

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force										Date: February 2015		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0207605F I Wargaming and Simulation Centers							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	5.326	5.956	6.035	-	6.035	6.015	6.130	6.245	6.357	Continuing	Continuing
672888: Distributed Mission Operations Center (DMOC)	-	5.326	5.956	6.035	-	6.035	6.015	6.130	6.245	6.357	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Distributed Mission Operations Center (DMOC) provides comprehensive Live, Virtual, and Constructive (LVC) simulation capabilities which prepare warfighters to conduct dominant operations in air, space, cyber, ground, and surface domains in an environment for theater-level, full spectrum combat training for Air Force/joint/coalition partners. This reaches 31 geographically separated LVC locations across 17 time zones representing such assets as real-world weapon systems, operator-in-the-loop, and constructive or computer-driven simulations. It is responsible for development and integration of scenarios, models, and databases and the integration of participating sites into Virtual Flag (VF) training events via numerous network connections, DMOC-developed interoperability tools, and controlled interfaces in support of Air Force, joint, and coalition warfighter readiness. In addition, activities include Distributed Mission Operations (DMO) technology and capability studies/analyses which support both current and future program planning and execution.

The DMOC utilizes RDT&E funding for the following to enhance DMO training:

1. Distributed Mission Operations Capability/Battlespace Systems Development: The DMOC upgrades and enhances the capabilities of Environment Generators and is in partnership with the US Naval Air Systems Command (NAVAIR) to enhance the capabilities of the Next Generation Threat System (NGTS) from version 2.4.14 to version 3.5 over the next two-three years that will provide red/blue air and other capabilities. The DMOC Replay Tool is regularly upgraded to facilitate a more complete mission review and debrief capability of the exercises as more sites and systems are added to events. Future planned DMO Tool development includes enhancement & improvement of: the Distributed Interactive Simulation (DIS) Filter; the Tactical Air Datalink Information-J (TADIL-J) Doctor-J (Dr. J) tool which allows tactical datalinks to be communicated and translated between disparate simulator communication formats; development of Intelligence, Surveillance, and Reconnaissance (ISR)/Battle Damage Assessment (BDA) which improves damage state models used by intelligence analysts in exercises and develops solutions for integrating Contested Degraded Operations (geographical and communications jamming) into DMO events.

2. Certification & Accreditation (C&A) and Networkiness: The DMOC supports requirements definition, integration test support, scenario development, analysis, systems engineering support, and C&A and Networkiness of core systems. It implements requirements of Cybersecurity and is working toward the application of the Risk Management Framework and Continuous Monitoring. Efforts include test & evaluation of the Distributed Training Network Guard (DTNG), a DMOC/NAVAIR partnership; accreditation work for various interoperability tools such as the DMOC Replay Tool, Dr. J, and the DIS filter tool.

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force				Date: February 2015		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development		R-1 Program Element (Number/Name) PE 0207605F I Wargaming and Simulation Centers				
3. Distributed Training Sites & Systems Integration: DMOC integrates distributed training sites and systems into LVC DMO training events such as VF and Coalition VF (four-eyes event) by resolving interoperability issues between disparate systems and networks so that all exercise participants can interact in the DMO environment. New sites and systems are incorporated into LVC DMO events each year based on higher headquarters and Combatant Commanders (CCDRs) emerging requirements.						
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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget		5.512	5.956	6.075	-	6.075
Current President's Budget		5.326	5.956	6.035	-	6.035
Total Adjustments		-0.186	-	-0.040	-	-0.040
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-0.186	-			
• Other Adjustments		-	-	-0.040	-	-0.040
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2014	FY 2015	FY 2016
Title: Distributed Mission Operations (DMO) Capability / Battlespace Systems Development				3.355	3.826	3.860
Description: Simulation software/hardware development in support of users conducting RDT&E, mission rehearsal, and concepts of operation development.						
FY 2014 Accomplishments: Enhanced Red and Blue Air/Ground/Sea simulators (NGTS version 3.0.0 to 3.1.0); developed/integrated the findings from the FY13 Contested Degraded Opearations (CDO) study; continued development of DMO tools such as Map Status (MAPSTAT) and the Distributed Interactive Simulation (DIS) Mu Law Decoder and Analyzer (DISMLDAA); developed next-gen JTAC TACP Operational Simulator interfaces; developed Space-Based Infrared Space System Trainer (SBIRS-ST); developed Synthetic Radar Interface for the Battlefield Command and Control Center (BC3); continued controlled interface ruleset development for coalition events.						
FY 2015 Plans: Finalize the integration of Blue Air environment generator to DMOC White Force capability within NGTS version 3. Continue improvements to Red and Blue Air/Ground/Sea simulation (NGTS - ver 3.1.0 to 3.1.6); continue development of DMO tools such						

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force		Date: February 2015		
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 0207605F <i>I Wargaming and Simulation Centers</i>		
C. Accomplishments/Planned Programs (\$ in Millions) as Dr. J, DMOC Replay Tool, and the DIS Filter tool as modifications/improvements are identified after completion of DMO events, these efforts support Modeling & Simulation technology and emerging Air Force and COCOM requirements. In addition, continue coalition ruleset development for coalition events. FY 2016 Plans: Will continue improvements to Red and Blue Air/Ground/Sea simulation (NGTS - ver 3.1.6 to 3.2.0); will continue development of DMO tools such as Dr. J, DMOC Replay Tool, and the DIS Filter tool as modifications / improvements are identify after completion of DMO events, these efforts will support changing M&S technology and emerging AF and COCOM requirements. In addition, will continue coalition ruleset development for coalition events.		FY 2014	FY 2015	FY 2016
Title: Certification & Accreditation (C&A) and Networkiness Description: Support requirements definition, integration test support, scenario development, analysis, systems engineering support, and C&A and Networkiness of core systems. Implement requirements of Cybersecurity, Risk Management Framework, and Continuous Monitoring. FY 2014 Accomplishments: Continued C&A efforts for Distributed Training Network Guard (DTNG) and Multinational Information Sharing (MNIS) rulesets and other emerging requirements based on technology changes. Implemented requirements of Cybersecurity, Risk Management framework, and Continuous Monitoring. FY 2015 Plans: Continue C&A efforts for emerging requirements based on technology changes. Implement requirements of Cybersecurity, Risk Management Framework, and Continuous Monitoring; continue to maintain Battlespace accreditation. FY 2016 Plans: Will continue C&A efforts for emerging requirements based on technology changes. Will implement requirements of Cybersecurity, Risk Management Framework, and Continuous Monitoring; will continue to maintain Battlespace accreditation.		1.024	1.107	1.130
Title: Distributed Training Sites & Systems Integration Description: Establish site/system integration / interoperability between DMOC, operational units, and modeling & simulation facilities. FY 2014 Accomplishments: Continued the site/system integration for three Virtual Flag (VF) and one Coalition VF (CVF) exercises. Added new sites and systems based on higher headquarters and Combatant Command (COCOM) requirements. Integrated the EC-130H into DMO events. Continued the exploration of a combined Red Flag and VF. Continued to evaluate VF as a possible Joint Interface Control		0.947	1.023	1.045

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force		Date: February 2015		
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 0207605F <i>I Wargaming and Simulation Centers</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
<p>Officer (JICO) certification venue. Developed "High Side" VF spiral event in cooperation with Combat Air Forces Distributed Training Center (CAF DTC) to enable F-22, F-15C, F-15E, F-16 and E-3s to conduct Operations Plan (OPLAN) familiarization for emerging Pacific Command (PACOM) requirement.</p> <p>FY 2015 Plans: Continue the site/system integration of three VF and one CVF exercises. Continue to add new sites and systems based on higher headquarter and COCOM requirements. Continue to execute Red Flag and Virtual Flag exercises. Integrate USN/USMC F/A-18 aircraft, P-8 and P-3 aircraft. Develop strategies to convert live radar data into simulator data to enable control by Live or Virtual Command and Control (C2). Continue cross domain requirements to add F-22 into VF at the appropriate classification level. Continue to develop VF spiral events that allow USAF aircraft to operate at full combat capability. Add Communications Intelligence (COMINT) capabilities for Intelligence, Surveillance, and Reconnaissance (ISR) airmen to fully train for major combat operations as Counterinsurgency (COIN) operations decrease.</p> <p>FY 2016 Plans: Will continue the site/system integration of three VF and one CVF exercises. Will continue to add new sites and systems based on higher headquarter and COCOM requirements. Will continue to bring live operations from USAF training ranges into Virtual-Constructive (VC) training environment to meet CSAF Live Virtual Constructive Operational Training (LVC-OT) roadmap. Will work cross domain solution to bring NATO virtual systems into CVF.</p>				
Accomplishments/Planned Programs Subtotals		5.326	5.956	6.035
D. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
E. Acquisition Strategy				
<p>The Distributed Mission Operations Center (DMOC) supports AF/Joint/Coalition DMO and the Joint National Training Capability (JNTC) through the development and integration of DMO training and test events, networks, scenarios, and databases. Due to evolving modeling & simulation technology, the DMOC is an on-going, evolutionary effort to keep pace with those changes by continuously developing/upgrading DMO environment generators, systems, and tools and ensuring integration/interoperability of new systems into DMO to provide the best warfighter training possible.</p> <p>DMOC awards full and open contracts that manage the acquisition, development, testing, and integration of DMO standards, training, modeling and simulation, cross-domain information sharing testbed, and exercises on AF/Joint/Coalition DMO networks.</p>				

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0207605F / <i>Wargaming and Simulation Centers</i>	
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.		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207605F / Wargaming and Simulation Centers				Project (Number/Name) 672888 / Distributed Mission Operations Center (DMOC)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Distributed Mission Operations (DMO) Capability / Battlespace Systems Development	C/CPFF	Lockheed Martin : Kirtland AFB, NM	-	2.330	Mar 2014	2.719	Mar 2015	2.733	Mar 2016	-		2.733	Continuing	Continuing	-
Certification & Accreditation (C&A) and Worthiness	C/CPFF	Lockheed Martin : Kirtland AFB, NM	-	0.692	Mar 2014	0.748	Mar 2015	0.763	Mar 2016	-		0.763	Continuing	Continuing	-
Distributed Training Sites & Systems Integration	C/CPFF	Lockheed Martin : Kirtland AFB, NM	-	0.277	Mar 2014	0.299	Mar 2015	0.305	Mar 2016	-		0.305	Continuing	Continuing	-
Subtotal			-	3.299		3.766		3.801		-		3.801	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Technical requirements development, integration/ acceptance testing, and engineering support	C/FFP	Alpha-Omega Change Engineering, Inc. : Kirtland AFB, NM	-	1.469	Sep 2014	1.587	Sep 2015	1.619	Sep 2016	-		1.619	Continuing	Continuing	-
Subtotal			-	1.469		1.587		1.619		-		1.619	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015		
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207605F / <i>Wargaming and Simulation Centers</i>				Project (Number/Name) 672888 / <i>Distributed Mission Operations Center (DMOC)</i>				

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Program Management Office Support	Various	705 CTS : Kirtland AFB, NM	-	0.558	Oct 2013	0.603	Oct 2014	0.615	Oct 2015	-		0.615	Continuing	Continuing	-
Subtotal			-	0.558		0.603		0.615		-		0.615	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	5.326		5.956		6.035		-		6.035	-	-	-

Remarks

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force										Date: February 2015									
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)									
3600 / 7					PE 0207605F / Wargaming and Simulation Centers					672888 / Distributed Mission Operations Center (DMOC)									

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
DMO Capability / Battlespace Systems Development																												
Certification & Accreditation (C&A) and Networthiness																												
Distributed Training Sites & Systems Integration																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force			Date: February 2015
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207605F / <i>Wargaming and Simulation Centers</i>	Project (Number/Name) 672888 / <i>Distributed Mission Operations Center (DMOC)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DMO Capability / Battlespace Systems Development	1	2014	4	2020
Certification & Accreditation (C&A) and Networthiness	1	2014	4	2020
Distributed Training Sites & Systems Integration	1	2014	4	2020