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

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0207606F <i>Joint Simulation Environment (JSE)</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	-	0.000	0.000	191.337	0.000	191.337	363.646	337.691	367.214	342.712	Continuing	Continuing
642407: <i>Joint Simulation Environment</i>	-	0.000	0.000	191.337	0.000	191.337	363.646	337.691	367.214	342.712	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In FY 2025, PE 0207142F, F-35 Squadrons, Project 675346, F-35 efforts were transferred to PE 0207606F, Joint Simulation Environment (JSE), Project 642407, Joint Simulation Environment, in order to consolidate all JSE funding under one PE 0207606F. This is not a new start.

In FY 2025, PE 0207605F, Wargaming and Simulation Centers, Project 672888, Distributed Mission Operations Center (DMOC) efforts were transferred to PE 0207606F, Joint Simulation Environment (JSE), Project 642407, Joint Simulation Environment, in order to consolidate all JSE funding under one PE 0207606F. This is not a new start.

Joint Simulation Environment (JSE) is the Air Force's integrated digital test and training range solution, enabling multi-platform, multi-domain interoperability via a government-owned-and operated architecture. It incorporates models for current and next-generation threats, a physics-based environment, and simulators employing platform Operational Flight Program (OFP) software.

JSE supports developmental and operational testing, High-End Advanced Tactics, Training, and Testing (HEAT3), operational plan rehearsals, large force exercises, and aircrew training events. This capability directly supports USAF Warfare Center, USAF Weapon School, Air Force Test Center (AFTC) and Air Force Operational Test and Evaluation Center (AFOTEC) test requirements, and platform training enclaves that cannot train or test in open air due to operational security (OPSEC) and the inability to adequately simulate operations in the real world. JSE encompasses, but is not limited to, lab facilities for development and experimentation, as well as multiple test and training locations: Joint Integrated Test & Training Center Nellis AFB (JITTC-N) (previously known as the Virtual Test & Training Center (VTTC)), Digital Test & Training Range Nellis AFB (DTTR-N), Digital Test & Training Range Edwards AFB (DTTR-E), and future planned location JITTC-E (Joint Base Elmendorf-Richardson).

JSE Platform-In-A-Box ("PIAB - OFP Based Simulator) Development: Entails the study, evaluation, early experimentation, and development for platforms beyond the current/existing F-35 Initial Operational Test & Evaluation (IOT&E) capability. Activities include early analysis of platform Operational Flight Program (OFP) against JSE software and interface standards, as well as common hardware standards enabling remote monitoring, updates, and security management.

JSE Digital Test and Training Ranges: Maintains and upgrades existing test capabilities, to include the continuation of installation, integration, and verification/validation activities in support of fielded and future platforms and Virtual Air Threats (VATS).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force	Date: March 2024
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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0207606F <i>I Joint Simulation Environment (JSE)</i>
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JSE Core Environment Development/Integration: Continues to develop JSE foundational capabilities enabling further test, integration, and training. Activities include but are not limited to experimentation, development/enhancement of JSE connected systems, tools, services, hardware, and simulators to integrate and enhance new and existing digital entities (platforms, sensors, adversary & friendly weapons, ground & airborne threats), blue weapons models, manned airborne threat simulators, and common services including but not limited to weather effects, infrared (IR) models, cyber, and space.

Funding may also be used to address Diminishing Manufacturing Sources (DMS) issues, obsolescence resolution and similar emerging requirements, as well as for overarching programmatic support. The JSE Enterprise intent is to replicate the digital test and training range capability at multiple test and training locations. Funding for this exhibit is contained in PE 0207606F.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

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. As this PE was established in FY 2025, civilian pay costs in FY 2023 and FY 2024 are non-applicable.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary (\$ in Millions)	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	191.337	0.000	191.337
Total Adjustments	0.000	0.000	191.337	0.000	191.337
• 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	191.337	0.000	191.337

C. Accomplishments/Planned Programs (\$ in Millions)	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>
Title: JSE Platform In-A-Box ("PIAB"- OFP Based Simulator) Development	0.000	0.000	37.605
Description: Includes, but is not limited to, platform study, evaluation, and early experimentation activities to assess Operational Flight Program (OFP) against JSE Government Simulator Interface (GSI) and Simulator Common Architecture, Requirements, &			

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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>		R-1 Program Element (Number/Name) PE 0207606F <i>I Joint Simulation Environment (JSE)</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>Standards (SCARS). The integration of additional/future platforms will utilize government-developed architecture and standards to re-host OFPs, and initial analysis/studies will provide data to support the continued development of the environment itself. Involves the evaluation and integration of new and emerging technologies including, but not limited to, Extended Reality (XR)/ Virtual Reality (VR) goggle capability, artificial intelligence (AI), and common hardware solutions, to include common cockpit configurations for training-focused sites. Supports research and development activities to generate data/conduct analysis of platform OFP-based simulators' hardware and software, to support the integration and testing of OFP-based simulators through common development standards.</p> <p>FY 2024 Plans: N/A</p> <p>FY 2025 Plans: Conduct studies, evaluations, and early experimentation activities necessary to assess Operational Flight Program (OFP) interoperability - specifically, F-35, F-22, and F-15EX platform OFPs, but not limited to - with the synthetic environment, as well as compare OFPs against JSE GSI and SCARS Simulator standards. Initiate the evaluation and integration of new technologies including, but not limited to, XR/VR Goggle capability, and JSE common cockpit configuration.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased due to consolidation of funds from PE 0207142F and PE 0207605F to JSE PE 0207606F, includes studies, evaluations, and early experimentation activities for multiple platform OFPs.</p>				
<p>Title: JSE Digital Test and Training Ranges</p> <p>Description: Maintains existing test capabilities, to include platform installation, integration, and verification and validation activities at DTTR-N and DTTR-E (Digital Test and Training Range Nellis and Edwards, respectively). Supports ongoing day-to-day digital test range operations, JSE organic development capability, and fielded and future Operational Test & Evaluation (OT&E) and Developmental Test & Evaluation (DT&E) activities. Establishes groundwork for hardware in-the-loop testing capability, future platform testing capability, and early experimentation efforts.</p> <p>FY 2024 Plans: N/A</p> <p>FY 2025 Plans: Plans include, but are not limited to, continued F-35, F-22, and Virtual Air Threats (VATS) installation, integration, and verification and validation activities. Continued support for day-to-day digital test and training range operations, JSE organic development</p>		0.000	0.000	17.810

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
capability, and fifth generation Operational Test & Evaluation (OT&E) activities. Establish foundation for hardware in-the-loop testing capability, future platform testing capability, and early experimentation efforts. FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased due to consolidation of funds from PE 0207142F and PE 0207605F to JSE PE 0207606F, and to support additional platform integration test and evaluation activities.				
Title: JSE Core Environment Development/Integration Description: Continues to develop JSE capabilities enabling further test, integration, and training. Development activities are accomplished by leveraging USAF and USN organic software development capabilities at geographically separated locations using shared classified environments, known collectively as the JSE Common Development Environment (CDE). CDE provides the foundation for secure digital collaboration, to perform DevSecOps (development, security, and operations) activities, share code, evaluate new capabilities, and distribute updated software versions to all connected locations. Costs include, but are not limited to, establishing equipment, personnel, processes, contracts, etc. to support JSE product development for the Air Force. FY 2024 Plans: N/A FY 2025 Plans: Efforts include, but are not limited to, continued Global Reusable Interface Domain (GRID) development, Next Generation Threat System (NGTS) virtual entities expansion, Weapon Server Common Environment (WSCE) server weapons integration, advanced strategic weapons, GRID core services (weather, Infrared, Electronic Warfare, Cyber, Space, data links, communication, etc.), Virtual Air Threats (VATs) development and Multi Mission Test Platform (MMTPs) refinement. Continue to develop, test, document, and deliver aircraft threat models using the Threat Modeling and Analysis Program (TMAP), Collaborative Development Environment at higher security levels, Multi-Level Security experimentation, and continued capability integration within JSE. FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased due to consolidation of funds from PE 0207142F and PE 0207605F to JSE PE 0207606F, as well as addition of funds to PE 0207606F to support increased development of core synthetic environment.		0.000	0.000	135.922
Accomplishments/Planned Programs Subtotals		0.000	0.000	191.337
D. Other Program Funding Summary (\$ in Millions) N/A Remarks				

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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0207606F <i>I Joint Simulation Environment (JSE)</i>
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E. Acquisition Strategy
The JSE program will leverage a combination of interagency agreements and contracts to support the continued development, experimentation, integration, testing and fielding of the core environment software and hardware infrastructure. Designation of an Air Force Program Executive Officer (PEO) for this JSE effort occurred in December 2022, and a Lead MAJCOM was established in March 2023. As such, the Air Force Program Office is actively pursuing the most effective strategies and acquisition pathways for accomplishing the various lines of effort under the JSE Enterprise. To support integration of additional platforms with the synthetic environment, the JSE program office will execute agreements with aircraft platform program offices and leverage existing platform contracts to support risk reduction, development, integration & test of additional platform-specific simulator capabilities. Services contracts will be leveraged to support test support operations requirements at sites intended to perform JSE-based developmental and operational test, to perform test capability development and test customer support activities. Additionally, the Air Force Program Office will continue to engage with its Navy counterparts to ensure DAF requirements are met, as well as to maintain a shared understanding and commonality across the JSE Enterprise.

Costs include, but are not limited to, establishing equipment, personnel, processes, contracts, etc. to support JSE Enterprise product development.

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0207606F / <i>Joint Simulation Environment (JSE)</i>	Project (Number/Name) 642407 / <i>Joint Simulation Environment</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Joint Simulation Environment Development</i>				
Software Pathway Planning Phase	1	2024	2	2025
Software Pathway Execution Phase	2	2025	4	2029
Minimum Viable Product (MVP)	2	2026	2	2026