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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Army **Date:** March 2019

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0203758A / Digitization							
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	4.611	6.308	5.270	-	5.270	4.520	4.200	4.200	4.200	0.000	33.309
374: HOR Battlefld Digitizn	-	4.611	6.308	5.270	-	5.270	4.520	4.200	4.200	4.200	0.000	33.309

A. Mission Description and Budget Item Justification

Army Futures Command provides a unique opportunity and a corresponding requirement to fully integrate and synchronize decision support data from across the modernization domain including key processes such as requirements (JCIDS / CARDS), resource programming (PPBE / AE2S and cProbe), Force Management (BOIP Development/FMS/AOS Data) synchronization will ensure an on demand Structure and Composition System (SACS) File, capability to plan, project, and in the current year see and understand equipment demand changes and respond efficiency. Synchronization and integration of FM systems (requirements) with AE2S (Resources) will enable this. This is also key enabler of Dynamic Force Employment as outlined in the 2019 National Defense Strategy. Acquisition (ACWS), financial execution (GFEBS) and systems sustainment (AESIP/ LIW). The major efforts included in the program element are: 1) Integration and synchronization of the Army's interoperability efforts; between joint and multi-national forces, combat materiel, and training efforts. 2) Systems engineering and integration of programmed and prioritized force structure data to digitize the modernization life-cycle from requirements, through PPBE, to divestiture. 3) Further develop Army Equipping Enterprise System (AE2S) to support the Army Modernization enterprise to include Army Futures Command and other Headquarters elements.

Digitization efforts are in support of the Army Equipping Strategy, National Defense Authorization Act 804, and OSD reports to Congress.

B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	4.803	6.316	6.020	-	6.020
Current President's Budget	4.611	6.308	5.270	-	5.270
Total Adjustments	-0.192	-0.008	-0.750	-	-0.750
• Congressional General Reductions	-0.004	-0.008			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.188	-			
• Adjustments to Budget Years	-	-	-0.750	-	-0.750

Change Summary Explanation

The FY 2020 funding request for Army Digitization was reduced to support other Army requirements.

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Appropriation/Budget Activity 2040 / 7					R-1 Program Element (Number/Name) PE 0203758A / Digitization				Project (Number/Name) 374 / HOR Battlefld Digitizn			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
374: HOR Battlefld Digitizn	-	4.611	6.308	5.270	-	5.270	4.520	4.200	4.200	4.200	0.000	33.309
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project allows the Army to further develop improved business practices as it relates to automation, transparency, and auditability, and collaboration. This project includes the funding of ongoing improvement to the Army Equipping Enterprise System (AE2S). AE2S provides the Army staff the ability to execute its planning, programming, budget, and execution (PPBE) mission as it pertains to equipment procurement and fielding. AE2S aggregates authoritative data from multiple Army databases to provide a common operating picture for the Army staff to use in developing funding and fielding solutions for the Army's equipment. It is the tool that Army senior leaders use to develop, review, and approve equipment funding positions. It is used extensively to answer congressional inquiries regarding equipment funding, unit on-hand quantities, projected fielding, and Transparency. This project allows the Army to improve its data architecture and software across systems in order to ensure accurate data is presented appropriately within AE2S. Additionally, this program element funds various Federally Funded Research and Development Center (FFRDC) projects that provide system engineering expertise to provide unbiased advice, formulate course of actions, analyze programs and make technical support and process recommendations to create efficiencies and improve systems. Specifically, these FFRDC projects support financial system and process improvement, equipment management and data visualization, equipment fill projections and automation recommendations. Funding provides independent technical analysis, special studies, and acquisition process improvement. In accordance with the National Defense Authorization Act (NDAA) 804 and support of the Office of the Secretary of Defense's (OSD) report to Congress, the Army is poised to implement an incremental approach to software development and hardware/software capability integration. This process will improve effectiveness in the management of resources, synchronization of programs and improve the auditability of funding to equipment delivery improving transparency and predictability in the equipping process.

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

	FY 2018	FY 2019	FY 2020
Title: Interoperability and Integration	0.781	1.095	0.914
Description: Funds are to be used for the following efforts			
FY 2019 Plans: Continue to conduct independent analyses of Army, joint, and multinational interfaces, adherence to standards, implementation profiles and interoperability baselines			
FY 2020 Plans: FFRDC contractor will continue conduct independent analyses of Army, joint, and multinational interfaces, adherence to standards, implementation profiles and interoperability baselines			
FY 2019 to FY 2020 Increase/Decrease Statement: Decrease from FY 2019 to FY 2020 due to variances in scope of planned accomplishments.			
Title: Operational Capability Analysis and Evaluation	0.825	1.158	0.966

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2018	FY 2019	FY 2020
<p>Description: Funds are to be used for the following efforts</p> <p>FY 2019 Plans: Continue to conduct iterative capability analyses and assessments consistent with CJCSI 3170 (JCIDS) and 6212 (Net Readiness) to ensure Army and joint program technical and operational requirements are consistent. Efforts support army and joint initiatives.</p> <p>FY 2020 Plans: FFRDC contractor will continue to conduct iterative capability analyses and assessments consistent with CJCSI 3170 (JCIDS) and 6212 (Net Readiness) to ensure Army and joint program technical and operational requirements are consistent. Efforts support Army and joint initiatives.</p> <p>FY 2019 to FY 2020 Increase/Decrease Statement: Decrease from FY 2019 to FY 2020 due to variances in scope of planned accomplishments.</p>					
<p>Title: Systems Architecture Development</p> <p>Description: Funds are to be used for the following efforts</p> <p>FY 2019 Plans: Continue to conduct broad concept studies with emphasis on interoperability and joint/coalition operations.</p> <p>FY 2020 Plans: FFRDC contractor will continue to conduct broad concept studies with emphasis on interoperability and joint/coalition operations.</p> <p>FY 2019 to FY 2020 Increase/Decrease Statement: Decrease from FY 2019 to FY 2020 due to variances in scope of planned accomplishments.</p>			0.674	0.945	0.783
<p>Title: AE2S Software</p> <p>Description: Procures AE2S software integration and enhancements for the single program language, single platform system that incorporates FDIIS, CEaVa, COP and AFM.</p> <p>FY 2019 Plans: Continue to integrate existing code-base for FDIIS, AFM and FDKC to reduce overall cost and maintenance footprint and incorporate the development of new applications to satisfy Long-Range Investment Requirements Analysis (LIRA), Sustainment Program Evaluation Group (SS PEG), and Equipping PEG (EE PEG) Manpower.</p> <p>FY 2020 Plans:</p>			1.658	1.684	1.684

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019
Will continue to integrate existing code-base for FDIIS, AFM and FDKC to reduce overall cost and maintenance footprint and incorporate the development of new applications to satisfy Strategic Portfolio Analysis Review (SPAR), Sustainment Program Evaluation Group (SS PEG), and Equipping PEG (EE PEG) Manpower.			
Title: Technical Reviews and Technical Performance Analysis		0.673	0.944
Description: Funds are to be used for the following efforts			
FY 2019 Plans: Continue to provide technology maturity assessments and prepare technical recommendations in support of Army Transformation and specific technologies of interest to G8. Test and evaluate network systems and infrastructure modeling and simulations.			
FY 2020 Plans: FFRDC contractor will continue to provide technology maturity assessments and prepare technical recommendations in support of Army Transformation and specific technologies of interest to G8. Test and evaluate network systems and infrastructure modeling and simulations.			
FY 2019 to FY 2020 Increase/Decrease Statement: Decrease from FY 2019 to FY 2020 due to variances in scope of planned accomplishments.			
Title: Academic Research		-	0.251
Description: Apply university academic and research resources to the integration of Army complex modeling, simulation, and training in support of modernized forces.			0.140
FY 2019 Plans: Apply university academic and research resources to the integration of Army complex modeling, simulation, and training in support of modernized forces.			
FY 2020 Plans: Will continue to apply university academic and research resources to the integration of Army complex modeling, simulation, and training in support of modernized forces.			
FY 2019 to FY 2020 Increase/Decrease Statement: Decrease from FY 2019 to FY 2020 due to variances in scope of planned accomplishments.			
Title: FY 2019 SBIR / STTR Transfer		-	0.231
Description: FY 2019 SBIR / STTR Transfer			-
FY 2019 Plans:			

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2018	FY 2019
FY 2019 SBIR / STTR Transfer			
FY 2019 to FY 2020 Increase/Decrease Statement: FY 2019 SBIR / STTR Transfer			
Accomplishments/Planned Programs Subtotals		4.611	6.308
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy The AE2S development will be done through either a competitive Cost Plus or Fixed Price Incentive contracts that will deliver capabilities in increments, recognizing up front the need for future improvements. The objective of the strategy is to develop and optimize system capabilities while reducing risk and streamlining business and engineering processes. FFRDC requirements will be accomplished by competitive contract. Other efforts will be accomplished by various contract methods and types.			
E. Performance Metrics N/A			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
Appropriation/Budget Activity 2040 / 7						R-1 Program Element (Number/Name) PE 0203758A / Digitization				Project (Number/Name) 374 / HOR Battlefld Digitizn					
Management Services (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Digitization Technical Integration	Various	Various : Various	5.556	-		-		-		-		-	0.000	5.556	-
Joint & Coalition Interoperability	Various	Various : Various	5.091	-		-		-		-		-	0.000	5.091	-
Subtotal			10.647	-		-		-		-		-	0.000	10.647	N/A
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Army Equipping Enterprise SYstem (AE2S) Software	C/CPFF	TBD : TBD	6.939	1.658		1.684		1.684		-		1.684	Continuing	Continuing	Continuing
Cross-Platform Development	Various	TBD : TBD	3.605	-		-		-		-		-	0.000	3.605	-
FY 2019 SBIR / STTR Transfer	TBD	TBD : TBD	-	-		0.231		-		-		-	0.000	0.231	-
Subtotal			10.544	1.658		1.915		1.684		-		1.684	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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
Interoperability and Integration	Various	Various : Various	6.215	0.781		1.095		0.914		-		0.914	0.000	9.005	-
Operational Capability Analysis and Evaluation	Various	VAR : VAR	5.447	0.825		1.158		0.966		-		0.966	0.000	8.396	-
Academic Research	Various	Various : Various	3.231	-		0.251		0.140		-		0.140	0.000	3.622	-
Operational CapabilityAnalysis and Evaluation	Various	Various : Various	5.608	-		-		-		-		-	0.000	5.608	-
Systems Architecture Development	Various	VAR : VAR	5.167	0.674		0.945		0.783		-		0.783	0.000	7.569	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army												Date: March 2019			
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Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 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 Reviews and Technical Performance Analysis	Various	VAR : VAR	4.683	0.673		0.944		0.783		-		0.783	0.000	7.083	-
Subtotal			30.351	2.953		4.393		3.586		-		3.586	0.000	41.283	N/A
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			51.542	4.611		6.308		5.270		-		5.270	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army	Date: March 2019
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Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203758A / <i>Digitization</i>	Project (Number/Name) 374 / <i>HOR Battlefield Digitizn</i>
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Event Name	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
Interoperability and Integration																												
Operational Capability Analysis and Evaluation																												
Systems Architecture Development 3.0																												
Systems Architecture Development 4.0																												
Systems Architecture Development 5.0																												
Army Equipping Enterprise System (AE2S) Software SW 3.0																												
Army Equipping Enterprise System (AE2S) Software SW 4.0																												
Army Equipping Enterprise System (AE2S) Software SW 5.0																												
Technical Reviews and Technical Performance Analysis																												
Academic Research																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203758A / <i>Digitization</i>	Project (Number/Name) 374 / <i>HOR Battlefld Digitizn</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Interoperability and Integration	1	2016	4	2023
Operational Capability Analysis and Evaluation	1	2016	4	2022
Systems Architecture Development 1.0	2	2015	2	2016
Systems Architecture Development 2.0	3	2016	3	2017
Systems Architecture Development 3.0	4	2017	4	2018
Systems Architecture Development 4.0	1	2019	1	2020
Systems Architecture Development 5.0	2	2020	4	2021
Army Equipping Enterprise System (AE2S) Software SW 1.0	2	2015	2	2016
Army Equipping Enterprise System (AE2S) Software SW 2.0	3	2016	3	2017
Army Equipping Enterprise System (AE2S) Software SW 3.0	4	2017	4	2018
Army Equipping Enterprise System (AE2S) Software SW 4.0	1	2019	1	2020
Army Equipping Enterprise System (AE2S) Software SW 5.0	2	2020	4	2021
Technical Reviews and Technical Performance Analysis	1	2015	4	2022
Academic Research	3	2015	4	2022