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 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603305A *I Army Missile Defense Sys Integration - Non Space*							
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	-	39.395	9.634	10.777	-	10.777	11.936	12.040	12.547	12.697	0.000	109.026
FG6: *Missile Defense (CA)*	-	30.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.000
TR5: *Missile Defense Battlelab*	-	9.395	9.634	10.777	-	10.777	11.936	12.040	12.547	12.697	0.000	79.026

A. Mission Description and Budget Item Justification

This Program Element funds missile defense systems integration efforts for both the US Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT).

USASMDC/ARSTRAT: Headquarters, Department of the Army General Order 37, dated 16 October 2006, designated USASMDC/ARSTRAT as the Army proponent for space and ground-based midcourse defense (GMD), the Army integrator for global missile defense, and the Army Service Component Command (ASCC) of the U.S. Strategic Command (USSTRATCOM). Army Regulation (AR) 10-87 Army Commands, Army Service Component Commands, and Direct Reporting Units, dated 4 September 2007 and AR 5-22 The Army Force Modernization Proponent System dated 19 August 2009 designates USASMDC/ARSTRAT as the Army specified proponent for Global Missile Defense and Space/High Altitude capabilities. As the Army proponent for space, high altitude and GMD, USASMDC/ARSTRAT is responsible for developing warfighting concepts, conduct warfighting experiments to validate those concepts, identify capabilities needed to implement the validated concepts, and develop Doctrine, Organizations, Training, Material, Leadership & Education, Personnel, Facilities and Policy (DOTMLPF-P) solutions to realize the GMD capabilities. As the Army integrator for global missile defense, USASMDC/ARSTRAT is responsible for reviewing programs managed by the Army, other Services, Defense agencies and National agencies to ensure that they are correctly synchronized and will ultimately provide the capabilities required by USSTRATCOM to execute its global missile defense responsibilities.

Project TR5 funds United States Army Space and Missile Defense Command/ Army Strategic Command (USASMDC/ARSTRAT) efforts to develop the associated operational prototyping, experimentation, operational analysis, and modeling and simulation in support of current and future Forces.

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 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603305A *I Army Missile Defense Sys Integration - Non Space*

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	9.433	9.634	11.046	-	11.046
Current President's Budget	39.395	9.634	10.777	-	10.777
Total Adjustments	29.962	0.000	-0.269	-	-0.269
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	30.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.038	-			
• Adjustments to Budget Years	-	-	-0.269	-	-0.269

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2017	FY 2018
Project: FG6: *Missile Defense (CA)*		
Congressional Add: *Enhanced Thermal Management Prototype*	30.000	-
Congressional Add Subtotals for Project: FG6	30.000	-
Congressional Add Totals for all Projects	30.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	Project (Number/Name) FG6 / *Missile Defense (CA)*	

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
FG6: *Missile Defense (CA)*	-	30.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This congressional add is for FY 2017.

A. Mission Description and Budget Item Justification

Four major efforts will be performed with these funds. a) High Power Microwave Lethality Prototype testing, testing and modeling will be performed to ascertain the vulnerabilities of critical electrical circuits and components in order to attack adversary systems, such as unmanned aerial systems, and to protect U.S. assets and infrastructure in use by the Warfighter. b) Advanced Electronic/Environmental Control Unit Thermal Management Prototypes of different sizes will be built and tested to reduce the magnitude of fuel used at forward operating bases consumed by environmental control units to keep major electronic systems cool in austere environments. Prototypes will be used to fully evaluate distributed cooling and legacy approaches. c) Technology Complex Compound Materials for Thermal/Energy Management prototypes will be manufactured and test for suitability in high velocity impacts. The planned compound is Coordinative Molecular Bond Armor Material and has potential to provide ballistics and thermal protection. d) Upgrades are planned for the Advanced Measurement Optical Range facility to support laser radar development and testing.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018
Congressional Add: Enhanced Thermal Management Prototype	30.000	-
FY 2017 Accomplishments: N/A		
Congressional Adds Subtotals	30.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	Project (Number/Name) FG6 / *Missile Defense (CA)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Support	SS/CPFF	Huntsville : Huntsville	-	3.303		-		-		-		-	0.000	3.303	-
		Subtotal	-	3.303		-		-		-		-	0.000	3.303	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
High Power Microwave Lethality	SS/CPFF	Radiance : Huntsville	-	3.900	Dec 2017	-		-		-		-	0.000	3.900	-
Advanced Electronic/ Environmental Control Unit Thermal Management Prototype	SS/CPAF	Radiance : Huntsville	-	14.000	Aug 2017	-		-		-		-	0.000	14.000	-
Technology Complex Compound Materials for Thermal/Energy Management Prototype	SS/CPFF	Radiance : huntsville	-	2.250	Dec 2017	-		-		-		-	0.000	2.250	-
Advanced Measurement Optical Range Facility Upgrades	SS/CPFF	Radiance : Huntsville	-	6.194		-		-		-		-	0.000	6.194	-
		Subtotal	-	26.344		-		-		-		-	0.000	26.344	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
High Power Microwave Lethality Prototype	SS/CPFF	Georgia Tech : Georgia	-	0.203		-		-		-		-	0.000	0.203	-
Advanced Meaasurement Optical Range Facility Upgrade	SS/CPFF	Huntsville : Huntsville	-	0.150		-		-		-		-	0.000	0.150	-
		Subtotal	-	0.353		-		-		-		-	0.000	0.353	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	Project (Number/Name) FG6 / *Missile Defense (CA)*	

	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	-	30.000		0.000		-		-		-	0.000	30.000	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	**Project (Number/Name)** FG6 / *Missile Defense (CA)*

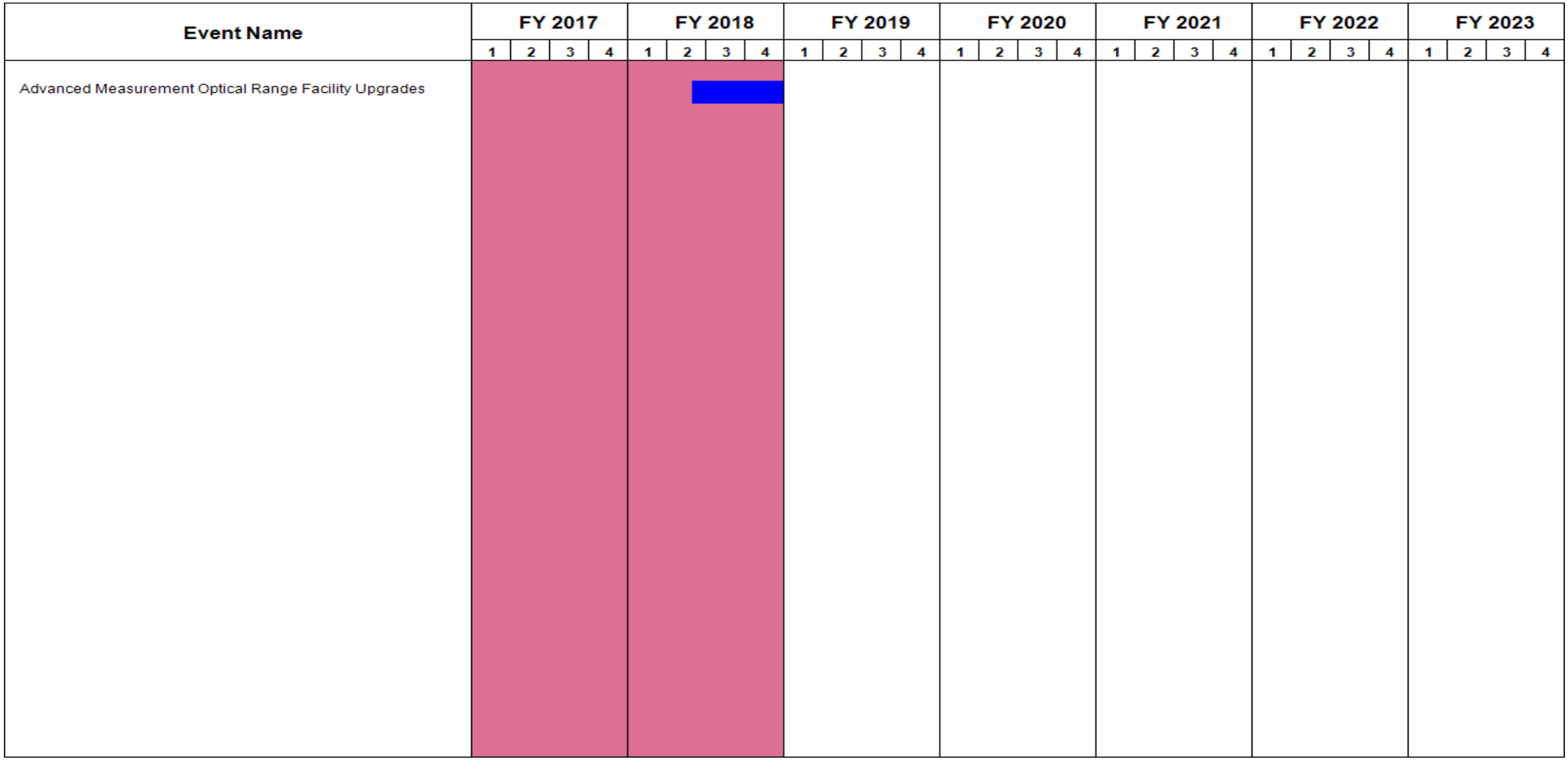

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	**Project (Number/Name)** FG6 / *Missile Defense (CA)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Advanced Measurement Optical Range Facility Upgrades	2	2018	4	2018

Exhibit R-2A, RDT&E Project Justification: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	Project (Number/Name) TR5 / *Missile Defense Battlelab*	

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
TR5: *Missile Defense Battlelab*	-	9.395	9.634	10.777	-	10.777	11.936	12.040	12.547	12.697	0.000	79.026
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Program Element funds missile defense systems integration efforts for both the US Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT).

USASMDC/ARSTRAT: Headquarters, Department of the Army General Order 37, dated 16 October 2006, designated USASMDC/ARSTRAT as the Army proponent for space and ground-based midcourse defense (GMD), the Army integrator for global missile defense, and the Army Service Component Command (ASCC) of the U.S. Strategic Command (USSTRATCOM). Army Regulation (AR) 10-87 Army Commands, Army Service Component Commands, and Direct Reporting Units, dated 4 September 2007 and AR 5-22 The Army Force Modernization Proponent System dated 19 August 2009 designates USASMDC/ARSTRAT as the Army specified proponent for Global Missile Defense and Space/High Altitude capabilities. As the Army proponent for space, high altitude and GMD, USASMDC/ARSTRAT is responsible for developing warfighting concepts, conduct warfighting experiments to validate those concepts, identify capabilities needed to implement the validated concepts, and develop Doctrine, Organizations, Training, Material, Leadership & Education, Personnel, Facilities and Policy (DOTMLPF-P) solutions to realize the GMD capabilities. As the Army integrator for global missile defense, USASMDC/ARSTRAT is responsible for reviewing programs managed by the Army, other Services, Defense agencies and National agencies to ensure that they are correctly synchronized and will ultimately provide the capabilities required by USSTRATCOM to execute its global missile defense responsibilities.

Project TR5 funds United States Army Space and Missile Defense Command/ Army Strategic Command (USASMDC/ARSTRAT) efforts to develop the associated operational prototyping, experimentation, operational analysis, and modeling and simulation in support of current and future Forces.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: Prototypes	5.637	5.776	6.359
Description: Funding is provided for the following efforts			
FY 2018 Plans: Take the lessons learned from the FY 2016 efforts to continue to evaluate new technologies in realistic operating environments. This is accomplished by participating in and providing support to Unified Quest wargames and experiments to analyze and integrate technology to identify the feasibility integration into Army space, missile defense, and high altitude systems. The Space and Missile Defense Command will participate and support biennial rewrites of Army Capstone, Operational and Functional Concepts. Continue to provide operational manager support to STRATCOM, NORTHCOM and SOCOM Joint Technical Capability Demonstrations to ensure Army space, missile defense, and high altitude equities are represented in advanced technology			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	**Project (Number/Name)** TR5 / *Missile Defense Battlelab*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
developments by demonstrating military utility when applied to military equipment and techniques. Examples include: supporting multi service experiments and capability development of the national-directed Phased Adaptive Approach (PAA) for Ballistic Missile Defense (BMD) as it is applied to each of the regional COCOMs; Developing effective Integrated Missile Defense concepts for Army support to the Phased Adaptive Approach (PAA) being implemented within each regional COCOM. A focus area will be informing the Missile Defeat Integrated Capability Development Working Group with experimentation on improving the timeliness and effectiveness of counter ballistic missile time sensitive targeting. Another project is developing and implementing a training environment for cyber defenders to train on defense of the GMD fire control networks through innovative scenario based training environments. Will support TRADOC proponents with their responsibilities relative to doctrine, organization, training, material, leader development and education, personnel, and facilities plus related matters to continue leveraging space, missile defense, and high altitude proponent input to Joint Capabilities Integration and Development System, Science and Technology, Concept Development, Capability Development. ***FY 2019 Plans:*** Take the lessons learned from the FY 2018 efforts to continue to evaluate new technologies in realistic operating environments. This is accomplished by participating in and providing support to Unified Quest wargames and experiments to analyze and integrate technology to identify the feasibility integration into Army space, missile defense, and high altitude systems. The Space and Missile Defense Command will participate and support biennial rewrites of Army Capstone, Operational and Functional Concepts. Continue to provide operational manager support to STRATCOM, NORTHCOM and SOCOM Joint Technical Capability Demonstrations to ensure Army missile defense equities are represented in advanced technology developments by demonstrating military utility when applied to military equipment and techniques. Examples include: supporting multi service experiments and capability development of the national-directed Phased Adaptive Approach (PAA) for Ballistic Missile Defense (BMD) as it is applied to each of the regional COCOMs; Developing effective Integrated Missile Defense concepts for Army support to the Phased Adaptive Approach (PAA) being implemented within each regional COCOM. A focus area will be informing the Missile Defeat Integrated Capability Development Working Group with experimentation on improving the timeliness and effectiveness of counter ballistic missile time sensitive targeting. Another project is developing and implementing a training environment for cyber defenders to train on defense of the GMD fire control networks through innovative scenario based training environments. Continue to support TRADOC proponents with their responsibilities relative to doctrine, organization, training, material, leader development and education, personnel, and facilities (DOTMLPF-P) plus related matters to continue missile defense proponent input to Joint Capabilities Integration and Development System (JCIDS), Science and Technology, Concept Development, and Capability Development. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increased emphasis on evaluating new missile defense technologies in response to increased international ballistic missile threat.			
Title: Analysis, and Models and Simulations (M&S)	3.758	3.858	4.418

Exhibit R-2A, RDT&E Project Justification: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	**Project (Number/Name)** TR5 / *Missile Defense Battlelab*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019

Description: Funding is provided for the following efforts

FY 2018 Plans:
Support Total Army Analysis (TAA) 20-24 Resourcing Phase. TAA is a phased force structure analysis process that defines the required Army force structure within end strength and accounts for the military and DA Civilian requirements and authorizations necessary to comply with DOD guidance. The TAA provides the basis for the Army?s Program Objective Memorandum (POM) development and establishment of the POM Force. Resourcing and Approval, the determination must be made as to the level of acceptable risk to be taken for each capability. These capability demands are based on Army leadership directives, written guidance, risk analysis, the Army force generation approach and input from the Combatant Commander?s Daily Operational Requirements (CCDOR). TAA builds a POM Force with which the PEGs can develop their portion of the Army?s budget. The POM Force will also determine the OF enabler support force structure and define the Generating Force (GF) necessary to support and sustain the OF capabilities directed in strategic guidance. The determination of the composition of the Army force structure, or shape, is an iterative, risk-benefit, trade-off analysis process. Capability Demand Analysis is made up of two separate events: force guidance and quantitative analysis.

Participate in the Army's FDU process The FDU Includes capabilities development, capabilities determination, requirements approval, and implementation decisions. Develops organizational design solutions to overcome identified capability shortfalls that cannot be accommodated by doctrine, training, leadership and education, facility, or policy solutions. As part of the solution development, TRADOC CoEs force modernization proponents and non-TRADOC force management proponents consider courses of action across DOTMLPF-P with the intent of deriving materiel, personnel and organizational solutions as a last resort. Once an organizational solution becomes the recommendation, the force modernization proponent begins the integration process across the DOTMLPF-P domains.

Take the lessons learned from the FY 2017 efforts to continue to evaluate new technologies in realistic operating environments. This will be accomplished by supporting ongoing efforts that provide the most realistic operating environment available to perform technology gap and cost reduction analysis of space, missile defense, and high altitude systems. Realistic operating environments will be available to determine the ability of the specific technologies to fill capability gaps in terms of utility to the warfighter. Support of technology demonstrations, Analysis and Demonstration Tools/Test Beds for evolving space superiority, high altitude and operationally responsive space concepts will address emerging needs and continue to be expanded to ensure that advanced technology development can adequately enhance missile defense capabilities. The Future War Center (FWC) will continue to provide program management for maintenance, sustainment, and development for Extended Air Defense Simulation (EADSIM) delivering the required high fidelity synthetic operating environment to provide the capability to perform system and cost benefit analysis, operational planning, and exercise/ experimentation support. The FWC will continue to provide program

Exhibit R-2A, RDT&E Project Justification: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	**Project (Number/Name)** TR5 / *Missile Defense Battlelab*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
management for maintenance, sustainment, and development for Reconfigurable Tactical Operations Simulator (RTOS) delivering operator in the loop capability for air and missile defense simulation in distributed exercises and experiments." ***FY 2019 Plans:*** Take the lessons learned from the FY 2018 efforts to continue to evaluate new technologies in realistic operating environments. This will be accomplished by supporting ongoing efforts that provide the most realistic operating environment available to perform technology gap and cost reduction analysis of missile defense systems. Realistic operating environments will be available to determine the ability of the specific technologies to fill capability gaps in terms of utility to the warfighter. Support of technology demonstrations, Analysis and Demonstration Tools/Test Beds for evolving missile defense concepts will address emerging needs and continue to be expanded to ensure that advanced technology development can adequately enhance missile defense capabilities. The Future Warfare Center (FWC) will continue to provide program management for maintenance, sustainment, and development for Extended Air Defense Simulation (EADSIM) delivering the required high fidelity synthetic operating environment to provide the capability to perform system and cost benefit analysis, operational planning, and exercise/ experimentation support. The FWC will continue to provide program management for maintenance, sustainment, and development for Reconfigurable Tactical Operations Simulator (RTOS) delivering operator in the loop capability for air and missile defense simulation in distributed exercises and experiments. The FWC will continue to provide program management for maintenance, sustainment, and development for the Joint Embedded Messaging System (JEMS) providing data translation application that enables communications between disparate systems, protocols and architectures. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Marginal increases in funding reflects increased demand to model and simulate realistic operating environments based on increasing ballistic missile defense threats.			
Accomplishments/Planned Programs Subtotals	9.395	9.634	10.777

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable for this item.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	Project (Number/Name) TR5 / *Missile Defense Battlelab*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Missile /Defense Battlelab	C/TBD	To Be determined : To be Determined	-	-		-		9.364		-		9.364	0.000	9.364	-
		Subtotal	-	-		-		9.364		-		9.364	0.000	9.364	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contracts	TBD	To Be Determined : To Be determined	-	-		1.232		1.413		-		1.413	0.000	2.645	-
		Subtotal	-	-		1.232		1.413		-		1.413	0.000	2.645	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Experiments & technology enhancements of prototypes/tools and analysis.	Various	Various Colorado Springs CO and Huntsville AL : Alabama, Colorado Springs	116.853	0.574		-		-		-		-	Continuing	Continuing	Continuing
Govt Support and Support Contracts	Various	Various Colorado Springs CO and Huntsville AL : Alabama, Colorado Springs	121.560	8.821		8.402		-		-		-	Continuing	Continuing	Continuing
		Subtotal	238.413	9.395		8.402		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	238.413	9.395		9.634		10.777		-		10.777	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Army			Date: February 2018
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	Project (Number/Name) TR5 / *Missile Defense Battlelab*	

	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	**Project (Number/Name)** TR5 / *Missile Defense Battlelab*

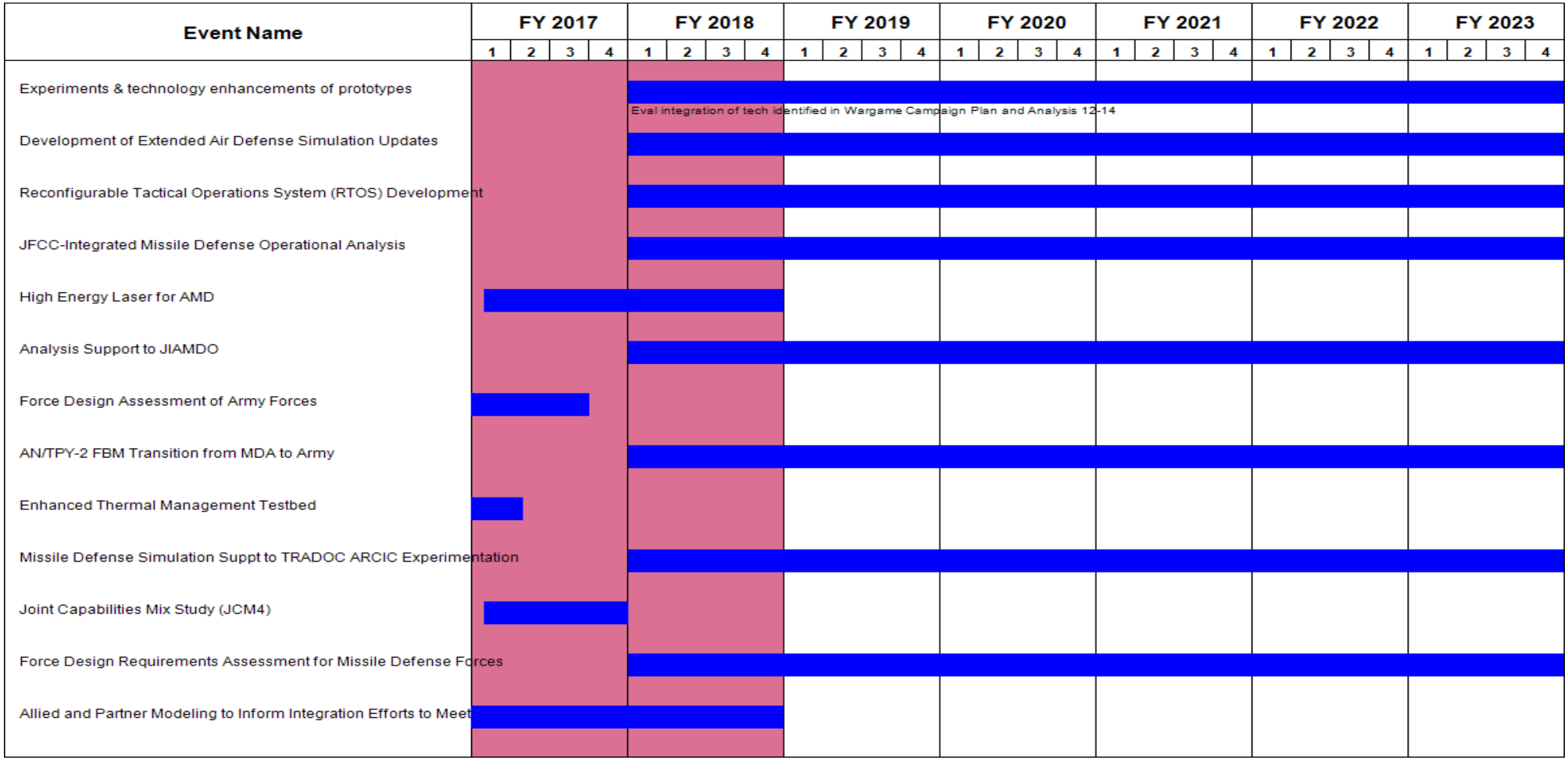

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	**Project (Number/Name)** TR5 / *Missile Defense Battlelab*

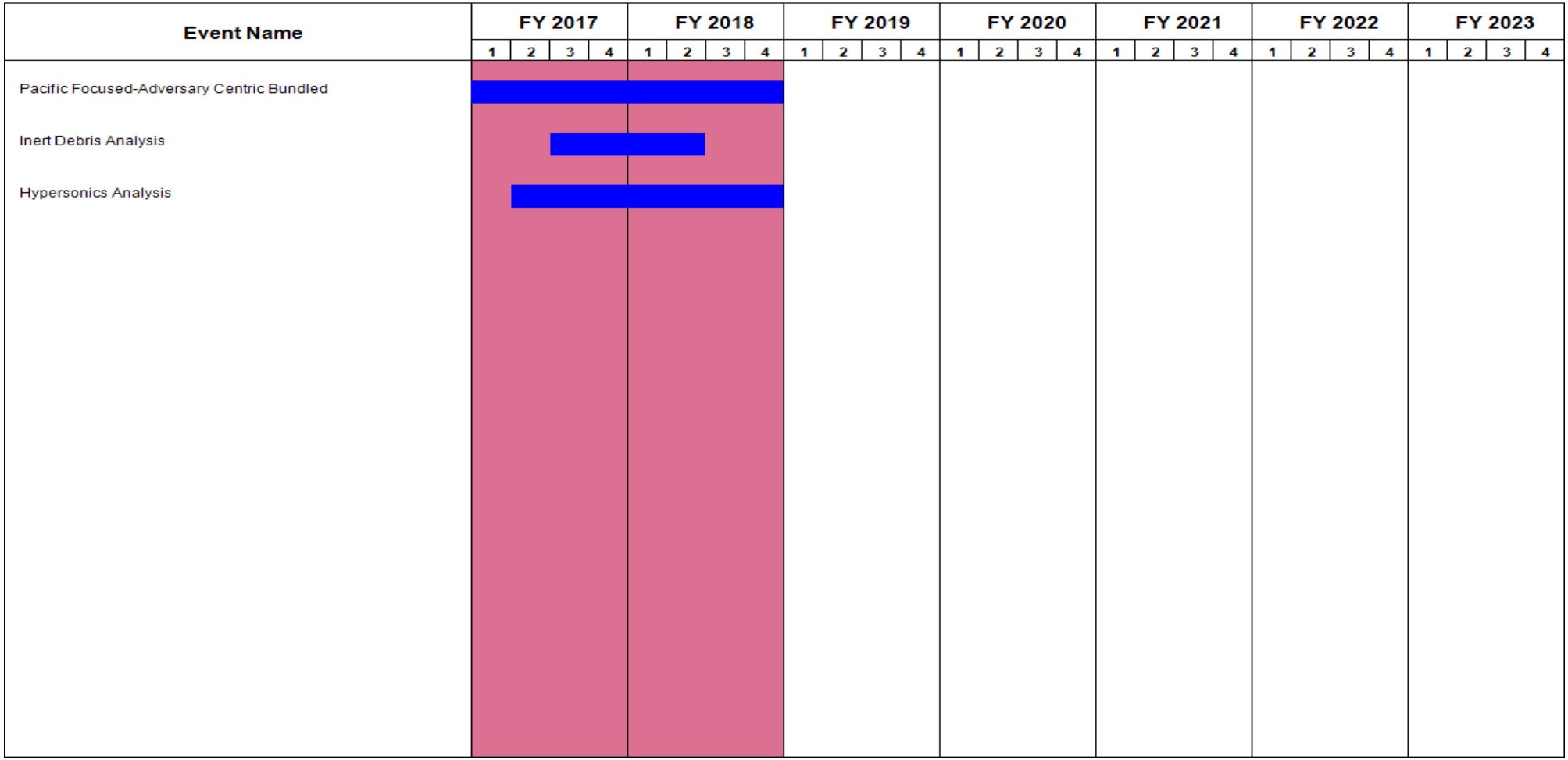

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Army		Date: February 2018
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603305A / *Army Missile Defense Sys Integration - Non Space*	**Project (Number/Name)** TR5 / *Missile Defense Battlelab*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Experiments & technology enhancements of prototypes	1	2018	4	2023
Development of Extended Air Defense Simulation Updates	1	2018	4	2023
Reconfigurable Tactical Operations System (RTOS) Development	1	2018	4	2023
JFCC-Integrated Missile Defense Operational Analysis	1	2018	4	2023
High Energy Laser for AMD	1	2015	4	2018
Analysis Support to JIAMDO	1	2018	4	2023
Force Design Assessment of Army Forces	3	2016	3	2017
AN/TPY-2 FBM Transition from MDA to Army	1	2018	4	2023
Enhanced Thermal Management Testbed	1	2015	1	2017
Missile Defense Simulation Suppt to TRADOC ARCIC Experimentation	1	2018	4	2023
Joint Capabilities Mix Study (JCM4)	1	2015	4	2017
Force Design Requirements Assessment for Missile Defense Forces	1	2018	4	2023
Allied and Partner Modeling to Inform Integration Efforts to Meet Objectives	3	2016	4	2018
Pacific Focused-Adversary Centric Bundled	3	2016	4	2018
Inert Debris Analysis	3	2017	2	2018
Hypersonics Analysis	2	2017	4	2018