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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / <i>Full Combat Mission Training</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	12.528	7.597	7.754	0.000	7.754	7.939	8.094	8.377	8.543	Continuing	Continuing
655012: <i>Full Combat Mission Training</i>	-	12.528	7.597	7.754	0.000	7.754	7.939	8.094	8.377	8.543	Continuing	Continuing

**Note**

In FY 2025, PE 0207605F, Wargaming and Simulation Centers, Project 672888, Distributed Mission Operations Center, efforts were transferred to PE 0207701F, Full Combat Mission Training, Project 672888, Distributed Mission Operations Center to meet higher priority AF Operational Readiness and Training efficiencies. Subsequently, PE 0207701F now resides in BA05 (AFRL integration work) and BA07 (DMOC Efforts).

**A. Mission Description and Budget Item Justification**

Full Combat Mission Training (FCMT) supports Air Force Distributed Mission Operations (DMO), Live-Synthetic Blended and Joint Simulation Environment (JSE) integration. FCMT funding provides research in areas benefiting the DMO/Live Virtual Constructive (LVC) environment and the Air Force JSE enterprise. It also provides research and development to facilitate integration of fielded and newly acquired Air Force owned training devices into DMO/LVC networks and JSE; enhances the quality of training for the systems added to the network; enables aircrews to network with LVC components to form the integrated DMO battlespace; links geographically distributed high-fidelity combat and combat support training devices including Command and Control and Intelligence, Surveillance, and Reconnaissance systems and develops, demonstrates, and inserts Multi-Level Security (MLS) capability. This capability enables warfighters to exercise and train at the operational and strategic levels of war, conduct networked unit-level training at home station and high-end test and training at joint test and training sites.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.00M was expended for civilian pay expenses in this program element. FY24 \$0.00M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	12.528	7.597	7.740	0.000	7.740
Current President's Budget	12.528	7.597	7.754	0.000	7.754
Total Adjustments	0.000	0.000	0.014	0.000	0.014
• 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	0.000	0.000	0.014	0.000	0.014

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 655012: *Full Combat Mission Training*

Congressional Add: *Airborne Augmented Reality for Pilot Training*

Congressional Add Subtotals for Project: 655012

Congressional Add Totals for all Projects

	<b>FY 2023</b>	<b>FY 2024</b>
	9.500	-
	9.500	-
	9.500	-

**Change Summary Explanation**

No other significant changes.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training				<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
655012: Full Combat Mission Training	-	12.528	7.597	7.754	0.000	7.754	7.939	8.094	8.377	8.543	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Full Combat Mission Training (FCMT) supports Air Force Distributed Mission Operations (DMO), Live-Synthetic, Blended, and Joint Simulation Environment (JSE) integration. FCMT funding provides research in areas benefiting the DMO/Live Virtual Constructive (LVC) environment as a whole; provides research and development to facilitate integration of fielded and newly acquired Air Force owned training devices into DMO/LVC networks; enhances the quality of training for the systems added to the network; enables aircrews to network with LVC components to form the integrated DMO battlespace; links geographically distributed high-fidelity combat and combat support training devices including Command and Control and Intelligence, Surveillance, and Reconnaissance systems and develops, demonstrates, and inserts Multi-Level Security (MLS) capability. This capability enables warfighters to exercise and train at the operational and strategic levels of war as well as conduct networked unit-level training at home station.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.00M was expended for civilian pay expenses in this program element. FY24 \$0.00M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Cross Domain Solutions (CDS)	0.980	3.420	3.489
<b>Description:</b> Development, demonstration, and insertion of Multi-Level Security (MLS) capability supporting Live Virtual Constructive training for fifth generation platforms.			
<b>FY 2024 Plans:</b> Validate the F-35 CDS. Begin the migration of the CDS to other simulation platforms (F-22 and F-16).			
<b>FY 2025 Plans:</b> Validate Rule Sets for FVEY CDS solution. Begin work to rapidly search SCGs to identify CDS rule set focus areas. Continue DMO/JSE MLS development and validation. Create common rule sets for interoperability.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to inflationary increase of funding from FY24 to FY25			
<b>Title:</b> Distributed Mission Operations Development	0.803	1.899	1.939

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> Development, demonstrations, studies and insertions of Live Virtual Constructive related technologies and proficiency based continuation training strategies.</p> <p><b>FY 2024 Plans:</b> Evaluate training tools for implementation in the Joint Simulation Environment (JSE).</p> <p><b>FY 2025 Plans:</b> Development work to ensure persistent JSE/DMO interoperability. Demonstrate JSE/DMO interoperability in at least two mission training applications.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to related to demand signals for JSE growth and needed interoperability with DMO infrastructure.</p>				
<p><b>Title:</b> Development and validation of DMO/JSE and Blended training assessments tools.</p> <p><b>Description:</b> Studies to assess and validate Live Virtual Constructive (LVC) training and accreditation of portions of this process; studies to develop objective enhancement and measurement tools DMO/JSE and blended training environments.</p> <p><b>FY 2024 Plans:</b> The FY24 plan is to migrate predictive analytic tools into routine operational training readiness assessment and reporting.</p> <p><b>FY 2025 Plans:</b> Continue trade space analytics for integrating purpose built components into the JSE ecosystem to support local and distributed blended training events. Demonstrate blended training and JSE interoperability in live flight exemplars.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to the demand signals for broader JSE mission applications and needs for blended training interoperability demonstrations.</p>		0.620	1.139	1.163
<p><b>Title:</b> Network Studies</p> <p><b>Description:</b> Research and development to provide for the integration of fielded and newly introduced Air Force, Joint and Coalition high-fidelity flight and mission trainers.</p> <p><b>FY 2024 Plans:</b> Demonstrate seamless training effectiveness and proficiency tracking from AETC to ACC and into operations.</p> <p><b>FY 2025 Plans:</b></p>		0.625	1.139	1.163

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
Begin evaluations of local and distributed services that reduce network transport delays while maintaining/enhancing training quality services. Perform quality of training evaluations for JSE components. Evaluate alternative approaches for on-premise and cloud-based services supporting improved network responsiveness and agility.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding increased due to budget fluctuations, but level of activity is planned with this in mind.			
<b>Accomplishments/Planned Programs Subtotals</b>	3.028	7.597	7.754

	FY 2023	FY 2024
<b><i>Congressional Add:</i></b> Airborne Augmented Reality for Pilot Training	9.500	-
<b><i>FY 2023 Accomplishments:</i></b> Development of visual capabilities for live, virtual and construct air combat training systems.		
<b>Congressional Adds Subtotals</b>	9.500	-

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Air Force Research Laboratory (AFRL) will conduct research/studies to develop/implement Cross Domain Solutions (CDS) supporting integrated DMO/JSE and Live-synthetic blended training. Fielded and projected Air Force flight and mission training systems without blended training capability and will be modified to ensure training compatibility.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 5				PE 0207701F / Full Combat Mission Training				655012 / Full Combat Mission Training							
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
Augmented Reality Development	SS/FFP	Air Force Research Lab : WPAFB, OH	-	9.500	Jan 2023	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	9.500		-		-		-		-	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
Cross Domain Solutions (CDS): Development, Testing and insertion of Multi-Level-Security protocols, Cross Domain rule set development and accreditation	Various	Air Force Research Lab, 711 Human Performance Wing, Human : Dayton, OH	-	0.980	Jan 2023	3.420	Jan 2024	3.482	Nov 2024	-		3.482	Continuing	Continuing	-
Develop DMO/ JSE Blended training capabilities: demonstration, studies and insertion of distributedmission ops related technologies.	Various	Air Force Research Lab, 711 Human Performance Wing : Dayton, OH	-	0.803	Jan 2023	1.899	Jan 2024	1.934	Nov 2024	-		1.934	Continuing	Continuing	-
Validation of warfighter seasoning and development of objective performance enhancements for DMO/ JSE/Blended environment.	Various	Air Force Research Lab, 711 Human Performance Wing : Dayton, OH	-	0.620	Jan 2023	1.139	Jan 2024	1.161	Nov 2024	-		1.161	Continuing	Continuing	-
Other Network Studies: Supporting integration of newly fielded high-fidelity training systems and networks	Various	Air Force Research Lab, 711 Human Performance Wing : Dayton, OH	-	0.625	Jan 2023	1.139	Jan 2024	1.161	Nov 2024	-		1.161	Continuing	Continuing	-
<b>Subtotal</b>			-	3.028		7.597		7.738		-		7.738	Continuing	Continuing	N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	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>Joint Simulation Environment phase 1</b>																												
Develop Multi-Level Security testbed and support testing on 5th Gen systems	██████████																											
Develop 4th to 5th generation rule sets for coalition integration	██████████																											
Develop metrics for routine proficiency evaluations and determine standard format for storing/analyzing proficiency data	██████████																											
Create and evaluate alternative data formats for routinely tracking and storing performance and proficiency data	██																											
Refine learning managed scenario and integrate with blended training events	██																											
Develop and integrate After Action Review tools for Mission Training Centers	██																											
Develop metrics and tools to measure training proficiency gained during blended training events/standardized implementation at Distributed training Centers (DTCs)	████████████████████																											
Conduct interoperability studies to evaluate the training value of 5th generation interoperable coalition training on the Combat Air Forces (CAF) DMO network and in JSE	████████████████████																											
Develop joint and coalition data standards and evaluate data management methods to support a full range of blended training	██████████																											
Demonstrate persistent performance measurement and readiness assessment in fourth to 5th generation training events	██																											





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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	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
Develop gateways and CDS to integrate high-fidelity trainers with Air Force, joint and coalition networks																												
Evaluate compressed DIS network standards for CDS in DMO; evaluate JSE alternatives																												
Integrate and evaluate multi-domain operations and kill-chain training scenarios for contested environments																												
Evaluate multi-national mission planning and debrief technologies in research training events																												
Implement, evaluate and field technologies aligned with future training strategies for LVC																												
Develop specifications for live data harvesting using encrypted systems and tools																												
Update Five Eyes (FVEY) rule sets for full 4th, 5th and collaborative combat aircraft tactical employment training																												
Create Secure testbed environment for kill chain and JADC2 ops training via DMO/JSE and blended training																												
<b>Joint Simulation Environment Phase 4</b>																												
Release Request For Proposal (RFP)																												
Award Development Contract																												
Begin initial Design and Development efforts																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Joint Simulation Environment phase 1</b>				
Develop Multi-Level Security testbed and support testing on 5th Gen systems	1	2023	2	2023
Develop 4th to 5th generation rule sets for coalition integration	1	2023	2	2023
Develop metrics for routine proficiency evaluations and determine standard format for storing/analyzing proficiency data	1	2023	2	2023
Create and evaluate alternative data formats for routinely tracking and storing performance and proficiency data	1	2023	4	2024
Refine learning managed scenario and integrate with blended training events	1	2023	1	2025
Develop and integrate After Action Review tools for Mission Training Centers	1	2023	2	2025
Develop metrics and tools to measure training proficiency gained during blended training events/standardized implementation at Distributed training Centers (DTCs)	1	2023	4	2023
Conduct interoperability studies to evaluate the training value of 5th generation interoperable coalition training on the Combat Air Forces (CAF) DMO network and in JSE	1	2023	4	2023
Develop joint and coalition data standards and evaluate data management methods to support a full range of blended training	1	2023	3	2023
Demonstrate persistent performance measurement and readiness assessment in fourth to 5th generation training events	1	2023	3	2026
Develop gateways and CDS to integrate high-fidelity trainers with Air Force, joint, and coalition networks	1	2023	1	2024
Evaluate compressed DIS network standards for CDS in DMO/Blended training	1	2023	3	2025
Integrate and evaluate multi-domain operations and kill-chain training strategies for JSE/Blended training	1	2024	3	2026
Evaluate multi-national mission planning and debrief technologies in research training events	3	2023	2	2025

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**Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Implement, evaluate, and field technologies aligned with future training strategies for LVC	1	2023	2	2025
Develop specifications for live data harvesting using encrypted systems and tools	2	2023	4	2026
Update Five Eyes (FVEY) rule sets for full 4th, 5th and autonomous tactical employment training	4	2024	4	2026
Create Secure LVC testbed environment for kill chain and JADC2 ops training via DMO/JSE	4	2024	3	2027
<b>Joint Simulation Environment Phase 2</b>				
Release Request For Proposal (RFP)	3	2023	3	2023
Award Development Contract	2	2023	2	2023
Begin initial design and development efforts	2	2023	2	2024
<b>Joint simulation environment Phase 3</b>				
Develop Multi-Level Security testbed and support testing on 5th Gen systems	3	2023	2	2024
Develop 4th and 5th Generation rule sets for coalition integration	1	2023	2	2023
Develop metrics for routine proficiency evaluations and determine standard format for storing /analyzing proficiency data	1	2023	2	2023
Create and evaluate alternative data formats for routinely tracking and storing performance and proficiency data	1	2023	1	2025
Refine learning managed scenario and integrate with DMO/JSE/Blended training events	2	2024	2	2026
Develop and integrate After Action Review tools for Mission Training Centers	1	2023	4	2025
Develop metrics and tools to measure training proficiency gained during blended training events /standardize implementation at Distributed Training Centers (DTCs)	1	2023	4	2025
Conduct interoperability studies to evaluate the training value of 5th Gen interoperable coalition training on the Combat Air Forces (CAF) DMO network and in JSE events	3	2024	3	2026
Develop joint and coalition data standards and evaluate data management methods to support blended training events	1	2023	3	2026

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training
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<b>Events by Sub Project</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Demonstrate persistent performance measurement and readiness assessment in fourth and 5th Gen JSE and blended training events	3	2024	4	2026
Develop gateways and CDS to integrate high-fidelity trainers with Air Force, joint and coalition networks	1	2023	3	2025
Evaluate compressed DIS network standards for CDS in DMO; evaluate JSE alternatives	4	2024	2	2026
Integrate and evaluate multi-domain operations and kill-chain training scenarios for contested environments	1	2023	4	2024
Evaluate multi-national mission planning and debrief technologies in research training events	4	2024	4	2027
Implement, evaluate and field technologies aligned with future training strategies for LVC	1	2023	2	2025
Develop specifications for live data harvesting using encrypted systems and tools	2	2023	4	2026
Update Five Eyes (FVEY) rule sets for full 4th, 5th and collaborative combat aircraft tactical employment training	2	2025	4	2027
Create Secure testbed environment for kill chain and JADC2 ops training via DMO/JSE and blended training	4	2024	4	2026
<b>Joint Simulation Environment Phase 4</b>				
Release Request For Proposal (RFP)	2	2023	3	2023
Award Development Contract	2	2023	2	2023
Begin initial Design and Development efforts	2	2023	2	2024