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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0207136F I Manned Destructive Suppression							
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	14.400	14.773	15.106	0.000	15.106	15.353	15.638	15.911	16.236	Continuing	Continuing
674595: F-16 HARM Targeting Sys	-	14.400	14.773	15.106	0.000	15.106	15.353	15.638	15.911	16.236	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Manned Destructive Suppression (MDS) program element funds the development, procurement, 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 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 HTS Revision 7 (HTS R7) 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 F-35 or a yet to be defined system. HTS R7 derived precision targeting data can be provided to all Joint Forces via Link-16. This effort continues preplanned product improvements (P3I) 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 and Material Shortage (DMSMS) issues.

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.

B. Program Change Summary (\$ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	14.860	14.773	15.062	0.000	15.062
Current President's Budget	14.400	14.773	15.106	0.000	15.106
Total Adjustments	-0.460	0.000	0.044	0.000	0.044
• 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	-0.460	0.000			
• Other Adjustments	0.000	0.000	0.044	0.000	0.044

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Change Summary Explanation Continue mission planning in support of HTS SWUP and future P3I upgrades. This effort includes continued development and testing of candidate upgrades and incremental engineering releases in support of fielding.				
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018
Title: P3I R7 Software Upgrade (SWUP) Description: P3I R7 Software Upgrade (SWUP) FY 2016 Accomplishments: Continued HTS R7.8 SWUP software development and formal development flight testing, test data analysis, software fixes, and release of updated software for iterative flight testing. Risk reduction included a minor software update (maintenance release) in support of F-16 Operational Flight Program (OFP) M7.2+ and studies continued risk reduction efforts for future P3I phase(s). Mission support (i.e., program management for administrative and technical support) continued. FY 2017 Plans: Continue HTS R7.8 SWUP software development and complete flight testing, test data analysis, software fixes, and software FCA. Risk reduction includes minor software updates (maintenance releases) in support of F-16 OFP M7.2+ and studies continue on risk reduction efforts for future P3I phase(s). Mission support (i.e., program management for administrative and technical support) continues. FY 2018 Plans: HTS SWUP risk reduction efforts continue to include minor software updates (maintenance releases) in support of F-16 OFP M7.2+ and candidate definition for the next SWUP upgrade. Mission support (i.e., program management for administrative and technical support) will continue. Down-selection of warfighter candidates for the next SWUP effort will occur, and risk reduction activities for subsequent SWUP upgrades will continue.		11.200	12.823	12.756
Title: Flight Test Description: Flight Test FY 2016 Accomplishments: Government flight test operations continued in formal development flight testing of R7.8 SWUP software capabilities. Developmental test included test data analysis support and baselining requirements from actual test data results during flight testing. Conducted ground testing such as anechoic chamber testing, as needed. The test organization conducted each mission		2.300	1.050	1.500

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C. Accomplishments/Planned Programs (\$ in Millions)									FY 2016	FY 2017	FY 2018
to include F-16 test aircraft operations, threat/test ranges and associated support, air refueling, and range control support. Post-mission support for each mission was accomplished. FY 2017 Plans: Government flight test operations continues in formal development flight testing of R7.8 SWUP software capabilities. This funding also includes test data analysis support and baselining requirements from actual test data results during flight testing. Conduct ground testing such as anechoic chamber testing, as needed. The test organization will conduct each mission to include F-16 test aircraft operations, threat/test ranges and associated support, air re-fueling, and range control support. Post-mission support for each mission is planned. FY 2018 Plans: Government flight test operations continue in planning for the next SWUP. This funding also includes baselining requirements from actual test data during recent flight testing. Ground testing such as anechoic chamber testing will be conducted, as needed. The test organization will conduct each mission to include F-16 test aircraft operations, threat/test ranges and associated support, air refueling, and range control support. Post-mission support for each mission is planned.											
Title: Mission Planning Description: Joint Mission Planning System (JMPS) (Formerly Air Force Mission Support System (AFMSS)) FY 2016 Accomplishments: Continued mission planning in conjunction with HTS R7.8 software upgrade and future P3I upgrades. This effort included continued development and testing of candidate upgrades and incremental engineering releases in support of fielding. FY 2017 Plans: Continue mission planning in conjunction with HTS R7.8 software upgrade and future P3I upgrades. This effort includes continued development and testing of candidate upgrades and incremental engineering releases in support of fielding. FY 2018 Plans: Continue mission planning in support of HTS SWUP and future P3I upgrades. This effort includes continued development and testing of candidate upgrades and incremental engineering releases in support of fielding.									0.900	0.900	0.850
Accomplishments/Planned Programs Subtotals									14.400	14.773	15.106
D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• No other investment funding: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000

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D. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u> <u>Base</u>	<u>FY 2018</u> <u>OCO</u>	<u>FY 2018</u> <u>Total</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
Remarks E. Acquisition Strategy The HTS R7 acquisition improvement strategy includes accomplishment of risk reduction studies and selection of appropriate contracting strategies for P3I and upgrade of HTS inventory. F. Performance Metrics Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

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Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Air Force												Date: May 2017			
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					
Product Development (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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/CPIF	Raytheon Systems Co. : Tucson, AZ	-	10.271	May 2016	12.064	Jul 2017	11.566	May 2018	0.000		11.566	Continuing	Continuing	-
JMPS (Formerly AFMSS)	MIPR	Multiple : Multiple	-	0.900	Jan 2016	0.900	Jan 2017	0.850	Jan 2018	0.000		0.850	Continuing	Continuing	-
Subtotal			-	11.171		12.964		12.416		0.000		12.416	-	-	-
Remarks HTS R7.8 SWUP risk reduction completed in May 2013. HTS R7.8 development began in May 2013 and is projected to continue until 2017.															
Support (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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
Subtotal			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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 TW : Edwards AFB, CA	-	2.300	Jan 2016	1.050	Jan 2017	1.500	Jan 2018	0.000		1.500	Continuing	Continuing	-
Subtotal			-	2.300		1.050		1.500		0.000		1.500	-	-	-
Management Services (\$ in Millions)				FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 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	-	0.929	Oct 2015	0.759	May 2017	1.190	Oct 2017	0.000		1.190	Continuing	Continuing	-
Subtotal			-	0.929		0.759		1.190		0.000		1.190	-	-	-

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			Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	14.400		14.773		15.106		0.000		15.106	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: FY 2018 Air Force										Date: May 2017									
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 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	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
R7.8 SWUP Contract																												
R7.8 SWUP Flight test (CT&E/DT&E)																												
R7.8 Software Release																												
R7.9 SWUP (R7.8X MNX Updates) Risk Reduction																												
R7.8X MNX1 Update Release																												
R7.9 SWUP Contract																												
R7.9 SWUP (CT&E/DT&E)																												
R7.9 Software Release																												
R7.8X MNX2 Update Release																												

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Exhibit R-4A, RDT&E Schedule Details: FY 2018 Air Force			Date: May 2017
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	Start		End	
	Quarter	Year	Quarter	Year
R7.8 SWUP Contract	1	2016	2	2017
R7.8 SWUP Flight test (CT&E/DT&E)	1	2016	1	2017
R7.8 Software Release	3	2017	3	2017
R7.9 SWUP (R7.8X MNX Updates) Risk Reduction	2	2016	3	2018
R7.8X MNX1 Update Release	3	2017	3	2017
R7.9 SWUP Contract	1	2018	3	2021
R7.9 SWUP (CT&E/DT&E)	1	2019	1	2021
R7.9 Software Release	4	2021	2	2022
R7.8X MNX2 Update Release	4	2018	4	2018