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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army **Date:** February 2016

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

| COST (\$ in Millions) | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
|--------------------------------------|-------------|---------|---------|--------------|-------------|---------------|---------|---------|---------|---------|------------------|------------|
| Total Program Element | - | 5.765 | 4.361 | 6.483 | - | 6.483 | 6.328 | 5.516 | 5.313 | 5.352 | Continuing | Continuing |
| 374: <i>HOR Battlefield Digitizn</i> | - | 5.765 | 4.361 | 6.483 | - | 6.483 | 6.328 | 5.516 | 5.313 | 5.352 | Continuing | Continuing |

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 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total |
|---|----------------|----------------|---------------------|--------------------|----------------------|
| Previous President's Budget | 5.993 | 4.361 | 7.034 | - | 7.034 |
| Current President's Budget | 5.765 | 4.361 | 6.483 | - | 6.483 |
| Total Adjustments | -0.228 | 0.000 | -0.551 | - | -0.551 |
| • Congressional General Reductions | - | - | | | |
| • Congressional Directed Reductions | - | - | | | |
| • Congressional Rescissions | - | - | | | |
| • Congressional Adds | - | - | | | |
| • Congressional Directed Transfers | - | - | | | |
| • Reprogrammings | - | - | | | |
| • SBIR/STTR Transfer | -0.228 | - | | | |
| • Adjustments to Budget Years | - | - | -0.551 | - | -0.551 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | | | | | | | | | Date: February 2016 | | |
| Appropriation/Budget Activity 2040 / 7 | | | | | R-1 Program Element (Number/Name) PE 0203758A / Digitization | | | | Project (Number/Name) 374 / HOR Battlefield Digitizn | | | |
| COST (\$ in Millions) | Prior Years | FY 2015 | FY 2016 | FY 2017 Base | FY 2017 OCO | FY 2017 Total | FY 2018 | FY 2019 | FY 2020 | FY 2021 | Cost To Complete | Total Cost |
| 374: HOR Battlefield Digitizn | - | 5.765 | 4.361 | 6.483 | - | 6.483 | 6.328 | 5.516 | 5.313 | 5.352 | Continuing | Continuing |
| 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 2015 | FY 2016 | FY 2017 |
|---|----------------|----------------|----------------|
| <p>Title: Interoperability and Integration</p> <p>Description: Funds are to be used for the following efforts</p> <p>FY 2015 Accomplishments: FFRDC contractor shall conduct independent analyses of Army, joint, and multinational interfaces, adherence to standards, implementation profiles and interoperability baselines</p> <p>FY 2016 Plans: FFRDC contractor shall conduct independent analyses of Army, joint, and multinational interfaces, adherence to standards, implementation profiles and interoperability baselines</p> <p>FY 2017 Plans: FFRDC contractor shall conduct independent analyses of Army, joint, and multinational interfaces, adherence to standards, implementation profiles and interoperability baselines</p> | 1.073 | 0.537 | 1.054 |
| <p>Title: Operational Capability Analysis and Evaluation</p> <p>Description: Funds are to be used for the following efforts</p> | 0.961 | 0.482 | 1.114 |

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| B. Accomplishments/Planned Programs (\$ in Millions) | FY 2015 | FY 2016 | FY 2017 |
|---|----------------|----------------|----------------|
| <p><i>FY 2015 Accomplishments:</i> Integrate and synchronize interoperability across Situational Awareness (SA)/Command & Control (C2) programs in support of acquisition synchronization, testing, training, and fielding System of Systems capabilities to the Army Force. Continue application across current and future force.</p> <p><i>FY 2016 Plans:</i> 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.</p> <p><i>FY 2017 Plans:</i> 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.</p> | | | |
| <p><i>Title:</i> Systems Architecture Development</p> <p><i>Description:</i> Funds are to be used for the following efforts</p> <p><i>FY 2015 Accomplishments:</i> FFRDC contractor shall conduct broad concept studies with emphasis on interoperability and joint/coalition operations.</p> <p><i>FY 2016 Plans:</i> FFRDC contractor shall conduct broad concept studies with emphasis on interoperability and joint/coalition operations.</p> <p><i>FY 2017 Plans:</i> FFRDC contractor shall conduct broad concept studies with emphasis on interoperability and joint/coalition operations.</p> | 0.875 | 0.592 | 0.910 |
| <p><i>Title:</i> AE2S Software</p> <p><i>Description:</i> Procures AE2S software integration and enhancements for the single program language, single platform system that incorporates FDIIS, CEaVa, COP and AFM.</p> <p><i>FY 2015 Accomplishments:</i> 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><i>FY 2016 Plans:</i></p> | 0.938 | 0.966 | 1.958 |

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| Exhibit R-2A, RDT&E Project Justification: PB 2017 Army | | Date: February 2016 | | |
| Appropriation/Budget Activity 2040 / 7 | R-1 Program Element (Number/Name) PE 0203758A / Digitization | Project (Number/Name) 374 / HOR Battlefield Digitizn | | |
| B. Accomplishments/Planned Programs (\$ in Millions) | | FY 2015 | FY 2016 | FY 2017 |
| <p>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 2017 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.</p> | | | | |
| <p>Title: Technical Reviews and Technical Performance Analysis</p> <p>Description: Funds are to be used for the following efforts</p> <p>FY 2015 Accomplishments: 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.</p> <p>FY 2016 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.</p> <p>FY 2017 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.</p> | | 0.826 | 0.661 | 0.909 |
| <p>Title: Academic Research</p> <p>Description: Apply university academic and research resources to the integration of Army complex modeling, simulation, and training in support of modernized forces.</p> <p>FY 2015 Accomplishments: Apply university academic and research resources to the integration of Army complex modeling, simulation, and training in support of modernized forces.</p> <p>FY 2016 Plans:</p> | | 0.522 | 0.538 | 0.538 |

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| Appropriation/Budget Activity 2040 / 7 | R-1 Program Element (Number/Name) PE 0203758A / Digitization | Project (Number/Name) 374 / HOR Battlefield Digitizn | | |
| B. Accomplishments/Planned Programs (\$ in Millions) | | FY 2015 | FY 2016 | FY 2017 |
| Apply university academic and research resources to the integration of Army complex modeling, simulation, and training in support of modernized forces. FY 2017 Plans: Will apply university academic and research resources to the integration of Army complex modeling, simulation, and training in support of modernized forces. | | | | |
| Title: Cross-platform development Description: Manage cross-platform software and hardware development, testing, training, and fielding to ensure the coordinated interoperability for each Army Force unit rotation. FY 2015 Accomplishments: Manage cross-platform software and hardware development, testing, training, and fielding to ensure the coordinated interoperability for each Army Force unit rotation. FY 2016 Plans: Manage cross-platform software and hardware development, testing, training, and fielding to ensure the coordinated interoperability for each Army Force unit rotation. | | 0.570 | 0.585 | - |
| Accomplishments/Planned Programs Subtotals | | 5.765 | 4.361 | 6.483 |
| 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 | | | | |

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army **Date:** February 2016

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| Management Services (\$ in Millions) | | | | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|---|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Digitization Technical Integration | Various | Various : Various | 4.089 | 0.875 | | 0.592 | | - | | - | | - | 0 | 5.556 | 0 |
| Joint & Coalition Interoperability | Various | Various : Various | 3.604 | 0.826 | | 0.661 | | - | | - | | - | 0 | 5.091 | 0 |
| Subtotal | | | 7.693 | 1.701 | | 1.253 | | - | | - | | - | 0.000 | 10.647 | 0.000 |

| Product Development (\$ in Millions) | | | | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|--|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Army Equipping Enterprise SYstem (AE2S) Software | C/CPFF | TBD : TBD | 3.077 | 0.938 | | 0.966 | | 1.958 | | - | | 1.958 | Continuing | Continuing | Continuing |
| Cross-Platform Development | Various | TBD : TBD | 2.573 | 0.570 | | 0.585 | | - | | - | | - | 0 | 3.728 | 0 |
| Subtotal | | | 5.650 | 1.508 | | 1.551 | | 1.958 | | - | | 1.958 | - | - | - |

| Support (\$ in Millions) | | | | FY 2015 | | FY 2016 | | FY 2017 Base | | FY 2017 OCO | | FY 2017 Total | Cost To Complete | Total Cost | Target Value of Contract |
|--|------------------------|--------------------------------|-------------|---------|------------|---------|------------|--------------|------------|-------------|------------|---------------|------------------|------------|--------------------------|
| Cost Category Item | Contract Method & Type | Performing Activity & Location | Prior Years | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | Award Date | Cost | | | |
| Interoperability and Integration | Various | Various : Various | 3.551 | 1.073 | | 0.537 | | 1.054 | | - | | 1.054 | 0 | 6.215 | 0 |
| Operational Capability Analysis and Evaluation | Various | VAR : VAR | 4.333 | - | | - | | 1.114 | | - | | 1.114 | 0 | 5.447 | 0 |
| Academic Research | Various | Various : Various | 1.932 | 0.522 | | 0.538 | | 0.538 | | - | | 0.538 | 0 | 3.530 | 0 |
| Operational Capability Analysis and Evaluation | Various | Various : Various | 4.165 | 0.961 | | 0.482 | | - | | - | | - | 0 | 5.608 | 0 |
| Systems Architecture Development | Various | VAR : VAR | 4.257 | - | | - | | 0.910 | | - | | 0.910 | 0 | 5.167 | 0 |

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army **Date:** February 2016

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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> |
|--|---|---|

| Event Name | FY 2015 | | | | FY 2016 | | | | FY 2017 | | | | FY 2018 | | | | FY 2019 | | | | FY 2020 | | | | FY 2021 | | | |
|---|--|--|---|---|------------|---|---|---|------------|---|---|---|------------|---|---|---|------------|---|---|---|------------|---|---|---|---------|---|---|---|
| | 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 | [Blue bar spanning all quarters from FY 2015 to FY 2021] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operational Capability Analysis and Evaluation | [Blue bar spanning all quarters from FY 2015 to FY 2021] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Systems Architecture Development 1.0 | [Blue bar] | | | | [Blue bar] | | | | | | | | | | | | | | | | | | | | | | | |
| Systems Architecture Development 2.0 | | | | | [Blue bar] | | | | [Blue bar] | | | | | | | | | | | | | | | | | | | |
| Systems Architecture Development 3.0 | | | | | | | | | [Blue bar] | | | | [Blue bar] | | | | | | | | | | | | | | | |
| Systems Architecture Development 4.0 | | | | | | | | | | | | | [Blue bar] | | | | [Blue bar] | | | | | | | | | | | |
| Systems Architecture Development 5.0 | | | | | | | | | | | | | | | | | | | | | [Blue bar] | | | | | | | |
| Army Equipping Enterprise System (AE2S) Software SW 1.0 | [Blue bar] | | | | [Blue bar] | | | | | | | | | | | | | | | | | | | | | | | |
| Army Equipping Enterprise System (AE2S) Software SW 2.0 | | | | | [Blue bar] | | | | [Blue bar] | | | | | | | | | | | | | | | | | | | |
| Army Equipping Enterprise System (AE2S) Software SW 3.0 | | | | | | | | | [Blue bar] | | | | [Blue bar] | | | | | | | | | | | | | | | |
| Army Equipping Enterprise System (AE2S) Software SW 4.0 | | | | | | | | | | | | | [Blue bar] | | | | [Blue bar] | | | | | | | | | | | |
| Army Equipping Enterprise System (AE2S) Software SW 5.0 | | | | | | | | | | | | | | | | | | | | | [Blue bar] | | | | | | | |
| Technical Reviews and Technical Performance Analysis | [Blue bar spanning all quarters from FY 2015 to FY 2021] | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army **Date:** February 2016

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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 |
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| Event Name | FY 2015 | | | | FY 2016 | | | | FY 2017 | | | | FY 2018 | | | | FY 2019 | | | | FY 2020 | | | | FY 2021 | | | |
|-------------------|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|---------|---|---|---|
| | 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 |
| Academic Research | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army **Date:** February 2016

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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> |
|--|---|---|

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 |