Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Army											Date: March 2019	
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 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
Total Program Element	-	184.389	144.442	181.732	-	181.732	59.469	44.109	35.456	39.935	Continuing	Continuing
BQ6: *Visual Augmentation System Eng Dev*	-	0.000	0.000	89.000	-	89.000	0.000	0.000	0.000	0.000	0.000	89.000
L67: *Soldier Night Vision Devices*	-	108.518	58.987	40.060	-	40.060	28.667	19.240	20.646	25.310	Continuing	Continuing
L70: *Night Vision Dev Ed*	-	53.681	59.670	39.026	-	39.026	19.982	13.809	4.892	3.536	Continuing	Continuing
L76: *Dismounted Fire Support Laser Targeting Systems*	-	14.366	15.322	5.836	-	5.836	5.249	5.452	4.878	5.480	Continuing	Continuing
L79: *Joint Effects Targeting Systems (JETS)*	-	7.824	10.463	7.810	-	7.810	5.571	5.608	5.040	5.609	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element provides night vision/reconnaissance, surveillance and target acquisition technologies required for United States 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 BQ6 focuses on developing, improving and miniaturizing high performance vision system's electro-optics. 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 Soldier's day/night situational awareness and individual targeting capability. This is a priority of the Secretary's Close Combat Lethality Task Force. Funding in this project aligns with the Army's priorities in support of the National Defense Strategy.

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. Close Access Target Reconnaissance (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. This project includes cost associated with efforts for integration and interface of products on Soldiers head, body and weapons. Funding in this project aligns with the Army's priorities in support of the National Defense Strategy.

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 and integrates technologies and capabilities which benefit the Lightweight Laser Designator Rangefinder (LLDR) 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) contested 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. This is a priority of the Secretary's Close Combat Lethality Task Force. Funding in this project aligns with the Army's priorities in support of the National Defense Strategy.

Project L79 is an Army program with joint information (Air Force and Marine Corps). The Joint Effects Targeting System (JETS) addresses the one-man, hand-held precision targeting gap identified by the Fires Center of Excellence (FCoE). JETS is a light-weight, handheld system that will provide the single dismounted observer with a common, enhanced day and night thermal capability to rapidly acquire, accurately locate, positively identify, and precisely designate targets. JETS Target Location

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Army	Date: March 2019
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*

and Designation System (TLDS) will be able to interface with existing and future Forward Entry Systems (FESs) and operate in environments where global positioning system (GPS) capabilities are degraded or denied including the integration of military GPS user equipment (M-Code) GPS receivers, when they become available. This project will address continued development and integration of improved precision targeting components to reduce size, weight, power, and cost of systems for dismounted precisions Fires mission. This is a priority of the Secretary's Close Combat Lethality Task Force. Funding in this project aligns with the Army's priorities in support of the National Defense Strategy.

B. Program Change Summary ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	108.504	139.614	82.845	-	82.845
Current President's Budget	184.389	144.442	181.732	-	181.732
Total Adjustments	75.885	4.828	98.887	-	98.887
• Congressional General Reductions	-0.087	-0.172			
• Congressional Directed Reductions	-	-1.000			
• Congressional Rescissions	-	-			
• Congressional Adds	17.500	6.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	62.694	-			
• SBIR/STTR Transfer	-4.222	-			
• Adjustments to Budget Years	-	-	98.887	-	98.887

Change Summary Explanation

FY 2018 increase begins the development of the Integrated Visual Augmentation System (IVAS) Heads Up Display (HUD) 3.0.
FY 2020 increase is for improved Forward Looking Infrared (IFLIR) and sensors and lasers in support of the Army's modernization priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*	Project (Number/Name) BQ6 / *Visual Augmentation System Eng Dev*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
BQ6: *Visual Augmentation System Eng Dev*	-	0.000	0.000	89.000	-	89.000	0.000	0.000	0.000	0.000	0.000	89.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project focuses on developing, improving and miniaturizing high performance vision system's electro-optics. 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 Soldier's day/night situational awareness and individual targeting capability. This is a priority of the Secretary's Close Combat Lethality Task Force. Funding for this project aligns with the Army's priorities in support of the National Defense Strategy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Heads Up Display (HUD) ***Description:*** Integrated Visual Augmentation System (IVAS) HUD 3.0 provides a first generation single platform for Soldier/Marines to fight, rehearse, and train in day and night that provides increased lethality, mobility, and situational awareness necessary to achieve overmatch against our current and future adversaries. ***FY 2020 Base Plans:*** Complete HUD development efforts by demonstrating and testing capability set 3 (further improved capability) and capability set 4 (final form factor and performance) systems. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 is the first year for the IVAS in this project.	-	-	89.000	-	89.000
Accomplishments/Planned Programs Subtotals	-	-	89.000	-	89.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• BQ5: *Visual Augmentation System Advanced Development*	-	-	242.000	-	242.000	-	-	-	-	0.000	242.000
• VT7: *Soldier Maneuver Sensors - Adv Dev*	501.816	7.341	7.528	-	7.528	7.573	7.683	7.602	7.378	0.000	546.921

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** BQ6 / *Visual Augmentation System Eng Dev*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• K36402: *IVAS/Heads Up Display*	-	-	76.225	-	76.225	907.000	1,046.775	320.000	-	Continuing	Continuing
• K36400: *Helmet Mounted Enhanced Vision Devices*	144.644	112.251	129.485	-	129.485	207.845	245.266	6.442	382.007	Continuing	Continuing

Remarks

D. Acquisition Strategy

This project utilizes competitively awarded contracts using best value source selection procedures.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*	Project (Number/Name) BQ6 / *Visual Augmentation System Eng Dev*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	Various : Various	-	-		-		20.510	Nov 2019	-		20.510	Continuing	Continuing	-
		Subtotal	-	-		-		20.510		-		20.510	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Heads Up Display (HUD)	Various	Various : Various	-	-		-		18.970	Oct 2019	-		18.970	Continuing	Continuing	-
		Subtotal	-	-		-		18.970		-		18.970	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	NVESD : Fort Belvoir, Virginia 22060	-	-		-		4.845	Nov 2019	-		4.845	Continuing	Continuing	-
		Subtotal	-	-		-		4.845		-		4.845	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IVAS HUD 3.0 Testing	MIPR	Various : Various	-	-		-		44.675	Jan 2020	-		44.675	Continuing	Continuing	-
		Subtotal	-	-		-		44.675		-		44.675	Continuing	Continuing	N/A

	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		0.000		89.000		-		89.000	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army			Date: March 2019
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / *Night Vision Systems - Eng Dev*	Project (Number/Name) BQ6 / *Visual Augmentation System Eng Dev*	

	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

In FY 2020, BQ6 Management Services, Support Cost and Test and Evaluation Cost Category Items will include funding towards PE 0603774A Night Vision Systems - Advanced Development project BQ5 Visual Augmentation System - Advanced Development.

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army		Date: March 2019
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** BQ6 / *Visual Augmentation System Eng Dev*

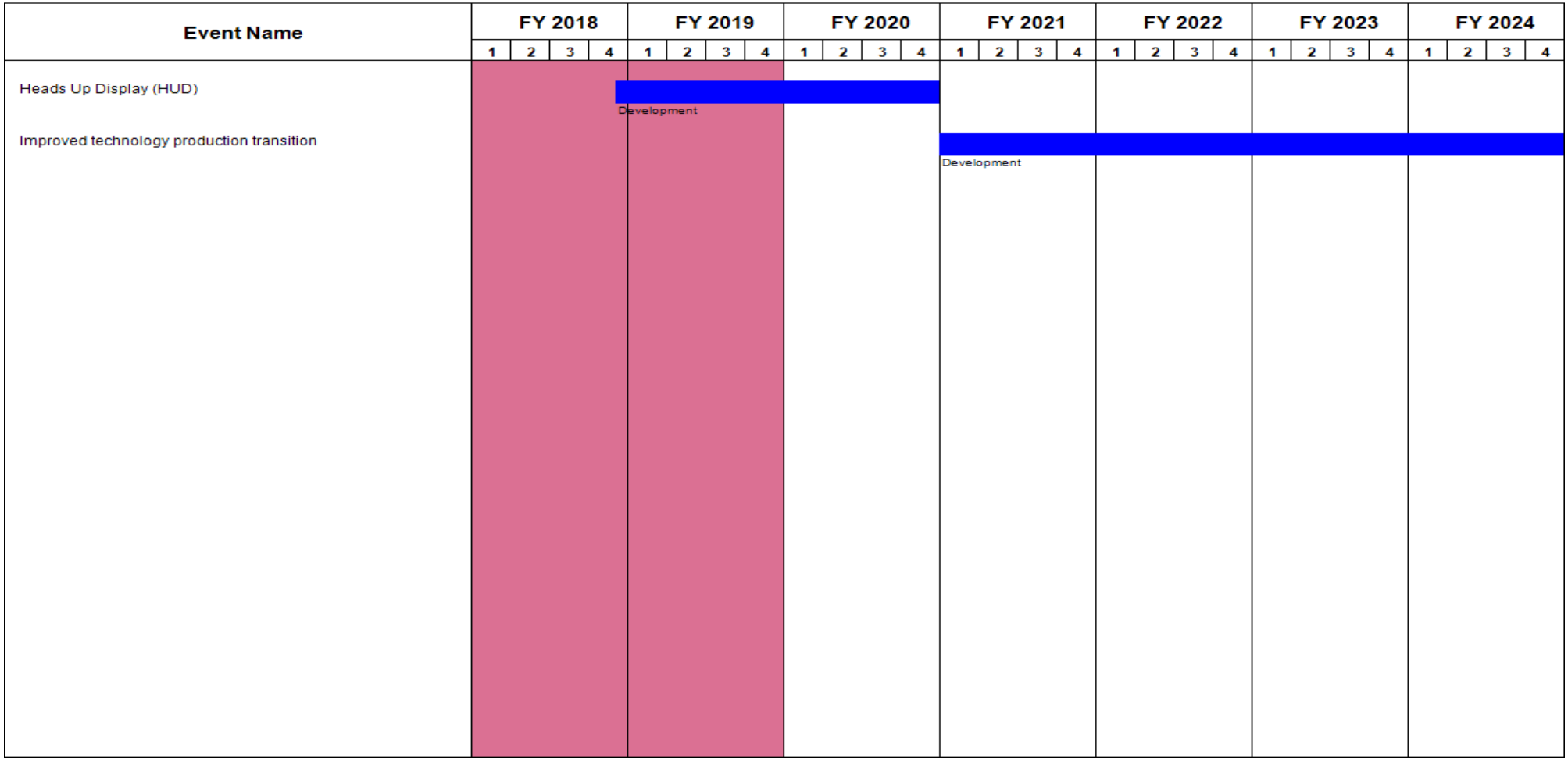

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army		Date: March 2019
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** BQ6 / *Visual Augmentation System Eng Dev*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Heads Up Display (HUD)	4	2018	4	2020
Improved technology production transition	1	2021	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: March 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
L67: *Soldier Night Vision Devices*	-	108.518	58.987	40.060	-	40.060	28.667	19.240	20.646	25.310	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. This project includes cost associated with efforts for integration and interface of products on Soldiers head, body and weapons.

Funding in this project aligns with the Army's priorities in support of the National Defense Strategy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Family of Weapon Sights (FWS)	41.295	23.972	21.708	-	21.708
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 all 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 Enhanced Night Vision Goggles or day display on the helmet. Leveraging the success of the Individual variant development, the FWS-CS variant operates as the primary sight. The FWS-CS system includes a wireless Helmet Mount Display (HMD) and provides the Soldier with input from a laser range finder 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					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
engagements while maintaining day sight, extending the lethality and provide exceptional observation. This project also supports thermal testing capabilities and Thermal Weapon Sight parts obsolescence. ***FY 2019 Plans:*** Complete FWS-CS Engineering and Manufacturing Development (EMD) testing in preparation for Low Rate Initial Production (LRIP). Improve the manufacturing process of uncooled FPA and micro-Organic Light-Emitting Diode (OLED) displays that are key components of FWS. Both FWS-S and FWS-CS will achieve MS C decision approval to enter LRIP Phase of the program. ***FY 2020 Base Plans:*** Conduct FWS-CS follow on testing through LRIP. FWS-S will continue EMD. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding decrease due to economic adjustments.					
Title: Small Tactical Optical Rifle Mounted (STORM) II ***Description:*** The 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, and a less expensive STORM variant (STORM II) for Soldiers. Funding also supports integrating ballistics calculator and in-line display capabilities into the STORM. ***FY 2019 Plans:*** This effort continues to fund and qualify the STORM II test systems in support of future procurements. This effort also funds the certification of technology, Intra Soldier Wireless (ISW), that supports wireless transmission of STORM data to other systems. ***FY 2020 Base Plans:*** Continue to qualify the STORM II test systems and fund the integration of technology to support wireless transmission of STORM data to other systems. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding decreased in FY 2020 due to the STORM II test systems were already procured and most of the qualification testing will be funded with FY 2019 funds. FY 2019 funds were used to certify ISW.	5.524	3.391	0.380	-	0.380
Title: Family of Vision and Mobility Capabilities (FVMC)	-	-	5.496	-	5.496

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Description: The FVMC (Day Display) provides the next generation vision capabilities 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. The Heads Up Display (HUD) is an output of the FVMC investment as a result of emerging commercial technology. The HUD will deliver overmatch warfighting capability plus enable Close Combat Squad Immersive Visual Training capability with Synthetic Training Environment core capabilities. The HUD will also provide a single integrated digital, low profile, conformal day/night device that allows Soldiers and Squads to Train, Rehearse and Fight in any operational environment. Prototyping will provide multiple knowledge point events to gauge vendor progress and capability to the force. ***FY 2020 Base Plans:*** Continue development of system prototypes for FVMC; Finalize Interface Control Document (ICD) to support interoperability between FVMC systems. Initiates development of the HUD ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FVMC funding increase due to maturing research and development of systems for FVMC Finalized ICD interoperability in preparation for subsequent Low-Rate Initial Production.					
Title: Enhanced Night Vision Goggle - Binocular (ENVG-B) ***Description:*** The ENVG-B system is a modular helmet-mounted, passive electro-optical night vision and long wave infrared (LWIR) imaging device in a binocular configuration. The system integrates dual Image Intensification (I2) sensors with the LWIR imagery into a single viewing display. The LWIR sensor provides the Soldier with the capability to rapidly detect and recognize human-sized targets in adverse weather, obscurants and in varying light conditions. The dual I2 sensors provide the Soldier with depth perception for ease of low-light level maneuvers and the ability to detect rifle-mounted aiming lights to engage targets. The ENVG-B can also be operated in a monocular configuration by moving one of the two individually rotating monoculars. The ENVG-B has a near infrared (NIR) emitting light source that provides illumination for close-up viewing. The ENVG-B mounts on current Soldier equipment, including the Advanced Combat Helmet (ACH), the Enhanced Combat Helmet (ECH) and Integrated Head Protection System (IHPS). The ENVG-B has a multi-point wireless interface to the FWS-I weapon mounted LWIR sensor and to Nett Warrior in order to support augmented reality	1.000	26.255	10.000	-	10.000

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
requirements. The ENVG-B wirelessly operates with the FWS-I to provide Rapid Target Acquisition (RTA) capability. RTA is the capability to view the boresighted/zeroed weapon sight reticle in the ENVG-B display, enabling the Soldier to accurately engage targets without having to bring the weapon to eye level and without the use of active lasers, all while remaining in defilade. ***FY 2019 Plans:*** FY 2019 will begin with the ENVG-B Engineering and Manufacturing Development (EMD) contract award. Two vendors will begin designing, building and deliver prototype systems for Government and Contract Testing. EMD Government testing will include an Engineering Characterization Test (ECT), a Reliability Growth Test - 1 (RGT-1), a Production Quality Test - Government (PQT-G) and a Limited User Test (LUT). ENVG-B EMD testing is in preparation for Low Rate Initial Production (LRIP). ***FY 2020 Base Plans:*** Continue testing and qualification for ENVG-B. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** ENVG-B funding decreases in FY 2020 as qualification events begin systems will ramp down.					
Title: Family of Target Acquisition Laser (FTAL) ***Description:*** FTAL develops, improves and miniaturizes high-performance systems to support target acquisition and engagement during day/night operations. FTAL will develop a family of modular products incorporating laser technology that include laser range finders, laser aiming lights, and laser imaging products to be used by mounted and dismounted forces with capabilities including range finding, marking, illumination, target hand-off, detecting optics, countering threat sensors, and navigation enhancements. FTAL will integrate and interface with products on the Soldier?s head, body and weapons to enhance situational awareness and lethality. ***FY 2019 Plans:*** Continue the development and integration of FTAL products. ***FY 2020 Base Plans:*** Continue development and integration of FTAL products. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** There will be a ramp up in development and integration of FTAL products.	0.581	1.075	2.476	-	2.476
Title: Heads Up Display HUD)	59.800	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Description: Integrated Visual Augmentation System (IVAS) HUD 3.0 provides a first generation single platform for Soldier/Marines to train, rehearse, fight in day and night that provides increased lethality, mobility, and situational awareness necessary to achieve overmatch against our current and futures adversaries.					
Title: Laser Target Locator Module (LTLM) ***Description:*** LTLM provides the dismounted observer or Scout a fully digital, handheld system to accurately determine target location and the ability of call for fire during all weather and lightening conditions. ***FY 2019 Plans:*** Continue improvement in speed, accuracy, and safety of the use over previous systems of this type (e.g. Laser Target Locator System). ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Effort not funded in FY 2020.	0.318	2.100	-	-	-
Title: FY 2019 SBIR / STTR Transfer ***Description:*** FY 2019 SBIR / STTR adjustment. ***FY 2019 Plans:*** FY 2019 SBIR / STTR adjustment. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2019 SBIR / STTR adjustment.	-	2.194	-	-	-
Accomplishments/Planned Programs Subtotals	108.518	58.987	40.060	-	40.060

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• VT7: *Soldier Maneuver Sensors - Adv Dev*	501.816	7.341	7.528	-	7.528	7.573	7.683	7.602	7.378	Continuing	Continuing
• K36400: *Helmet Mounted Enhanced Vision Devices*	144.644	112.251	129.485	-	129.485	207.845	245.266	6.442	382.007	Continuing	Continuing
• K22002: *FWS-INDIVIDUAL*	59.105	94.932	81.541	-	81.541	70.211	61.922	71.600	77.797	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: March 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• K35110: *Small Tactical Optical Rifle Mounted MLRF*	16.157	21.238	22.623	-	22.623	10.607	21.377	26.087	31.845	Continuing	Continuing
• B53800: *Laser Target Locator Systems*	37.975	32.704	24.354	-	24.354	13.913	20.839	23.773	24.182	Continuing	Continuing
• K22003: *FWS-CREW SERVED*	-	31.106	39.342	-	39.342	85.949	85.002	85.647	77.306	Continuing	Continuing
• K22004: *FWS-SNIPER*	-	-	0.000	-	0.000	2.571	11.348	18.862	19.787	Continuing	Continuing
• BQ5: *Visual Augmentation System Advanced Development*	-	-	242.000	-	242.000	-	-	-	-	0.000	242.000
• BQ6: *Visual Augmentation System Eng Dev*	-	-	89.000	-	89.000	-	-	-	-	0.000	89.000
• K36401: *Night Vision AN/PVS-14 Mods*	-	8.496	6.540	3.676	10.216	0.416	7.379	32.735	23.867	Continuing	Continuing
• K36402: *IVAS/Heads Up Display*	-	-	76.225	-	76.225	907.000	1,046.775	320.000	-	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: PB 2020 Army			Date: March 2019
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 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PROGRAM MGMT	MIPR	Various : Various	8.097	11.000	Nov 2017	1.957	Nov 2018	2.027	Nov 2019	-		2.027	Continuing	Continuing	-
		Subtotal	8.097	11.000		1.957		2.027		-		2.027	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Weapon Sights-Crew Served (FWS-CS)	C/CPFF	DRS RSTA, Inc BAE Systems : Dallas, TX/Nashua, NH	11.262	33.523	Nov 2017	11.394	Feb 2019	-		-		-	Continuing	Continuing	-
Family of Weapon Sights-Sniper (FWS-S)	Allot	N2 Imaging Systems : Irvine, CA	4.122	0.503	Mar 2018	7.947	Jun 2019	8.251	Jun 2020	-		8.251	Continuing	Continuing	-
Family of Vision and Mobility Capabilities (FVMC)	MIPR	NVESD : Ft Belvoir, VA	-	2.413	Mar 2018	-		13.910	Feb 2020	-		13.910	Continuing	Continuing	-
STORM II Test Systems (L3)	C/FFP	Optics 1 : Bedford, NH	-	2.093	May 2018	-		-		-		-	Continuing	Continuing	-
STORM II Test Systems (Optics 1)	C/FFP	L3 : Londonderry, NH	-	3.431	May 2018	-		-		-		-	Continuing	Continuing	-
STORM - Intra Soldier Wireless (ISW)	TBD	TBD : NVESD	-	-		2.100	Jan 2019	-		-		-	Continuing	Continuing	-
Enhanced Night Vision Google - Binocular (ENVG-B) (Vendor A)	C/CPFF	TBD : TBD	-	-		11.139	Mar 2019	5.000	Mar 2020	-		5.000	Continuing	Continuing	-
Enhanced Night Vision Google - Binocular (ENVG-B) (Vendor B)	C/CPFF	TBD : TBD	-	-		11.138	Mar 2019	5.000	Mar 2020	-		5.000	Continuing	Continuing	-
Laser Target Location Module (Optics 1)	C/CPFF	Army Contracting Center : Aberdeen Proving Ground	-	-		2.100	Feb 2019	0.686	Feb 2020	-		0.686	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army			Date: March 2019
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*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Target Acquisition Laser (FTAL)	MIPR	NVESD : Ft. Belvoir, VA	-	0.581	May 2018	0.775	Nov 2018	2.893	Dec 2019	-		2.893	Continuing	Continuing	-
Heads Up Display (HUD)	TBD	Various : Various	-	26.270	Sep 2018	-		-		-		-	Continuing	Continuing	-
FY 2019 SBIR / STTR Transfer	TBD	TBD : TBD	-	-		2.194		-		-		-	Continuing	Continuing	-
		Subtotal	15.384	68.814		48.787		35.740		-		35.740	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	NVESD : Ft Belvoir, VA	6.790	20.115	Nov 2017	1.476	Nov 2018	1.160	Nov 2019	-		1.160	Continuing	Continuing	-
		Subtotal	6.790	20.115		1.476		1.160		-		1.160	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test Support Activity	MIPR	Army Test and Evaluation Command : Various	50.193	8.589	Apr 2018	6.767	Apr 2019	1.133	Nov 2019	-		1.133	Continuing	Continuing	-
		Subtotal	50.193	8.589		6.767		1.133		-		1.133	Continuing	Continuing	N/A

	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	80.464	108.518		58.987		40.060		-		40.060	Continuing	Continuing	N/A

Remarks

In FY 2018, there's a $59,800 million Above Threshold Reprogramming for the Heads Up Display (HUD) project.

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army		Date: March 2019
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*

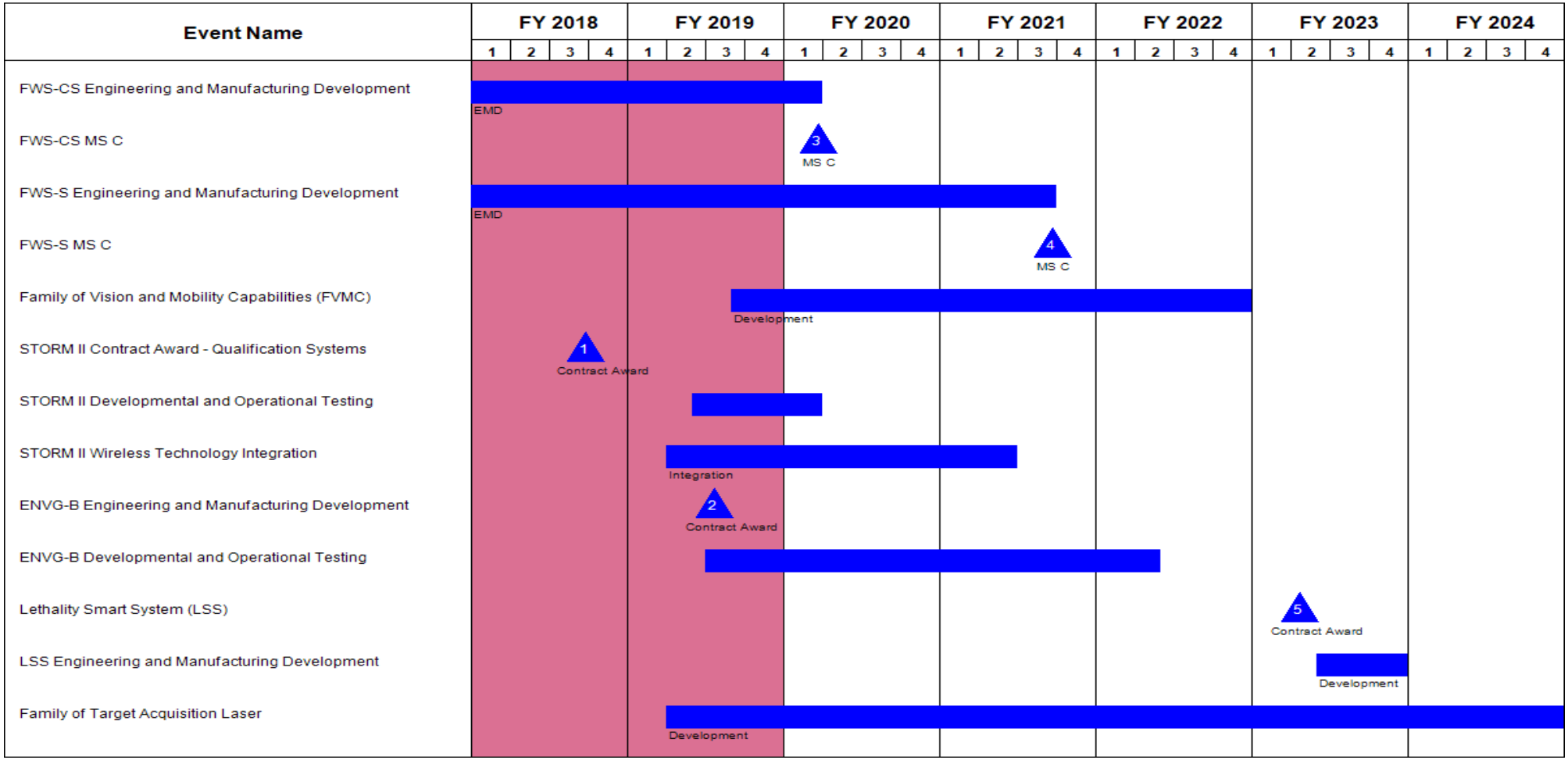

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army		Date: March 2019
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L67 / *Soldier Night Vision Devices*

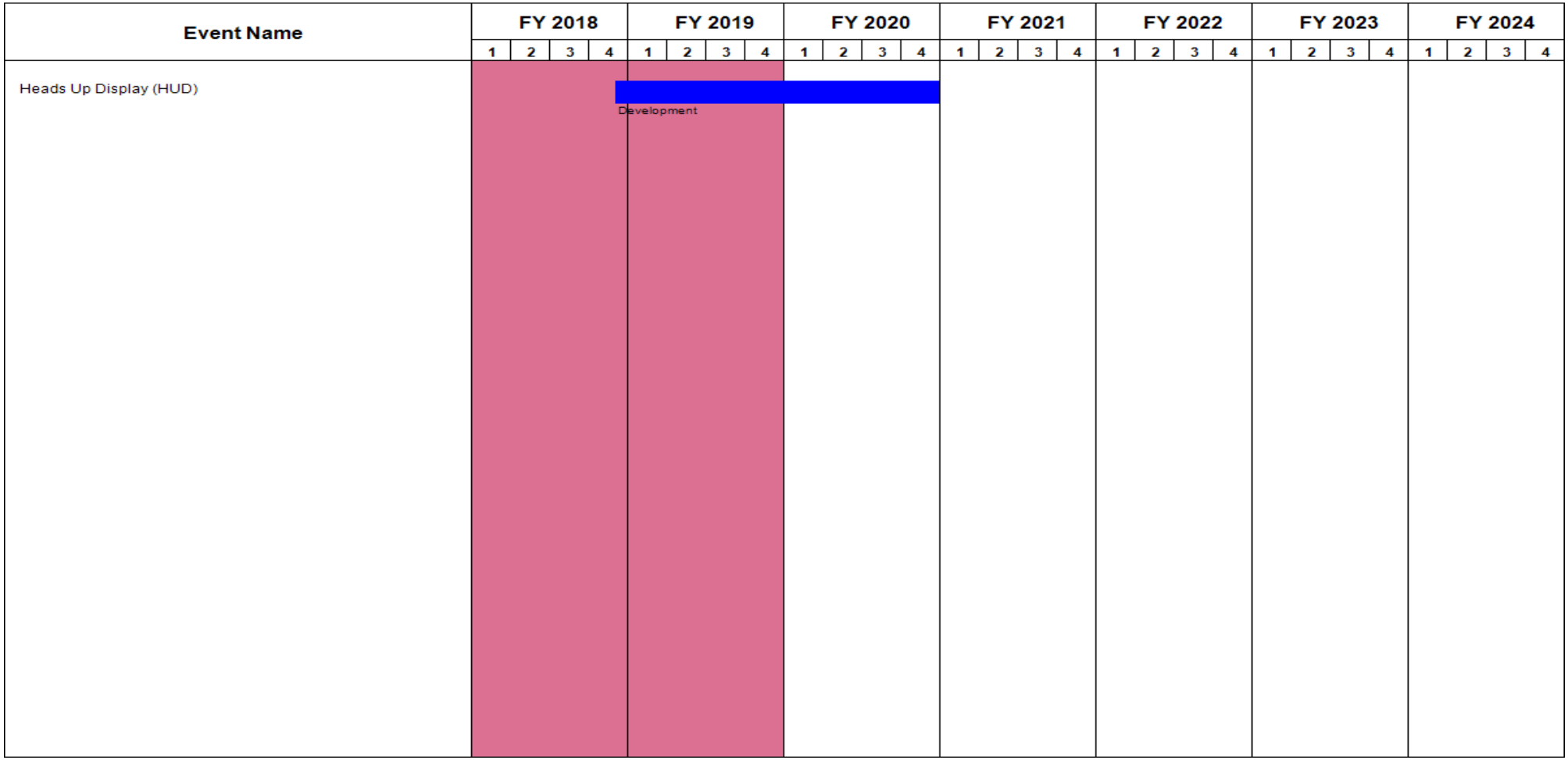

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army		Date: March 2019
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L67 / *Soldier Night Vision Devices*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
FWS-CS Engineering and Manufacturing Development	3	2016	1	2020
FWS-CS MS C	1	2020	1	2020
FWS-S Engineering and Manufacturing Development	3	2016	3	2021
FWS-S MS C	3	2021	3	2021
Family of Vision and Mobility Capabilities (FVMC)	3	2019	4	2022
STORM II Contract Award - Qualification Systems	3	2018	3	2018
STORM II Developmental and Operational Testing	2	2019	1	2020
STORM II Wireless Technology Integration	2	2019	2	2021
ENVG-B Engineering and Manufacturing Development	3	2019	3	2019
ENVG-B Developmental and Operational Testing	3	2019	2	2022
Lethality Smart System (LSS)	2	2023	2	2023
LSS Engineering and Manufacturing Development	2	2023	4	2023
Family of Target Acquisition Laser	2	2019	4	2024
Heads Up Display (HUD)	4	2018	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army											Date: March 2019	
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 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
L70: *Night Vision Dev Ed*	-	53.681	59.670	39.026	-	39.026	19.982	13.809	4.892	3.536	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 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 and Next Generation Combat Vehicle / Optionally Manned Fighting Vehicle (NGCV/OMFV) platforms, 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 the LRAS3 Modification Work Order (MWO) to integrate the 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 2020 Base funding in the amount of $39.026 million supports the 3 GEN FLIR B-Kit EMD program activities. Additionally, FY 2020 Base Funding supports the 3GEN LRAS3 program and 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).

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: 3GEN FLIR B-Kit EMD ***Description:*** 3GEN FLIR EMD requirements and contract awards. ***FY 2019 Plans:*** FY 2019 Base Funding supports 3GEN FLIR Prototype Fabrication, B-Kit CDR, TRR, and Design Verification Testing (DVT). ***FY 2020 Base Plans:*** FY 2020 Base funding supports 3GEN FLIR B-Kit integration, Hardware/Software Test Readiness Review, Software Functional Qualification Testing, Sight Qualification Testing, Design Verification Testing (DVT), Improved Optical Improvement Dewar Cooler Bench Physical Configuration Audit, Software Verification Review, and development of the Digital Readout Integrated Circuit (DROIC) and Strained Layer Superlattice (SLS). ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Decrease is due to the transition from hardware fabrication to qualification test activities.	52.789	59.034	38.826	-	38.826
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 2019 Plans:*** FY 2019 Base Funding supports continued development of the COE program to include meeting the sensor interoperability requirement and improving the soldier-machine interface. Specific FY 2019 activities include continued demonstrations and experimentation for transition into Army programs. ***FY 2020 Base Plans:*** FY 2020 Base funding supports continued development of the COE program to include meeting the sensor interoperability requirement and improving the soldier machine interface. Specific FY 2020 activities include continued demonstrations and experimentation for transition into Army programs.	0.100	0.100	0.100	-	0.100
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.	0.792	0.536	0.100	-	0.100

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2019 Plans: FY 2019 Base Funding supports 3GEN LRAS3 market research and documentation updates associated with integration of the 3GEN FLIR B-Kit. ***FY 2020 Base Plans:*** FY 2020 Base funding supports the 3GEN LRAS3 documentation updates associated with integration of the 3GEN FLIR B-Kit. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** IFLIR/LRAS3: 50% funding cut ? Concentrate 3GEN FLIR on Abrams					
Accomplishments/Planned Programs Subtotals	53.681	59.670	39.026	-	39.026

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• 330: *Abrams Tank Improve Prog*	93.739	165.655	119.645	-	119.645	83.983	68.332	63.419	99.979	Continuing	Continuing
• 371: *Bradley Improve Prog*	121.374	86.877	89.697	-	89.697	46.925	23.381	24.843	19.974	Continuing	Continuing
• K38300: *Long Range Advanced Scout Surveillance System*	-	2.861	0.000	-	0.000	-	2.075	39.585	50.570	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, 3GEN LRAS3 performed technical trade studies to determine modifications required to the current LRAS3 to integrate 3GEN FLIR B-Kit technology, an Inertial Measurement Unit (IIMU), and an M-coded Global Positioning System (GPS) receiver. Market research and documentation update activities are planned for FY 2019 and FY 2020.

Sensor CE: Additional Fiscal Year 2020 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).

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
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*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army			Date: March 2019
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 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	MIPR	PM TS : Ft. Belvoir, VA	14.092	1.410	Jan 2018	1.518	Jan 2019	1.027	Jan 2020	-		1.027	Continuing	Continuing	9.454
		Subtotal	14.092	1.410		1.518		1.027		-		1.027	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 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	-
3GEN FLIR B-Kit Engineering/Document Prep	C/Various	Various : Various	21.685	-		-		-		-		-	0.000	21.685	-
3GEN FLIR B-Kit EMD	C/CPIF	Various : Various	50.314	48.245	Dec 2017	54.135	Nov 2018	34.354	Nov 2019	-		34.354	Continuing	Continuing	-
3GEN LRAS3: Tech Trade Studies	C/TBD	Various : Various	1.611	-		-		-		-		-	0.000	1.611	-
3GEN LRAS3: ECP Integration	C/TBD	Various : Various	-	0.313	Mar 2018	-		-		-		-	0.000	0.313	-
PSS P3I: CE COE	C/FP	Various : Various	19.162	-		-		-		-		-	0.000	19.162	-
		Subtotal	92.821	48.558		54.135		34.354		-		34.354	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
3GEN FLIR B-Kit Support	C/TBD	Various : Various	32.066	3.354	Feb 2018	3.381	Feb 2019	3.445	Feb 2020	-		3.445	Continuing	Continuing	-
3GEN LRAS3 - Spec development and acquisition documentation	C/TBD	Various : Various	0.350	0.259	Feb 2018	0.536	Feb 2019	0.100	Feb 2020	-		0.100	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army			Date: March 2019
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 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
COE Support	C/CPFF	Various : Various	1.294	0.100	Feb 2018	0.100	Feb 2019	0.100	Feb 2020	-		0.100	Continuing	Continuing	-
		Subtotal	33.710	3.713		4.017		3.645		-		3.645	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Test Support	MIPR	Various : Various	15.850	-		-		-		-		-	0.000	15.850	15.850
		Subtotal	15.850	-		-		-		-		-	0.000	15.850	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	156.473	53.681		59.670		39.026		-		39.026	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army		Date: March 2019
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*

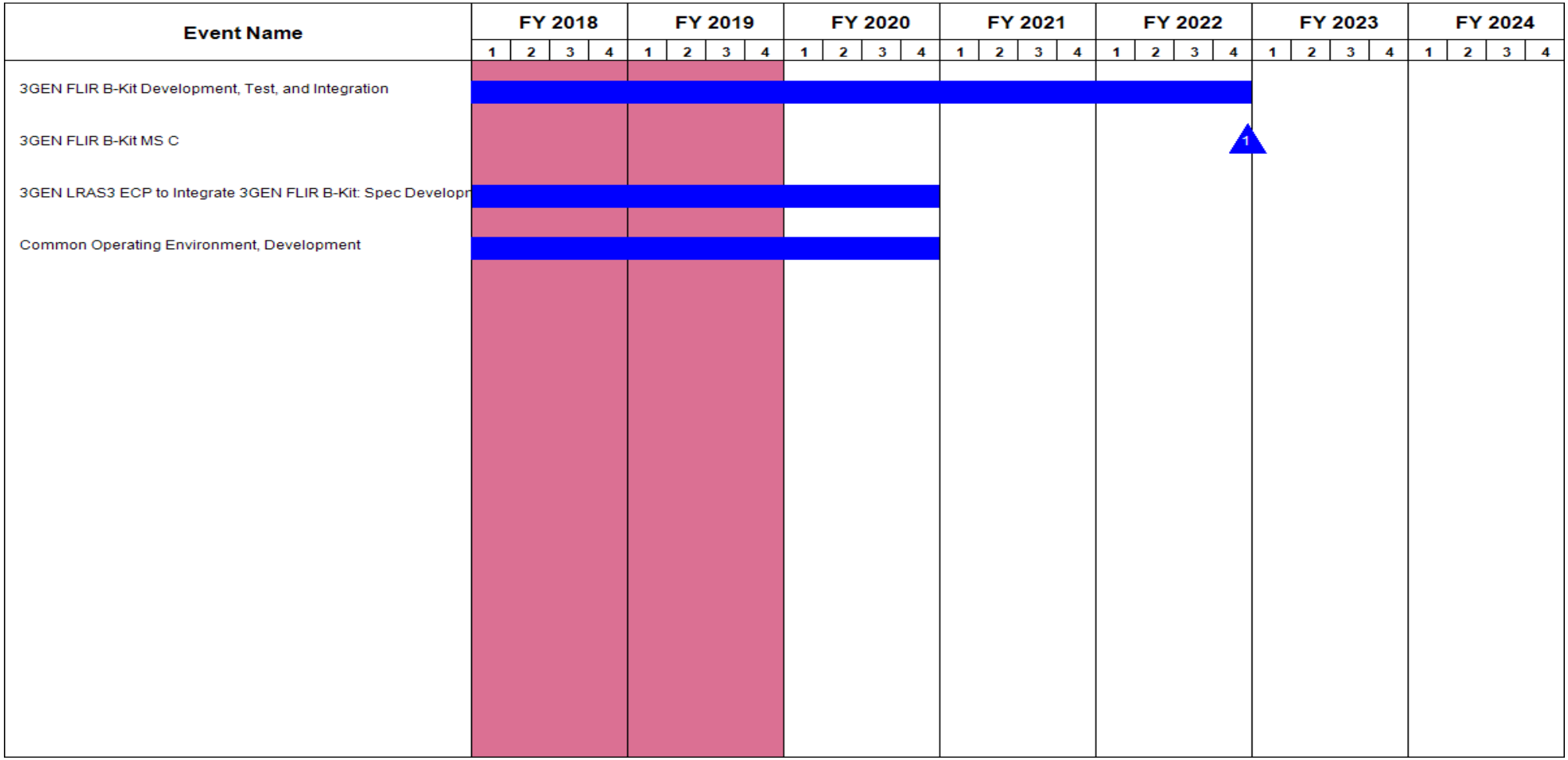

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army		Date: March 2019
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L70 / *Night Vision Dev Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
3GEN FLIR B-Kit Development, Test, and Integration	2	2016	4	2022
3GEN FLIR B-Kit MS C	4	2022	4	2022
3GEN LRAS3 ECP to Integrate 3GEN FLIR B-Kit: Spec Development & Documentation	1	2018	4	2020
Common Operating Environment, Development	2	2012	4	2020
3GEN LRAS3 ECP to Integrate 3GEN FLIR B-Kit: Perform Tech Trade Studies	2	2017	4	2017

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army			Date: March 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
L76: *Dismounted Fire Support Laser Targeting Systems*	-	14.366	15.322	5.836	-	5.836	5.249	5.452	4.878	5.480	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project matures and integrates technologies and capabilities which benefit the Joint Effects Targeting System (JETS) and Lightweight Laser Designator Rangefinder (LLDR) systems. 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 JETS and LLDR systems. 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) contested environment to improve situational awareness, and to integrate Military Global Positioning System (GPS) User Equipment (M-Code) (next-generation GPS) receivers into JETS and LLDR, when available. Funding in this project aligns with the Army's priorities in support of the National Defense Strategy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Design, Integration, & Qualification of LLDR 3 Systems	14.366	14.761	5.836	-	5.836
Description: One contract was competitively awarded to procure LLDR 3 systems with improved imaging performance and 24/7 precision targeting capability. This effort procures and qualifies LLDR 3 systems for production beginning in FY 2021.					
FY 2019 Plans: Continue integration of improved LLDR (15) systems and initiate qualification testing.					
FY 2020 Base Plans: Complete the integration efforts for the LLDR 3 (15) systems and continue the qualification testing.					
FY 2019 to FY 2020 Increase/Decrease Statement: FY 2020 funds the completion and qualification of the LLDR 3 test systems. FY 2019 is substantially more because it funds a significant share of hardware and integration costs of the test systems.					
Title: FY 2019 SBIR / STTR Transfer	-	0.561	-	-	-
Description: FY 2019 SBIR / STTR adjustment.					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2019 Plans: FY 2019 SBIR / STTR adjustment. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2019 SBIR / STTR adjustment.					
Accomplishments/Planned Programs Subtotals	14.366	15.322	5.836	-	5.836

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• KA3100: *Mod Of In-Svc Equip (LLDR)*	9.172	24.833	6.044	-	6.044	-	-	-	-	0.000	40.049
• K32307: *LLDR 3*	-	-	0.000	-	0.000	31.364	54.425	59.123	61.841	Continuing	Continuing
• K32101: *JOINT EFFECTS TARGETING SYSTEM (JETS)*	38.664	66.574	69.720	-	69.720	69.714	69.707	69.701	69.694	Continuing	Continuing
• L79: *Joint Effects Targeting Systems (JETS)*	7.824	10.463	7.810	-	7.810	5.571	5.608	5.040	5.609	Continuing	Continuing
• VT8: *SOLDIER PRECISION TARGETING DEVICES - ADV DEV*	-	-	1.483	-	1.483	2.767	2.767	2.000	2.000	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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army			Date: March 2019
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 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	MIPR	PM-SSL : Ft. Belvoir VA 22060	0.104	0.216	Aug 2018	0.138	Nov 2018	0.150	Dec 2019	-		0.150	Continuing	Continuing	Continuing
		Subtotal	0.104	0.216		0.138		0.150		-		0.150	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LLDR Qualification	C/FFP	DRS : Melbourne, FL	-	14.000	Sep 2018	14.405	Feb 2019	2.995	Nov 2019	-		2.995	Continuing	Continuing	-
FY 2019 SBIR / STTR Transfer	TBD	TBD : TBD	-	-		0.561		-		-		-	Continuing	Continuing	-
		Subtotal	-	14.000		14.966		2.995		-		2.995	Continuing	Continuing	N/A

Remarks

A competitively awarded contract to integrate and qualify LLDR 3 systems was made in September 2018 to DRS.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Various : Various	0.180	0.150		0.168	Nov 2018	0.300	Nov 2019	-		0.300	Continuing	Continuing	-
Science and Engineering Support	MIPR	Johns Hopkins University : Laurel, MD	3.833	-		-		0.500	Jan 2020	-		0.500	Continuing	Continuing	-
		Subtotal	4.013	0.150		0.168		0.800		-		0.800	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army			Date: March 2019
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 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation Support	MIPR	Army Test and Evaluation Command, WSMR, NM : MIPR	-	-		0.050	Jun 2019	1.891	Feb 2020	-		1.891	Continuing	Continuing	Continuing
		Subtotal	-	-		0.050		1.891		-		1.891	Continuing	Continuing	N/A

Remarks

Contractor will deliver the test systems in late 4th Qtr FY19. The majority of Government qualification testing will occur in FY20.

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.117	14.366		15.322		5.836		-		5.836	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army		Date: March 2019
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*

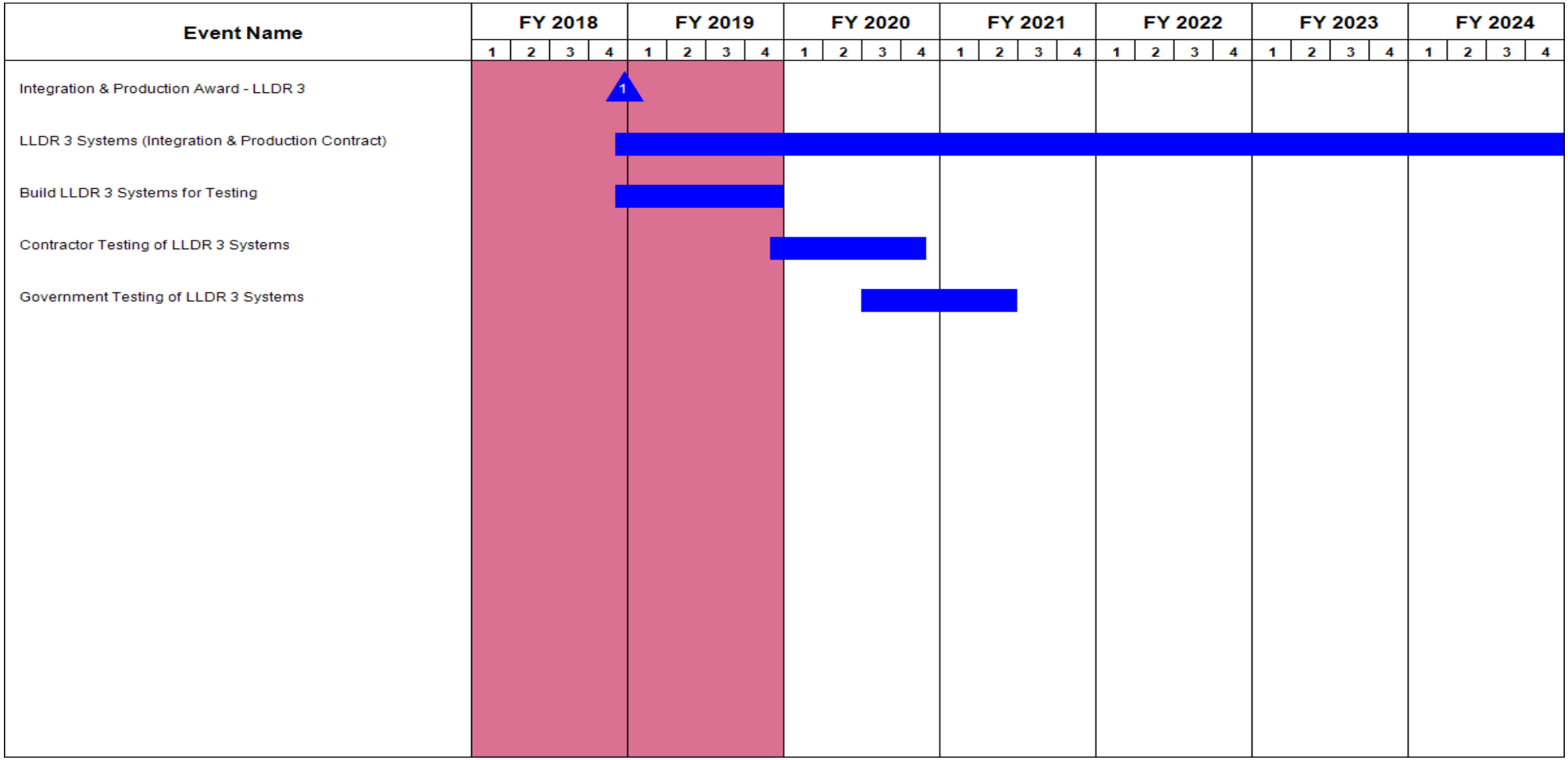

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army		Date: March 2019
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L76 / *Dismounted Fire Support Laser Targeting Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Integration & Production Award - LLDR 3	4	2018	4	2018
LLDR 3 Systems (Integration & Production Contract)	4	2018	4	2024
Build LLDR 3 Systems for Testing	4	2018	4	2019
Contractor Testing of LLDR 3 Systems	4	2019	4	2020
Government Testing of LLDR 3 Systems	3	2020	2	2021

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army											Date: March 2019	
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 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
L79: *Joint Effects Targeting Systems (JETS)*	-	7.824	10.463	7.810	-	7.810	5.571	5.608	5.040	5.609	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 information (Air Force and Marine Corps). JETS addresses the one-man, hand-held precision targeting gap identified by the Fires Center of Excellence (FCoE). JETS is a light-weight, handheld system that will provide the single dismounted observer 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) and operate in environments where global positioning system (GPS) capabilities are degraded or denied including the integration of military GPS user equipment (M-Code) GPS receivers, when they become available. This project will address continued development and integration of improved precision targeting components to reduce size, weight, power, and cost of systems for dismounted precisions Fires mission. Funding in this project aligns with the Army's priorities in support of the National Defense Strategy.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**
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. ***FY 2019 Plans:*** Complete qualification and testing. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2019 is the last year of LRIP support including JETS testing.	2.542	1.215	-	-	-
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. Develop improvements to celestial navigation PAVAM solutions to improve availability of precision measurements over a wider range of environments. ***FY 2019 Plans:***	5.182	1.503	1.219	-	1.219

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Continue improvements to current PAVAM technology. Continue development of reduced size, weight, power, and cost for the PAVAM. Continue development of improved celestial navigation PAVAM. ***FY 2020 Base Plans:*** Continue improvements to current PAVAM technology. Continue development of reduced size, weight, power, and cost for the PAVAM. Continue development of improved celestial navigation PAVAM. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 reflects a ramp down in PAVAM improvement efforts and a shift to precision targeting and target acquisition.					
Title: Joint Effects Targeting System (JETS) Threat Mitigation Development and Integration ***Description:*** Focuses on developing and integrating technologies to counter battlefield threats to the system and the Soldier. This includes technologies and techniques to allow JETS to operate in GPS contested environments, incorporating counter sensor detection, and continuing to improve targeting sensors and lasers to operate in adverse conditions. ***FY 2019 Plans:*** Continue development of technologies to reduce size, weight, and power (SWAP) and to mitigate the impact when operating in GPS denied environments. Continue counter sensor development. Continue development of improved thermal imager and initiate integration into JETS. ***FY 2020 Base Plans:*** Continue development of technologies to reduce SWAP and to mitigate the impact when operating in GPS contested environments. Continue counter sensor development. Continue development of improved thermal imager and initiate integration into JETS. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 decrease reflects shift toward improving precision targeting and target acquisition development.	-	2.219	1.491	-	1.491
Title: Precision Targeting and Target Acquisition Development ***Description:*** This project develops prototype precision targeting systems incorporating improved target acquisition sensors and optics, improved targeting sensors, and updated targeting algorithms while reducing size, weight, and power requirements. Incorporate the Intra Solider Wireless (ISW) capability into the Adaptive Soldier Architecture (ASA).	0.100	5.143	5.100	-	5.100

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
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 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2019 Plans: Initiate trade studies and design development for improved precision targeting prototypes and component integration. ***FY 2020 Base Plans:*** Conduct trade studies and design development for improved precision targeting prototypes, and initiate component integration. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2020 reflects shift to develop and integrate the latest sensor technologies into the modular components.					
Title: FY 2019 SBIR / STTR Transfer ***Description:*** FY 2019 SBIR / STTR adjustment. ***FY 2019 Plans:*** FY 2019 SBIR / STTR adjustment. ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY 2019 SBIR / STTR adjustment.	-	0.383	-	-	-
Accomplishments/Planned Programs Subtotals	7.824	10.463	7.810	-	7.810

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• K32101: *JOINT EFFECTS TARGETING SYSTEM (JETS)*	38.664	66.574	69.720	-	69.720	69.714	69.707	69.701	69.694	Continuing	Continuing
• L76: *Dismounted Fire Support Laser Targeting Systems*	14.366	15.322	5.836	-	5.836	5.249	5.452	4.878	5.480	Continuing	Continuing
• VT8: *SOLDIER PRECISION TARGETING DEVICES - ADV DEV*	-	-	1.483	-	1.483	2.767	2.767	2.000	2.000	0.000	11.017

Remarks

Funding line VT8 is continuing for "cost to complete." System does not allow this to be updated.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Army		Date: March 2019
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)*

D. Acquisition Strategy

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

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army			Date: March 2019
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)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	MIPR	PM-SSL : Ft Belvoir, VA 22060	3.747	0.133	Dec 2017	0.219	Dec 2018	0.180	Dec 2019	-		0.180	Continuing	Continuing	Continuing
		Subtotal	3.747	0.133		0.219		0.180		-		0.180	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PAVAM 2 Development	C/FFP	Various : Various	7.262	2.996	Mar 2018	1.355	Mar 2019	0.950	Mar 2020	-		0.950	Continuing	Continuing	Continuing
Threat Mitigation Development	C/FFP	Various : Various	1.415	-		0.300	Mar 2019	0.900	Mar 2020	-		0.900	Continuing	Continuing	Continuing
Precision Targeting & Target Acquisition Development	C/FFP	Various : Various	-	0.100	Mar 2018	4.636	Jan 2019	3.242	Mar 2020	-		3.242	Continuing	Continuing	Continuing
FY 2019 SBIR / STTR Transfer	TBD	TBD : TBD	-	-		0.383		-		-		-	Continuing	Continuing	-
		Subtotal	8.677	3.096		6.674		5.092		-		5.092	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Night Vision Electronics Sensors Directorate : Ft. Belvoir, VA	12.360	0.338	Dec 2017	0.375	Dec 2018	0.388	Dec 2019	-		0.388	Continuing	Continuing	-
Science and Engineering Support	SS/CPFF	Johns Hopkins University : Laurel, MD	3.019	2.608	Apr 2018	2.100	Apr 2019	1.500	Apr 2020	-		1.500	Continuing	Continuing	-
		Subtotal	15.379	2.946		2.475		1.888		-		1.888	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Army			Date: March 2019
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)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing	MIPR	Various : Various	3.651	1.649	Dec 2017	1.095	Dec 2018	0.650	Dec 2020	-		0.650	Continuing	Continuing	-
		Subtotal	3.651	1.649		1.095		0.650		-		0.650	Continuing	Continuing	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	31.454	7.824		10.463		7.810		-		7.810	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Army		Date: March 2019
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)*

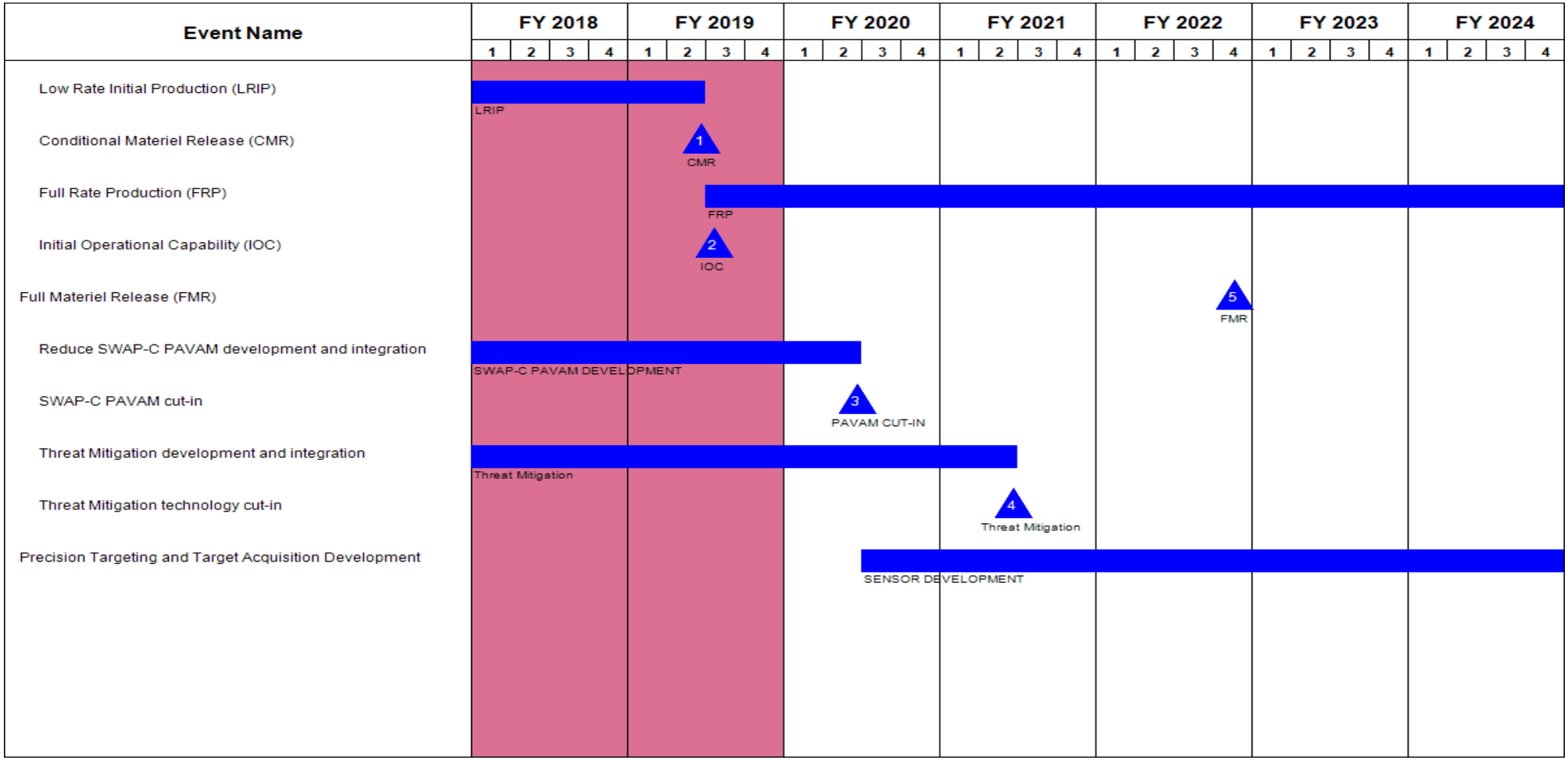

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Army		Date: March 2019
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L79 / *Joint Effects Targeting Systems (JETS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Low Rate Initial Production (LRIP)	1	2017	2	2019
Conditional Materiel Release (CMR)	2	2019	2	2019
Full Rate Production (FRP)	3	2019	4	2024
Initial Operational Capability (IOC)	3	2019	3	2019
Full Materiel Release (FMR)	4	2022	4	2022
Reduce SWAP-C PAVAM development and integration	3	2016	2	2020
SWAP-C PAVAM cut-in	2	2020	2	2020
Threat Mitigation development and integration	2	2017	2	2021
Threat Mitigation technology cut-in	2	2021	2	2021
Precision Targeting and Target Acquisition Development	3	2020	4	2024