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

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207697F / <i>Distributed Training and Exercises</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	-	3.699	4.303	3.390	0.000	3.390	4.460	4.541	4.622	4.707	Continuing	Continuing
675190: <i>JFCOM Wargaming</i>	-	3.699	4.303	3.390	0.000	3.390	4.460	4.541	4.622	4.707	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, 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.

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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
Previous President's Budget	3.825	4.303	4.377	0.000	4.377
Current President's Budget	3.699	4.303	3.390	0.000	3.390
Total Adjustments	-0.126	0.000	-0.987	0.000	-0.987
• 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	0.000	0.000			
• Other Adjustments	-0.126	0.000	-0.987	0.000	-0.987
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
<b>Title:</b> Develop/ Upgrade M&S Tools for WIE	1.248	1.502	1.216	0.000	1.216
<b>Description:</b> 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					
<b>FY 2020 Plans:</b>					
- 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 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.					
<b>FY 2021 Base Plans:</b>					
- Carry on the assimilation of tools to capture consequences of force structures, capabilities employed in wargames to effect budgeting and programming choices.					

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
<p>- Additionally, continue to expand and develop the Wargaming Information Environment (WIE), integrating 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 by other wargames, to include creation of custom interfaces to allow interaction within the WIE, for example the latest development Integrated Sustainment and Wargaming Analysis Toolkit(ISWAT3) in FY21.</p> <p>- Lastly, seek to improve the ease and effectiveness of wargame execution by developing new WIE visualizations and user/ participant interfaces in the GE22 Series beginning in FY21.</p> <p><b>FY 2021 OCO Plans:</b> This PE is not supported by OCO funds to complete its designated mission areas</p> <p><b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Wargaming JC&amp;D tools typically increase from year to year as part of normal progression. From FY20 to FY21 substantial decrease due to change from typical obligation of funds on contract and transitioning to execution rates. This significantly impacts the wargame 2-yr cycle, and circumvents the Oct 2019 SecDef memo to the Office of Net Assessment for the continuation of long term wargaming. This PE supports a two year cycle using the NDS as the backbone to develop and execute the series and other supported MAJCOM games. Our mission directive is the Title 10 Wargame supporting the CSAF and influencing the SP3 process.</p>						
<p><b>Title:</b> Joint Concept Development &amp; Experimentation (JCD&amp;E) Tools</p> <p><b>Description:</b> Develop scenarios and data for future synthetic environment that grounded in truth to support several wargames and mini-wargames.</p> <p><b>FY 2020 Plans:</b> 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.</p> <p>No OCO funds programmed nor executed.</p> <p><b>FY 2021 Base Plans:</b></p>		2.451	2.801	2.174	0.000	2.174

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
<p>HAF Wargaming will execute Global Engagement 22 and lead up events beginning in FY21. HAF Wargaming will continue to design, develop models, research concepts, and conduct workshops for Global Engagement 22 including the Capstone event in the Spring of 2022 including its post-game analysis and report writing.(USAF Foundation wargame). HAF Wargaming will continue to conduct quick-turn wargames in support of senior leaders (Agile, ECCT)as directed including support to other service wargames to advocate for Air Force equities.</p> <p>No OCO funds programmed nor executed.</p> <p><b><i>FY 2021 OCO Plans:</i></b> This PE is not supported by OCO funds to complete its designated mission areas</p> <p><b><i>FY 2020 to FY 2021 Increase/Decrease Statement:</i></b> Wargaming Joint Concept Development &amp; Experimentation (JCD&amp;E) Tools cost typically increase from year to year as part of normal progression. From FY20 to FY21 significant has been shown. From FY20 to FY21 substantial decrease due to change from typical obligation of funds on contract and transitioning to execution rates. This significantly impacts the wargame 2-yr cycle, and circumvents the Oct 2019 SecDef memo to the Office of Net Assessment for the continuation of long term wargaming. This PE supports a two year cycle using the NDS as the backbone to develop and execute the series and other supported MAJCOM games. Our mission directive is the Title 10 Wargame supporting the CSAF and influencing the SP3 process.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	3.699	4.303	3.390	0.000	3.390

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

**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.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2021 Air Force		<b>Date:</b> February 2020
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207697F / <i>Distributed Training and Exercises</i>	<b>Project (Number/Name)</b> 675190 / <i>JFCOM Wargaming</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

<b><i>Wargaming Information Environment</i></b>	
Develop and Integrate M&S Tools	
Enhance ViewPoint	
Improve GamePoint	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Air Force		<b>Date:</b> February 2020
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Wargaming Information Environment</i></b>				
Develop and Integrate M&S Tools	1	2019	4	2025
Enhance ViewPoint	1	2019	4	2025
Improve GamePoint	1	2019	4	2025