

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force **Date:** May 2021

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 0207697F / <i>Distributed Training and Exercises</i>
--	---

COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	4.146	3.384	4.007	0.000	4.007	-	-	-	-	-	-
675190: <i>JFCOM Wargaming</i>	-	4.146	3.384	4.007	0.000	4.007	-	-	-	-	-	-
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 Air Force Strategy, Planning, Programming, Budget, and Execution (SPPBE) 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/A5/7, 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/A5/7 strategy and concept development objectives; all to better address the requirements of the Strategy, Planning, Programming, Budget, and Execution (SPPBE) 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 element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY20 \$0M was expended for civilian pay expenses in this program element, and in FY21 \$0M is forecasted for civilian pay expenses in this program element.

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.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force				Date: May 2021	
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 0207697F / <i>Distributed Training and Exercises</i>			
B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	4.303	3.390	4.460	0.000	4.460
Current President's Budget	4.146	3.384	4.007	0.000	4.007
Total Adjustments	-0.157	-0.006	-0.453	0.000	-0.453
• Congressional General Reductions	0.000	-0.006			
• 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	-0.157	0.000			
• Other Adjustments	0.000	0.000	-0.453	0.000	-0.453
C. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Develop/ Upgrade Modeling & Simulation (M&S) Tools for Wargaming Information Environment (WIE)	1.502	1.216	1.560	0.000	1.560
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 2021 Plans:					
<ul style="list-style-type: none"> • Continue developing and assimilating tools that capture consequences of alternative force structures and capabilities employed in wargames to inform Department of the Air Force (DAF) budgeting and programming choices. • Continue to expand and develop the Headquarters USAF (HAF) Wargaming Information Environment (WIE) by integrating the latest technology and tools that will support of a more flexible, robust, and agile wargaming enterprise that is quicker to respond and tailorable for a wider range of wargaming. This will require analysis of the utility and functionality of additional models and analytical tools used in other wargames, and creation of custom interfaces to allow interaction within the WIE (for example, the latest iteration of Air Force Materiel Command's Integrated Sustainment and Wargaming Analysis Toolkit (ISWAT3), which assesses and reports changing logistics and supply levels across wargame moves, battle damage, resupply etc.). • Lastly, seek to improve the ease and effectiveness of wargame execution by developing new WIE visualizations and user/ participant interfaces in the FY21 HAF "Title 10" wargame series comprised of Futures Game 21 (FG 21) and Global Engagement 21 (GE 21)—where FG is a high-classification deep-dive into 					

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force	Date: May 2021
--	-----------------------

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 0207697F / <i>Distributed Training and Exercises</i>
--	---

C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p>capabilities 15-20 years out and GE is an Ally-informed look at military theater competition between now and that period.</p> <p>Justification of work planned for FY21:</p> <ul style="list-style-type: none"> • This work will take place in preparation for, and in support of, FG 21 in the Spring of 2021; a Plan Blue game in Summer '21; and major planning workshops leading up to GE 21 in the Fall. • The HAF is using these wargames as one of its primary means to inform budgeting and programming decisions needed to fully implement and align with the National Defense Strategy. • This is particularly important follow-on work to implement/solidify lessons and best practices learned during the upcoming September Futures Game 20 (FG 20), which will inform the wargaming M&S, analysis, assessments, and adjudication that will be used for FG 21. <ul style="list-style-type: none"> o FG 20 will be the Air Force's first "COVID-distributed" Title 10 wargame, and its first wargame executed under a reorganized structure that merges HAF Title 10 gaming with Air Force Warfighter Integration Capability (AFWIC) Experimentation and Data Analysis teams. o The WIE used for FG 20, combined with tools brought in and refined by AFWIC and RAND (and integrated with other tools we continue to refine such as ISWAT)) will directly underpin the planned follow-on FG 21 wargame—and subsequently GE 21 and FG 22. o Continue to develop robust wargame results (enabled by the WIE and associated M&S, assessments, and analysis tools) on which it relies to inform critical planning decisions on future concepts, capabilities, and force structure—all in support of NDS requirements. <p>FY 2022 Base Plans: Category Title: Develop/ Upgrade Modeling & Simulation (M&S) Tools for Wargaming Information Environment (WIE).</p>					

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force	Date: May 2021
--	-----------------------

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 0207697F / <i>Distributed Training and Exercises</i>
--	---

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
---	----------------	----------------	---------------------	--------------------	----------------------

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 Wargame Information Environment (WIE).

FY22 Base Plan:

- Continue developing and assimilating tools that capture consequences of alternative force structures and capabilities employed in wargames to inform Department of the Air Force (DAF) budgeting and programming choices.
- Continue to expand and develop the Headquarters USAF (HAF) Wargaming Information Environment (WIE) by integrating the latest technology and tools that will support of a more flexible, robust, and agile wargaming enterprise that is quicker to respond and tailorable for a wider range of wargaming. This will require analysis of the utility and functionality of additional models and analytical tools used in other wargames, and creation of custom interfaces to allow interaction within the WIE (for example, the latest iteration of Air Force Materiel Command's Integrated Sustainment and Wargaming Analysis Toolkit (ISWAT3), which assesses and reports changing logistics and supply levels across wargame moves, battle damage, resupply etc.).
- Lastly, seek to improve the ease and effectiveness of wargame execution by developing new WIE visualizations and user/ participant interfaces in the FY22 HAF "Title 10" wargame series comprised of Futures Game 22 (FG 22) and Global Engagement 22 (GE 22)—where FG is a high-classification deep-dive into capabilities 15-20 years out and GE is an Ally-informed look at military theater competition between now and that period.

Justification of work planned for FY22:

- This work will take place in preparation for, and in support of, FG 22 in the Spring of 2022; a Plan Blue game in Summer '22; and major planning workshops leading up to GE 22 in the Fall.
- The HAF is using these wargames as one of its primary means to inform budgeting and programming decisions needed to fully implement and align with the National Defense Strategy.

--	--	--	--	--	--

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force		Date: May 2021
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 0207697F / <i>Distributed Training and Exercises</i>	

C. Accomplishments/Planned Programs (\$ in Millions)

- This is particularly important follow-on work to implement/solidify lessons and best practices learned during the previous Futures Game 21 (FG 21), which will inform the wargaming M&S, analysis, assessments, and adjudication that will be used for FG 22.
 - o The WIE used for FG 21, combined with tools brought in and refined by AFWIC and RAND (and integrated with other tools we continue to refine such as ISWAT) will directly underpin the planned follow-on FG 22 wargame—and subsequently GE 22 and FG 23.
 - o Loss of this PE funding for FY22 would drastically undermine both FG 22 and 23, as well as Global Engagement wargaming. The Air Force would lose the robust wargame results (enabled by the WIE and associated M&S, assessments, and analysis tools) on which it relies to inform critical planning decisions on future concepts, capabilities, and force structure—all in support of NDS requirements.

 Category Title: Joint Concept Development & Experimentation (JCD&E) Tools
 Description: Develop scenarios and data for future synthetic environment that are grounded in truth to support several wargames and mini-wargames.

FY22 Base Plan:

- HAF Wargaming will execute FG 22 and GE 22 lead-up events in FY22.
- HAF Wargaming will continue to design, develop models, research concepts, and conduct workshops for FG 22 and GE 22 including post-game assessment, analysis and reporting.
- HAF Wargaming will continue to conduct quick-turn wargames in support of senior leaders as directed including support to other service wargames to ensure Air Force interests are incorporated in a realistic manner.

Justification of work planned for FY22:

- The utility and credibility of results from all Air Force Title 10 wargaming described in the FY21 base plan is utterly reliant on the development in each game cycle of plausible and well-informed scenarios, Blue planning & facilitation experts, crack Red teams, and credible Red, Green and Blue baseline data for the future game epochs.

FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force	Date: May 2021
--	-----------------------

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 0207697F / <i>Distributed Training and Exercises</i>
--	---

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<ul style="list-style-type: none"> • These scenarios, teams, and data—and the wargame plans they generate or underpin—are achievable only through the tailored hiring and the building over time of key persons/teams, and by enabling them with the right tools and collaboration activities to plan and build. • Wargaming access to such individuals, teams and tools, and their development activities that underpin HAF Title 10 wargames large and small, is made possible by this PE. • If this PE were to be defunded for FY22, the experts who build scenarios, develop and man Red teams, and provide the latest credible data on Blue, Red and Green forces and planning, would be lost—to be replaced later only slowly and with difficulty. The people and tools that port such data into the WIE would go away, as well. HAF Title 10 wargaming that depends on these elements—and therefore the vital results from such wargaming—would be significantly impacted, to the detriment of USAF future-force decisions and development. • Additionally, associated joint gaming/experimentation that uses and benefits from USAF Title 10 scenarios and data would be impacted as well (e.g. the Joint Staff's Global Integrated Wargame) <p>FY 2022 OCO Plans: OCO funds are not programmed in this PE.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Increased to match requirements.</p>					
<p>Title: Joint Concept Development & Experimentation (JCD&E) Tools</p> <p>Description: Develop scenarios and data for future synthetic environment that are grounded in truth to support several wargames and mini-wargames.</p> <p>FY 2021 Plans:</p> <ul style="list-style-type: none"> • HAF Wargaming will execute FG 21 and GE 21 lead-up events in FY21. • HAF Wargaming will continue to design, develop models, research concepts, and conduct workshops for FG 21 and GE 21 including post-game assessment, analysis and reporting. • HAF Wargaming will continue to conduct quick-turn wargames in support of senior leaders as directed including support to other service wargames to ensure Air Force interests are incorporated in a realistic manner. 	2.644	2.168	2.447	0.000	2.447

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force	Date: May 2021
--	-----------------------

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 0207697F / <i>Distributed Training and Exercises</i>
--	---

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p>Justification of work planned for FY21:</p> <ul style="list-style-type: none"> • The utility and credibility of results from all Air Force Title 10 wargaming described in the FY21 base plan is utterly reliant on the development in each game cycle of plausible and well-informed scenarios, Blue planning & facilitation experts, crack Red teams, and credible Red, Green and Blue baseline data for the future game epochs. • These scenarios, teams, and data—and the wargame plans they generate or underpin—are achievable only through the tailored hiring and the building over time of key persons/teams, and by enabling them with the right tools and collaboration activities to plan and build. • Wargaming access to such individuals, teams and tools, and their development activities that underpin HAF Title 10 wargames large and small, is made possible by this PE. • Associated joint gaming/experimentation that uses and benefits from USAF Title 10 scenarios and data (e.g. the Joint Staff's Global Integrated Wargame) <p>FY 2022 Base Plans: HAF Wargaming will execute Global Engagement 23 and lead up events beginning in FY22. HAF Wargaming will continue to design, develop models, research concepts, and conduct workshops for Global Engagement 23 including the Capstone event in the Fall of 2023 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>FY 2022 OCO Plans: OCO funds are not programmed in this PE.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Increased to match requirements.</p>					
Accomplishments/Planned Programs Subtotals	4.146	3.384	4.007	0.000	4.007

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

Remarks

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force		Date: May 2021
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 0207697F / <i>Distributed Training and Exercises</i>	
<u>E. Acquisition Strategy</u> 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.		

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		Date: May 2021
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>

FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
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>Wargaming Information Environment</i>	
Develop and Integrate M&S Tools	
Enhance ViewPoint	
Improve GamePoint	

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Air Force		Date: May 2021
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	2020	4	2026
Enhance ViewPoint	1	2020	4	2026
Improve GamePoint	1	2020	4	2026