Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Army											**Date:** February 2018	

Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 7: *Operational Systems Development*					**R-1 Program Element (Number/Name)** PE 0203758A *I Digitization*							

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	6.234	4.803	6.316	-	6.316	6.020	5.650	5.571	5.681	0.000	40.275
374: *HOR Battlefld Digitizn*	-	6.234	4.803	6.316	-	6.316	6.020	5.650	5.571	5.681	0.000	40.275

A. Mission Description and Budget Item Justification

Horizontal Battlefield Digitization is a strategy that allows warfighters, from the individual soldier and platform to echelons above corps, to share critical situation awareness (SA) and command and control (C2) information. It conducts analysis and evaluation of new information technologies, concepts, and applications of integrated management activities. Digital information technologies to acquire, exchange, and employ data throughout the operational environment, are used to provide an operational picture for leaders. This timely sharing of information significantly improves the ability to quickly make decisions, synchronize forces and fires, and increase the operational tempo. 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 material, and training efforts. 2) Systems engineering and integration of hardware and software from a System of Systems (SOS) perspective. 3) Develop Army Equipping Enterprise System (AE2S) integration of the Force Development Investment Information System (FDIIS), Army Flow Model (AFM), and Force Development Knowledge Center (FDKC) programs into a single integrated system.

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	6.483	4.803	6.384	-	6.384
Current President's Budget	6.234	4.803	6.316	-	6.316
Total Adjustments	-0.249	0.000	-0.068	-	-0.068
• Congressional General Reductions	-0.003	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.246	-			
• Adjustments to Budget Years	-	-	-0.068	-	-0.068

Exhibit R-2A, RDT&E Project Justification: PB 2019 Army										Date: February 2018	
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 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
374: HOR Battlefld Digitizn	-	6.234	4.803	6.316	-	6.316	6.020	5.650	5.571	5.681	0.000	40.275
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds the Army Equipping Enterprise System (AE2S) continued development and integration of the Force Development Investment Information System (FDIIS), Army Flow Model (AFM), and the Force Development Knowledge Center (FDKC) into an improved, single system. Continued development of the suite of the AE2S applications is necessary to create and improve workflow efficiencies amongst various organizations and data base systems, Active and Reserve Component equipment transparency reporting requirements, and Active and Reserve equipment fielding plans to the Solider according to the Army Force Generation (ARFORGEN). 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 Army Mission Command and network architecture (operational and systems) development, technical and policy document review in support of planning and acquisition, network and joint integration and interoperability evaluations and assessments, program and database analysis, 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 identification, assessment and acquisition of capability solutions for the Army.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2017**	**FY 2018**	**FY 2019**
Title: Interoperability and Integration	1.054	0.824	1.095
Description: Funds are to be used for the following efforts **FY 2018 Plans:** FFRDC contractor shall conduct independent analyses of Army, joint, and multinational interfaces, adherence to standards, implementation profiles and interoperability baselines **FY 2019 Plans:** FFRDC contractor shall conduct independent analyses of Army, joint, and multinational interfaces, adherence to standards, implementation profiles and interoperability baselines **FY 2018 to FY 2019 Increase/Decrease Statement:** Return to previous level of effort.			
Title: Operational Capability Analysis and Evaluation	1.114	0.871	1.158
Description: Funds are to be used for the following efforts **FY 2018 Plans:**			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0203758A / Digitization	Project (Number/Name) 374 / HOR Battlefld Digitizn

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
FFRDC contractor shall 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. *FY 2019 Plans:* FFRDC contractor shall 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. *FY 2018 to FY 2019 Increase/Decrease Statement:* Return to previous level of effort.			
Title: Systems Architecture Development	0.910	0.711	0.945
Description: Funds are to be used for the following efforts *FY 2018 Plans:* FFRDC contractor shall conduct broad concept studies with emphasis on interoperability and joint/coalition operations. *FY 2019 Plans:* FFRDC contractor shall conduct broad concept studies with emphasis on interoperability and joint/coalition operations. *FY 2018 to FY 2019 Increase/Decrease Statement:* Return to previous level of effort.			
Title: AE2S Software	1.958	1.267	1.684
Description: Procures AE2S software integration and enhancements for the single program language, single platform system that incorporates FDIIS, CEaVa, COP and AFM. *FY 2018 Plans:* 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. *FY 2019 Plans:* 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. *FY 2018 to FY 2019 Increase/Decrease Statement:*			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Army		Date: February 2018	
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Return to previous level of effort.			
Title: Technical Reviews and Technical Performance Analysis	0.909	0.710	0.944
Description: Funds are to be used for the following efforts *FY 2018 Plans:* FFRDC contractor shall 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 Plans:* FFRDC contractor shall 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 2018 to FY 2019 Increase/Decrease Statement:* Return to previous level of effort.			
Title: Academic Research	0.289	0.420	0.490
Description: Apply university academic and research resources to the integration of Army complex modeling, simulation, and training in support of modernized forces. *FY 2018 Plans:* Will apply university academic and research resources to the integration of Army complex modeling, simulation, and training in support of modernized forces. *FY 2019 Plans:* Will apply university academic and research resources to the integration of Army complex modeling, simulation, and training in support of modernized forces. *FY 2018 to FY 2019 Increase/Decrease Statement:* Economic increase.			
Accomplishments/Planned Programs Subtotals	6.234	4.803	6.316

C. Other Program Funding Summary ($ in Millions)

 N/A

Remarks

Exhibit R-2A, **RDT&E Project Justification:** PB 2019 Army		**Date:** February 2018
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0203758A / *Digitization*	**Project (Number/Name)** 374 / *HOR Battlefld Digitizn*

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army												Date: February 2018	
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Army Equipping Enterprise SYstem (AE2S) Software	C/CPFF	TBD : TBD	4.981	1.958		1.451		1.684		-		1.684	Continuing	Continuing	Continuing
Cross-Platform Development	Various	TBD : TBD	3.605	-		-		-		-		-	0.000	3.605	-
		Subtotal	8.586	1.958		1.451		1.684		-		1.684	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Interoperability and Integration	Various	Various : Various	5.161	1.054	Dec 2016	0.781		1.095		-		1.095	0.000	8.091	-
Operational Capability Analysis and Evaluation	Various	VAR : VAR	4.333	1.114	Aug 2017	0.825		1.158		-		1.158	0.000	7.430	-
Academic Research	Various	Various : Various	2.942	0.289	Aug 2017	0.399		0.490		-		0.490	0.000	4.120	-
Operational CapabilityAnalysis and Evaluation	Various	Various : Various	5.608	-		-		-		-		-	0.000	5.608	-
Systems Architecture Development	Various	VAR : VAR	4.257	0.910	Dec 2016	0.674		0.945		-		0.945	0.000	6.786	-

Exhibit R-3, **RDT&E Project Cost Analysis:** PB 2019 Army														**Date:** February 2018	
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Support ($ in Millions)				**FY 2017**		**FY 2018**		**FY 2019 Base**		**FY 2019 OCO**		**FY 2019 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	3.774	0.909	Dec 2016	0.673		0.944		-		0.944	0.000	6.300	-
Subtotal			26.075	4.276		3.352		4.632		-		4.632	0.000	38.335	N/A

	Prior Years	**FY 2017**		**FY 2018**		**FY 2019 Base**		**FY 2019 OCO**		**FY 2019 Total**	**Cost To Complete**	**Total Cost**	**Target Value of Contract**
Project Cost Totals	45.308	6.234		4.803		6.316		-		6.316	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army		**Date:** February 2018
Appropriation/Budget Activity 2040 *I* 7	**R-1 Program Element (Number/Name)** PE 0203758A *I Digitization*	**Project (Number/Name)** 374 *I HOR Battlefld Digitizn*

Event Name	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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

Exhibit R-4A, **RDT&E Schedule Details:** PB 2019 Army		**Date:** February 2018
Appropriation/Budget Activity 2040 *I* 7	**R-1 Program Element (Number/Name)** PE 0203758A *I Digitization*	**Project (Number/Name)** 374 *I HOR Battlefld Digitizn*

Schedule Details

Events	Start		End	
	Quarter	**Year**	**Quarter**	**Year**
Interoperability and Integration	1	2016	4	2021
Operational Capability Analysis and Evaluation	1	2016	4	2021
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	2021
Academic Research	3	2015	4	2021