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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force										Date: February 2019		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0901226F I Air Force Studies and Analysis Agency							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	1.506	1.418	1.443	0.000	1.443	1.468	1.499	1.526	1.553	Continuing	Continuing
676009: M & S DEVELOPMENT	-	1.506	1.418	1.443	0.000	1.443	1.468	1.499	1.526	1.553	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Provides for development and enhancement of modeling and simulation (M&S) tools for strategic planning, operational requirements, modernization and recapitalization of systems and programs, as well as the Planning, Programming, Budgeting and Execution (PPBE) processes for the AF Analytic Community and Secretary of the Air Force Standard Analysis Toolkit in support of AF Senior Leadership. As new technologies are introduced to the battlefield (Digital Electronic Jammers, maneuvering Surface-to-Surface Missiles, Directed Energy Weapons, etc.) along with evolving warfighting techniques and support operations, the range of capabilities that needs to be covered by analytic tools needs to expand as well. M&S creation and enhancement can require extensive research in how to properly implement the emerging weapons capabilities as well as demand development of software techniques to implement the changes. Additionally, emerging and continuing focus areas such as Space, Irregular Warfare, Information Operations, Cyber warfare and ISR demand specific tools of their own for new exploration and development. These focus areas require examination in isolation as well as cross-domain making the problem more complex and increasing the R&D challenges to field new decision support tools.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	1.563	1.418	1.443	0.000	1.443
Current President's Budget	1.506	1.418	1.443	0.000	1.443
Total Adjustments	-0.057	0.000	0.000	0.000	0.000
• 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	-0.057	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020
Title: Modeling and Simulation Development Description: Develop and Update Modeling & Simulation (M&S) tools. FY 2019 Plans: Continue research and development of M&S Tools FY 2020 Plans: Continue research and development of M&S Tools FY 2019 to FY 2020 Increase/Decrease Statement: Funding increased to account for increased costs.		1.506	1.418	1.443
Accomplishments/Planned Programs Subtotals		1.506	1.418	1.443
D. Other Program Funding Summary (\$ in Millions) N/A				
Remarks N/A.				
E. Acquisition Strategy Previous and planned future efforts have been/will be awarded under existing Task Order contracts. AF/A9 does not anticipate awarding a new contract for R&D work in the next year.				
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: PB 2020 Air Force												Date: February 2019		
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0901226F / Air Force Studies and Analysis Agency				Project (Number/Name) 676009 / M & S DEVELOPMENT				

Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Software Development	Various	Not specified. : NV	-	1.506	Mar 2018	1.418	Mar 2019	1.443	Mar 2020	-		1.443	Continuing	Continuing	-
Subtotal			-	1.506		1.418		1.443		-		1.443	Continuing	Continuing	N/A

			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	1.506		1.418		1.443		-		1.443	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force			Date: February 2019		
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0901226F / Air Force Studies and Analysis Agency			Project (Number/Name) 676009 / M & S DEVELOPMENT

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
M&S Development																												
Modeling & Simulation Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force			Date: February 2019
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0901226F / <i>Air Force Studies and Analysis Agency</i>	Project (Number/Name) 676009 / <i>M & S DEVELOPMENT</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>M&S Development</i>				
Modeling & Simulation Development	1	2018	4	2024

Note

Applying the resources under this PE started in 1Q FY2012 and has continued to develop successful products over time. A9 anticipates work to begin continue for 12-24 months for (1)research into how to better model new friendly and enemy weapons systems, (2) continue to develop tools to better examine evolving weapons technologies and (3) developing new models to better populate the data requirements of existing tools.