</b> April 2022		
<b>Appropriation/Budget Activity</b> 3600 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>				<b>Project (Number/Name)</b> 653891 / <i>Adv Infrared Counter Measures(Aircm)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
653891: <i>Adv Infrared Counter Measures(Aircm)</i>	-	2.017	7.110	2.222	0.000	2.222	13.773	18.123	18.507	18.918	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

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This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY21 \$0.00 was expended for civilian pay expenses in this program element, and in FY22 \$0.00 is forecasted for civilian pay expenses in this program element.

This program element may include necessary test or evaluation equipment required to assess Advanced Infrared Countermeasure weapons system capabilities.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>
<b>Title:</b> Countermeasure Development and Testing	2.017	2.110	2.222	-	2.222
<b>Description:</b> Development, testing and qualification of EO, IR, and RF countermeasures on aircraft					
<b>FY 2022 Plans:</b> Activities include development, testing and qualification of expendable countermeasures or cocktails on various aircraft.					
<b>FY 2023 Base Plans:</b> Activities include development, testing and qualification of expendable countermeasures or cocktails on various aircraft.					
<b>FY 2022 to FY 2023 Increase/Decrease Statement:</b>					

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**Exhibit R-2A, RDT&E Project Justification:** PB 2023 Air Force **Date:** April 2022

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> 653891 / <i>Adv Infrared Counter Measures(Aircm)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Marginal increase due to inflation adjustments.					
<b>Title:</b> Wide Band Receiver for Radar Jammer	0.000	5.000	0.000	0.000	0.000
<b>Description:</b> Next Generation Ultra Wide Band Receiver					
<b>FY 2022 Plans:</b> Develop ultrawide band receiver for radar jammers					
<b>FY 2023 Base Plans:</b> N/A					
<b>FY 2023 OCO Plans:</b> N/A					
<b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> FY22 Funds are Congressional Add					
<b>Accomplishments/Planned Programs Subtotals</b>	2.017	7.110	2.222	0.000	2.222

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023 Base</u>	<u>FY 2023 OCO</u>	<u>FY 2023 Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• PAAF 01 352010: <i>Cartridges</i>	20.618	26.483	-	-	-	-	-	-	-	-	Continuing
• PAAF 01 356010: <i>Flares</i>	61.259	85.934	120.548	-	120.548	79.250	80.797	82.203	83.664	-	Continuing

**Remarks**  
Qualified flares, if not in AF inventory, will be procured under program 0208030F War Reserve Munitions, Flares.

**D. Acquisition Strategy**  
Contracts are awarded through the Department of Defense Ordnance Technology Consortium (DOTC), or Other Transaction Authorities (OTAs), such as Cornerstone Industrial Base Analysis & Sustainment (IBAS), which facilitates collaborative Government, Industry, and Academic ordnance technology development and prototyping initiatives. They serve as a single point contracting agent for development/technology demonstrations needed to advance and expand our military technological superiority.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Air Force** **Date:** April 2022

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<b>Product Development (\$ in Millions)</b>				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			
IR/UV: Black Body Thrusted Flare	C/CPFF	Cornerstone OTA : TBD, TN	-	-		1.110	Jun 2022	1.222	Jan 2023	-		1.222	Continuing	Continuing	-
Ultra Wide Band Receiver for Radar Jammer	TBD	TBD : TBD	-	-		5.000	Jun 2022	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	-		6.110		1.222		-		1.222	Continuing	Continuing	N/A

**Remarks**  
Development of Advanced Expendable Countermeasures to defeat currently fielded threats from which aircraft are not sufficiently protected.

<b>Test and Evaluation (\$ in Millions)</b>				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			
Modeling and Simulation	MIPR	Air Force Research Laboratory : WPAFB, OH	-	1.000	Jun 2021	1.000	Jun 2022	1.000	Jan 2023	-		1.000	Continuing	Continuing	-
Test Support	MIPR	Various : NV	-	1.017	Jun 2021	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	2.017		1.000		1.000		-		1.000	Continuing	Continuing	N/A

**Remarks**

Modeling and simulation

- This entails performance of modeling and simulation (to include threat hardware in-the-loop) which helps to predict advanced expendable countermeasure effectiveness and develop and define Air Force requirements
- Performing activity varies; conducted by AFRL and Georgia Tech Research Institute

Range Test

- This is the cost to use the range for testing (Radiometric, Captive Seeker, Flight, etc.)
- Performing Activity & Location varies; 96th Test Wing, Eglin AFB, FL, White Sands Missile Range, NM, Gila Bend, AZ

Test Support

- This includes but is not limited to Seeker Test Vans (multiple vans required for Captive Seeker), duo chrome camera, and other test equipment
- Activities/support during testing (i.e. communications/electric/security)
- Performing Activity & Location should remain "Various: TBD", multiple activities are included





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2023 Air Force		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> 653891 / <i>Adv Infrared Counter Measures(Aircm)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Advance IR Aircm</i></b>				
Modeling and Simulation - Threat Exploitation	1	2021	4	2027
Pulse Kinematic Flare Development	1	2021	4	2021
IR/UV: Black Body Thrusted Flare Development	1	2022	4	2024
Advanced IR Flare Development for future threats	1	2024	4	2027
<b><i>Wideband Receiver for Radar Jammer</i></b>				
Next Generation Ultra Wide Band Receiver	3	2022	4	2023