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

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605718A / <i>Army Modeling & Sim X-Cmd Collaboration & Integ</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	-	5.874	11.204	11.257	-	11.257	11.262	11.296	11.364	11.478	0.000	73.735
S02: <i>HQDA DECISION SUPPORT TOOLS & SERVICES</i>	-	-	-	8.334	-	8.334	8.334	8.334	8.365	3.390	0.000	36.757
S03: <i>Analysis M&S Tools and Services</i>	-	5.874	11.204	2.923	-	2.923	2.928	2.962	2.999	8.088	0.000	36.978

Note

Funding realigned from Project S03/Analysis M&S Tools and Services to Project S02/HQDA DECISION SUPPORT TOOLS & SERVICES in FY 2025.

A. Mission Description and Budget Item Justification

This Program Element (PE) promotes the Army's Modeling and Simulation (M&S) strategy, defined by five guiding priorities: (1) formulate Army M&S policies; (2) develop and employ management processes for models, simulations and data; (3) develop M&S standards, architectures, networks and environments; (4) develop/employ new M&S tools and simulation technology; (5) develop an M&S workforce. Specifically, this PE focuses on priorities 3 and 4 to include the modernization of the Center for Army Analysis (CAA) models, simulations, and analytic capabilities.

M&S Standards, Architectures, Networks and Environments: The consistent use of standards, architectures, networks and environments advances the goal of interoperability. The Army coordinates with Joint, Interagency, Intergovernmental, and Multinational (JIIM) partners along with industry and academia to develop/employ standards that promote collaboration and facilitate the sharing of tools, data and information. The Army oversees procedures and processes for the appropriate use of standards to foster common formats and increase M&S and data reuse. The Army ensures these standards, architectures, networks and environments are readily accessible and can be reliably applied by users.

M&S Tools and Simulation Technology: The Army must have credible M&S tools and data to support the full range of Army organizational missions and functional responsibilities. M&S results that are timely and credible enhance decision making. The Army must develop and accredit reliable M&S tools so that decision makers and senior leaders benefit from the results and thus support the continued development, integration and use of such tools. To ensure credibility and reliability of results, M&S managers, developers and users must make the capabilities, constraints, limitations and assumptions of their M&S tools readily accessible. PE 0605718A provides for the development and employment of tools in the form of models, simulations and data that support the full range of Army missions and deliver timely information to Army senior leaders. Moreover, these tools can be documented, verified, validated and accredited for their intended purpose in order to provide timely, credible results.

Until FY25, this program element will continue to support modernization of the analytic tools utilized by Center for Army Analysis. CAA conducts analysis of senior-level decisions for current and future national security issues. The suite of models, simulations, and analytic tools must remain relevant, current, and responsive to the ever-changing Operational Environment in order to support effectively the Army's analytic requirements.

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This program element supports the Center for Army Analysis (CAA) mission to conduct decision support analysis across the spectrum of conflict in joint and multinational contexts for the purpose of supporting senior level decisions on current and future national security issues. In partial furtherance of this mission, CAA leverages a theater campaign model representing joint and combined operational maneuver that requires updating to suitably reflect emerging operational concepts such as Multi-Domain Operations.

This program element enables realization of a modernized theater campaign analysis model that provides a tractable, flexible, and extensible representation of Army capabilities and their effects on major combat operations in crisis and conflict.

B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	6.097	11.204	11.234	-	11.234
Current President's Budget	5.874	11.204	11.257	-	11.257
Total Adjustments	-0.223	0.000	0.023	-	0.023
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.223	-			
• Adjustments to Budget Years	-	-	0.023	-	0.023

Change Summary Explanation

Minor increase in FY25 funding from the previous PB to the current PB due to revised economic assumptions.

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Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605718A / Army Modeling & Sim X-Cmd Collaboration & Integ	Project (Number/Name) S02 / HQDA DECISION SUPPORT TOOLS & SERVICES
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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
S02: HQDA DECISION SUPPORT TOOLS & SERVICES	-	-	-	8.334	-	8.334	8.334	8.334	8.365	3.390	0.000	36.757
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Funding realigned from Project S03/Analysis M&S Tools and Services to Project S02/HQDA DECISION SUPPORT TOOLS & SERVICES in FY 2025.

A. Mission Description and Budget Item Justification

HQDA Decision Support Tools and Services assesses existing modeling and simulation tools, available data sources, and completed and ongoing research in order to implement adapt, and/or create algorithms and software that improve the accuracy and relevance of theater campaign analysis performed in joint and combined multi-domain contexts.

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

	FY 2023	FY 2024	FY 2025
Title: Campaign Model Modernization	-	-	8.334
Description: This project assesses extant modeling and simulation tools, available data sources, and completed and ongoing research in order to implement, adapt, and/or create algorithms and software improving the accuracy and relevance of theater campaign analysis performed in joint and combined multi-domain contexts.			
FY 2025 Plans: FY25 funds will be applied against efforts to continue assessment of currently available models for suitability, transitioning where and as appropriate to constructive efforts to build a campaign analysis model that reflects multi-domain operations with suitable precision and accuracy. Efforts may incorporate elements of research (to include subject matter expert interviews), systems engineering, software architecture, and software engineering; FY25 efforts will likely begin shifting toward software architecture and engineering.			
FY 2024 to FY 2025 Increase/Decrease Statement: Funding realigned from Project S03/Analysis M&S Tools and Services.			
Accomplishments/Planned Programs Subtotals	-	-	8.334

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

N/A

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Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605718A / <i>Army Modeling & Sim X-Cmd d Collaboration & Integ</i>	Project (Number/Name) <i>S02 / HQDA DECISION SUPPORT TOOLS & SERVICES</i>

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

Remarks

D. Acquisition Strategy

N/A

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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
S03: Analysis M&S Tools and Services	-	5.874	11.204	2.923	-	2.923	2.928	2.962	2.999	8.088	0.000	36.978
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project has two functions:

Function 1 (Priority 3 of the "Army Modeling and Simulation (M&S) Strategy") -- Develop M&S standards, architectures, networks and environments that promote sharing, interoperability, access, and reliable application of tools, formats, data and information among/for users.

Function 2 (priority 4 of the "Army M&S Strategy") -- Develop and improve tools and technology in the form of models, simulations and data that support the full range of Army interests and deliver timely information to enhance effective decision making. These tools can be documented, verified, validated and accredited for their intended purpose.

Resources under Project S03 support the M&S communities (Acquisition, Analysis, Experimentation, Test & Evaluation, Training, Intelligence) at the enterprise level through enabling efforts. These efforts include the following: (a) design models, simulations, data and tools that are resident within one organization but reusable and trusted by M&S users and specialists across the Army M&S enterprise; (b) leverage industry and academia; (c) promote interoperability within M&S and between M&S and operational capabilities.

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

	FY 2023	FY 2024	FY 2025
Title: Develop M&S tools and technology	3.862	7.639	1.989
Description: Develop and improve tools and technology in the form of models, simulations and data that support the full range of Army interests and deliver timely information to enhance effective decision making. These tools can be documented, verified and validated for their intended purpose.			
FY 2024 Plans: FY24 funds will be distributed among activities that promote the fourth priority of the Army M&S Strategy: develop M&S tools and technology. Specific FY24 plans include: a.) development of an Army Fires Community AEM; b.) development of network modeling scenarios and models for the test/evaluation and analysis network communities; c.) update and enhance intelligence models for existing simulations and Mission Command Information Systems (MCISs). Includes modernization and life cycle management of CAA's suite of models, simulations, data management, and analytic tools.			
FY 2025 Plans:			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>FY25 funds will be distributed among activities that promote the fourth priority of the Army M&S Strategy: develop M&S tools and technology. Specific FY25 plans include: a.) development of an Army Fires Community AEM; b.) development of network modeling scenarios and models for the test/evaluation and analysis network communities; c.) update and enhance intelligence models for existing simulations and Mission Command Information Systems (MCISs). Includes modernization and life cycle management of CAA's suite of models, simulations, data management, and analytic tools.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Decrease in funding due to realignment from 665718S03 to 665718S02 in support of modernization of analytic tools.</p>				
<p>Title: Develop M&S standards, architectures, networks and environments</p> <p>Description: Develop M&S standards, architectures, networks and environments that promote sharing, interoperability, access, and reliable application of tools, formats, data and information among/for users.</p> <p>FY 2024 Plans: FY23 funds will be distributed among activities that promote the third priority of the Army M&S Strategy: develop M&S standards, architectures, networks and environments. a.) development and access to cyber/electronic warfare simulated environments, b.) development of an enhanced fires training and testing environment, c.) development of an OE signal architecture, d.) enhancement and access to a network modeling architecture that bridges multiple modeling and simulation environments. FY22 M&S standards, architectures, networks and environment plans will be developed to maximize reuse across the Army M&S-enabled communities. Includes modernization and life cycle management of CAA's suite of models, simulations, data management, and analytic tools.</p> <p>FY 2025 Plans: FY25 funds will be distributed among activities that promote the fourth priority of the Army M&S Strategy: develop M&S tools and technology. Specific FY25 plans include the following: a.) development of an Army Fires Community AEM, b.) development of network modeling scenarios and models for the test/evaluation and analysis network communities, c.) update and enhance intelligence models for existing simulations and Mission Command Information Systems (MCISs). Includes modernization and life cycle management of CAA's suite of models, simulations, data management, and analytic tools.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Decrease in funding due to realignment from PE 0605718A/S03 to PE 0605718A/S02 in support of modernization of analytic tools.</p>		2.012	3.565	0.934
Accomplishments/Planned Programs Subtotals		5.874	11.204	2.923

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

N/A

Remarks

D. Acquisition Strategy

N/A