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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 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 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	-	15.044	14.933	15.855	0.000	15.855	-	-	-	-	-	-
674595: <i>F-16 HARM Targeting Sys</i>	-	15.044	14.933	15.855	0.000	15.855	-	-	-	-	-	-
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 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 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 0605831F. In FY20 \$0M was expended for civilian pay expenses in this program element, and in FY21 \$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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	15.521	14.960	16.094	0.000	16.094
Current President's Budget	15.044	14.933	15.855	0.000	15.855
Total Adjustments	-0.477	-0.027	-0.239	0.000	-0.239
• 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	-0.477	0.000			
• Other Adjustments	0.000	-0.027	-0.239	0.000	-0.239

Change Summary Explanation

No Significant Changes

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
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Title: P3I R7 Software Upgrade (SWUP)	14.144	14.033	14.055	0.000	14.055
Description: HTS SWUP risk reduction and software development Engineering and Manufacturing Development(EMD) efforts include software updates in support of F-16 OFP releases. These releases improve the capability of the pod in an evolving threat environment.					
FY 2021 Plans: Begin fielding first increment of SWUP 3 and prepare for operational testing for second increment of SWUP 3. HTS SWUP 4 continues from risk reduction to iterative software development and preparation for flight testing. Mission support (i.e., program management for administrative and technical support) will continue. Future software upgrades will continue. Continue Commercial Off The Shelf (COTS) studies to demonstrate COTS hardware analysis and experimentation.					
FY 2022 Base 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. Begin risk reduction activities for subsequent SWUP 5 upgrades and transition to EMD efforts.					
FY 2022 OCO Plans:					

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C. Accomplishments/Planned Programs (\$ in Millions)						
		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
N/A						
FY 2021 to FY 2022 Increase/Decrease Statement: Funding increased due to more planned SWUP activity in FY22.						
Title: Flight Test		0.900	0.900	0.900	0.000	0.900
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.						
FY 2021 Plans: Government flight test operations will continue for SWUP 3 and SWUP 4. This funding also includes baselining requirements from actual test data during recent flight testing.						
FY 2022 Base 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.						
FY 2022 OCO Plans: N/A						
FY 2021 to FY 2022 Increase/Decrease Statement: N/A						
Title: Mission Planning		0.000	0.000	0.900	0.000	0.900
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 FY20 activity.						
FY 2021 Plans: N/A						
FY 2022 Base Plans: Continue mission planning in support of future SWUP 3 and SWUP 4 requirements and upgrades.						
FY 2022 OCO Plans:						

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
N/A					
<i>FY 2021 to FY 2022 Increase/Decrease Statement:</i> Funding increased due to needed mission planning upgrades for SWUP 3 and SWUP 4.					
Accomplishments/Planned Programs Subtotals	15.044	14.933	15.855	0.000	15.855

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

Remarks

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 Risk Reduction (RR) contract was awarded in December 2015 as a Cost-Plus-Fixed-Fee (CPFF) contract type. The SWUP 3 RR development effort completed in March 2019.

The SWUP 3 Engineering & Manufacturing Development (EMD) and SWUP 4 RR contract awarded in April 2019 as a CPFF contract type and is a 36 month effort. Both the SWUP 3 and SWUP 4 EMD portions include plans for two releases to the field, Builds A and B. The SWUP 5 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.

The SWUP 4 EMD contract is planned for award in May 2021. This contract plans for multiple releases to the field.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force												Date: May 2021				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 0207136F / Manned Destructive Suppression				674595 / F-16 HARM Targeting Sys								
Product Development (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
HTS R7 SWUP/P3I	SS/CPFF	Raytheon Systems Co. : Tucson, AZ	-	13.779	Feb 2020	12.283	May 2021	12.282	Oct 2021	-		12.282	-	-	-	
JMPS	SS/CPIF	Multiple : Multiple	-	0.000		0.000		0.900	May 2022	-		0.900	-	-	-	
Subtotal			-	13.779		12.283		13.182		-		13.182	-	-	N/A	
Test and Evaluation (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Government Test	PO	412 and 96 TW, NAWCWD : Edwards,Eglin, CLake	-	0.900	May 2020	0.900	Nov 2020	0.900	Nov 2021	-		0.900	-	-	-	
Subtotal			-	0.900		0.900		0.900		-		0.900	-	-	N/A	
Management Services (\$ in Millions)				FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Program Management Administration	C/Various	Multiple : Eglin AFB, FL	-	0.365	Jul 2020	1.750	Dec 2020	1.773	Apr 2022	-		1.773	-	-	-	
Subtotal			-	0.365		1.750		1.773		-		1.773	-	-	N/A	
Project Cost Totals			-	15.044		14.933		15.855		-		15.855	-	-	N/A	
Remarks																

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Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207136F / <i>Manned Destructive Suppression</i>	Project (Number/Name) 674595 / <i>F-16 HARM Targeting Sys</i>

	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
<i>Manned Destructive Suppression</i>																												
SWUP 3 Risk Reduction																												
SWUP 3 Build A																												
SWUP 3 Build B																												
SWUP 4 Risk Reduction																												
SWUP 4 Build A																												
SWUP 4 Build B																												
SWUP 5 Risk Reduction																												
COTS Hardware																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207136F / <i>Manned Destructive Suppression</i>	Project (Number/Name) 674595 / <i>F-16 HARM Targeting Sys</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Manned Destructive Suppression</i>				
SWUP 3 Risk Reduction	1	2020	3	2020
SWUP 3 Build A	1	2020	1	2021
SWUP 3 Build B	1	2020	4	2022
SWUP 4 Risk Reduction	1	2020	2	2022
SWUP 4 Build A	3	2021	3	2023
SWUP 4 Build B	2	2022	3	2024
SWUP 5 Risk Reduction	2	2022	2	2024
COTS Hardware	2	2020	3	2021