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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 0207697F I Distributed Training and Exercises							
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	-	4.046	3.825	4.303	0.000	4.303	4.377	4.467	4.549	4.631	Continuing	Continuing
675190: JFCOM Wargaming	-	4.046	3.825	4.303	0.000	4.303	4.377	4.467	4.549	4.631	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Funding supports the CSAF Title 10 wargaming efforts to test concepts, capabilities, programming choices, and plans using simulation and other techniques, otherwise known as wargaming. Based on the Department and Air Force direction, there is a concerted effort in these periods of fiscal restraint to reinvigorate, institutionalize, and systematize wargaming across the Department. This effort requires continued funding to maintain the level of effort to most effectively pursue an innovative strategy, avoid operational and technical surprise and make best use of limited resources. The Air Force continues to refine the wargame process and design to better integrate and synergize those efforts in support of the new Air Force Strategy, Planning, and Programming (SP3) process. Specifically, in addition to maintaining a robust Title 10 Wargame series, Global Engagement, servicing Chief of Staff of the Air Force (CSAF) objectives. The HAF Wargaming Enterprise is executing on-call Wargaming in support of the AF/A5/8, the Agile series, along with quick-turning wargame support to the USAF Enterprise Capability Collaboration Team (ECCT) requirements, the Enterprise series, Plan Blue, and to service AF/A5S strategy and concept development objectives; all to better address the requirements of the SP3 process and cycles. Additionally, HAF Wargaming provides and coordinates Air Force representation at other Service and Joint wargames as they execute across the department. These efforts are providing decision support to senior Air Force leaders involving investment strategies and develop concepts to best employ U.S. forces in future conflicts.

The Wargame Information Environment (WIE) is a continually evolving system that provides an array of services to game players which enables the accomplishment of game objectives. The backbone of the WIE is GameNet, a deployable, standalone, Local Area Network (LAN) with servers and laptops that host applications to support virtual battlespace collaboration, decision making, three-dimensional visualizations & mapping, and services. Behind these applications are cutting edge technologies and database architectures from both commercial off-the-shelf and government developed software that assures relevance to the wargame. The modeling, simulation, and analysis applications allow participants, adjudicators, and control team members to effectively and efficiently collaborate, make decisions, present those decisions, and execute moves within the wargame; documenting each step in the process. This information capture enables discovery during the wargame and permits postgame analysis. These findings inform portfolio rebalancing exercises, concept and strategy development, and very senior leader decision making.

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.

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B. Program Change Summary (\$ in Millions)		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total		
Previous President's Budget		4.190	4.225	4.303	0.000	4.303		
Current President's Budget		4.046	3.825	4.303	0.000	4.303		
Total Adjustments		-0.144	-0.400	0.000	0.000	0.000		
• Congressional General Reductions		-0.144	-0.400					
• 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		0.000	0.000					
• Other Adjustments		0.000	0.000	0.000	0.000	0.000		
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Develop/ Upgrade M&S Tools for WIE				1.391	1.290	1.502	-	1.502
Description: Develop air, space and cyber space wargaming specific functionality in existing modeling and simulation and analysis tools and integrate into the latest version of the WIE								
FY 2019 Plans:								
- Extend the WIE to include either the Lemay Center Wargaming Institute BubbleNet or Air Force Space Command Schriever Wargame System in support of an Air Force Title 10 Game event.								
- Integrate tools to capture implications of force structures and capabilities employed in wargames to influence budgeting and programming choices.								
- Continue to expand and develop the WIE, incorporating latest technology and tools, in support of a more flexible and agile wargaming enterprise; quicker to respond and tailorable for a wider range of wargaming. This will require analysis of utility and functionality of additional models and analytical tools used by other wargames, to include creation of custom interfaces to allow interaction within the WIE.								
FY 2020 Base Plans:								
- Continue the integration of tools to capture consequences of force structures, capabilities employed in wargames to effect budgeting and programming choices.								
- Continue to expand and develop the WIE, incorporating the latest technology and tools, in support of a more flexible, robust, and agile wargaming enterprise; quicker to respond and tailorable for a wider range of wargaming. This will require analysis of utility and functionality of additional models and analytical tools used								

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
by other wargames, to include creation of custom interfaces to allow interaction within the WIE, for example the Integrated Sustainment and Wargaming Analysis Toolkit (ISWAT). - Improve the ease and effectiveness of wargame execution by developing new WIE visualizations and user interfaces.						
FY 2019 to FY 2020 Increase/Decrease Statement: Increase from FY19 to FY20 accounts for inflation.						
Title: Joint Concept Development & Experimentation (JCD&E) Tools		2.655	2.535	2.801	0.000	2.801
Description: Develop scenarios and data for future synthetic environment that grounded in truth to support several wargames and mini-wargames.						
FY 2019 Plans: HAF Wargaming will conclude Global Engagement 18 post-game analysis and report writing, as well as, execute Futures Game 18, along with post-game analysis and report writing. HAF Wargaming will design, develop models, research concepts, and conduct workshops for Global Engagement 20 (USAF Foundation wargame). HAF Wargaming will conduct quick-turn wargames in support of senior leaders (Agile, ECCT) as directed.						
FY 2020 Base Plans: HAF Wargaming will execute Global Engagement 20. HAF Wargaming will design, develop models, research concepts, and conduct workshops for Global Engagement 20 and its post-game analysis and report writing.(USAF Foundation wargame). HAF Wargaming will conduct quick-turn wargames in support of senior leaders (Agile, ECCT) as directed.						
FY 2020 OCO Plans: No OCO funds programmed nor executed.						
FY 2019 to FY 2020 Increase/Decrease Statement: Increase from FY19 to FY20 accounts for inflation.						
Accomplishments/Planned Programs Subtotals		4.046	3.825	4.303	0.000	4.303
D. Other Program Funding Summary (\$ in Millions)						
N/A						

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D. Other Program Funding Summary (\$ in Millions)		
Remarks		
E. Acquisition Strategy In order to achieve an innovative strategy, avoid operational and technical surprise and make best use of limited resources, wargaming requires an evolutionary acquisition approach for every wargame. Contract support is required as wargame and IT specialized expertise resides with industry and is not available organically. The requirements constantly evolve and a challenge to be accurately defined at the outset of the contract; however, we will continue to pursue a firm fixed price (FFP) contract awarded under a full and open competition.		
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 0207697F / <i>Distributed Training and Exercises</i>						Project (Number/Name) 675190 / <i>JFCOM Wargaming</i>			

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	
FA7014-18-C-1003	SS/FFP	AFDW : JBA, MD	-	4.046	Mar 2018	3.825	Mar 2019	4.303		-		4.303	0.000	12.174	22.084	
Subtotal			-	4.046		3.825		4.303		-		4.303	0.000	12.174	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			-	4.046		3.825		4.303		-		4.303	0.000	12.174	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force												Date: February 2019							
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	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
Wargaming Information Environment																												
Develop and Integrate M&S Tools																												
Enhance ViewPoint																												
Improve GamePoint																												

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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 0207697F / <i>Distributed Training and Exercises</i>	Project (Number/Name) 675190 / <i>JFCOM Wargaming</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Wargaming Information Environment</i>				
Develop and Integrate M&S Tools	1	2018	4	2021
Enhance ViewPoint	1	2018	4	2021
Improve GamePoint	1	2018	4	2021