Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army											Date: February 2020	
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 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	-	139.337	143.696	61.445	-	61.445	38.094	31.349	37.520	95.108	Continuing	Continuing
BQ6: *Visual Augmentation System Eng Dev*	-	0.000	63.200	8.991	-	8.991	4.995	8.108	8.125	70.754	Continuing	Continuing
L67: *Soldier Night Vision Devices*	-	56.793	35.060	14.653	-	14.653	9.231	12.519	17.161	17.163	Continuing	Continuing
L70: *Night Vision Dev Ed*	-	57.703	39.026	32.235	-	32.235	18.265	5.687	6.630	1.187	Continuing	Continuing
L76: *Dismounted Fire Support Laser Targeting Systems*	-	14.761	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.761
L79: *Joint Effects Targeting Systems (JETS)*	-	10.080	6.410	5.566	-	5.566	5.603	5.035	5.604	6.004	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 L67 project develops, improves and miniaturizes high performance 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 the development, integration and interface of products on Soldiers head, body and weapons. Funding in this project supports the Army's Soldier Lethality Cross Functional Teams (SL CFT) initiatives. Funding in this project aligns with the Army's priorities in support of the National Defense Strategy.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army	Date: February 2020
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 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. Due to a shift in Army priorities the LLDR 3 program is being terminated.

Project L79 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. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	144.442	181.732	59.469	-	59.469
Current President's Budget	139.337	143.696	61.445	-	61.445
Total Adjustments	-5.105	-38.036	1.976	-	1.976
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-38.036			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-5.105	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	1.976	-	1.976

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army			Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
BQ6: *Visual Augmentation System Eng Dev*	-	0.000	63.200	8.991	-	8.991	4.995	8.108	8.125	70.754	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This projects 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 project includes costs for efforts associated with movement of information and high level processing, integration, and interface of products with the Soldiers' head, body, weapon, and transportation. 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. This project supports the Soldier Lethality Cross Functional Team.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Heads Up Display (HUD) ***Description:*** Integrated Visual Augmentation System (IVAS) HUD 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 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 2021 Base Plans:*** Perform Systems Engineering/Program Management, integration, and test to insert improvements into the first generation IVAS. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding decreased from $63,200,000 in FY 2020 to $8,991,000 in FY 2021 due to the transition from rapid prototyping to rapid fielding. Major initial development efforts for the first generation IVAS are completed in FY 2020.	-	60.329	8.991	-	8.991
Title: FY 2020 SBIR/STTR Transfer	-	2.871	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Description: Funding transferred in accordance with Title 15 USC 638 ***FY 2020 Plans:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638					
Accomplishments/Planned Programs Subtotals	-	63.200	8.991	-	8.991

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• K36402: *IVAS/Heads Up Display*	-	-	906.045	-	906.045	1,045.688	319.670	-	148.426	Continuing	Continuing
• BQ5: *Visual Augmentation System Advanced Development*	-	193.280	13.986	-	13.986	11.843	11.819	67.534	30.314	Continuing	Continuing

Remarks

D. Acquisition Strategy

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army		Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	Various : Various	-	-		19.793	Feb 2020	0.991	Nov 2020	-		0.991	Continuing	Continuing	-
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	-		2.871		-		-		-	0.000	2.871	-
		Subtotal	-	-		22.664		0.991		-		0.991	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Heads Up Display (HUD)	Various	Various : Various	-	-		18.252	Mar 2020	1.500	Dec 2020	-		1.500	Continuing	Continuing	-
		Subtotal	-	-		18.252		1.500		-		1.500	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	NVESD : Fort Belvoir, Virginia 22060	-	-		4.127	Feb 2020	0.900	Nov 2020	-		0.900	Continuing	Continuing	-
		Subtotal	-	-		4.127		0.900		-		0.900	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IVAS HUD Testing	MIPR	Various : Various	-	-		18.157	Mar 2020	5.600	Jan 2021	-		5.600	Continuing	Continuing	-
		Subtotal	-	-		18.157		5.600		-		5.600	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
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 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		63.200		8.991		-		8.991	Continuing	Continuing	N/A

Remarks

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

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
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*

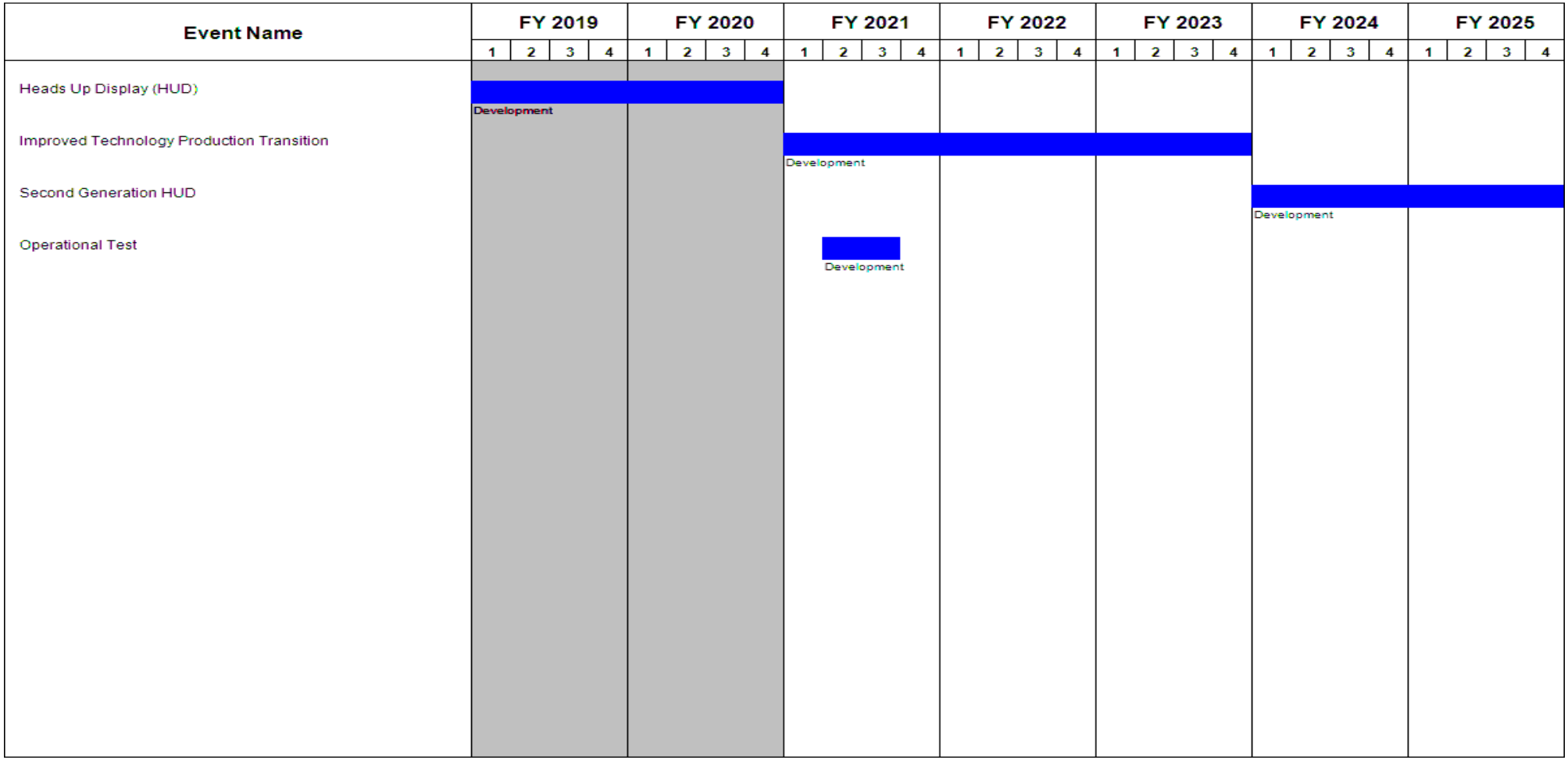

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** BQ6 / *Visual Augmentation System Eng Dev*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Heads Up Display (HUD)	4	2018	4	2020
Improved Technology Production Transition	1	2021	4	2023
Second Generation HUD	1	2024	4	2025
Operational Test	2	2021	3	2021

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army			Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
L67: *Soldier Night Vision Devices*	-	56.793	35.060	14.653	-	14.653	9.231	12.519	17.161	17.163	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops, improves and miniaturizes high performance 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 the development, integration and interface of products on Soldiers head, body and weapons. Funding in this project supports the Army's Soldier Lethality Cross Functional Teams (SL CFT) initiatives. Funding in this project aligns with the Army's priorities in support of the National Defense Strategy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Family of Weapon Sights (FWS)	18.410	26.674	6.147	-	6.147
Description: There are three variants in the Family of Weapon Sights: FWS-Individual (FWS-I), FWS-Sniper (FWS-S) and FWS-Crew Served (FWS-CS). These sights enable combat forces to acquire and engage targets with small arms and conduct surveillance and fire control under day/night obscurants, no-light, and adverse weather conditions. The FWS utilizes advancements in thermal and low light level sensors to produce sights operable in-line with a day optic or in stand-alone mode. This RDT&E project integrates smaller pixel thermal detectors/imagers in high definition formats with improved sensitivity, clarity, and range, while simultaneously reducing the size, weight and power consumption for all FWS variants and provides a minimum of a 20% overmatch for each of the weapon platforms they are intended for. The FWS-I variant is a weapon mounted thermal sensor that enables Soldiers to fire quickly and accurately from any carry position and with significantly reduced exposure to enemy fire by providing a wirelessly transmitted zeroed weapon aimpoint in the Soldier's Enhanced Night Vision Goggle, helmet mounted display, or Integrated Visual Augmentation system. The FWS-I variant is in production and has no RDT&E requirement in the FY 2021 President's Budget. FWS-I does require RDT&E in FY 2022-2025 to qualify a second vendor. The FWS-CS variant leverages the success of the FWS-I development effort, and will be the primary sight for the MK19, M240B and M2. The FWS- CS system integrates High Definition (HD) Thermal and Day Color					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
imagers, an Integrated Laser Range Finder (ILRF) and ballistic calculator to provide Soldiers with an accurate aimpoint that adjusts automatically for range, ammunition characteristics, vertical angle, and weapon cant. The FWS-CS includes a wireless HD Helmet Mounted Display (HMD) that receives weapon sight imagery allowing the Soldier to utilize the weapon sight without requiring them to look through the weapon sights eyepiece. This wireless HMD provides the opportunity for the Solder to stay in a protected, unexposed posture while still accurately detecting and engaging targets. Additionally, the FWS-CS will integrate into Adaptive Squad Architecture and wirelessly share video and data with the Enhanced Night Vision Goggle-Binocular (ENVG-B) and the Nett Warrior End User Device (EUD). All wireless communication will be through the Intra Soldier Wireless (ISW) Network. The FWS-S variant utilizes a HD thermal sensor and mounts in-line with the Sniper's direct view optic providing a thermal capability without the need to remove or re-boresight the current direct view optic. The FWS-S provides Snipers a large format display with increased pixel density that enables accurate long range engagements in all battlefield conditions while utilizing the direct view optic?s aiming features, extending lethality and providing exceptional observation. ***FY 2020 Plans:*** The FWS-CS program will continue in Engineering and Manufacturing Development (EMD) with major integration efforts for compatibility and interoperability with the Multi-role Anti-armor Anti-personnel Weapon System (MAAWS), and the MK-19 XM1176 High Explosive Dual Purpose ? Air Burst (HEDP-AB) round. Near the end of this fiscal year, the FWS-CS program will request Milestone C approval to begin Low Rate Initial Production (LRIP). Additionally, in FY 2020 FWS-CS will begin incorporating the Intra-Soldier Wireless (ISW) requirement which includes 128-bit encryption and FIPs 140-2 compliance with plans to grow to the 256-bit encryption once available. The FWS-CS has one prime vendor. FWS-S will continue in the EMD Phase with two prime vendors. During this year the vendors will complete Preliminary and Critical Designs. Vendor's progress payments are tied to successfully completing these milestones. The first of two Soldier Touch Points will be conducted in late Spring 2020 to gain user feedback / input into the vendor designs. In parallel, Logistics Product Support key tasks will be underway that build on the vendor's Level of Repair Analysis (LORA). Product Support tasks include vendor's developing an interface from					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
their Sniper Sight to the Government's Modular Test Measurement and Diagnostics Equipment. Both vendors will begin Contractor Development Testing at the end of FY 2020. ***FY 2021 Base Plans:*** In FY 2021, FWS-CS requires RDT&E funding to continue the Intra-Soldier Wireless (ISW) requirement to incorporate the 256-bit encryption technology. The end state is for all production FWS-CS systems to be ISW 256-bit encryption compliant. Also during FY 2021 FWS-CS will conduct Initial Operational Test and Evaluation (IOT&E) testing. FWS-S will conduct the second of two Soldier Touch Points in 1QFY2021 to gain user feedback. Contractor Development Testing of 18 systems will continue through 2QFY2021. FWS-S will conduct Government Developmental Testing in 1QFY2022 prior to the Limited User Test. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Overall FWS RDT&E funding requirements taper off in FY 2021 due to nearing completion of both the FWS-CS and the FWS-S Engineering and Development Phases.					
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 as well as a power/data rail interface to support the sharing of laser range finder (LRF) data to other enablers on the weapon. ***FY 2020 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. Initiate integration of a power/data rail interface to support the sharing of LRF data to other enablers on the weapon. ***FY 2021 Base Plans:***	3.475	2.325	1.250	-	1.250

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continue to fund the integration of technology to support wireless transmission of STORM data to other systems. Continue the integration of a power/data rail interface to support the sharing of LRF data to other enablers on the weapon. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2021 decrease due to the completion of the qualification and testing of the STORM II systems in FY 2020 and the nearing completion of integration of the wireless technology.					
Title: Heads Up Display (HUD) ***Description:*** This efforts provides support for systems integration of multi-sensor day/night devices that enable near to long-range target acquisition and improved battlefield command and control in around-the clock combat operations.	4.800	-	-	-	-
Title: Enhanced Night Vision Goggle - Binocular (ENVG-B) ***Description:*** The ENVG-B system is a modular helmet-mounted, passive electro-optical fused sensor imaging device in a binocular configuration. The system integrates dual Image Intensification (I2) sensors with the thermal sensor imagery into a single viewing display. The thermal 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 and Nett Warrior in order to support augmented reality 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 2020 Plans:*** Continue testing and qualification for ENVG-B. ***FY 2021 Base Plans:***	26.893	4.469	4.570	-	4.570

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continue and complete Phase II testing and qualification of ENVG-B. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2020 to FY 2021 decrease results from EMD completion.					
Title: Target Acquisition Laser Capabilities ***Description:*** Target Acquisition Laser Capabilities develops, improves and miniaturizes high-performance systems to support target acquisition and engagement during day/night operations. This effort will develop a family of modular products incorporating technology that includes laser range finders, laser aiming lights, and laser imaging products to be used by mounted and dismounted forces with capabilities including range finding, marking, designating, illumination, target hand-off, detecting optics, countering threat sensors, point cloud mapping, precision targeting, aimpoint adjustment, auto-targeting, and navigation enhancements. This effort also will integrate and interface with products on the Soldier's head, body, weapons, and handheld devices to enhance situational awareness and lethality.	1.115	-	-	-	-
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 light conditions. ***FY 2021 Base Plans:*** Initiate integration and evaluation of technology to support sharing of LTLM data to other systems to support inclusion of LTLM with the Adaptive Squad Architecture. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2021 increase due to the ramp up of integration efforts of improved technologies and wireless capability into the LTLM.	2.100	-	2.686	-	2.686
Title: FY 2020 SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2020 Plans:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2020 to FY 2021 Increase/Decrease Statement:***	-	1.592	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Funding transferred in accordance with Title 15 USC 638					
Accomplishments/Planned Programs Subtotals	56.793	35.060	14.653	-	14.653

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• VT7: *Soldier Maneuver Sensors - Adv Dev*	7.072	6.028	7.565	-	7.565	7.675	3.141	2.779	2.037	Continuing	Continuing
• K36400: *Helmet Mounted Enhanced Vision Devices*	112.251	50.632	207.626	-	207.626	245.012	6.436	318.684	-	Continuing	Continuing
• K22002: *FWS-INDIVIDUAL*	90.932	81.541	99.160	-	99.160	61.858	71.526	77.718	84.792	Continuing	Continuing
• K35110: *Small Tactical Optical Rifle Mounted MLRF*	16.990	22.623	13.954	-	13.954	21.355	26.060	29.315	3.131	Continuing	Continuing
• B53800: *Laser Target Locator Systems*	32.704	24.354	13.704	0.643	14.347	20.817	23.752	21.663	49.820	Continuing	Continuing
• K22003: *FWS-CREW SERVED*	22.698	-	31.861	-	31.861	78.066	78.193	77.228	64.934	Continuing	Continuing
• K22004: *FWS-SNIPER*	-	-	2.569	-	2.569	11.336	18.843	19.767	11.489	Continuing	Continuing
• K36401: *Night Vision AN/PVS-14 Mods*	8.496	10.216	0.000	-	0.000	0.420	0.420	0.429	0.433	Continuing	Continuing
• K36402: *IVAS/Heads Up Display*	-	-	906.045	-	906.045	1,045.688	319.670	-	148.426	Continuing	Continuing
• BQ5: *Visual Augmentation System Advanced Development*	-	193.280	13.986	-	13.986	11.843	11.819	67.534	30.314	Continuing	Continuing
• BQ6: *Visual Augmentation System Eng Dev*	-	63.200	8.991	-	8.991	4.995	8.108	8.125	70.754	Continuing	Continuing

Remarks

K22003 / FWS Crew Served Adjusted FY 2020 per the FY 2020 Appropriation Bill mark which zeroed FY 2020 Procurement.

D. Acquisition Strategy

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army		Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PROGRAM MGMT	MIPR	Various : Various	19.097	2.515	Mar 2019	1.850	Mar 2020	0.392	Nov 2020	-		0.392	Continuing	Continuing	-
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	-		1.592		-		-		-	0.000	1.592	-
		Subtotal	19.097	2.515		3.442		0.392		-		0.392	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 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	44.785	2.998	Mar 2019	9.330	Jan 2020	0.500	Jan 2021	-		0.500	Continuing	Continuing	-
Family of Weapon Sights-Sniper (FWS-S)	C/FFP	Knights Armament Titusville; N2 Imaging Irvine : FL; CA	4.625	8.997	Sep 2019	11.869	Jun 2020	5.000	Jan 2021	-		5.000	Continuing	Continuing	-
Family of Vision and Mobility Capabilities (FVMC)	MIPR	NVESD : Ft Belvoir, VA	2.413	-		-		-		-		-	Continuing	Continuing	-
STORM II Test Systems (L3)	C/FFP	Optics 1 : Bedford, NH	2.093	0.450	Mar 2019	-		-		-		-	Continuing	Continuing	-
STORM II Test Systems (Optics 1)	C/FFP	L3 : Londonderry, NH	3.431	5.135	Nov 2019	-		-		-		-	Continuing	Continuing	-
STORM - Intra Soldier Wireless (ISW)	TBD	TBD : NVESD	-	2.100	Jan 2019	-		-		-		-	Continuing	Continuing	-
STORM II - Wireless Integration	C/FP	TBD : TBD	-	-		0.942	Jun 2020	1.000	Jan 2021	-		1.000	Continuing	Continuing	-
STORM Power Data Rail Integration	C/FFP	TBD : TBD	-	-		0.766	Jun 2020	-		-		-	0.000	0.766	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army		Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Enhanced Night Vision Goggle - Binocular (ENVG-B) (Vendor A)	C/CPFF	L3 Corporation : St Louis, MO	-	14.127	May 2019	2.323	Mar 2020	0.612	Mar 2021	-		0.612	Continuing	Continuing	-
Enhanced Night Vision Goggle - Binocular (ENVG-B) (Vendor B)	C/CPFF	Harris Corporation : Melbourne, FL	-	10.277	May 2019	2.323	Mar 2020	0.612	Mar 2021	-		0.612	Continuing	Continuing	-
Laser Target Location Module (Optics 1)	C/CPFF	Army Contracting Center : Aberdeen Proving Ground	-	1.986	Feb 2019	-		2.300	Dec 2020	-		2.300	Continuing	Continuing	-
Target Acquisition Laser Capabilities	MIPR	NVESD : Ft. Belvoir, VA	0.581	0.815	Nov 2018	-		-		-		-	Continuing	Continuing	-
Heads Up Display (HUD)	MIPR	Various : Various	26.270	4.800	Sep 2019	-		-		-		-	Continuing	Continuing	-
SPTD PTD (OVERT) DEVELOPMENT	TBD	Various : VArious	-	0.695	Nov 2019	-		-		-		-	Continuing	Continuing	-
		Subtotal	84.198	52.380		27.553		10.024		-		10.024	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	NVESD : Ft Belvoir, VA	26.905	0.903	Dec 2018	0.983	Jan 2020	0.300	Nov 2020	-		0.300	Continuing	Continuing	-
		Subtotal	26.905	0.903		0.983		0.300		-		0.300	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test Support Activity	MIPR	Army Test and Evaluation Command : Various	58.782	0.995	Apr 2019	3.082	Mar 2020	3.937	Nov 2020	-		3.937	Continuing	Continuing	-
		Subtotal	58.782	0.995		3.082		3.937		-		3.937	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
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*	

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	188.982	56.793		35.060		14.653		-		14.653	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
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*

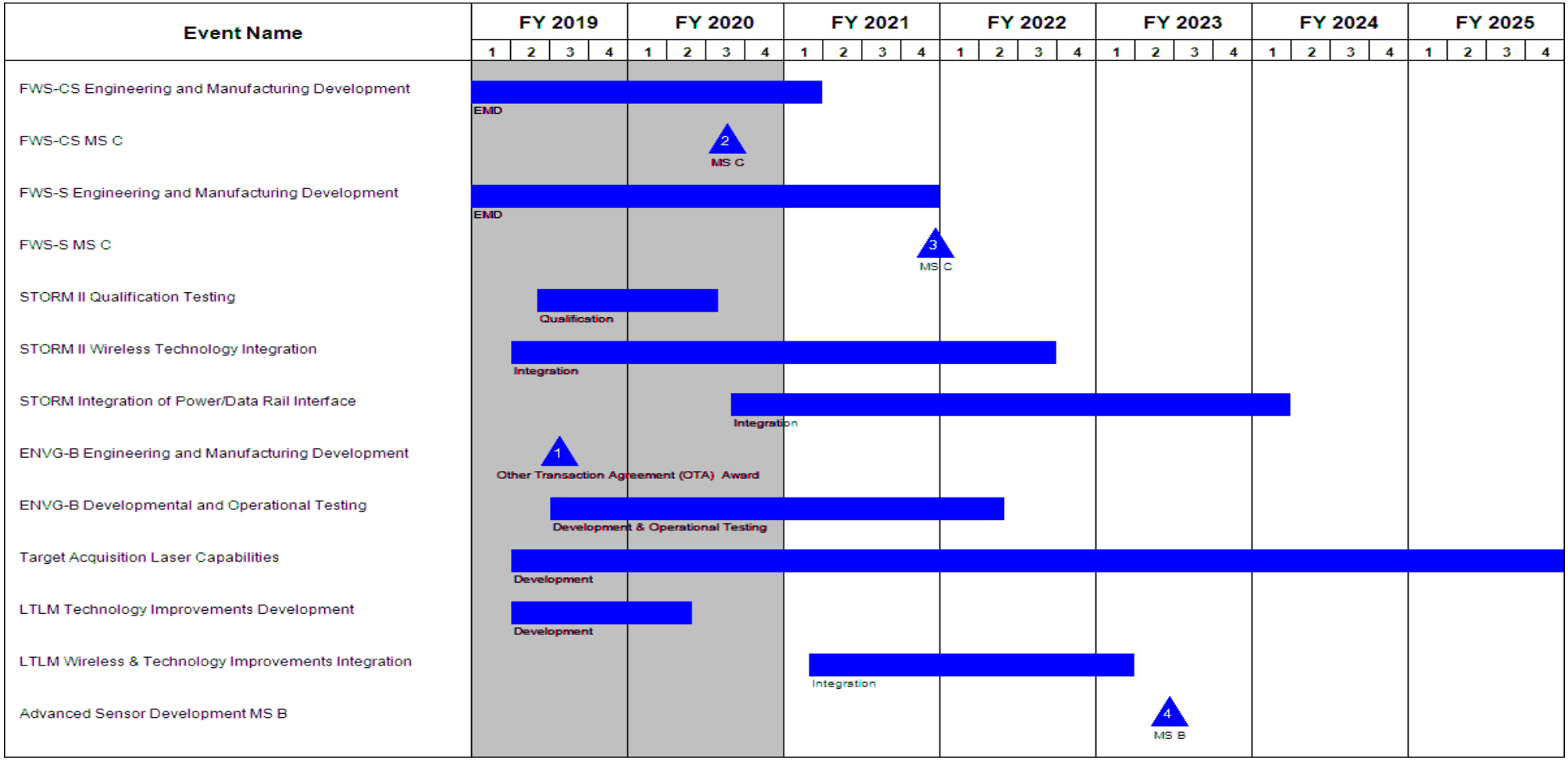

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L67 / *Soldier Night Vision Devices*

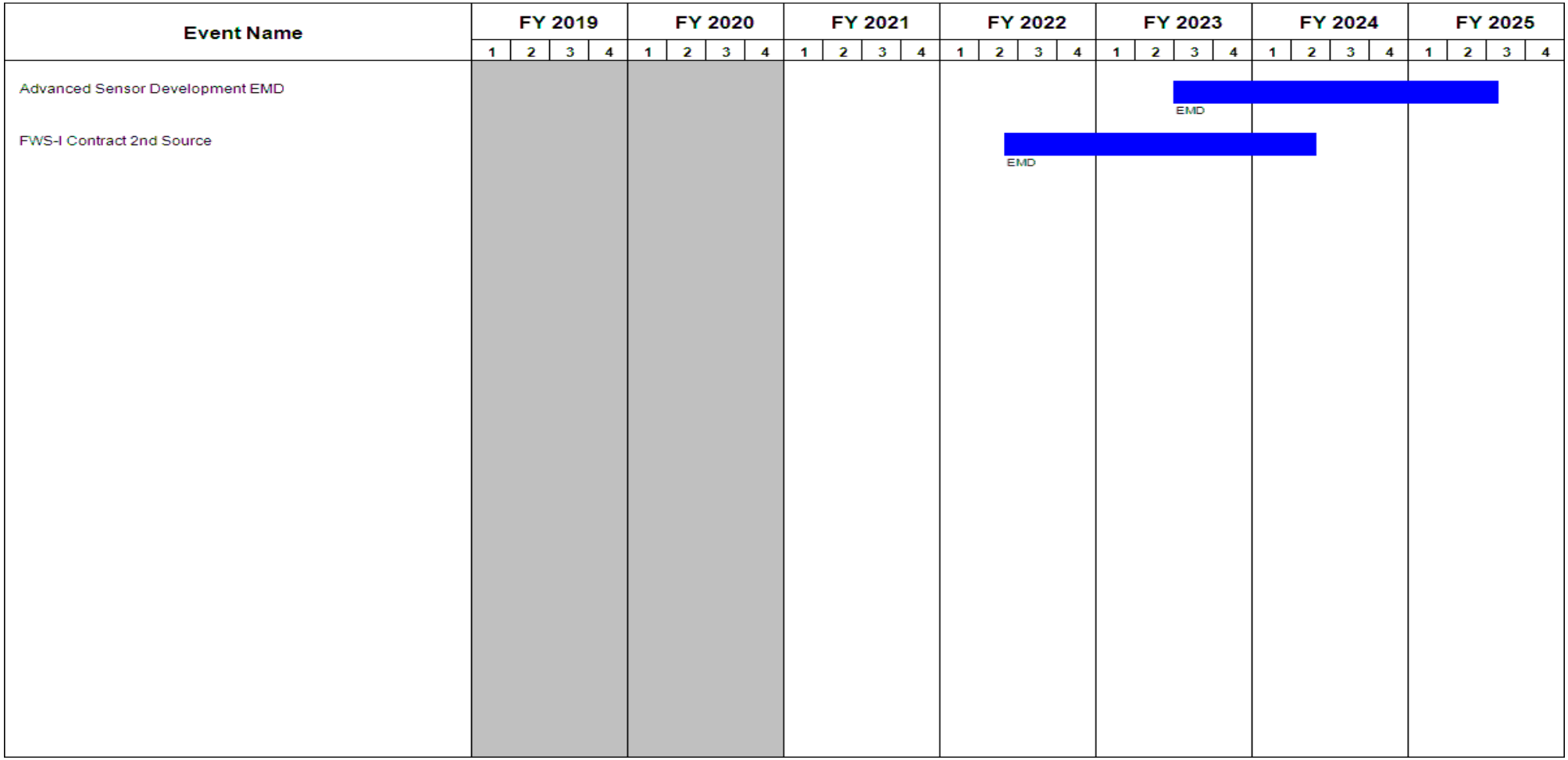

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L67 / *Soldier Night Vision Devices*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
FWS-CS Engineering and Manufacturing Development	3	2016	1	2021
FWS-CS MS C	3	2020	3	2020
FWS-S Engineering and Manufacturing Development	3	2016	4	2021
FWS-S MS C	4	2021	4	2021
STORM II Qualification Testing	2	2019	3	2020
STORM II Wireless Technology Integration	2	2019	3	2022
STORM Integration of Power/Data Rail Interface	3	2020	1	2024
ENVG-B Engineering and Manufacturing Development	3	2019	3	2019
ENVG-B Developmental and Operational Testing	3	2019	2	2022
Target Acquisition Laser Capabilities	2	2019	4	2025
LTLM Technology Improvements Development	2	2019	2	2020
LTLM Wireless & Technology Improvements Integration	1	2021	1	2023
Advanced Sensor Development MS B	2	2023	2	2023
Advanced Sensor Development EMD	3	2023	3	2025
FWS-I Contract 2nd Source	2	2022	2	2024

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army			Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
L70: *Night Vision Dev Ed*	-	57.703	39.026	32.235	-	32.235	18.265	5.687	6.630	1.187	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 2021 Base funding in the amount of $32.235 million supports the 3GEN FLIR B-Kit EMD program activities. Additionally, FY 2021 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).

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: 3GEN FLIR B-Kit EMD ***Description:*** 3GEN FLIR EMD requirements and contract awards. ***FY 2020 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 2021 Base Plans:*** FY 2021 Base funding supports 3GEN FLIR B-Kit delivery of hardware to the Abrams and Next Generation Combat Vehicle (NGCV) / Optionally Manned Fighting Vehicle (OMFV) platforms for integration and developmental testing, enables integration of automation and artificial intelligence/machine learning, award of the Manufacturing Risk Reduction option to fabricate hardware in support of platform Operational Test, and initiation of Industrial Base manufacturing readiness activities in preparation for Low Rate Initial Production (LRIP). ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Decrease is due to completion of qualification test activities and long-lead material procurements in FY 2020 resulting in reduced funding requirements in FY 2021.	57.116	37.054	32.135	-	32.135
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 2020 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. ***FY 2021 Base Plans:***	-	0.100	0.100	-	0.100

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
FY 2021 Base funding supports continued development of the COE program to include meeting the sensor interoperability requirement and improving the soldier machine interface. Specific FY 2021 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 2020 Plans:*** FY 2020 Base funding supports the 3GEN LRAS3 documentation updates associated with integration of the 3GEN FLIR B-Kit. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** LRAS3 program no longer funded to integrate the 3GEN FLIR B-Kit.	0.536	0.100	-	-	-
Title: FY 2019 NDAA SEC 825 MDAP Cost Overrun ***Description:*** FY 2019 Rapid Prototyping Funds for MDAPs.	0.051	-	-	-	-
Title: FY 2020 SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2020 Plans:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638	-	1.772	-	-	-
Accomplishments/Planned Programs Subtotals	57.703	39.026	32.235	-	32.235

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• 330: *Abrams Tank Improve Prog*	159.688	119.645	83.546	-	83.546	67.899	62.982	99.503	89.527	Continuing	Continuing
• CF6: *Next Generation Combat Vehicle (OMFV)*	-	205.620	327.732	-	327.732	426.892	65.638	52.251	52.778	0.000	1,130.911

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• K38300: *Long Range Advanced Scout Surveillance System*	2.861	-	0.000	-	0.000	2.073	69.513	100.468	140.776	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 (IMU), 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 2021 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-3, RDT&E Project Cost Analysis: PB 2021 Army		Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	MIPR	PM TS : Ft. Belvoir, VA	15.502	1.365	Jan 2019	0.436	Jan 2020	0.696	Jan 2021	-		0.696	Continuing	Continuing	9.454
FY 2019 NDAA SEC 825 MDAP Cost Overruns	Various	HQDA : HQDA	-	0.051	Sep 2019	-		-		-		-	0.000	0.051	-
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	-		1.772		-		-		-	0.000	1.772	-
		Subtotal	15.502	1.416		2.208		0.696		-		0.696	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 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	98.559	52.456	Nov 2018	33.763	Nov 2019	29.437	Nov 2020	-		29.437	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	-		-		-		-		-	0.000	0.313	-
PSS P3I: CE COE	C/FP	Various : Various	19.162	-		-		-		-		-	0.000	19.162	-
		Subtotal	141.379	52.456		33.763		29.437		-		29.437	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army		Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
3GEN FLIR B-Kit Support	C/TBD	Various : Various	35.420	3.295	Feb 2019	2.855	Feb 2020	2.002	Feb 2021	-		2.002	Continuing	Continuing	-
3GEN LRAS3 - Spec development and acquisition documentation	C/TBD	Various : Various	0.609	0.536	Feb 2019	0.100	Feb 2020	-		-		-	0.000	1.245	-
COE Support	C/CPFF	Various : Various	1.394	-		0.100	Feb 2020	0.100	Feb 2021	-		0.100	0.000	1.594	-
		Subtotal	37.423	3.831		3.055		2.102		-		2.102	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 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 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	210.154	57.703		39.026		32.235		-		32.235	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
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*

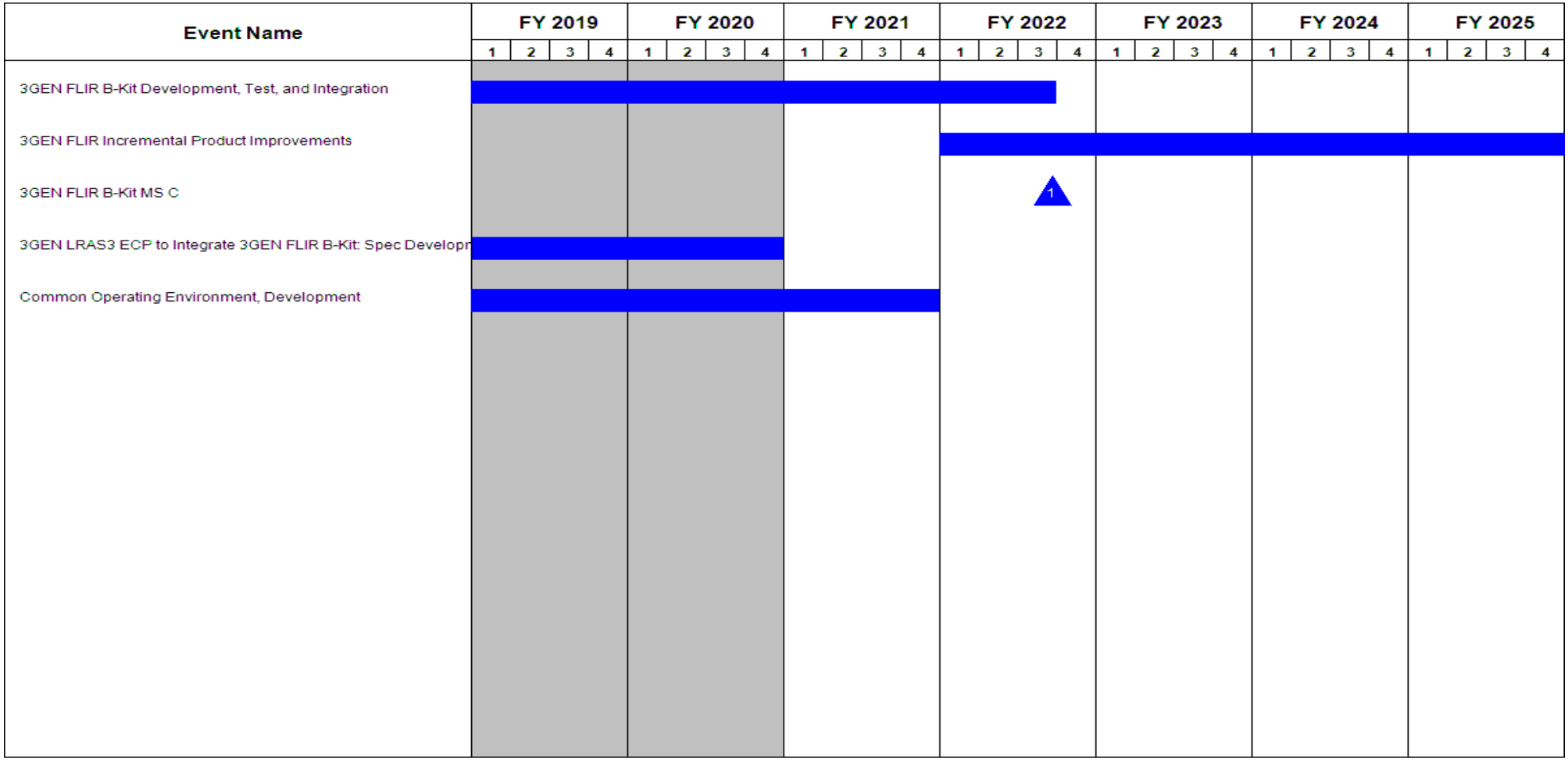

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L70 / *Night Vision Dev Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
3GEN FLIR Materiel Development Decision (MDD)	1	2015	1	2015
3GEN FLIR Development Request For Proposal Release Review (DRFPRR)	3	2015	3	2015
3GEN FLIR B-Kit MS B	2	2016	2	2016
3GEN FLIR B-Kit Development, Test, and Integration	2	2016	3	2022
3GEN FLIR Incremental Product Improvements	1	2022	4	2027
3GEN FLIR B-Kit MS C	3	2022	3	2022
3GEN LRAS3 ECP to Integrate 3GEN FLIR B-Kit: Spec Development & Documentation	1	2018	4	2020
Common Operating Environment, Development	2	2012	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army			Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
L76: *Dismounted Fire Support Laser Targeting Systems*	-	14.761	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.761
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), Lightweight Laser Designator Rangefinder (LLDR) and other Dismounted Precision Targeting capabilities 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, LLDR and other Dismounted Precision Targeting capabilities 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, LLDR and other Dismounted Precision Targeting capabilities systems , when available. Funding in this project aligns with the Army's priorities in support of the National Defense Strategy. Due to a shift in Army priorities the LLDR 3 program was terminated.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Design, Integration, & Qualification of LLDR 3 Systems ***Description:*** One contract was competitively awarded to procure LLDR 3 systems with improved imaging performance and 24/7 precision targeting capability.	14.761	-	-	-	-
Accomplishments/Planned Programs Subtotals	14.761	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• KA3100: *Mod Of In-Svc Equip (LLDR)*	24.833	6.044	0.000	-	0.000	-	-	-	-	0.000	30.877
• K32101: *JOINT EFFECTS TARGETING SYSTEM (JETS)*	66.574	25.330	69.641	-	69.641	67.932	69.629	69.624	69.623	0.000	438.353
• L79: *Joint Effects Targeting Systems (JETS)*	10.080	6.410	5.566	-	5.566	5.603	5.035	5.604	6.004	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	MIPR	PM-SMPT : Ft. Belvoir VA 22060	0.320	0.476	Feb 2019	-		-		-		-	0.000	0.796	-
		Subtotal	0.320	0.476		-		-		-		-	0.000	0.796	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LLDR III Termination	C/FFP	DRS : Melbourne, FL	14.000	14.135	Feb 2019	-		-		-		-	0.000	28.135	-
		Subtotal	14.000	14.135		-		-		-		-	0.000	28.135	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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Various : Various	0.330	0.150	Nov 2018	-		-		-		-	0.000	0.480	-
Science and Engineering Support	MIPR	Johns Hopkins University : Laurel, MD	3.833	-		-		-		-		-	0.000	3.833	-
		Subtotal	4.163	0.150		-		-		-		-	0.000	4.313	N/A

	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	18.483	14.761		0.000		-		-		-	0.000	33.244	N/A

Remarks

Due to a shift in Army priorities the program is being terminated. The FY19 funds were not awarded but are being held to cover potential closeout costs.

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
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*

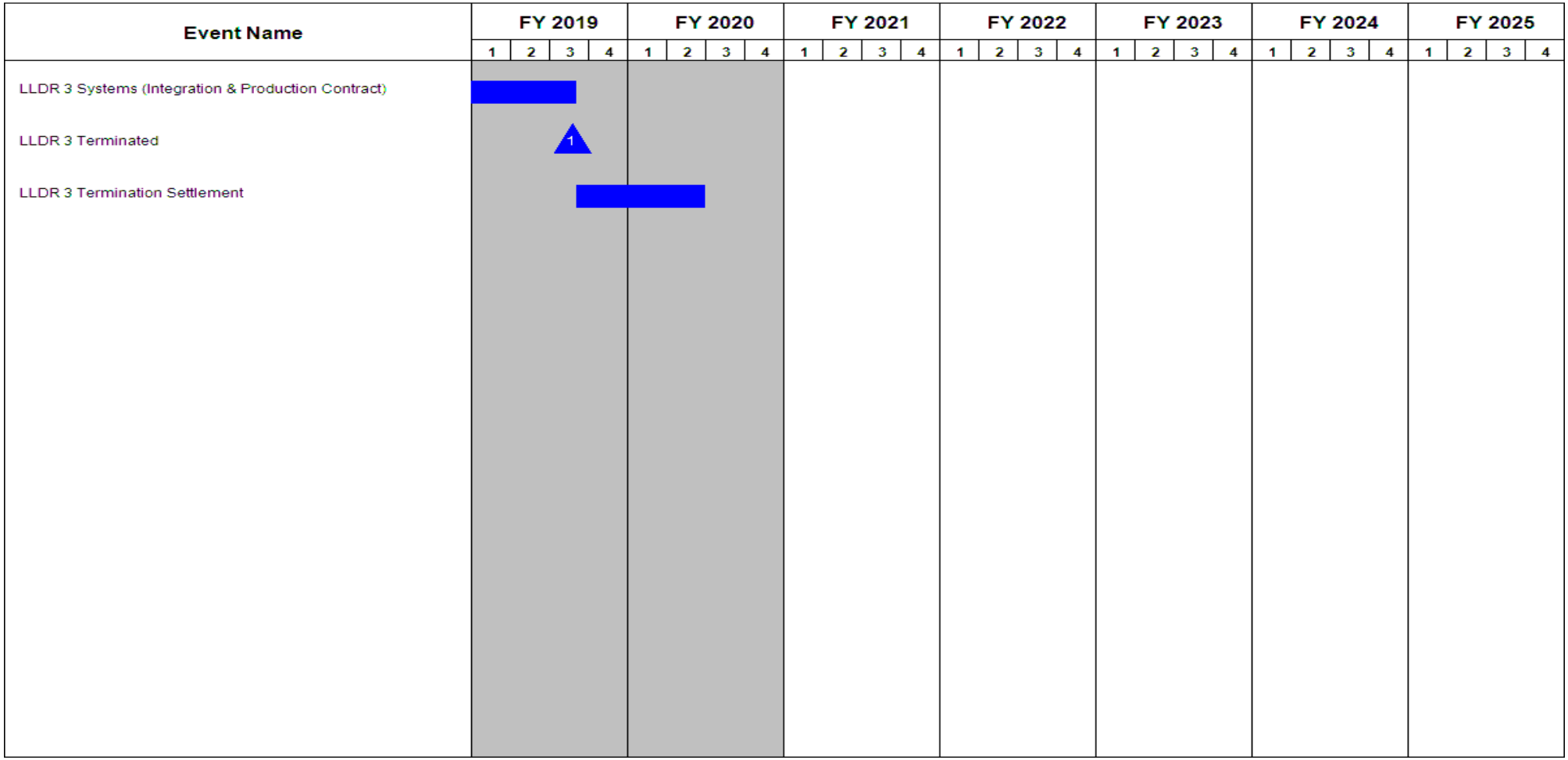

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L76 / *Dismounted Fire Support Laser Targeting Systems*

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	3	2019
LLDR 3 Terminated	3	2019	3	2019
LLDR 3 Termination Settlement	3	2019	2	2020

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army			Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
L79: *Joint Effects Targeting Systems (JETS)*	-	10.080	6.410	5.566	-	5.566	5.603	5.035	5.604	6.004	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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 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 2020 Plans:*** Conduct additional reliability testing with Soldiers. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** No planned testing in FY21.	0.321	0.403	-	-	-
Title: Precision Azimuth and Vertical Angle Measurement (PAVAM) Development ***Description:*** Focuses on developments to improve Size, Weight, Power and Cost (SWAP-C) 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 2020 Plans:***	3.075	0.165	0.741	-	0.741

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continue improvements to current PAVAM technology. Continue development of reduced SWAP-C for the PAVAM. ***FY 2021 Base Plans:*** Continue development of reduced SWAP-C of PAVAM architecture. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2021 funding reflects a slight increase in PAVAM projects from FY 2020.					
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 2020 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 2021 Base Plans:*** Initiate integration of technologies and techniques into JETS to allow it to operate in GPS contested environments. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2021 decrease reflects a shift towards precision targeting and target acquisition development.	3.315	0.820	0.562	-	0.562
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 JETS and the Adaptive Squad Architecture (ASA). ***FY 2020 Plans:***	3.369	4.730	4.263	-	4.263

Exhibit R-2A, RDT&E Project Justification: PB 2021 Army		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Conduct trade studies and design development for improved precision targeting prototypes, and initiate component integration. ***FY 2021 Base Plans:*** Continue development and component integration of improved precision targeting prototypes. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY 2021 decrease due to completion of trade studies.					
Title: FY 2020 SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2020 Plans:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638	-	0.292	-	-	-
Accomplishments/Planned Programs Subtotals	10.080	6.410	5.566	-	5.566

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• K32101: *JOINT EFFECTS TARGETING SYSTEM (JETS)*	66.574	25.330	69.641	-	69.641	67.932	69.629	69.624	69.623	0.000	438.353
• L76: *Dismounted Fire Support Laser Targeting Systems*	14.761	-	0.000	-	0.000	-	-	-	-	0.000	14.761
• VT8: *SOLDIER PRECISION TARGETING DEVICES - ADV DEV*	-	1.483	2.765	-	2.765	2.764	1.998	1.998	1.998	Continuing	Continuing

Remarks

D. Acquisition Strategy

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	MIPR	PM-SMPT : Ft Belvoir, VA 22060	3.880	0.455	Feb 2019	0.562	Dec 2019	0.337	Dec 2020	-		0.337	Continuing	Continuing	Continuing
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	-		0.292		-		-		-	0.000	0.292	-
		Subtotal	3.880	0.455		0.854		0.337		-		0.337	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PAVAM 2 Development	C/FFP	Various : Various	10.258	2.523	May 2019	0.151	May 2020	0.621	Jan 2021	-		0.621	Continuing	Continuing	Continuing
Threat Mitigation Development	C/FFP	Various : Various	1.415	2.672	Feb 2019	0.701	Jan 2020	0.471	Feb 2021	-		0.471	Continuing	Continuing	Continuing
Precision Targeting & Target Acquisition Development	C/FFP	Elbit : Merrimack, NH	0.100	2.268	Jan 2019	3.989	Mar 2020	3.318	Jan 2021	-		3.318	Continuing	Continuing	Continuing
		Subtotal	11.773	7.463		4.841		4.410		-		4.410	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Night Vision Electronics Sensors Directorate : Ft. Belvoir, VA	12.698	0.199	Nov 2018	0.364	Dec 2019	0.219	Dec 2020	-		0.219	Continuing	Continuing	-
Science and Engineering Support	SS/CPFF	Johns Hopkins University : Laurel, MD	5.627	1.700	Feb 2019	-		0.250	Jan 2021	-		0.250	Continuing	Continuing	-
		Subtotal	18.325	1.899		0.364		0.469		-		0.469	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army			Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing	MIPR	Various : Various	5.300	0.263	Jan 2019	0.351	May 2020	0.350	Jan 2021	-		0.350	Continuing	Continuing	-
		Subtotal	5.300	0.263		0.351		0.350		-		0.350	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	39.278	10.080		6.410		5.566		-		5.566	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army		Date: February 2020
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)*

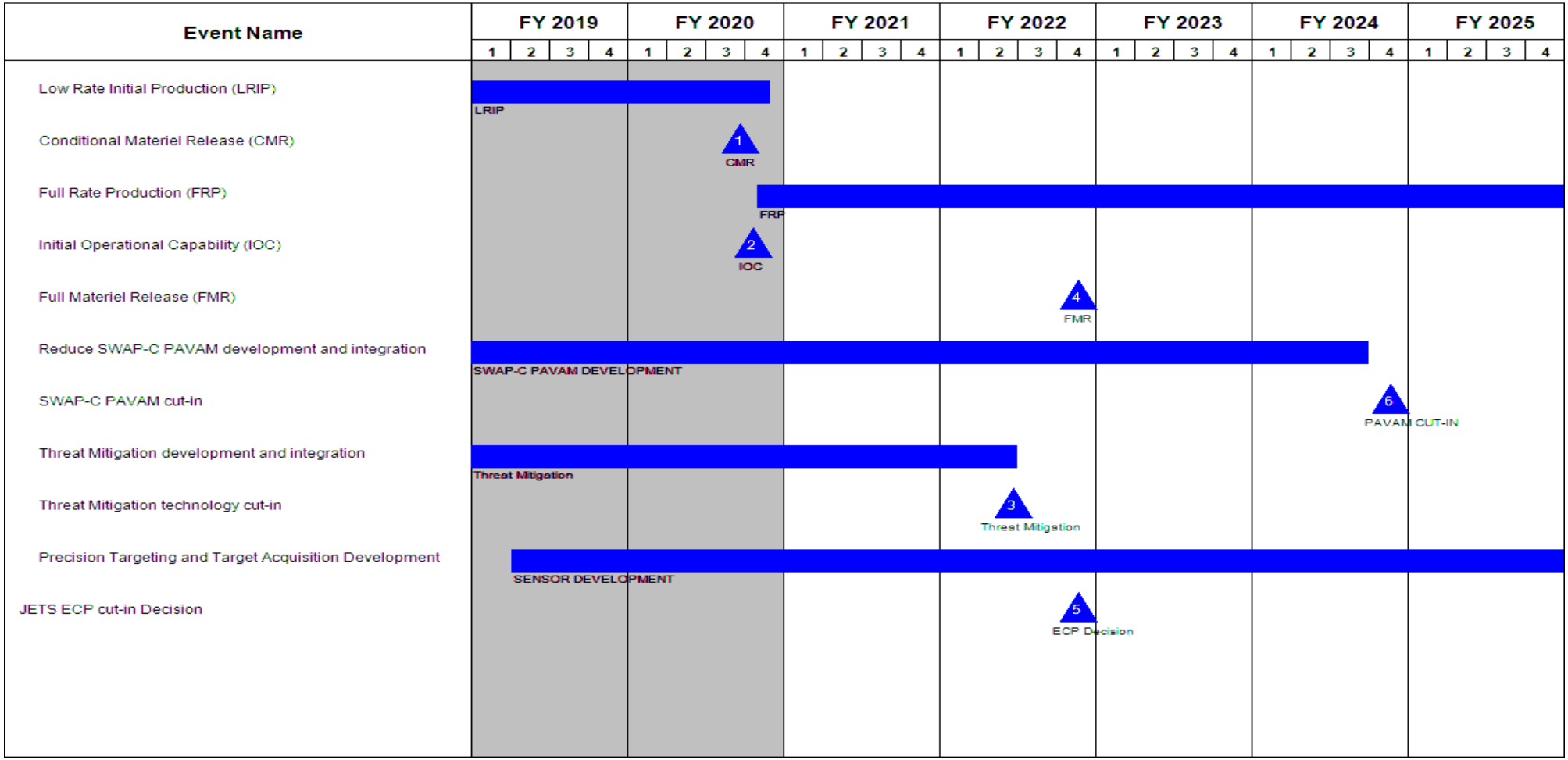

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army		Date: February 2020
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L79 / *Joint Effects Targeting Systems (JETS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Low Rate Initial Production (LRIP)	1	2017	4	2020
Conditional Materiel Release (CMR)	3	2020	3	2020
Full Rate Production (FRP)	4	2020	4	2025
Initial Operational Capability (IOC)	4	2020	4	2020
Full Materiel Release (FMR)	4	2022	4	2022
Reduce SWAP-C PAVAM development and integration	3	2016	3	2024
SWAP-C PAVAM cut-in	4	2024	4	2024
Threat Mitigation development and integration	2	2017	2	2022
Threat Mitigation technology cut-in	2	2022	2	2022
Precision Targeting and Target Acquisition Development	2	2019	4	2025
JETS ECP cut-in Decision	4	2022	4	2022