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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force **Date:** February 2020

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 0901226F / <i>Air Force Studies and Analysis Agency</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	1.364	1.443	1.197	0.000	1.197	1.497	1.524	1.550	1.579	Continuing	Continuing
676009: <i>M & S DEVELOPMENT</i>	-	1.364	1.443	1.197	0.000	1.197	1.497	1.524	1.550	1.579	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.

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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	1.418	1.443	1.468	0.000	1.468
Current President's Budget	1.364	1.443	1.197	0.000	1.197
Total Adjustments	-0.054	0.000	-0.271	0.000	-0.271
• 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	-0.054	0.000			
• Other Adjustments	0.000	0.000	-0.271	0.000	-0.271

Change Summary Explanation

Increases due to development and application of advanced analytics, capability to improve efficiency and effectiveness within Air Force Enterprise. Expanding the capability to exploit large data sets using modern algorithms and machine learning.

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
<p>Title: Modeling and Simulation Development</p> <p>Description: Develop and Update Modeling & Simulation (M&S) tools.</p> <p>FY 2020 Plans: Continue research and development of M&S Tools</p> <p>FY 2021 Plans: Continue research and development of M&S Tools</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding decreased due to other higher Air Force priorities.</p>	1.364	1.443	1.197
Accomplishments/Planned Programs Subtotals	1.364	1.443	1.197

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force		Date: February 2020
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>

FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
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>M&S Development</i>	
Modeling & Simulation Development	

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
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	2019	4	2025

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.