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

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0207136F / <i>Manned Destructive Suppression</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	-	14.462	15.855	16.695	0.000	16.695	17.037	17.356	17.721	18.115	Continuing	Continuing
674595: <i>F-16 HARM Targeting Sys</i>	-	14.462	15.855	16.695	0.000	16.695	17.037	17.356	17.721	18.115	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Manned Destructive Suppression (MDS) program funds the development and sustainment of the Air Force's Suppression of Enemy Air Defenses (SEAD) and Destruction of Enemy Air Defenses (DEAD) capabilities. The F-16 High-speed Anti-Radiation Missile (HARM) Targeting System (HTS) is currently the only programmed reactive SEAD/DEAD capability and enables targeting the HARM missile in its most lethal 'range known' mode. The program provides F-16 Block 50/52 and Block 40/42 aircraft with the ability to employ the AN/ASQ-213 Pod. With the introduction of Pre-Planned Product Improvement (P3I) HTS Revision 7 in 2007, the AN/ASQ-213 Pod now has a precision geo-location capability to target Precision Guided Munitions (PGMs) to destroy fixed and mobile enemy air defense elements. Additionally, by relocating the AN/ASQ-213 HTS R7 Pod to the aircraft's left inlet hard point, the F-16 can simultaneously carry the HTS R7 Pod and an Advanced Targeting Pod (ATP). HTS R7 fielding is complete and represents the Air Force's near-term solution for reactive time-critical targeting for DEAD until this mission can be transferred to the F-35. HTS R7 derived precision targeting data can be provided to all Joint Forces via Link-16. This effort continues upgrades for the HTS and applies technologies similar to those demonstrated in the Advanced Tactical Targeting Technologies (AT3) program and HTS R7 development.

Funds may be used to address emerging and short-notice Diminishing Manufacturing Sources and Material Shortage (DMSMS) issues.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

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 elements 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY21 \$0M was expended for civilian pay expenses in this program element, and in FY22 \$0M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	14.933	15.855	0.000	0.000	0.000
Current President's Budget	14.462	15.855	16.695	0.000	16.695
Total Adjustments	-0.471	0.000	16.695	0.000	16.695
• 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	-0.471	0.000			
• Other Adjustments	0.000	0.000	16.695	0.000	16.695

Change Summary Explanation

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 FY 2023 cannot be made in a relevant manner.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
Title: P3I R7 Software Upgrade (SWUP)	13.761	14.055	14.595
Description: HTS SWUP risk reduction and software development Engineering and Manufacturing Development (EMD) efforts include software updates in support of F-16 Operational Flight Profile (OFP) releases. These releases improve the capability of the pod in an evolving threat environment.			
FY 2022 Plans: Continue SWUP 3 fielding activities and SWUP 4 risk reduction, iterative software development, and preparation for SWUP 4 flight testing. Mission support (i.e., program management for administrative and technical support) will continue.			
FY 2023 Plans: Continue SWUP 4 iterative software development, EMD, and preparation for SWUP 4 flight testing. Mission support (i.e., program management for administrative and technical support) will continue.			
FY 2022 to FY 2023 Increase/Decrease Statement: Funding increased due to normal inflation expectations.			
Title: Flight Test	0.701	0.900	1.200

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>Description: Conducts test planning, requirements derivation, and post-test data analysis and reporting. Provides test organization support to include test aircraft operations, threat/test range control and associated support, air refueling, and post-mission support. Ground testing, such as anechoic chamber testing, will also be accomplished as necessary.</p> <p>FY 2022 Plans: Government flight test operations will continue for SWUP 3 and SWUP 4 activities. This funding also includes baselining requirements from actual test data during recent flight testing.</p> <p>FY 2023 Plans: Government flight test operations will continue for SWUP 4 activities. This funding also includes baselining requirements from actual test data during recent flight testing. Begin testing on produced A9B Circuit Cards.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding increased due to an increase in the number of expected flight tests related to the A9B Circuit Card Development.</p>				
<p>Title: Mission Planning</p> <p>Description: Joint Mission Planning System (JMPS). This effort includes continued development and testing of candidate upgrades and incremental engineering releases in support of HTS SWUP fielding. Mission planning is a continuation of FY21 activity.</p> <p>FY 2022 Plans: Continue mission planning in support of future SWUP 3, 4, and other future SWUP requirements and upgrades.</p> <p>FY 2023 Plans: Continue mission planning in support of future SWUP 4 efforts and other future SWUP requirements.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: N/A</p>		0.000	0.900	0.900
Accomplishments/Planned Programs Subtotals		14.462	15.855	16.695
D. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				

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E. Acquisition Strategy

The HTS R7 Software Update Program (SWUP) is underway to keep the HTS pod capable in a growing threat environment. The SWUP 3 Engineering & Manufacturing Development (EMD) and SWUP 4 Risk Reduction (RR) contract awarded in April 2019 as a Cost Plus Fixed Fee (CPFF) contract type and is a 36 month effort. The initial SWUP 4 EMD contract awarded in July 2021 for four months. SWUP 3 includes plans for two releases to the field: Builds A and B. SWUP 4 adopts a more agile approach with three potential releases to the field: Builds A, B, and C.

Future SWUP RR portion will mature candidates for future software builds by addressing findings from the field, incorporating requested improvements from the warfighter, and implementing other software changes to keep the HTS pod updated and mission capable. A follow on mod to the contract was accomplished in November 2021 for one year. Future SWUP RR efforts to begin in FY24.

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

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207136F / Manned Destructive Suppression	Project (Number/Name) 674595 / F-16 HARM Targeting Sys
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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			
HTS R7 SWUP/P3I	SS/CPFF	Raytheon Systems Co. : Tucson, AZ	-	12.419	Jul 2021	12.282	Nov 2021	12.445	Nov 2022	-		12.445	Continuing	Continuing	-
JMPS	SS/CPIF	Multiple : Multiple	-	0.000		0.900	May 2022	0.900	May 2023	-		0.900	Continuing	Continuing	-
Subtotal			-	12.419		13.182		13.345		-		13.345	Continuing	Continuing	N/A

Test and Evaluation (\$ 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			
Government Test	PO	412 and 96 TW, NAWCWD : Edwards, Eglin, CLake	-	0.701	Nov 2020	0.900	Nov 2021	1.200	Nov 2022	-		1.200	Continuing	Continuing	-
Subtotal			-	0.701		0.900		1.200		-		1.200	Continuing	Continuing	N/A

Management Services (\$ 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 Administration	C/Various	Multiple : Eglin AFB Robins AFB	-	1.342	Dec 2020	1.773	Apr 2022	2.150	Feb 2023	-		2.150	Continuing	Continuing	-
Subtotal			-	1.342		1.773		2.150		-		2.150	Continuing	Continuing	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			-	14.462	15.855	16.695	-	16.695	Continuing	Continuing	N/A

Remarks

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

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Manned Destructive Suppression</i>				
SWUP 3 Risk Reduction	1	2021	3	2021
SWUP 3 Build A	1	2021	1	2021
SWUP 3 Build B	1	2021	2	2022
SWUP 4 Risk Reduction	1	2021	2	2022
SWUP 4 Bridge	4	2021	1	2022
SWUP 4 Builds A, B, and C	1	2022	1	2025
Future SWUP Risk Reduction	2	2024	1	2025
COTS Hardware	1	2021	3	2021