Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army											Date: May 2017	
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 0604115A *I TECHNOLOGY MATURATION INITIATIVES*							
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
Total Program Element	-	34.493	70.047	115.221	-	115.221	96.372	100.740	107.350	110.775	Continuing	Continuing
DS3: *TECHNOLOGY MATURATION INITIATIVES*	-	34.493	45.047	115.221	-	115.221	96.372	100.740	107.350	110.775	Continuing	Continuing
EX3: *Ground Vehicle Prototyping*	-	0.000	25.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	25.000

A. Mission Description and Budget Item Justification

This Program Element (PE) funds experimental prototyping and demonstration of selected technology enabled capabilities to support advanced ground systems, aviation systems, command, control, communications & reconnaissance systems and equipment, precision weapons, High Energy Laser (HEL) systems, and Soldier equipment. Funding facilitates maturation and demonstration of advanced technologies and systems in relevant environments and tactical/operational scenarios, as well as the maturation and demonstration of a robust Virtual Proving Ground (VPG) for rapid, accurate, and computational prototyping of major Army platforms. Benefits include maturing technologies to a goal of Technology Readiness Level (TRL) 7, informing emerging requirements for future systems, and reducing technology risk in order to facilitate transition of new capabilities into acquisition programs. In Project DS3, Technology Maturation Initiative efforts mature and integrate advanced component technologies into system and sub-system technology demonstrators and experimental prototypes, which are then validated and transitioned to priority Army experimentation efforts and programs of record. Computational Prototyping Environment (CPE) efforts include demonstration of physics-based, computational modeling integrated with new advances in deep learning to explore design tradespaces and understand defeat strategies for prototypic platforms. Project EX3 funds experimental prototyping and demonstration of ground vehicles to assess future concepts and designs against selected capability trades, and emerging technologies for current and future combat vehicles across the combat vehicle portfolio. This PE provides the Army an improved mechanism for enabling greater competition in the latter stages of technology maturation and establishes a closer alignment between Science and Technology (S&T) efforts and acquisition programs.

The cited work is consistent with the Assistant Secretary of Defense, Research and Engineering Science and Technology priority focus areas and the Army Modernization Strategy.

Work in this PE is performed by the Research, Development and Engineering Command (RDECOM), Engineering Research Development Center (ERDC), and US Army Space and Missile Defense Command/Army Forces Strategic Command (SMDC/ARSTRAT).

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army					Date: May 2017
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*			R-1 Program Element (Number/Name) PE 0604115A / *TECHNOLOGY MATURATION INITIATIVES*		
B. Program Change Summary ($ in Millions)	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**
Previous President's Budget	35.917	70.047	57.378	-	57.378
Current President's Budget	34.493	70.047	115.221	-	115.221
Total Adjustments	-1.424	0.000	57.843	-	57.843
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.424	-			
• Adjustments to Budget Years	0.000	0.000	57.843	-	57.843

Change Summary Explanation

FY2018 decreased for transfer of Project EX3, Ground Vehicle Prototyping (-25.000); decreased Vehicle Survivability Subsystem Demonstrator (-0.157), and increased for Multi-Mission High Energy Laser (MMHEL) (+82.000) and Computational Prototyping Environment (+1.000) efforts under Project DS3, Technology Maturation Initiatives.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604115A / *TECHNOLOGY MATURATION INITIATIVES*	Project (Number/Name) DS3 / *TECHNOLOGY MATURATION INITIATIVES*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
DS3: *TECHNOLOGY MATURATION INITIATIVES*	-	34.493	45.047	115.221	-	115.221	96.372	100.740	107.350	110.775	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

N/A

A. Mission Description and Budget Item Justification

This Project funds the maturation, integration, and demonstration of advanced technology demonstrators and experimental prototypes to support advanced ground systems; aviation systems; command, control, communication & reconnaissance systems and equipment; precision weapons, High Energy Laser (HEL) systems; and Soldier equipment. Technology Maturation Initiative (TMI) efforts mature and integrate component technologies into early system and sub-system experimental prototypes for demonstration in relevant environments and tactical/operational scenarios, taking technologies to a goal of Technology Readiness Level (TRL) 7. Technology demonstrators and experimental prototypes are validated and transitioned to priority Army experimentation efforts and acquisition programs of record to inform emerging requirements for future systems and reduce the risk of technology insertion. These efforts are typically 2-4 years in duration, and are directed by an Army Senior Executive Steering Group (ESG) based on priority and opportunity, to ensure that demonstrations have high potential for filling capability gaps and transitioning. Activities include the maturation, integration and demonstration of HEL prototype weapons performance on a combat platform in realistic operational environments. A 50 kW-class laser weapon system has the potential to engage and defeat rockets, artillery, mortars (RAM), unmanned aerial vehicles (UAVs), sensors, and optics for maneuvering brigade combat teams (BCTs). Computational Prototyping Environment (CPE) efforts include demonstration of physics-based, computational modeling integrated with new advances in deep learning to explore design tradespaces and understand defeat strategies for prototypic platforms. CPE efforts facilitate rapid, accurate, and computational prototyping in a robust Virtual Proving Ground (VPG) for early performance verification of new capabilities and transition into acquisition programs. This Project provides the Army an improved mechanism for enabling greater competition in the latter stages of technology maturation and establishing a closer alignment between Science and Technology (S&T) efforts and acquisition programs.

The cited work is consistent with the Assistant Secretary of Defense, Research and Engineering Science and Technology priority focus areas and the Army Modernization Strategy.

Work in the Project is performed by the Research, Development and Engineering Command (RDECOM), Engineering Research Development Center (ERDC), the Space and Missile Defense Command/Army Forces Strategic Command (SMDC/ARSTRAT).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: Maturation and Prototyping for Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Systems	19.274	9.187	-

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604115A / *TECHNOLOGY MATURATION INITIATIVES*	**Project (Number/Name)** DS3 / *TECHNOLOGY MATURATION INITIATIVES*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Description: This effort selects technologies that show high promise for advancing command, control, communication and reconnaissance capabilities required under acquisition programs; prototypes, evaluates, and demonstrates integrated technologies within a high fidelity and realistic operating environment, and transitions them to a formal program of record at reduced cost and/or risk. ***FY 2016 Accomplishments:*** Matured and prototyped Assured Positioning, Navigation and Timing (PNT) devices for mounted and dismounted applications; accelerated the integration and validation of mounted capability with ground vehicle platforms and military Global Positioning System (GPS); continued the development and validation of Anti-Jam GPS Antenna performance specifications and A-Kit to enable off-the-shelf, Assured PNT for mounted applications. Integrated, validated and transitioned mature Improved Forward-Looking Infrared (I-FLIR) prototype solution, addressing program performance requirements at reduced cost and risk prior to Engineering and Manufacturing Development (EMD) phase. ***FY 2017 Plans:*** Will complete demonstration and validation of Assured PNT Mounted solutions in support of Assured PNT Program of Record milestone decisions. Will mature Mounted sub-systems for transition and fabrication, and will characterize performance of Assured PNT Mounted solutions both with and without Anti-Jam GPS Antennas.			
Title: Maturation and Prototyping for Ground Systems	13.059	-	-
Description: This effort selects ground maneuver technologies in areas such as mobility, survivability, vehicle architecture, lethality and systems integration, that show high promise for advancing capabilities required under acquisition programs; prototypes, evaluates, and demonstrates integrated technologies within a high fidelity and realistic operating environment, and transitions them to a formal program of record at reduced cost and/or risk. In order to add clarity for the work being conducted in FY17 and beyond, this bullet has been broken into three new bullets: Vehicle Survivability Subsystem Demonstrator, Advanced Powertrain Subsystem Demonstrator, and the Modular Active Protection System (MAPS) Demonstration. ***FY 2016 Accomplishments:*** Began multi-year effort to fabricate, integrate, and evaluate critical subsystem prototypes in support of the Combat Vehicle Prototyping (CVP) program, reducing the risk of transitioning next-generation and leap-ahead technologies. Built mature, CVP subsystem prototypes for vehicle blast mitigation, including seat, restraint, hull and floor components; evaluated component prototypes' ability to reduce dynamic deformation, blast loading, and occupant injury against increased blast threats, Began CVP advanced engine and transmission component prototype builds for performance evaluation. Began multi-year effort to mature, demonstrate, and test modular Active Protection System (APS) common architecture, components, and controller that will provide future fighting vehicles with increased protection against current and emerging advanced threats, while maintaining or reducing			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604115A / *TECHNOLOGY MATURATION INITIATIVES*	**Project (Number/Name)** DS3 / *TECHNOLOGY MATURATION INITIATIVES*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
vehicle weight. Verified APS common architecture performance and flexibility in soft-kill configurations by integrating and testing interchangeable soft-kill sensors and countermeasures; conducted maturation testing of these components for performance in realistic and operational environments and to ensure their ability to operate across all relevant scenarios; evaluated APS subsystem.			
Title: Vehicle Survivability Subsystem Demonstrator ***Description:*** The Vehicle Survivability Subsystem effort will integrate and demonstrate, cost effective, lightweight designs for the optimization of hull, frame, body, cab and armor technologies to achieve survivability systems weight reductions of 10-15% and increased vehicle survivability against advanced and emerging threats. This effort is coordinated with efforts in PE 0603005A. ***FY 2017 Plans:*** Will fabricate and integrate of components and subsystems for a survivability subsystem demonstrator targeting tracked combat vehicles with limited ground standoff. Will integrate blast components & subsystems such as; floors, seats, lightweight hull, and active blast mitigation systems into a blast demonstrator for underbody blast and structural evaluation. Will exploit subsystem design optimization conducted in 0603005A to achieve system level performance metrics and improve upon subsystem performance specifications. ***FY 2018 Plans:*** Will leverage the data from the previous year testing to integrate lessons learned while fabricating and integrating advanced components and optimized subsystems for a survivability demonstrator, targeting tracked combat vehicles with limited ground standoff. Will integrate matured blast components & subsystems for demonstrator testing, to include: armor, advanced energy absorbing (EA) floors, adjustable EA seats, lighter weight hull with same or better protection levels. Will optimize the number and placement of active blast mitigation system countermeasures into a blast demonstrator for underbody blast and structural evaluation. Will perform design optimization of the survivability demonstrator for Fiscal Year (FY) 2019.	-	10.170	10.271
Title: Advanced Powertrain Subsystem Demonstrator ***Description:*** The Advanced Powertrain Subsystem Demonstrator effort will fabricate, integrate and demonstrate next generation, scalable combat vehicle powertrain technologies into a high power dense and more fuel efficient combat vehicle powertrain. This powertrain will demonstrate advancements in engine and transmission subsystem components specific for military platforms in order to provide an integrated advanced propulsion system in a high fidelity and realistic military operating environment. This effort is coordinated with efforts in PE 0603005A. ***FY 2017 Plans:*** Will continue integration of powertrain technologies such as advanced multi-cylinder engine, transmission, thermal management, and integrated starter generator into a subsystem powertrain demonstrator. Will begin evaluations of integrated powertrain	-	9.508	12.950

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604115A / *TECHNOLOGY MATURATION INITIATIVES*	**Project (Number/Name)** DS3 / *TECHNOLOGY MATURATION INITIATIVES*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
subsystems and system level designs in a laboratory environment. Will mature subsystem performance specifications for powertrain technologies such as advanced multi-cylinder engine and thermal management systems. ***FY 2018 Plans:*** Will integrate the major subsystem to include the multi-cylinder engine and the advanced high efficient transmission as part of the overall advanced powertrain demonstrator integration. As part of the subsystem integration, will verify and validate a functional opposed piston, multi-cylinder engine operationally mated to a high efficiency cross drive (to include steering and braking) transmission to support military tracked vehicles. The technology will be developed for future military vehicle application such as the Bradley Family of Vehicles and future fighting vehicles.			
Title: Modular Active Protection System (MAPS) Demonstration ***Description:*** This effort will conduct APS component and subsystem technology maturation and adaption, aligned with Survivability Sets 1, 2, and 3, as well as Expedited APS activity, to increase component reliability, comply with the Army's modular approach to active protection, and resolve component integration challenges; will integrate subsystem technology demonstrators and conduct demonstrations of soft-kill and hard-kill APS capability to verify APS performance within the modular and safe design approach and to reduce technical risk for APS transition for the current and future combat and tactical vehicle platforms. ***FY 2017 Plans:*** Will implement a modular active protection system architecture configuration using sensors and countermeasures that are matured and compliant with the Modular APS Framework interfaces and protocols. Will realize the first prototype of a modular APS through platform integration of a soft-kill APS. Will mature, integrate and test APS at the component and system level; will conduct advanced performance and safety testing of APS sensors and countermeasures to verify durability and reliability in relevant environmental conditions and operating environments prior to system level platform integration into a prototype for testing and demonstration; will characterized performance and evaluate APS interoperability of a soft-kill APS configuration during system-level demonstrations. Will develop soft-kill component performance specifications using the results of the APS component testing completed. Will evaluate APS integration on current Army platforms such as Abrams, Bradley, and Stryker. ***FY 2018 Plans:*** Will complete build of soft-kill/hard-kill Modular APS Controller subsystem technology demonstrator and demonstrate in a relevant environment. Will implement Modular APS framework for Survivability Set 1 (SS1) capabilities, including passive threat sensing (i.e., laser warning receiving and passive infrared (IR) cue) and smoke technologies; will mature Modular APS framework for Survivability Set 2 (SS2) soft-kill capabilities, including passive threat sensing, smoke, and countermeasure technologies. Will continue evaluation of APS installation on current Army Abrams, Bradley, and Stryker platforms.	-	16.182	9.000
Title: Maturation and Prototyping for Soldier Systems	0.960	-	-

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604115A / *TECHNOLOGY MATURATION INITIATIVES*	**Project (Number/Name)** DS3 / *TECHNOLOGY MATURATION INITIATIVES*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Description: This effort selects technologies that show high promise for advancing required soldier system capabilities required under acquisition programs; prototypes, evaluates, and demonstrates integrated technologies within a high fidelity and realistic operating environment, and transitions them to a formal program of record at reduced cost and/or risk. ***FY 2016 Accomplishments:*** Completed the maturation, demonstration and validation of targeting software for the Mobile Handheld Fires Application; integrated Government Purpose Rights software into full prototype solution and transitioned to the Pocket-sized Forward Entry Device (PFED) Inc 2 Program of Record.			
Title: Maturation and Prototyping for Logistics and Sustainment Systems ***Description:*** This effort selects logistics and/or sustainment technologies that show high promise for advancing mobility capabilities required under acquisition programs; prototypes, evaluates, and demonstrates integrated technologies within a high fidelity and realistic operating environment, and transitions them to a formal program of record at reduced cost and/or risk. ***FY 2016 Accomplishments:*** Completed the demonstration and validation the advanced Transparent Armor 3a design against Rock Strike requirements; completed integration and testing of the government-own design on Joint Light Tactical Vehicle (JLTV) and transitioned to materiel vendors for increased competition.	1.200	-	-
Title: Multi-Mission High Energy Laser (MMHEL) ***Description:*** This effort matures and integrates a 50 kW-class laser system into a Stryker platform, providing a system-level, HEL experimental prototype for demonstration in realistic operating environments. These demonstrations will inform requirements, decrease risk for future Army HEL acquisition programs, and support the future development of warfighter Tactics/Techniques/ Procedures (TTPs) and Concept of Operations (CONOPS). HEL weapon systems are expected to complement conventional offensive and defensive weapons at a lower cost-per-shot than current systems and without the need to stockpile ordnance. A 50 kW-class laser weapon system has the potential to engage and defeat rockets, artillery, mortars (RAM); UAVs; sensors; and optics for maneuvering BCTs. Demonstrations will also inform potential future capability to defeat both fixed- and rotary-wing manned aircraft. Leveraging Government investments and Industry technology advancements, will review and select existing HEL subsystem designs for integration into a Stryker vehicle; will conduct integration and demonstration of a system-level HEL experimental prototype; and will provide assessment of technical performance in an operational environment. ***FY 2018 Plans:*** Will establish government/industry teams for execution of the MMHEL effort. Leveraging previous advanced technology development and risk-reduction activities, will update and review existing 50kW-class laser subsystem designs and interfaces	-	-	82.000

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604115A / *TECHNOLOGY MATURATION INITIATIVES*	**Project (Number/Name)** DS3 / *TECHNOLOGY MATURATION INITIATIVES*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
for integration into a Stryker vehicle (including laser, beam control, power, thermal management, and Army Battle Management Command, Control, and Computers (BMC3) architecture). Will assess and select sub-system designs for utilization in MMHEL and develop overall system-level experimental prototype design. Will develop interface control documents with the Army Battle Management Communications, Command, Control, Computers and Intelligence (BMC4I) network, and refine system architecture accordingly. Will initiate build and integration of system-level experimental prototype hardware.			
Title: Computational Prototyping Environment ***Description:*** The Computational Prototyping Environment (CPE) effort will create an integrated, robust, and verified testing and evaluation system that leverages recent Department of Defense advancements in large data tradespace analytics, high-fidelity physics-based modeling, deep learning techniques, high performance computing capabilities, and inverse modeling approaches. The CPE will demonstrate the verification and validation of selected weapons platform variations in a way that accurately identifies potential performance and design failures, while also testing and mitigating solutions and multiple trades in a VPG prior to cost-bearing production and manufacturing. The CPE will reduce the cost and the time required for testing and evaluating air and ground vehicle systems, thereby reducing acquisition risk and enabling rapid transition of new warfighting capabilities. ***FY 2018 Plans:*** Will develop sustainable integration framework. Will begin build of initial VPG and complete CPE architecture.	-	-	1.000
Accomplishments/Planned Programs Subtotals	34.493	45.047	115.221

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• RDT&E,A: *RDT&E,A PE 0604120A*	30.058	83.279	108.847	-	108.847	87.914	37.847	28.851	-	Continuing	Continuing

Remarks

Program Element Title: Assured Positioning, Navigation and Timing (A-PNT)

D. Acquisition Strategy

Multiple competitive contracts will be awarded based on selection of Technology Maturation Initiative efforts by the Senior Executive Steering Group. These efforts will continue to exercise competitively awarded contracts using best value source selection procedures. The Other Transaction Agreement (OTA) # W15QKN-14-9-1001 Initiative (Task Order) DOTC-16-01-INIT-0302 will be the primary contract vehicle for the MMHEL effort. Computational Prototyping Environment activities will be conducted both in-house and through competitively awarded contracts using best value source selection procedures.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604115A / *TECHNOLOGY MATURATION INITIATIVES*	**Project (Number/Name)** DS3 / *TECHNOLOGY MATURATION INITIATIVES*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604115A / *TECHNOLOGY MATURATION INITIATIVES*	**Project (Number/Name)** DS3 / *TECHNOLOGY MATURATION INITIATIVES*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Maturation and Prototyping for C4ISR Systems	C/Various	Various : Various	0.000	19.274		9.187		-		-		-	0.000	28.461	0.000
Maturation and Prototyping for Ground Systems	C/Various	Various : Various	0.000	13.059		-		-		-		-	0.000	13.059	0.000
Vehicle Survivability Subsystem Demonstrator	C/Various	Various : Various	0.000	-		10.170		10.271		-		10.271	0.000	20.441	0.000
Advanced Powertrain Subsystem Demonstrator	C/Various	Various : Various	0.000	-		9.508		12.950		-		12.950	0.000	22.458	0.000
Modular Active Protection Systems (MAPS) Demonstrations	C/Various	Various : Various	0.000	-		16.182		9.000		-		9.000	0.000	25.182	0.000
Maturation and Prototyping for Soldier Systems	C/Various	Various : Various	0.000	0.960		-		-		-		-	0.000	0.960	0.000
Maturation and Prototyping for Logistics and Sustainment Systems	C/Various	Various : Various	0.000	1.200		-		-		-		-	0.000	1.200	0.000
Multi-Mission High Energy Laser (MMHEL)	C/Various	Various : Huntsville, AL	0.000	-		-		82.000		-		82.000	153.000	235.000	0.000
Computational Prototyping Environment	C/Various	Various : Various	0.000	-		-		1.000		-		1.000	0.000	1.000	0.000
		Subtotal	0.000	34.493		45.047		115.221		-		115.221	153.000	347.761	0.000

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	34.493		45.047		115.221		-		115.221	153.000	347.761	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604115A / *TECHNOLOGY MATURATION INITIATIVES*	**Project (Number/Name)** DS3 / *TECHNOLOGY MATURATION INITIATIVES*

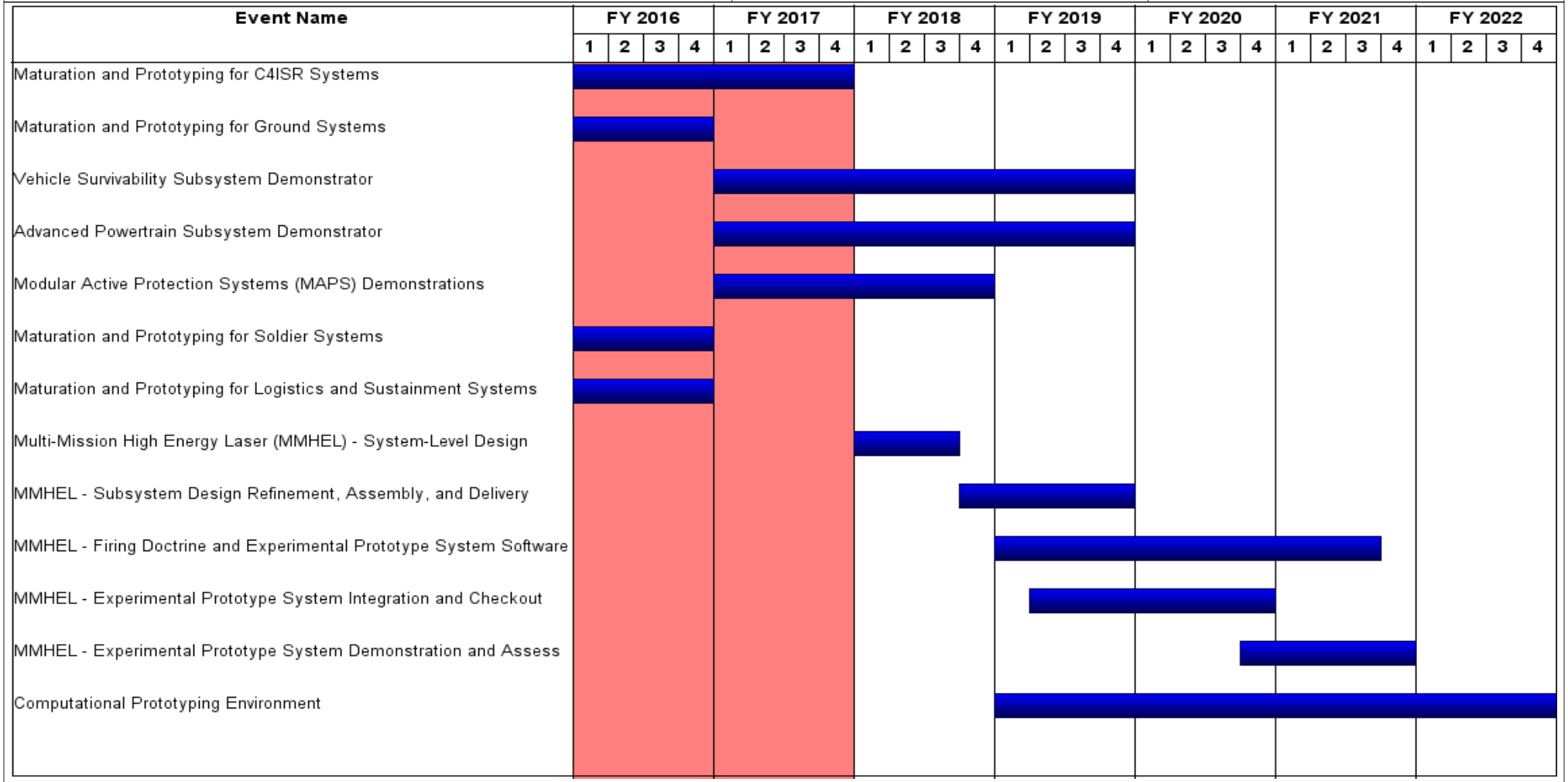

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604115A / *TECHNOLOGY MATURATION INITIATIVES*	**Project (Number/Name)** DS3 / *TECHNOLOGY MATURATION INITIATIVES*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Maturation and Prototyping for C4ISR Systems	3	2014	4	2017
Maturation and Prototyping for Ground Systems	3	2014	4	2016
Vehicle Survivability Subsystem Demonstrator	1	2017	4	2019
Advanced Powertrain Subsystem Demonstrator	1	2017	4	2019
Modular Active Protection Systems (MAPS) Demonstrations	1	2017	4	2018
Maturation and Prototyping for Soldier Systems	1	2015	4	2016
Maturation and Prototyping for Logistics and Sustainment Systems	1	2015	4	2016
Multi-Mission High Energy Laser (MMHEL) - System-Level Design	1	2018	3	2018
MMHEL - Subsystem Design Refinement, Assembly, and Delivery	4	2018	4	2019
MMHEL - Firing Doctrine and Experimental Prototype System Software	1	2019	3	2021
MMHEL - Experimental Prototype System Integration and Checkout	2	2019	4	2020
MMHEL - Experimental Prototype System Demonstration and Assess	4	2020	4	2021
Computational Prototyping Environment	1	2019	4	2022

Note

N/A

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0604115A / *TECHNOLOGY MATURATION INITIATIVES*	Project (Number/Name) EX3 / *Ground Vehicle Prototyping*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
EX3: *Ground Vehicle Prototyping*	-	0.000	25.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	25.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This is a new start.

A. Mission Description and Budget Item Justification

This Project funds the prototyping and demonstration of ground vehicle technologies. The main goals are to conduct technical assessments against selected capability trades and future technologies for current and future combat vehicles across the combat vehicle portfolio. The funding will support continuing advanced concept development, trade studies, technology maturation/testing, technical/operational/affordability analyses, and system and subsystem iterative and integrated prototyping to assess future designs that integrate emerging science and technology advancements for current and future combat vehicles and to inform the Army's Force 2025 Maneuvers campaign of learning.

The cited work is consistent with the Assistant Secretary of Defense, Research and Engineering Science and Technology priority focus areas and the Army Combat Vehicle Modernization Strategy.

This work is fully coordinated with and complementary to Program Element (PE) 0603005A (Combat Vehicle and Automotive Advanced Technology), and PE 0603645/ EV7 (Armored Systems Modernization Advance Development/Combat Vehicle Prototyping). Work in the Project is performed by the Research, Development and Engineering Command (RDECOM).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: Ground Vehicle Prototyping	-	25.000	-
Description: This effort conducts system level ground vehicle advanced concepting, prototyping and demonstration. This effort will partner Government and industry for an iterative and integrated combat vehicle concepting and prototyping process to inform future vehicle Requirements, inform current and future vehicle performance characteristics, reduce future acquisition risk, and evaluate and update Operational Concepts. Activity will include the integration and demonstration of a series of subsystem demonstrators building off of previous investment in ground combat acquisition and science and technology programs. ***FY 2017 Plans:*** Will conduct concept development and system level risk reduction for current and next generation combat vehicles. Will mature system level concepts and prototype designs to integrate advanced ground vehicle subsystem technologies such as active protection systems, armor, powertrains, lethality solutions, and electronics architectures. Will partner Government and industry			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0604115A / *TECHNOLOGY MATURATION INITIATIVES*	**Project (Number/Name)** EX3 / *Ground Vehicle Prototyping*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
through the design and vehicle trade process by creating an open collaboration forum for an iterative and integrated prototyping process that seeks the best of breed across the private and public sectors.			
Accomplishments/Planned Programs Subtotals	-	25.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Competitive contracts will be awarded. This project will continue to exercise competitively awarded contracts using best value source selection procedures.

E. Performance Metrics

N/A