Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army											Date: May 2017	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*							
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	-	65.482	84.519	108.504	-	108.504	105.417	75.722	54.465	45.704	Continuing	Continuing
EQ9: *Close Access Target Reconnaissance (CATR)*	-	0.262	1.173	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.435
L67: *Soldier Night Vision Devices*	-	19.710	26.257	32.504	-	32.504	23.355	19.649	19.343	19.200	Continuing	Continuing
L70: *Night Vision Dev Ed*	-	28.426	40.368	52.900	-	52.900	55.625	41.875	23.776	14.905	Continuing	Continuing
L75: *Profiler*	-	2.024	3.885	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.909
L76: *Dismounted Fire Support Laser Targeting Systems*	-	4.477	5.778	14.957	-	14.957	15.677	6.122	5.531	5.742	Continuing	Continuing
L79: *Joint Effects Targeting Systems (JETS)*	-	10.583	7.058	8.143	-	8.143	10.760	8.076	5.815	5.857	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element provides night vision/reconnaissance, surveillance and target acquisition technologies required for U. S. defense forces to engage enemy forces twenty-four hours a day under conditions of degraded visibility due to darkness, adverse weather, battlefield obscurants, foliage and man-made structures. These developments and improvements to high performance night vision electro-optics, radar, laser, and thermal systems and integration of related multi-sensor suites will enable near to long range target acquisition, identification and engagement to include significant fratricide reduction, which will improve battlefield command and control in "around-the-clock" combat operations.

Project EQ9 focuses on a kit of electronic devices that acquires, collects, and transmits data to provide near real time feedback in order to validate, follow, locate, or track a target (i.e., tagging, tracking, and locating (TTL)). Using electronic audio and/or video recorders, information obtained will validate movement and identify targets. In addition, threat monitoring can be integrated into existing operational tools, help to paint a clearer picture of the battlefield, pinpoint possible target locations, and identify and exploit enemy movements and patterns. CATR has been fielded since 2005 as a Quick Reaction Capability (QRC) program.

Project L67 develops, improves and miniaturizes high performance night vision electro-optics, thermal and laser systems. It also provides for systems integration of related multi-sensor suites to enable near to long-range target acquisition and engagement as well as improved battlefield command and control in around-the-clock combat operations. It focuses on adapting demonstrated technologies that bring improvements to the dismounted Soldiers' equipment. This project develops or enhances equipment that provides the individual Soldier's day/night situational awareness and individual targeting capability, sniper fire detection and location capability, and integrates improved target location and self-location capability to eliminate friendly fire incidents. Includes costs associated with efforts for integration and interface of products on Soldiers' head, body, and weapons.

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 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604710A *I Night Vision Systems - Eng Dev*

Project L70 focuses on night vision, reconnaissance, surveillance and target acquisition (RSTA) sensor and suites of sensors to provide well-defined surveillance and targeting capabilities for a variety of Current, Modular, and Future Force platforms. This project includes: 3rd Generation Forward Looking Infra-Red (3GEN FLIR) B-Kit development activities, the 3GEN Long Range Advanced Scout Surveillance System (LRAS3) Modification Work Order (MWO) to integrate 3GEN FLIR B-Kit,and the Assistant Secretary of the Army for Acquisition, Logistics, and Technology ASA(ALT) Common Operating Environment (COE) effort to meet sensor interoperability requirements and improve the soldier-machine interface of the Program of Record (POR).

Project L75 focuses on development of Profiler Block enhanced capabilities for meteorological (MET) measurement sensors and data. Improvements have reduced the footprint (less soldiers/vehicles) and complexity of the system, improved performance (accuracy), improved survivability, connectivity, no balloon sensor, multiple initialization data, and terrain visualization. The improved MET message data will increase lethality by enabling artillery a greater probability of first round hit with indirect fire systems. Profiler Block III provides a networked laptop configuration while further reducing the system's logistics footprint with the elimination of the High Mobility Multi-purpose Wheeled Vehicle (HMMWV) mounted shelter and trailer located in the Tactical Operations Center (TOC). The Profiler Virtual Module (PVM), a product improvement to the Block III, concept includes the following updates: update of weather model; update of software architecture removing legacy Block I code and creating a modular framework; development in conjunction with the Advanced Field Artillery Tactical Data System (AFATDS) program including AFATDS, to provide increased interoperability and usability; and to enable operation of the Profiler system in a virtual machine for use in the Common Operating Environment (COE) versions 2,3,4,and 5. This concept is a flexible approach that supports use of existing Block III hardware, increased accuracy during technical refresh of hardware with higher performance computers, and virtualization on the Command Post Computing Environment (CP CE) server.

Project L76 matures technologies and capabilities which benefit the Lightweight Laser Designator Rangefinder (LLDR, AN/PED-1, AN/PED-1A, and AN/PED-1B) and the Joint Effects Targeting System (JETS). These precision targeting and next generation systems are used by dismounted Soldiers to locate, identify, and target enemy assets. This project focuses on reducing size, weight, power and cost, improving imaging performance, and increasing targeting accuracy. Targeting accuracy improvements will focus on developing and integrating affordable, non-magnetic, high accuracy, full-time (24/7), and all weather Precision Azimuth and Vertical Angle Measurement (PAVAM) devices, with reduced size, weight and power characteristics into the LLDR system. Long term goals include improving current celestial navigation systems to increase operational availability, developing precision targeting capabilities that will operate in a Global Positioning System (GPS) denied environment, and integration of Military Global Positioning System (GPS) User Equipment (M-Code) (next generation GPS) receivers into LLDR and JETS, when available.

Project L79 focuses on the Joint Effects Targeting System (JETS). JETS is an Army program with joint interest (Air Force and Marine Corps). JETS will meet the one-man, hand-held precision targeting gap identified by the Fire Center of Excellence (FCOE). JETS is a light-weight, handheld system that will provide the single dismounted observer and Joint Terminal Attack Controller (JTAC) with a common, enhanced day and night thermal capability to rapidly acquire, accurately locate, positively identify, and precisely designate targets. JETS Target Location and Designation System (TLDS) will be able to interface with existing and future Service Forward Entry Systems (FESs). After initiating JETS TLDS production, this project will address continued development and integration of improved precision targeting components to reduce size, weight, power, and cost of the system, to address operation in environments where GPS is denied, and to integrate M-code GPS receivers when they become available.

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army					Date: May 2017
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*		
B. Program Change Summary ($ in Millions)	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**
Previous President's Budget	67.582	84.519	88.129	-	88.129
Current President's Budget	65.482	84.519	108.504	-	108.504
Total Adjustments	-2.100	0.000	20.375	-	20.375
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.599	-			
• Adjustments to Budget Years	0.499	0.000	20.375	-	20.375

Change Summary Explanation

Fiscal Year 2018: Program increases of $17.814 million to Project L67 for Soldier Night Vision Devices, $8.826 million to L76 - Dismounted Fire Support Laser Targeting Systems, and $0.304 million to L79 - Joint Effects Targeting Systems (JETS). Program decreases of -$3.705 million to L75 Profiler and -$2.864 million to L70 Night Vision Dev Ed. No change to EQ9 - CATR.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*	Project (Number/Name) EQ9 / *Close Access Target Reconnaissance (CATR)*	

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
EQ9: *Close Access Target Reconnaissance (CATR)*	-	0.262	1.173	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.435
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

CATR is a kit of electronic devices that acquires, collects, and transmits data to provide near real time feedback in order to validate, follow, locate, or track a target (.e., tagging, tracking, and locating (TTL)). Using electronic audio and/or video recorders, information obtained will validate movement and identify targets. In addition, threat monitoring can be integrated into existing operational tools, help to paint a clearer picture of the battlefield, pinpoint possible target locations, and identify and exploit enemy movements and patterns. CATR has been fielded since 2005 as a Quick Reaction Capability (QRC) program.

FY 2018 Base development dollars - There is no funding in FY 2018.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Close Access Target Reconnaissance (CATR) Post Milestone C/Fielding Decision	0.262	1.173	-	-	-
Description: Prepare for Post Milestone C/Fielding Decision and prepare acquisition documentation. ***FY 2016 Accomplishments:*** In order for CATR to obtain a Post Milestone C/Fielding Decision in FY2016, a Customer Test will be conducted by the Army Test & Evaluation Command (ATEC). Funding is also to secure the type classification of the CATR Basic Set, participate in the logistics demonstration, review Customer Test report, develop life cycle sustainment plan, and develop acquisition documents for a Post Milestone C/Fielding Decision. ***FY 2017 Plans:*** New technology will be evaluated and tested in order to support technology refresh in the Production & Deployment phase in FY2018.					
Accomplishments/Planned Programs Subtotals	0.262	1.173	-	-	-

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
• Close Access Target Reconnaissance: *Close*	5.012	7.970	8.050	-	8.050	5.210	5.554	5.310	5.340	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** EQ9 / *Close Access Target Reconnaissance (CATR)*

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
Access Target Reconnaissance (CATR) (B10002)											

Remarks

D. Acquisition Strategy

Based on a successful Materiel Development Decision (MDD) in September 2015, the Milestone Decision Authority designated the CATR program as a post-Milestone C Acquisition Category (ACAT) III program at the Production and Deployment phase. After a successful Fielding decision planned for 4th Quarter FY2016, CATR will utilize Quick Reaction Capability (QRC) equipment to refresh, re-kit existing, and field sets/systems in the Brigade Combat Teams (BCTs).

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*	Project (Number/Name) L67 / *Soldier Night Vision Devices*	

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
L67: *Soldier Night Vision Devices*	-	19.710	26.257	32.504	-	32.504	23.355	19.649	19.343	19.200	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops, improves and miniaturizes high performance night vision electro-optics, thermal and laser systems. It also provides for systems integration of related multi-sensor suites to enable near to long-range target acquisition and engagement as well as improved battlefield command and control in around-the-clock combat operations. It focuses on adapting demonstrated technologies that bring improvements to the dismounted Soldiers' equipment. This project develops or enhances equipment that provides the individual Soldier's day/night situational awareness and individual targeting capability, sniper fire detection and location capability, and integrates improved target location and self-location capability to eliminate friendly fire incidents. This project includes cost associated with efforts for integration and interface of products on Soldiers head, body and weapons.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Family of Weapons Sights (FWS)	19.610	26.257	24.057	-	24.057
Description: FWS is a family of weapon sights that enable combat forces to acquire and engage targets with small arms and to conduct surveillance and fire control under day/night obscurants, no-light, and adverse weather conditions. The family utilizes advancements in thermal and low light level sensors to produce Individual (I), Crew-Served (CS), and Sniper (S) weapon sights operable in-line with a day optic or in stand-alone mode. This project integrates smaller pixel focal plane arrays in multiple large format sizes to improve sensitivity, clarity, and range, while simultaneously reducing the size, weight and power consumption of both the Crew-Served and Sniper variants. The FWS-I variant is a weapon mounted long-wave infrared sensor that enables Soldiers to fire quickly and accurately from any carry position and with significantly reduced exposure to enemy fire by providing a wireless zeroed weapon aimpoint in the Soldier's goggle. Leveraging the success of the Individual variant development, the FWS-CS variant operates as the primary sight; it includes a wireless Helmet Mount Display (HMD) and provides the Soldier with input from a laser rangefinder device, resulting in a more accurate aimpoint that adjusts automatically for range, ammunition characteristics, and vertical angle. The FWS-S variant mounts in-line with the Sniper's direct view optic providing a thermal imagery capability to the host weapon at the weapon's maximum effective range, plus 20% overmatch. FWS-S provides Snipers a large format display with increased pixel density that enables accurate long range engagements while maintaining day sight, extending the lethality and provide exceptional observation.					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L67 / *Soldier Night Vision Devices*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
FY 2016 Accomplishments: Completed Government and Contractor testing of FWS-I Engineering and Manufacturing Development (EMD) systems in support of Milestone C, 4QFY16. Initiated FWS-CS and FWS-S EMD to design, build and deliver prototype systems for Government and Contractor testing. Improved the manufacturing process of uncooled Focal Plane Arrays (FPA) and micro-Organic Light-Emitting Diode (OLED) displays that are key components of FWS. ***FY 2017 Plans:*** Continue FWS-CS and FWS-S EMD to design, build and deliver prototype systems for Government and Contractor testing. FWS-I continue testing. Improve the manufacturing process of uncooled Focal Plane Arrays (FPA) and micro-Organic Light-Emitting Diode (OLED) displays that are key components of FWS. ***FY 2018 Base Plans:*** Continue FWS-CS and FWS-S EMD to design, build and deliver prototype systems for Government and Contractor testing. Complete FWS-CS and FWS-S EMD testing in preparation for Low Rate Initial Production (LRIP). Improve the manufacturing process of uncooled Focal Plane Arrays (FPA) and micro-Organic Light-Emitting Diode (OLED) displays that are key components of FWS					
Title: Small Tactical Optical Rifle Mounted (STORM) II ***Description:*** The AN/PSQ-23 STORM Micro-Laser Range Finder (MLRF) is a weapon-mounted multi-function laser system. It provides an eye safe laser range finder, digital compass, Infrared (IR) and visible aiming lights, and an IR illuminator for far target location with continuous range, accuracy, weight and power performance enhanced capabilities. Funding supports qualifying smaller, lighter, less expensive STORM variant (STORM II) with Soldiers. ***FY 2016 Accomplishments:*** Conducted delta qualification testing for the STORM SLX variant. ***FY 2018 Base Plans:*** Multiple contracts will be awarded to procure competing, updated STORM systems, STORM II. STORM II test systems will be capitalize on improved laser and electro-optical technologies to develop a lighter, lower cost, multi-function laser system for the individual Soldier. This effort incrementally funds the procurement and qualification of STORM II test systems for future procurements.	0.100	-	4.850	-	4.850
Title: Family of Vision and Mobility Capabilities (FVMC)	-	-	2.100	-	2.100

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L67 / *Soldier Night Vision Devices*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Description: The FVMC is the next generation vision system for day and night that will reduce the Soldier's burden and allow hands free operation. The FVMC will provide automatic adjustment of imagery and matched sensor fields of view. The FVMC will provide day/night Rapid Target Acquisition (RTA) capability by interfacing with FWS-I, day/night data display for the Soldier Network Warrior End User Device/Computer (EUD), and ability to send/receive data to the EUD to support advanced EUD applications to process the sensor video, integrate it with external data sources, and produced advanced processed imagery with overlay data display. ***FY 2018 Base Plans:*** Initiate development of system prototypes for the FVMC.					
Title: Pre-Shot Threat Detection ***Description:*** The PTD system is a compact, lightweight, mounted multi-function laser system designed to detect threat Snipers, Forward Observers and Scouts equipped with direct view optics. The PTD functions include laser illumination, optical augmentation and pointing. The PTD capabilities will be developed in two parallel paths to allow for technology insertions when available. PTD (Overt) provides the maneuver element with an initial solution (overt) that improves the Soldier's capability to conduct pre-shot threat detection, obtain situational awareness, and verification of threat. PTD combines the capability of the Multi-Function Aiming Light and the Green Laser Interdiction System, thereby reducing redundancy and the total load. PTD (Covert) provides the maneuver element with an enhanced solution (covert) that improves the Soldier's capability to conduct pre-shot threat detection, obtain situational awareness, and verification of threat, while remaining undetected by enemy optics. ***FY 2018 Base Plans:*** Finalize production representative system and conduct Limited User Tests (LUT) for the Overt PTD prototypes. Draft and release RFP. Further develop covert capability.	-	-	1.497	-	1.497
Accomplishments/Planned Programs Subtotals	19.710	26.257	32.504	-	32.504

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
• 603774A VT7: *603774A - Night Vision Systems Advanced Development (VT7)*	7.003	10.321	12.347	-	12.347	8.435	6.779	6.828	7.451	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L67 / *Soldier Night Vision Devices*

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
• Helmet Mounted Enhanced Vision Devi: *Helmet Mounted Enhanced Vision Devices (HMEVD) (SSN K36400)*	97.777	156.197	144.617	0.027	144.644	120.898	91.640	43.111	33.076	Continuing	Continuing
• Family of Weapons Sights - Inidivid: *Family of Weapons Sights - Inidividual (FWS-I) (SSN K22002)*	30.194	55.536	49.887	-	49.887	89.769	83.246	80.685	19.900	Continuing	Continuing
• Small Tactical Optical Rifle Mounte: *Small Tactical Optical Rifle Mounted (STORM) (SSN K35110)*	19.677	18.843	13.947	0.060	14.007	23.846	23.883	24.216	27.876	Continuing	Continuing
• Laser Target Locators: *Laser Target Locators (LTL) (SSN B53800)*	26.197	32.973	21.876	0.350	22.226	21.059	21.256	21.703	22.300	Continuing	Continuing
• Family of Weapons Sights-Crew Serv: *Family of Weapons Sights - Crew Serve (FWS-CS) (SSN K22003)*	-	-	1.033	-	1.033	31.469	78.822	86.403	95.575	Continuing	Continuing
• Family of Weapons Sights-Sniper: *Family of Weapons Sights -Sniper (FWS-S) (SSN K22004)*	-	-	8.185	-	8.185	15.753	26.467	16.555	1.728	Continuing	Continuing

Remarks

D. Acquisition Strategy

The various developmental programs in this project continue to exercise competitively awarded contracts using best value source selection procedures.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*	Project (Number/Name) L67 / *Soldier Night Vision Devices*	

Management Services ($ 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
PROGRAM MGMT	MIPR	Various : Various	2.912	2.098	Feb 2016	3.087	Feb 2017	3.005	Feb 2018	-		3.005	Continuing	Continuing	0.000
		Subtotal	2.912	2.098		3.087		3.005		-		3.005	-	-	0.000

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
Family of Weapon Sights-Individual (FWS-I)	C/CPFF	DRS RSTA, Inc BAE Systems : Dallas, TX/Nashua, NH	33.396	3.043	Jun 2016	-		-		-		-	0.000	36.439	0.000
Family of Weapon Sights-Crew Served (FWS-CS)	C/CPFF	Various : Various	0.000	6.459	Sep 2016	14.465	Jan 2017	14.499	Dec 2017	-		14.499	0.000	35.423	0.000
Family of Weapon Sights-Sniper (FWS-S)	Allot	N2 Imaging Systems : Irvine, CA	0.000	4.600	Jun 2016	4.122	Jan 2017	0.607	Dec 2017	-		0.607	0.000	9.329	0.000
Family of Vision and Mobility Capabilities (FVMC)	MIPR	NVESD : Ft Belvoir, VA	0.000	-		-		2.100	Feb 2018	-		2.100	0.000	2.100	Continuing
Pre-Shot Threat Detection	Various	Various : Various	0.000	-		-		0.847	Feb 2018	-		0.847	0.000	0.847	Continuing
STORM II Test Systems (Vendor A)	C/FFP	TBD : TBD	0.000	-		-		2.125	Jan 2018	-		2.125	0.000	2.125	Continuing
STORM II Test Systems (Vendor B)	C/FFP	TBD : TBD	0.000	-		-		2.125	Jan 2018	-		2.125	0.000	2.125	Continuing
		Subtotal	33.396	14.102		18.587		22.303		-		22.303	0.000	88.388	-

Support ($ 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
Matrix Support	MIPR	NVESD : Ft Belvoir, VA	4.195	1.046	Feb 2016	1.549	Feb 2017	2.429	Feb 2018	-		2.429	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army			Date: May 2017
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Support ($ 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
		Subtotal	4.195	1.046		1.549		2.429		-		2.429	-	-	0.000

Test and Evaluation ($ 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
Government Test Support Activity	MIPR	Army Test and Evaluation Command : Various	44.695	2.464	Mar 2016	3.034	Jun 2017	4.767	Jul 2018	-		4.767	Continuing	Continuing	0.000
		Subtotal	44.695	2.464		3.034		4.767		-		4.767	-	-	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	85.198	19.710		26.257		32.504		-		32.504	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L67 / *Soldier Night Vision Devices*

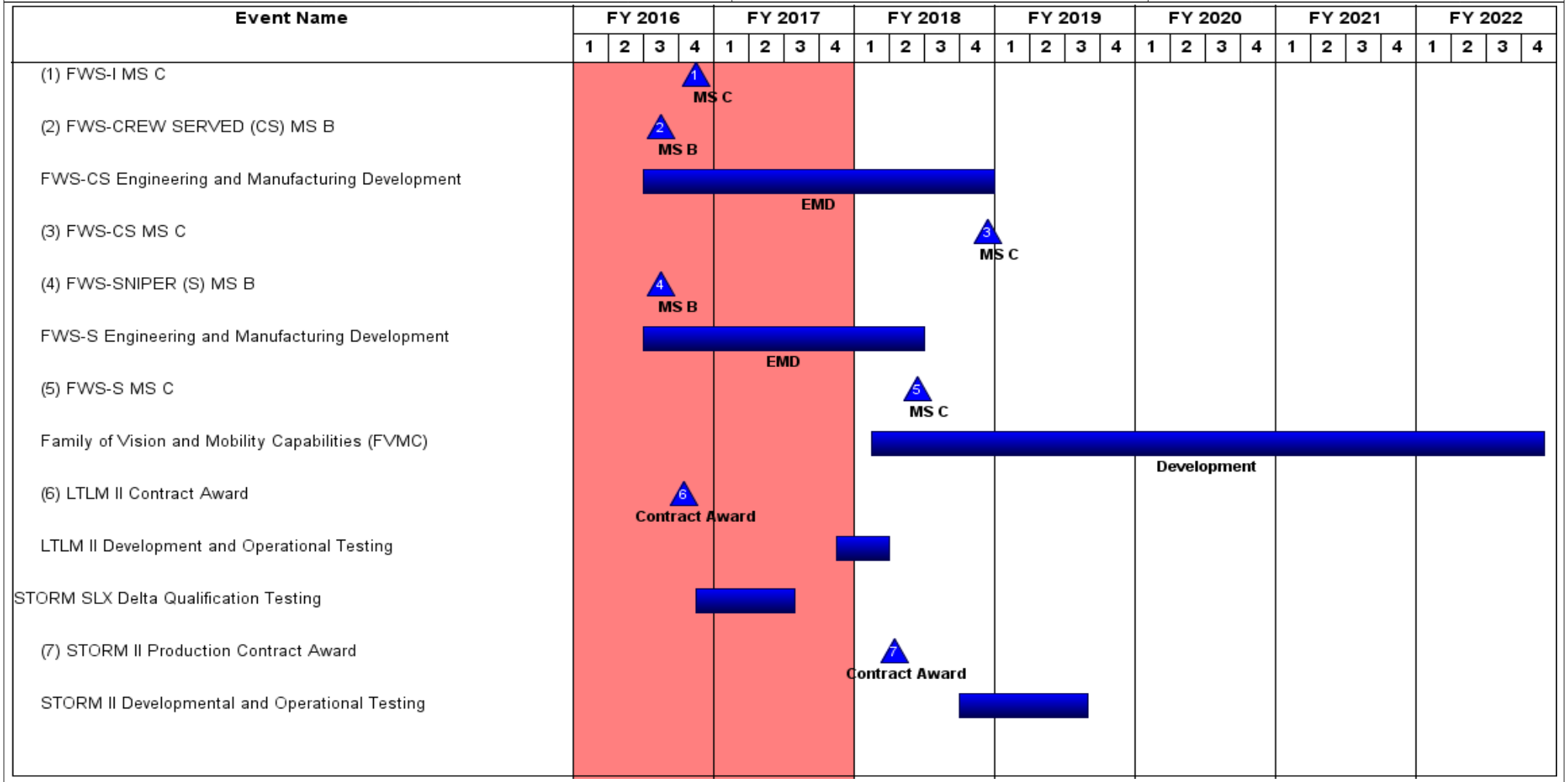

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L67 / *Soldier Night Vision Devices*

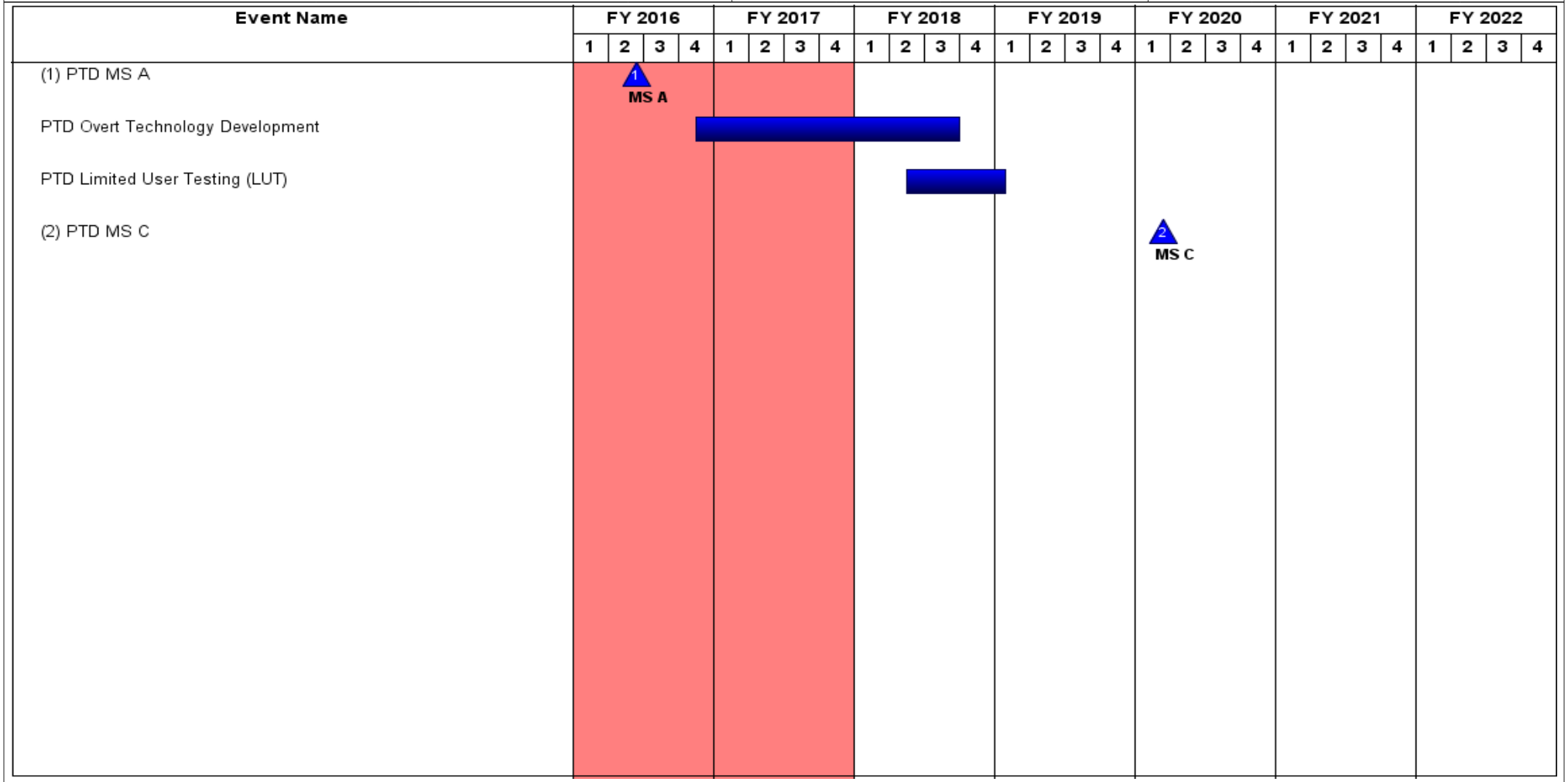

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L67 / *Soldier Night Vision Devices*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
FWS-I MS C	4	2016	4	2016
FWS-CREW SERVED (CS) MS B	3	2016	3	2016
FWS-CS Engineering and Manufacturing Development	3	2016	4	2018
FWS-CS MS C	4	2018	4	2018
FWS-SNIPER (S) MS B	3	2016	3	2016
FWS-S Engineering and Manufacturing Development	3	2016	2	2018
FWS-S MS C	2	2018	2	2018
Family of Vision and Mobility Capabilities (FVMC)	1	2018	4	2022
LTLM II Contract Award	4	2016	4	2016
LTLM II Development and Operational Testing	4	2017	1	2018
STORM SLX Delta Qualification Testing	4	2016	3	2017
STORM II Production Contract Award	2	2018	2	2018
STORM II Developmental and Operational Testing	4	2018	3	2019
PTD MS A	2	2016	2	2016
PTD Overt Technology Development	4	2016	3	2018
PTD Limited User Testing (LUT)	2	2018	1	2019
PTD MS C	1	2020	1	2020

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*	Project (Number/Name) L70 / *Night Vision Dev Ed*	

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
L70: *Night Vision Dev Ed*	-	28.426	40.368	52.900	-	52.900	55.625	41.875	23.776	14.905	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project performs Engineering and Manufacturing Development (EMD) on high performance night vision, Reconnaissance, Surveillance, and Target Acquisition (RSTA) systems and other related systems that allow forces to locate and track enemy units in day, night, and all battlefield conditions, and through natural and man-made structures and obscurants. It also develops and integrates suites of these sensors to provide well-defined surveillance and targeting capabilities, as well as architectures for these sensors to communicate automatically. These efforts focus on meeting the requisite night vision and RSTA capabilities required for evolving Current Force, Modular Force, and Future Force systems.

The project supports the 3rd Generation Forward Looking Infrared (3GEN FLIR) B-Kit EMD program, which incorporates the next generation of forward looking infrared technologies. The 3GEN FLIR EMD program will leverage critical technology development from the Advanced Thermal Imaging EMD and Combat Vehicle Advanced Sensor Technology (CVAST) effort to develop a common 3GEN FLIR B-Kit for integration into US Army FLIR sensor systems in accordance with the approved Improved Forward Looking Infrared (I-FLIR) Capability Development Document (CDD). The common 3GEN FLIR B-Kit prescribed by the I-FLIR CDD will allow the Army to achieve economies of scale and avoid duplicative engineering and development costs. As a result, 3GEN FLIR capabilities can be delivered at a lower cost to the Abrams, Bradley, and Long Range Advanced Scout Surveillance System (LRAS3), while potentially leveraging 3GEN FLIR components for airborne applications. The 3GEN FLIR B-Kit provides Mid Wave Infrared and Long Wave Infrared digital video and the electronic interfaces required to integrate the 3GEN FLIR technology with the host platform sensor. When integrated in current sensor packages, 3GEN FLIR technology enhances the war-fighters' survivability and lethality through increased identification range performance, while enabling the detection of difficult or obscured targets and faster threat detection through automated processes. The 3GEN FLIR B-Kit EMD program is also a key element in maintaining the Army's FLIR industrial base.

The project supports LRAS3 Modification Work Order (MWO) to integrate 3GEN FLIR B-Kit. The LRAS3 MWO effort includes integration of 3GEN FLIR B-Kit technology, an Inertial Measurement Unit (IMU), and an M-code Global Positioning System (GPS) receiver. Collectively, these capabilities will improve the Far Target Location (FTL) accuracy of the LRAS3 and enhance the scout's survivability and lethality through increased detection, recognition and identification range performance.

This project also executes the Army Sensor Computing Environment (CE) effort which is part of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA-ALT) Common Operating Environment (COE) program. The Sensor CE effort focuses on increasing sensor interoperability across the enterprise and improving the Soldier-machine interface. This is done by defining, demonstrating and standardizing Sensor interfaces across the Army networks. Standardized interfaces delivered from this effort will be incorporated into current and future sensor systems and programs.

FY 2018 Base Funding in the amount of $52.900 million supports the 3GEN FLIR B-Kit EMD program activities as well as the initiation of the 3GEN LRAS3 Modification Work Order (MWO) effort to integrate 3GEN FLIR B-Kit, an IMU, and an M-code GPS receiver; and completion of the performance specification and solicitation

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
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documentation. Additionally, FY 2018 Base Funding supports the continued activities associated with meeting sensor interoperability requirements and improving the Soldier-machine interface in support of the Army's vision of the Common Operating Environment (COE).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: 3GEN FLIR B-Kit Milestone Activities ***Description:*** 3GEN FLIR engineering and document preparation. ***FY 2016 Accomplishments:*** FY 2016 Base Funding supports EMD engineering and logistics document preparation in support of a 2QFY16 Milestone B decision. Support includes preparation of core logistics analysis, system engineering plan, test and evaluation master plan, life cycle sustainment plan, and an independant logistics assessment.	4.755	-	-	-	-
Title: 3GEN FLIR B-Kit EMD ***Description:*** 3GEN FLIR EMD requirements and contract awards. ***FY 2016 Accomplishments:*** FY 2016 Base Funding supports source selection activities, award of multiple contracts in support of 3GEN FLIR, and program management support. Contract awards will support development engineering activities and Preliminary Design Review (PDR). ***FY 2017 Plans:*** FY 2017 Base Funding supports the continuation of 3GEN FLIR development activities to include Critical Design Review (CDR), coding of software, the initiation of prototype manufacturing, platform Preliminary Design Review (PDR) support activities, and program management support. ***FY 2018 Base Plans:*** FY 2018 Base Funding supports the continuation of 3GEN FLIR Prototype Fabrication, Test Readiness Review (TRR) preparation, initiation of software Formal Qualification Testing (FQT), and program management support.	17.191	37.212	43.919	-	43.919
Title: Common Operating Environment (COE) ***Description:*** This effort supports the Common Operating Environment vision by improving the sensor interoperability requirement and the Soldier-machine interface. Resultant improvements to be made on a program by program basis. ***FY 2016 Accomplishments:***	5.981	0.100	0.100	-	0.100

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L70 / *Night Vision Dev Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
FY 2016 Base Funding supports continued development of the COE program to include meeting the network interoperability requirement and improving the soldier-machine interface. Specific FY16 activities include continuation of configuration management, specification development & implementation, and execution of demonstrations and experimentation for transition into Army programs. ***FY 2017 Plans:*** FY 2017 Base Funding supports continued development of the COE program to include meeting the sensor interoperability requirement and improving the soldier-machine interface. Specific FY17 activities include continued execution of demonstrations and experimentation for transition into Army programs. ***FY 2018 Base Plans:*** FY 2018 Base Funding supports continued development of the COE program to include meeting the sensor interoperability requirement and improving the soldier-machine interface. Specific FY18 activities include continued demonstrations and experimentation for transition into Army programs.					
Title: 3GEN LRAS3 ECP to integrate 3GEN FLIR B-Kit ***Description:*** This effort supports the sensor enhancement activities required to integrate 3GEN FLIR B-Kit technology into the LRAS3. ***FY 2016 Accomplishments:*** FY 2016 Base Funding supports performing trade studies to analyze the current LRAS3 for modification required to integrate 3GEN FLIR B-Kit. ***FY 2017 Plans:*** FY 2017 Base Funding supports performing trade studies to analyze the current LRAS3 for modification required to integrate 3GEN FLIR B-Kit, an Inertial Measurement Unit (IMU), and an M-code GPS receiver; and developing the performance specification and preparing solicitation documentation. ***FY 2018 Base Plans:*** FY 2018 Base Funding supports completion of the performance specification and solicitation documentation; and initiation of the Modification Work Order (MWO) to integrate 3GEN FLIR B-Kit, an IMU, and an M-code GPS receiver.	0.499	3.056	8.881	-	8.881
Accomplishments/Planned Programs Subtotals	28.426	40.368	52.900	-	52.900

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L70 / *Night Vision Dev Ed*

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
• ABRAMS Tank Improvement Program: *Abrams Tank Improvement Program (PE 0203735A)*	73.768	88.452	108.570	-	108.570	159.380	108.000	68.000	59.939	Continuing	Continuing
• BRADLEY Improvement Program: *Bradley Improvement Program (PE 0203735A)*	91.752	102.382	130.863	-	130.863	179.400	149.000	87.500	81.889	Continuing	Continuing
• LRAS3: *Long Range Advanced Scout Surveillance System (LRAS3) (K38300) OPA2*	-	-	-	-	-	-	-	3.000	50.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

3GEN FLIR: Materiel Development Decision (MDD) was received from the Army Acquisition Executive (AAE) and the Acquisition Decision Memorandum (ADM) was signed on 22-Dec-2014. Per the ADM, 3GEN FLIR entered the acquisition lifecycle at Milestone B (MS B) in 2Q FY 2016. After a successful MS B decision, competitive EMD contracts were awarded to design, develop, integrate and test the 3GEN FLIR B-Kit prior to production and mitigate the industrial base risk. The host platforms are responsible for integration of the 3GEN FLIR B-Kit.

3GEN Long Range Advanced Scout Surveillance System (LRAS3): After a Milestone Decision Authority (MDA) review planned for 2Q FY2017, 3GEN LRAS3 will perform technical trade studies to determine modifications required to the current LRAS3 to integrate 3GEN FLIR B-Kit technology, an Inertial Measurement Unit (IMU), and an M-coded Global Positioning System (GPS) receiver. Contract preparation activities are planned for the Modification Work Order (MWO) award in 3Q FY 2018.

Sensor CE: Additional Fiscal Year 2018 activities include continued development of the sensor interoperability requirement and improving the Soldier-machine interface in support of the Army's vision of the Common Operating Environment (COE).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*	Project (Number/Name) L70 / *Night Vision Dev Ed*	

Management Services ($ 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
Project Management	MIPR	PM TS : Ft. Belvoir, VA	11.244	1.870	Feb 2016	1.332	Jan 2017	3.006	Jan 2018	-		3.006	0.000	17.452	9.454
		Subtotal	11.244	1.870		1.332		3.006		-		3.006	0.000	17.452	9.454

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
FY 2012-FY 2013: Develop, Fab, and Qual of a common Ground Platform Engine with Block II EOCCM	C/Various	Various : Various	0.049	-		-		-		-		-	0.000	0.049	0.000
3GEN FLIR B-Kit Engineering/Document Prep	C/Various	Various : Various	19.495	2.190	Jan 2016	-		-		-		-	0.000	21.685	0.000
3GEN FLIR B-Kit EMD	C/CPIF	Various : Various	0.000	17.191	Mar 2016	34.150	Dec 2016	40.030	Dec 2017	-		40.030	0.000	91.371	0.000
3GEN LRAS3: Tech Trade Studies	C/TBD	Various : Various	0.000	0.499	Aug 2016	2.182	Mar 2017	-		-		-	0.000	2.681	0.000
3GEN LRAS3: ECP Integration	C/TBD	Various : Various	0.000	-		-		7.486	Apr 2018	-		7.486	0.000	7.486	0.000
PSS P3I: CE COE	C/FP	Various : Various	14.292	4.870	Mar 2016	-		-		-		-	0.000	19.162	0.000
		Subtotal	33.836	24.750		36.332		47.516		-		47.516	0.000	142.434	0.000

Support ($ 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
3GEN FLIR B-Kit Support	C/TBD	Various : Various	28.777	1.606	Mar 2016	1.930	Feb 2017	1.154	Feb 2018	-		1.154	0.000	33.467	0.000
3GEN LRAS3 - Spec development and solicitation prep	C/TBD	Various : Various	0.000	-		0.674	Feb 2017	1.124	Feb 2018	-		1.124	0.000	1.798	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*	Project (Number/Name) L70 / *Night Vision Dev Ed*	

Support ($ 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
COE Support	C/CPFF	Various : Various	0.994	0.200	Mar 2016	0.100	Feb 2017	0.100	Feb 2018	-		0.100	0.000	1.394	0.000
		Subtotal	29.771	1.806		2.704		2.378		-		2.378	0.000	36.659	0.000

Test and Evaluation ($ 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
Other Test Support	MIPR	Various : Various	15.850	-		-		-		-		-	0	15.850	15.850
		Subtotal	15.850	-		-		-		-		-	0.000	15.850	15.850

	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	90.701	28.426		40.368		52.900		-		52.900	0.000	212.395	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L70 / *Night Vision Dev Ed*

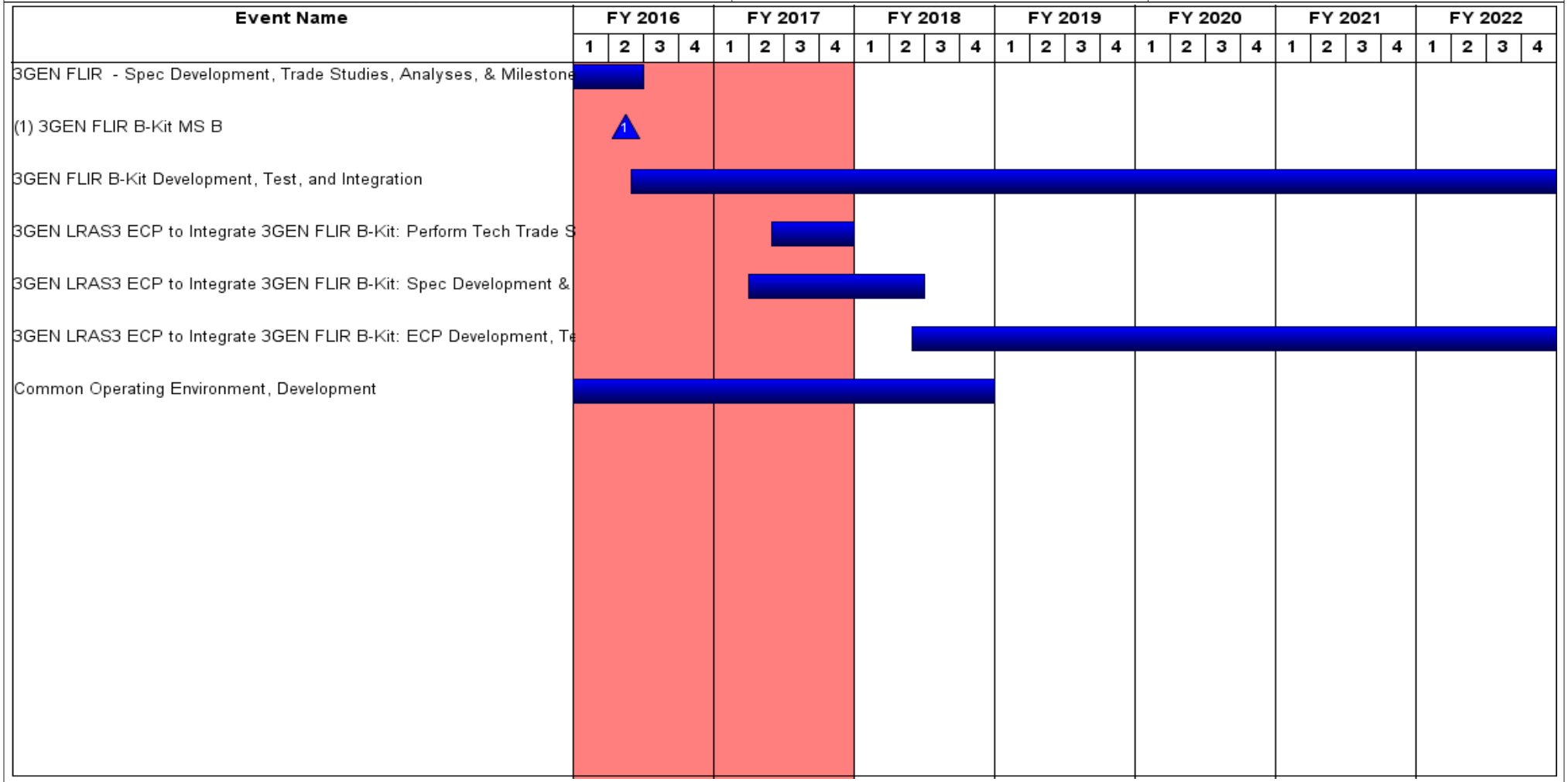

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L70 / *Night Vision Dev Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
3GEN FLIR - Spec Development, Trade Studies, Analyses, & Milestone Prep	1	2012	2	2016
3GEN FLIR B-Kit MS B	2	2016	2	2016
3GEN FLIR B-Kit Development, Test, and Integration	2	2016	4	2022
3GEN LRAS3 ECP to Integrate 3GEN FLIR B-Kit: Perform Tech Trade Studies	2	2017	4	2017
3GEN LRAS3 ECP to Integrate 3GEN FLIR B-Kit: Spec Development & Solicitation	2	2017	2	2018
3GEN LRAS3 ECP to Integrate 3GEN FLIR B-Kit: ECP Development, Test & Integration	2	2018	4	2022
Common Operating Environment, Development	2	2012	4	2018

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*	Project (Number/Name) L75 / *Profiler*	

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
L75: *Profiler*	-	2.024	3.885	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.909
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Profiler Virtual Module (PVM) provides meteorological (MET) data that includes wind speed, wind direction, temperature, barometric pressure, and humidity information required for use in the Advanced Field Artillery Tactical Data System (AFATDS). The correctional information is necessary for precise targeting and terminal guidance to Field Artillery assets. PVM improves accuracy of predictive fires solutions and allows for first round effects on target and reduces the risk of fratricide. This capability increases the lethality of indirect fire systems such as the rocket launchers, self-propelled or towed howitzers, and mortars.

FY2018 Base funding is $0.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Profiler Virtual Module COE V2/3 development ***Description:*** Implementation of COE V2/3 requirements and Digital Terrain and Elevation Data (DTED) upgrades and improved elevation algorithms. ***FY 2016 Accomplishments:*** Completed COE V2 requirements and Digital Terrain and Elevation Data (DTED) upgrades and improved elevation algorithms. ***FY 2017 Plans:*** Continue development for PVM in compliance with CP CE/COE V3	1.158	2.635	-	-	-
Title: Support cost for conversion of the MET model for Profiler Virtual Module ***Description:*** Conversion of the MET model for Profiler Virtual Module ***FY 2016 Accomplishments:*** Continued Engineering and development of PVM to receive the European weather data and compute meteorological data for Advanced Field Artillery Tactical Data System (AFATDS). ***FY 2017 Plans:*** Continued engineering and development of PVM for MET model upgrades.	0.566	0.650	-	-	-
Title: Formal Qualification Testing/Developmental Testing (FQT/DT)	-	0.300	-	-	-

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L75 / *Profiler*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Description: Conduct and complete FQT/DT ***FY 2017 Plans:*** Conduct Developmental Testing for PVM 1.0.1 for CP CE/COE V3					
Title: Program Support Costs for Profiler software development ***Description:*** Cost for Project Management Office efforts. ***FY 2016 Accomplishments:*** Program Management Office (PMO) efforts. ***FY 2017 Plans:*** Provide Program Management Office (PMO) efforts.	0.300	0.300	-	-	-
Accomplishments/Planned Programs Subtotals	2.024	3.885	-	-	-

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
• Profiler (K27900): *Profiler (K27900)*	4.057	-	-	-	-	-	-	-	-	0.000	4.057

Remarks

D. Acquisition Strategy

The Profiler Acquisition Strategy was approved by the MDA on 28 March 2012 for a product improvement to the Profiler Block III for a Virtual Module supporting the Command Post Computing Environment of the Common Operating Environment (COE). PVM 1.0 was completed in FY15. PVM 1.0.1 reflects continued updates for weather model changes and to meet directed COE compliance.

The Profiler product was transitioned to PEO C3T per the transition plan signed by the Army Acquisition Executive (AAE) dated 14 May 2015. The APB dated 30 Sep 2010, reflecting efforts to develop Profiler Block 3, was closed out 3 Apr 2015. Profiler will transition to sustainment in FY17/18.

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*	Project (Number/Name) L76 / *Dismounted Fire Support Laser Targeting Systems*	

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
L76: *Dismounted Fire Support Laser Targeting Systems*	-	4.477	5.778	14.957	-	14.957	15.677	6.122	5.531	5.742	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project matures technologies and capabilities which benefit the Lightweight Laser Designator Rangefinder (LLDR, AN/PED-1, AN/PED-1A, and AN/PED-1B) and the Joint Effects Targeting System (JETS). These precision targeting and next generation systems are used by dismounted Soldiers to locate, identify, and target enemy assets. This project focuses on reducing size, weight, power and cost, improving imaging performance, and increasing targeting accuracy. Targeting accuracy improvements will focus on developing and integrating affordable, non-magnetic, high accuracy, full-time (24/7), and all weather Precision Azimuth and Vertical Angle Measurement (PAVAM) devices, with reduced size, weight, and power characteristics into the LLDR system. Long term goals include improving current celestial navigation systems to increase operational availability, developing precision targeting capabilities that will operate in a Global Positioning System (GPS) denied environment to improve situational awareness, and to integrate Military Global Positioning System (GPS) User Equipment (M-Code) (next-generation GPS) receivers into LLDR and JETS, when available.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Precision Azimuth and Vertical Angle Measurement (PAVAM) development	4.477	4.900	-	-	-
Description: PAVAM is a non-magnetic based inertial navigation materiel solution for targeting devices in order to provide 24/7 precision target capability. This PAVAM effort improves azimuth accuracy leading to reduced collateral damage and improved target engagement. Celestial navigation systems provide a supplemental high accuracy, low cost azimuth measurement capability. ***FY 2016 Accomplishments:*** Continued funding the development of an improved PAVAM and initiated integration with the LLDR to provide a 24/7 precision targeting capability. ***FY 2017 Plans:*** Base FY 2017 Description: Complete integration of an improved precision AVAM with the LLDR system and conduct testing. Continue development of improved celestial navigation system technologies for application to LLDR and JETS.					
Title: Laser Development	-	0.500	-	-	-

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L76 / *Dismounted Fire Support Laser Targeting Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Description: Development of lightweight, low cost, multi-spectral, and more efficient lasers, and to develop laser stabilization technologies. ***FY 2017 Plans:*** Incorporate laser improvements into the LLDR and conduct testing.					
Title: Target Acquisition Development ***Description:*** Focuses on development of improvements to optical detection, recognition, and identification of targets for precision targeting systems. ***FY 2017 Plans:*** Incorporate imaging improvements into the LLDR design and conduct testing.	-	0.378	-	-	-
Title: Integration of M-Code GPS Receivers ***Description:*** Integrates M-Code GPS Receivers into the LLDR System. ***FY 2018 Base Plans:*** Initiate integration of M-Code GPS receivers into LLDR.	-	-	0.838	-	0.838
Title: Design, Integration, & Qualification of Improved LLDR Systems ***Description:*** One contract will be competitively awarded to procure updated LLDR systems with improved imaging performance and 24/7 precision targeting capability. This effort procures and qualifies improved LLDR systems for production beginning in FY20. ***FY 2018 Base Plans:*** Initiate procurement of competing, improved LLDR systems.	-	-	14.119	-	14.119
Accomplishments/Planned Programs Subtotals	4.477	5.778	14.957	-	14.957

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
• LLDR Mod-of-In-Service (SSN KA3100): *Lightweight*	22.314	28.058	5.198	3.974	9.172	29.247	46.212	40.271	65.307	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L76 / *Dismounted Fire Support Laser Targeting Systems*

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
Laser Designator Rangefinder (LLDR) Modification-of-In-Service (SSN KA3100)											
• JETS (SSN K32101): *Joint Effects Targeting System (JETS) (SSN K32101)*	47.212	50.726	48.664	-	48.664	43.511	77.755	95.736	92.853	Continuing	Continuing
• JETS (654710.L79-RDTE): *Joint Effects Targeting System (JETS) (654710.L79-RDTE)*	10.583	7.058	8.143	-	8.143	10.760	8.076	5.815	5.857	Continuing	Continuing

Remarks

D. Acquisition Strategy

This project continues to exercise competitively awarded contracts using value adjusted total evaluated price (VATEP) source selection procedures.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L76 / *Dismounted Fire Support Laser Targeting Systems*	

Management Services ($ 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
Program Management Support	Allot	PM-SSL : Ft. Belvoir VA 22060	0.007	0.050	Mar 2016	0.050	Nov 2016	0.075	Nov 2017	-		0.075	Continuing	Continuing	Continuing
		Subtotal	0.007	0.050		0.050		0.075		-		0.075	-	-	-

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
PAVAM Development and Integration	SS/CPFF	Northrop Grumman : Apopka, FL	4.188	3.140	Aug 2016	3.720	Nov 2016	-		-		-	0.000	11.048	0.000
Laser Development	SS/CPFF	TBD : Alexandria, VA 22310	0.680	0.500	Apr 2016	0.500	Feb 2017	-		-		-	Continuing	Continuing	0.000
Target Acquisition Development	SS/CPFF	CACI Technologies, INC : Chantilly, VA 20151	0.100	-		0.378	Nov 2016	-		-		-	Continuing	Continuing	0.000
M-Code Integration	SS/CPFF	Johns Hopkins University : Laurel, MD	0.000	-		-		0.657	Dec 2017	-		0.657	Continuing	Continuing	0.000
LLDR Qualification	C/FFP	TBD : TBD	0.000	-		-		13.625	Mar 2018	-		13.625	Continuing	Continuing	0.000
		Subtotal	4.968	3.640		4.598		14.282		-		14.282	-	-	0.000

Support ($ 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
Matrix Support	MIPR	Various : Various	0.000	-		0.180	Nov 2016	-		-		-	Continuing	Continuing	0.000
Science and Engineering Support	SS/CPFF	Johns Hopkins University : Laurel, MD	0.000	0.787	May 2016	0.600	Jan 2017	0.600	Dec 2017	-		0.600	Continuing	Continuing	0.000
		Subtotal	0.000	0.787		0.780		0.600		-		0.600	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*	Project (Number/Name) L76 / *Dismounted Fire Support Laser Targeting Systems*	

Test and Evaluation ($ 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
Test and Evaluation Support	MIPR	Army Test and Evaluation Command, WSMR, NM : MIPR	0.000	-		0.350	Mar 2017	-		-		-	Continuing	Continuing	Continuing
		Subtotal	0.000	-		0.350		-		-		-	-	-	-

	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	4.975	4.477		5.778		14.957		-		14.957	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L76 / *Dismounted Fire Support Laser Targeting Systems*

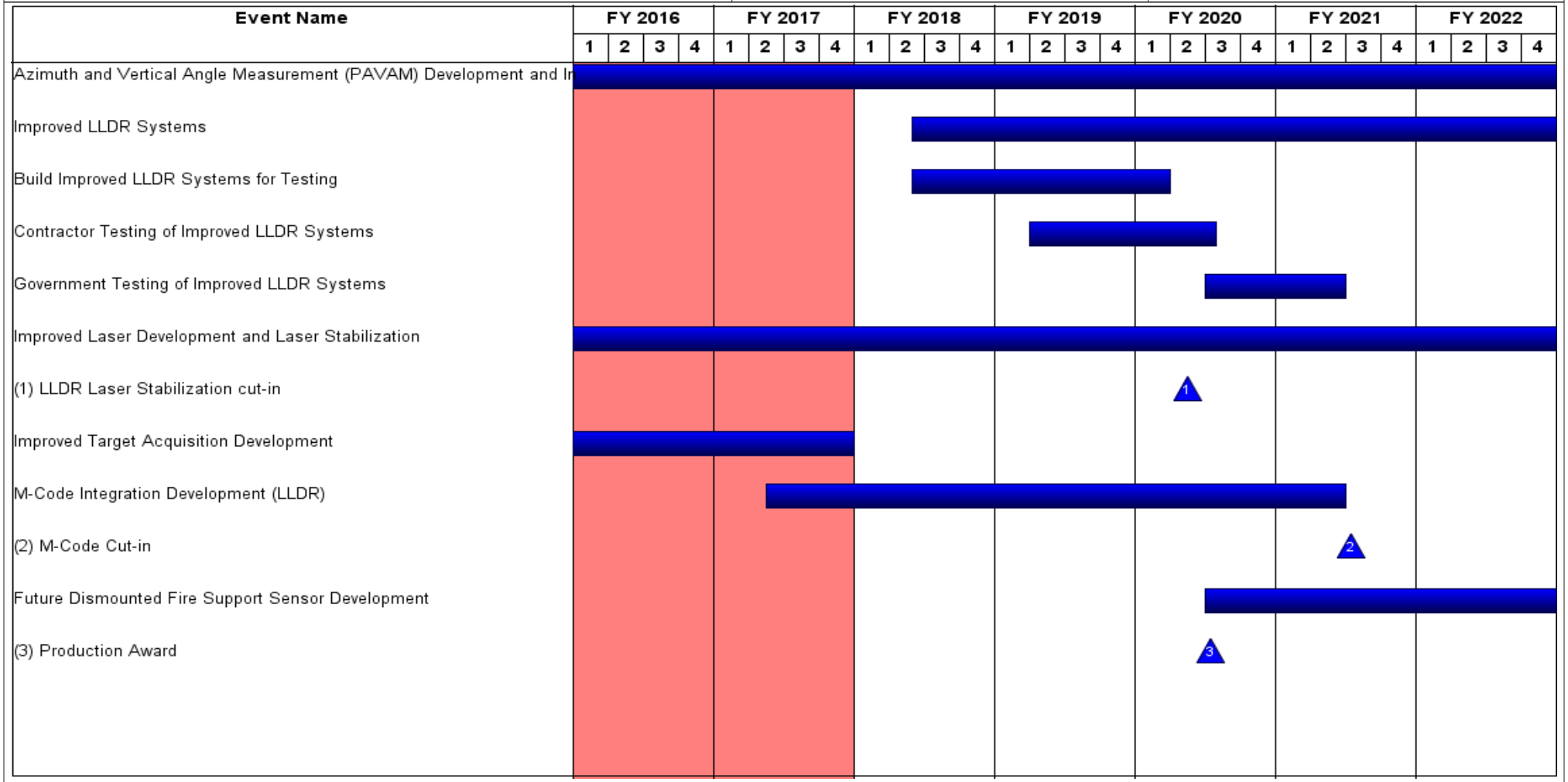

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L76 / *Dismounted Fire Support Laser Targeting Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Azimuth and Vertical Angle Measurement (PAVAM) Development and Integration	2	2014	4	2022
Improved LLDR Systems	2	2018	2	2023
Build Improved LLDR Systems for Testing	2	2018	1	2020
Contractor Testing of Improved LLDR Systems	2	2019	3	2020
Government Testing of Improved LLDR Systems	3	2020	2	2021
Improved Laser Development and Laser Stabilization	2	2014	4	2022
LLDR Laser Stabilization cut-in	2	2020	2	2020
Improved Target Acquisition Development	1	2015	4	2017
M-Code Integration Development (LLDR)	2	2017	2	2021
M-Code Cut-in	3	2021	3	2021
Future Dismounted Fire Support Sensor Development	3	2020	4	2023
Production Award	3	2020	3	2020

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*	Project (Number/Name) L79 / *Joint Effects Targeting Systems (JETS)*	

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
L79: *Joint Effects Targeting Systems (JETS)*	-	10.583	7.058	8.143	-	8.143	10.760	8.076	5.815	5.857	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Effects Targeting System (JETS) is an Army program with joint interest (Air Force and Marine Corps). JETS will meet the one-man, hand-held precision targeting gap identified by the Fire Center of Excellence (FCOE). JETS is a light-weight, handheld system that will provide the single dismounted observer and Joint Terminal Attack Controller (JTAC) with a common, enhanced day and night thermal capability to rapidly acquire, accurately locate, positively identify, and precisely designate targets. JETS Target Location and Designation System (TLDS) will be able to interface with existing and future Forward Entry Systems (FESs). After initiating JETS TLDS production, this project will address continued development and integration of improved precision targeting components to reduce size, weight, power, and cost of the system, to improve situational awareness, to address operation in environments where Global Positioning System (GPS) is denied, and to integrate Military GPS User Equipment (M-Code) GPS receivers when they become available.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Joint Effects Targeting System (JETS) Engineering and Manufacturing Development (EMD) ***Description:*** JETS is a lightweight mission equipment set for the dismounted forward observers and Joint Terminal Attack Controllers (JTAC). JETS provides observers and controllers the means to call for fire and control delivery of air, ground and naval surface fire support, including using precision munitions and effects (both lethal and non-lethal). ***FY 2016 Accomplishments:*** Completed EMD phase with two prime contract vendors by completing contractor testing and Government Developmental Testing (DT). ***FY 2017 Plans:*** Refurbish EMD prototypes with corrective actions following DT(with one contractor). Perform follow-on DT and limited user testing.	10.583	2.162	-	-	-
Title: Joint Effects Targeting System (JETS) Low-Rate Initial Production Qualification Testing ***Description:*** This projects supports the Initial Operational Test & Evaluations (IOT&E) for the JETS production representative test systems.	-	-	1.730	-	1.730

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L79 / *Joint Effects Targeting Systems (JETS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
FY 2018 Base Plans: Conduct IOT&E.					
Title: Precision Azimuth and Vertical Angle Measurement (PAVAM) Development ***Description:*** Focuses on developments to improve size, weight, power and cost for inertial navigation PAVAM solutions which provide a 24/7 precision targeting capability. Develops improvements to celestial navigation PAVAM solutions to improve availability of precision measurements over a wider range of environments. ***FY 2017 Plans:*** Continue development of the improved AVAM to reduce size, weight, power and cost, and initiate development to address operation in GPS denied environments. ***FY 2018 Base Plans:*** Continue development to address operation in GPS challenged/denied environments.	-	4.896	6.413	-	6.413
Accomplishments/Planned Programs Subtotals	10.583	7.058	8.143	-	8.143

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
• Joint Effects Targeting System: *Joint Effects Targeting System (SSN K32101)*	47.212	50.726	48.664	-	48.664	43.511	77.755	95.736	92.853	Continuing	Continuing
• Dismounted Fire Spt Laser Targeting: *Dismounted Fire Support Laser Targeting Sys (654710.L76)*	4.477	5.778	14.957	-	14.957	15.677	6.122	5.531	5.742	Continuing	Continuing

Remarks

D. Acquisition Strategy

This project continues to exercise competitively awarded contracts using best value source selection procedures.

E. Performance Metrics

N/A