Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
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*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	52.959	43.417	62.679	-	62.679	38.594	92.455	94.138	94.384	Continuing	Continuing
BQ6: *Visual Augmentation System Eng Dev*	-	7.495	4.934	34.543	-	34.543	8.142	72.395	73.868	74.586	Continuing	Continuing
L67: *Soldier Night Vision Devices*	-	11.043	13.474	7.663	-	7.663	6.189	5.942	5.825	5.880	Continuing	Continuing
L70: *Night Vision Dev Ed*	-	29.058	19.893	9.039	-	9.039	10.744	7.800	7.836	7.912	Continuing	Continuing
L79: *Joint Effects Targeting Systems (JETS)*	-	5.363	5.116	11.434	-	11.434	13.519	6.318	6.609	6.006	Continuing	Continuing

A. Mission Description and Budget Item Justification

A portion of this funding line is directly aligned to the Army Soldier Lethality Modernization Priority in support of situational awareness for the Close Combat Soldier. 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 This project focuses on transitioning demonstrated technologies that bring improvements to the dismounted Soldier's augmented vision and situational awareness system and provide Soldiers with the ability to fight, rehearse, train and win during multi-domain operations. Funded efforts will accelerate the implementation of components, terrain shared coordinate data and processing, algorithms including machine learning/artificial intelligence and demonstrations in support of the next generation augmented vision and situational awareness. Efforts will provide rapid decision making and targeting capabilities with the integration of external video and data sources such as weapon sights, unmanned air and ground vehicles and other data sources enabled by tactical cloud package and advanced network services. This project will provide data driven analytics to optimize unit performance and enhance lethality and to enable Synthetic Training Environment (STE) squad capability to perform live mixed reality training and rehearsing. 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. 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. The total cost of the Integrated Visual Augmentation System Rapid Prototyping Middle Tier of Acquisition effort is $863.9 million RDT&E from FY18 to FY23. The totality of the RDT&E is from the combined APEs of 603774A BQ5 and 604710A BQ6.

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

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
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*

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.

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 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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	54.234	62.690	0.000	-	0.000
Current President's Budget	52.959	43.417	62.679	-	62.679
Total Adjustments	-1.275	-19.273	62.679	-	62.679
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-19.273			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.275	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	62.679	-	62.679

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
BQ6: *Visual Augmentation System Eng Dev*	-	7.495	4.934	34.543	-	34.543	8.142	72.395	73.868	74.586	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project focuses on transitioning demonstrated technologies that bring improvements to the dismounted Soldier's augmented vision and situational awareness system and provide Soldiers with the ability to fight, rehearse, train and win during multi-domain operations. Funded efforts will accelerate the implementation of components, terrain shared coordinate data and processing, algorithms including machine learning/artificial intelligence and demonstrations in support of the next generation augmented vision and situational awareness system. Efforts will provide rapid decision making and targeting capabilities with the integration of external video and data sources such as weapon sights, unmanned air and ground vehicles and other data sources enabled by tactical cloud package, "See Through" armor, and advanced network services. This project will provide data driven analytics to optimize unit performance and enhance lethality and to enable Synthetic Training Environment (STE) squad capability to perform live mixed reality training and rehearsing. 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. 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. The total cost of the Integrated Visual Augmentation System Rapid Prototyping Middle Tier of Acquisition effort is $863.9 million RDT&E from FY18 to FY23. The totality of the RDT&E is from the combined APEs of 603774A BQ5 and 604710A BQ6.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Heads Up Display (HUD)	7.495	4.754	33.348
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 2022 Plans: Perform Systems Engineering/Program Management and integration to implement engineering changes to higher resolution thermal sensors, and app development to enhance mission planning and mission execution based on Soldier centered design input. These tools will extend IVAS capabilities and be driven by Soldier Centered Design activities. Conduct testing to verify operational performance of all production changes.			
FY 2023 Plans: Begin test and evaluation of IVAS 1.2			
FY 2022 to FY 2023 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
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 2021	FY 2022	FY 2023
FY23 increase is due to initiation of test and evaluation of IVAS version 1.2			
Title: SBIR/STTR Transfer	-	0.180	1.195
Description: Funding transferred in accordance with Title 15 USC 638 ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2023 Plans:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638			
Accomplishments/Planned Programs Subtotals	7.495	4.934	34.543

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• K36402: *IVAS/Heads Up Display*	670.476	405.140	400.024	-	400.024	91.282	-	-	-	Continuing	Continuing
• BQ5: *Visual Augmentation System Advanced Development*	5.475	56.519	12.094	-	12.094	69.370	29.663	30.268	30.563	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 2023 Army		Date: April 2022
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 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	Various : Various	16.561	1.315	Nov 2020	0.005		1.195		-		1.195	Continuing	Continuing	-
SBIR/STTR Trasnfer	TBD	To Be Determined : To Be Determined	-	-		0.180		-		-		-	0.000	0.180	-
		Subtotal	16.561	1.315		0.185		1.195		-		1.195	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Heads Up Display (HUD)	Various	Various : Various	27.710	0.209	Dec 2020	-		30.348	Nov 2022	-		30.348	Continuing	Continuing	-
		Subtotal	27.710	0.209		-		30.348		-		30.348	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Various : Various	11.823	-		-		-		-		-	Continuing	Continuing	-
		Subtotal	11.823	-		-		-		-		-	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IVAS HUD Testing	MIPR	Various : Various	4.505	5.971	Jan 2021	4.749	Mar 2022	3.000	Mar 2023	-		3.000	Continuing	Continuing	-
		Subtotal	4.505	5.971		4.749		3.000		-		3.000	Continuing	Continuing	N/A

Remarks

For FY 2022, Test & Evaluation conducts testing to verify operational performance of all production changes.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
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 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	60.599	7.495		4.934		34.543		-		34.543	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
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*

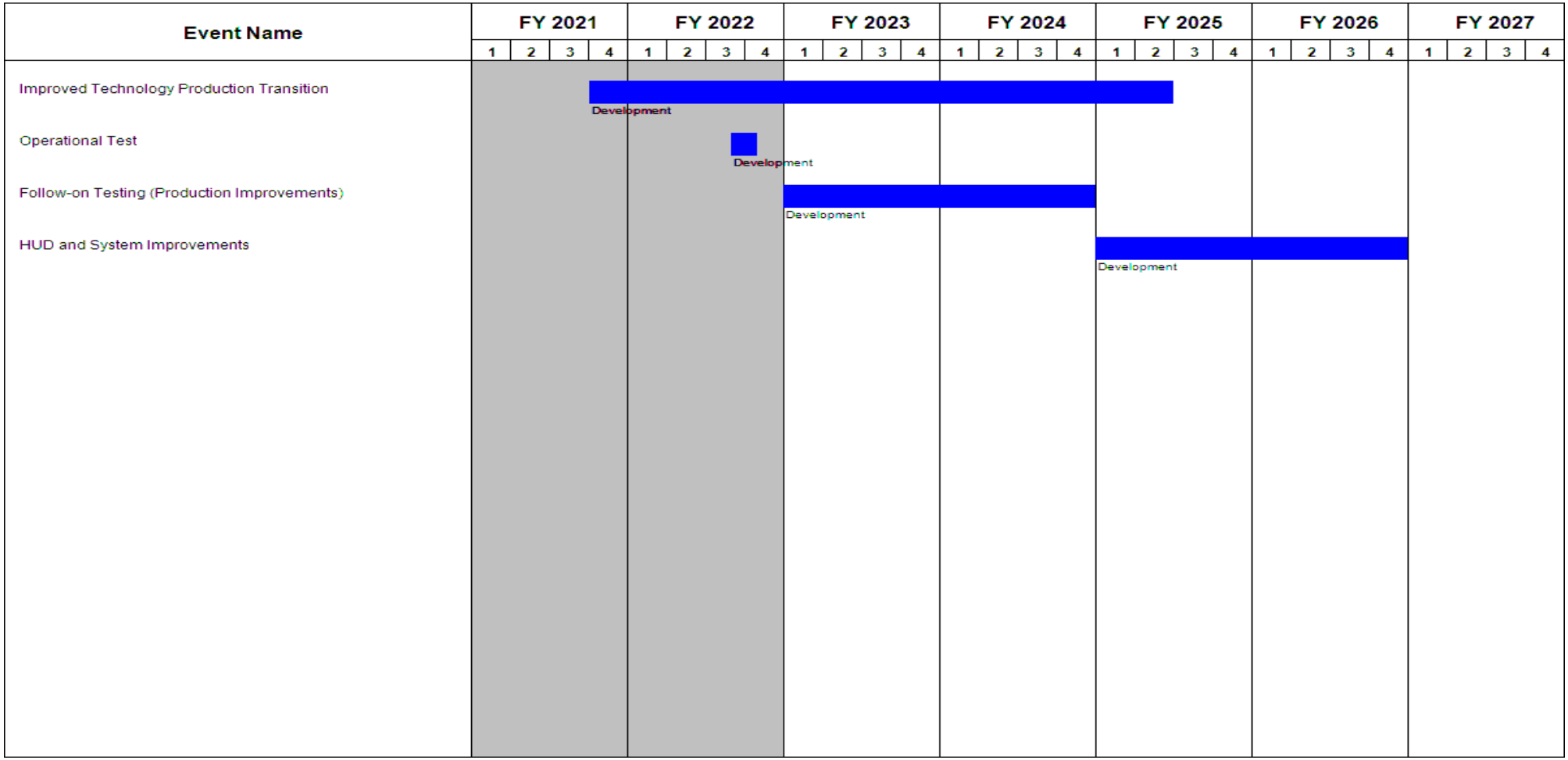

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** BQ6 / *Visual Augmentation System Eng Dev*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Heads Up Display (HUD)	4	2018	4	2020
Improved Technology Production Transition	4	2021	2	2025
Operational Test	3	2022	4	2022
Follow-on Testing (Production Improvements)	1	2023	4	2024
HUD and System Improvements	1	2025	4	2026

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
L67: *Soldier Night Vision Devices*	-	11.043	13.474	7.663	-	7.663	6.189	5.942	5.825	5.880	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 and supports the Night Vision Goggles Modernization Strategy. 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 2021	FY 2022	FY 2023
Title: Family of Weapon Sights (FWS)	3.508	6.360	1.000

Description: There are three variants in the Family of Weapon Sights: FWS-Individual (FWS-I), FWS-Crew Served (FWS-CS) and FWS-Sniper (FWS-S). 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.

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 wireless, zeroed weapon aimpoint in the Soldier's Enhanced Night Vision Goggle - Binocular (ENVG-B) or Integrated Visual Augmentation System (IVAS). FWS-I requires RDT&E in FY2022 and FY2023 to design and qualify a second vendor in production, because additional capacity is required to meet the increase AAO of 112K.

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 imagers, an Integrated Laser Range Finder (ILRF) and ballistic calculator to provide Soldiers with an accurate aimpoint that adjusts automatically for range, ammunition

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
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 2021	FY 2022	FY 2023
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 Night Vision Systems (NVS) 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 2022 Plans:*** In FY 2022, FWS-I requires RDT&E funding to complete design work and execute Government qualification testing for a second vendor. In FY 2022, FWS-CS will continue operational testing during LRIP including PQT-G, RGT-2, and Airborne testing. ***FY 2023 Plans:*** FWS-CS will complete LRIP operational testing (RGT-2 and Airborne testing). ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2022 to FY 2023 decrease is necessary to cover the remaining LRIP qualification test events (RGT-2 and ABN LUT).			
Title: Enhanced Night Vision Goggle - Binocular (ENVG-B)	3.136	3.688	-
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			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
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 2021	FY 2022	FY 2023
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 2022 Plans:*** Complete LRIP and accomplish Full Materiel Release and First Unit Equipped. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2022 to FY 2023 decrease in funding is due to ENVG-B is planned to be in Full Rate Production in FY23.			
Title: Night Vison Goggle - Next (NVG-N) ***Description:*** NVG-N provides the capability to engage threat personnel at night or in low light conditions with greater clarity, depth perception, and increased recognition range for engagements. NVG-N systems will replace Soldiers? legacy monocular AN/PVS-14s and bi-ocular AN/PVS-7s increasing the Soldiers? situational awareness, mobility, speed, and effectiveness to support an increased operational tempo. ***FY 2023 Plans:*** Initiate the development and testing of the NVG-N (renamed Night Vision Device-Next (NVD-N)) product in support of the Night Vision Goggle Modernization Strategy. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY22 to FY23 increase in RDT&E funding is due to FY2022 -$19.273M Congressional Mark reduction.	-	-	5.163
Title: Small Tactical Optical Rifle Mounted (STORM) ***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 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 2022 Plans:*** Funding will continue the integration of the STORM into the Adaptive Squad Architecture to support wireless transmission of STORM data to other systems. Continue the integration and qualification efforts of a power/data rail interface to support the sharing of LRF data to other enablers on the weapon. ***FY 2022 to FY 2023 Increase/Decrease Statement:***	0.602	1.029	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
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 2021	FY 2022	FY 2023
FY 2023 decrease in funding due to the completion of STORM's integration efforts.			
Title: Laser Target Locator Module (LTLM) ***Description:*** LTLM is a Lightweight, Handheld Laser Target Locator with a direct view optic, un-cooled thermal camera, eye-safe laser range finder, digital magnetic compass, and an internal SAASM GPS receiver, which provides the dismounted observer or Scout a fully digital, handheld system to accurately determine target location and the ability to call for fire during all weather and light conditions. ***FY 2022 Plans:*** FY22 funding supports the integration and qualification of the Congressionally mandated M-Code GPS into the LTLM system. Continue the 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 2023 Plans:*** FY 2023 funding will support the qualification and Government testing for the upgraded LTLM variant beginning in the 2Q FY23. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 funding decrease reflects a shift from the M-Code GPS integration work to supporting the qualification and Government testing of the upgraded LTLM.	3.797	1.905	1.500
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC 638. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638	-	0.492	-
Accomplishments/Planned Programs Subtotals	11.043	13.474	7.663

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• VT7: *Soldier Maneuver Sensors - Adv Dev*	7.039	3.777	3.909	-	3.909	3.808	3.661	3.777	3.813	Continuing	Continuing
• K22002: *FWS-INDIVIDUAL*	83.820	147.271	150.273	-	150.273	135.562	153.900	109.025	108.973	0.000	888.824

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• K35110: *Small Tactical Optical Rifle Mounted MLRF*	7.715	21.103	11.357	-	11.357	26.057	11.332	11.528	11.523	Continuing	Continuing
• B53800: *Laser Target Locator Systems*	14.347	27.331	24.229	-	24.229	21.995	22.409	22.307	22.326	Continuing	Continuing
• K22003: *FWS-CREW SERVED*	-	25.673	40.985	-	40.985	43.522	52.203	43.145	43.126	Continuing	Continuing
• K22004: *FWS-SNIPER*	2.569	11.201	11.000	-	11.000	10.350	10.237	5.236	5.233	Continuing	Continuing
• BQ5: *Visual Augmentation System Advanced Development*	5.475	56.519	12.094	-	12.094	69.370	29.663	30.268	30.563	Continuing	Continuing
• BQ6: *Visual Augmentation System Eng Dev*	7.495	4.934	34.543	-	34.543	8.142	72.395	73.868	74.586	Continuing	Continuing
• K36400: *Helmet Mounted Enhanced Vision Devices*	183.000	234.906	0.000	-	0.000	-	-	-	-	0.000	417.906

Remarks

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 2023 Army		Date: April 2022
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 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PROGRAM MGMT	MIPR	Various : Various	23.134	0.875	Sep 2021	0.804	Nov 2021	0.867	Nov 2022	-		0.867	Continuing	Continuing	-
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.492		-		-		-	0.000	0.492	-
		Subtotal	23.134	0.875		1.296		0.867		-		0.867	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Weapon Sights-Individual (FWS-I)	C/FFP	TBD : TBD	-	-		3.046	Apr 2022	-		-		-	0.000	3.046	-
Family of Weapon Sights-Crew Served (FWS-CS)	C/FFP	DRS RSTA, Inc : Dallas, TX/Nashua, NH	53.533	0.550	Apr 2021	-		-		-		-	0.000	54.083	-
Enhanced Night Vision Goggle - Binocular (ENVG-B)	C/FFP	Applied Research Associates, Inc. (ARA) : Albuquerque, NM	0.300	0.375	Feb 2021	-		-		-		-	0.000	0.675	-
Enhanced Night Vision Goggle - Binocular (ENVG-B)	C/FFP	L3Harris Corporation: : Londonderry, NH	15.517	0.612	Mar 2021	1.549	May 2022	-		-		-	0.000	17.678	-
Enhanced Night Vision Goggle - Binocular (ENVG-B)	C/FFP	Elbit Systems of America : Roanoke, VA	11.967	0.612	Mar 2021	1.549	May 2022	-		-		-	0.000	14.128	-
Night Vision Device - Next	C/TBD	TBD : TBD	-	-		-		3.228	Apr 2023	-		3.228	Continuing	Continuing	-
STORM II - Wireless Integration & SWAP C (L3)	C/CPFF	L3H : Londonderry, NH	1.843	0.167	Mar 2021	0.280	Jan 2022	-		-		-	0.000	2.290	-
Laser Target Location Module (Optics 1)	C/CPFF	Optics 1 : Bedford, NH	1.986	2.365	Feb 2021	1.678	Jan 2022	-		-		-	0.000	6.029	-
Laser Target Location Module - Intra Soldier Wireless (ISW)	C/FFP	Various : Various	-	1.322	Apr 2021	-		-		-		-	0.000	1.322	-
		Subtotal	85.146	6.003		8.102		3.228		-		3.228	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
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*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	RTI : Ft Belvoir, VA	29.486	0.815	Dec 2020	0.387	Dec 2021	0.519	Dec 2022	-		0.519	Continuing	Continuing	-
		Subtotal	29.486	0.815		0.387		0.519		-		0.519	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test Support Activity	MIPR	Army Test and Evaluation Command : Various	62.167	3.350	Jun 2021	3.689	Mar 2022	3.049	Mar 2023	-		3.049	Continuing	Continuing	-
		Subtotal	62.167	3.350		3.689		3.049		-		3.049	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	199.933	11.043		13.474		7.663		-		7.663	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
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*

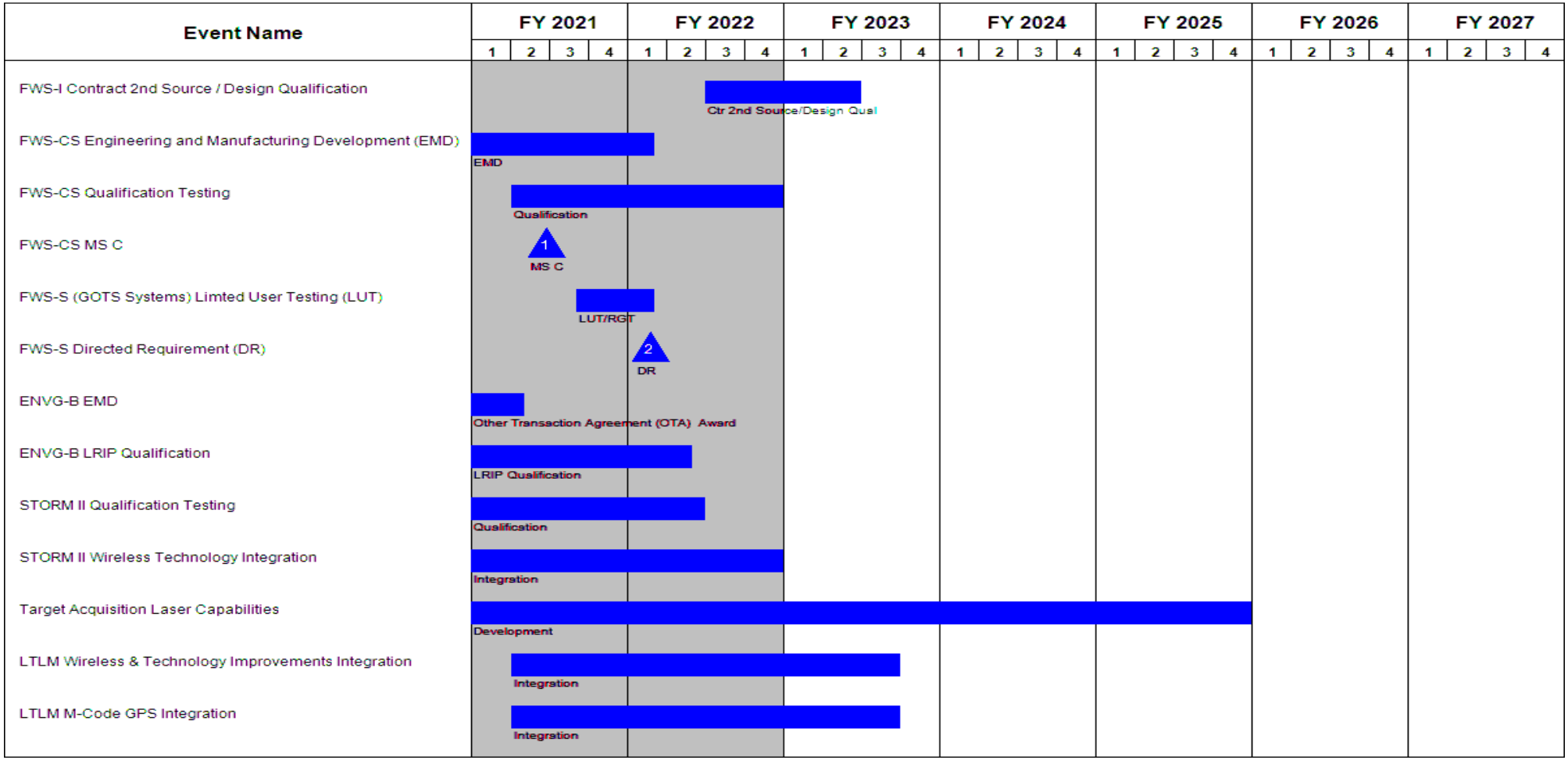

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L67 / *Soldier Night Vision Devices*

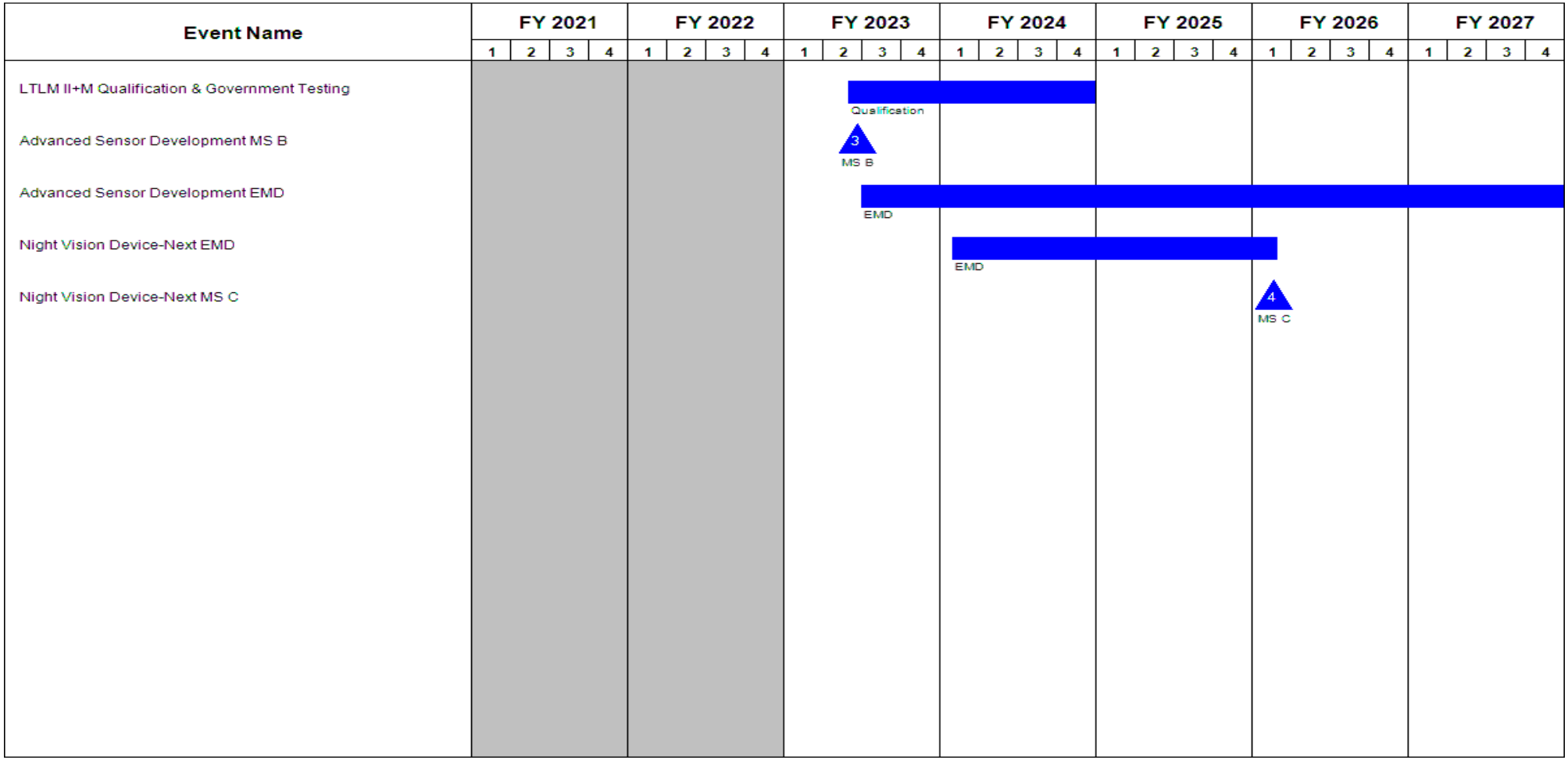

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L67 / *Soldier Night Vision Devices*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
FWS-I Contract 2nd Source / Design Qualification	3	2022	2	2023
FWS-CS Engineering and Manufacturing Development (EMD)	3	2016	1	2022
FWS-CS Qualification Testing	2	2021	4	2022
FWS-CS MS C	2	2021	2	2021
FWS-S (GOTS Systems) Limted User Testing (LUT)	3	2021	1	2022
FWS-S Directed Requirement (DR)	1	2022	1	2022
ENVG-B EMD	3	2019	2	2021
ENVG-B MS C	4	2020	4	2020
ENVG-B LRIP Qualification	4	2020	2	2022
STORM II Qualification Testing	2	2019	2	2022
STORM II Wireless Technology Integration	2	2019	4	2022
Target Acquisition Laser Capabilities	2	2019	4	2025
LTLM Technology Improvements Development	2	2019	2	2020
LTLM Wireless & Technology Improvements Integration	2	2021	3	2023
LTLM M-Code GPS Integration	2	2021	3	2023
LTLM II+M Qualification & Government Testing	2	2023	4	2024
Advanced Sensor Development MS B	2	2023	2	2023
Advanced Sensor Development EMD	3	2023	4	2027
Night Vision Device-Next EMD	1	2024	1	2026
Night Vision Device-Next MS C	1	2026	1	2026

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
L70: *Night Vision Dev Ed*	-	29.058	19.893	9.039	-	9.039	10.744	7.800	7.836	7.912	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 program, which incorporates the next generation of forward looking infrared technologies. The 3GEN FLIR 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 platform 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 program is also a key element in maintaining the Army's FLIR industrial base.

FY 2023 Base funding in the amount of $9.039 million supports the 3GEN FLIR B-Kit program activities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: 3GEN FLIR B-Kit EMD	29.058	19.166	9.039
Description: 3GEN FLIR EMD requirements and contract awards.			
FY 2022 Plans: FY 2022 Base funding supports 3GEN FLIR B-Kit hardware integration with the Abrams M1A2 SEPv4 Modernization (Lethality ECP) effort for developmental testing, execution of critical component warm lines, continues integration of automation and artificial intelligence/machine learning, and supports Detect, Recognize, and Identify (DRI) operational testing in support of the 3GEN FLIR B-Kit Milestone C (MS C) in FY22, and promote competition for full rate production.			
FY 2023 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
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 2021	FY 2022	FY 2023
FY 2023 Base Funding supports continued integration of sensor automation and artificial intelligence/machine learning to support Aided Target Detection and Recognition and promote competition for full rate production. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease is due the completion of 3GEN FLIR EMD hardware manufacturing and the transition to performance enhancement activities through technical insertions.			
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease is due to no planned SBIR/STTR costs in PB 2023.	-	0.727	-
Accomplishments/Planned Programs Subtotals	29.058	19.893	9.039

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 330: *Abrams Tank Improve Prog*	61.039	120.308	61.229	-	61.229	98.274	85.285	85.279	86.109	Continuing	Continuing
• CF6: *Next Generation Combat Vehicle (OMFV)*	162.390	202.320	589.762	-	589.762	1,238.951	553.275	376.107	379.760	0.000	3,502.565
• KA4511: *Improved Forward Looking Infrared (IFLIR) B-Kit*	-	11.929	37.914	-	37.914	20.856	71.461	69.801	127.372	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 FLIR product improvement efforts will continue to focus on the integration and refinement of the artificial intelligence/machine learning capabilities.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army		Date: April 2022
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 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	MIPR	PM TS : Ft. Belvoir, VA	16.867	-		0.518	Jan 2022	0.362	Jan 2023	-		0.362	Continuing	Continuing	-
FY 2019 NDAA SEC 825 MDAP Cost Overruns	Various	HQDA : HQDA	0.051	-		-		-		-		-	0.000	0.051	-
FY 2022 SBIR/STTR Transfer	TBD	Various : Various	-	-		0.727	Mar 2022	-		-		-	0.000	0.727	-
		Subtotal	16.918	-		1.245		0.362		-		0.362	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 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	186.189	27.306	Nov 2020	14.764	Nov 2021	-		-		-	0.000	228.259	-
3GEN FLIR Product Improvements	TBD	Various : Various	-	-		-		8.267	Jan 2023	-		8.267	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	229.009	27.306		14.764		8.267		-		8.267	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
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 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
3GEN FLIR B-Kit Support	C/TBD	Various : Various	40.961	1.752	Feb 2021	0.822	Feb 2022	0.410	Feb 2022	-		0.410	Continuing	Continuing	-
3GEN LRAS3 - Spec development and acquisition documentation	C/TBD	Various : Various	1.145	-		-		-		-		-	0.000	1.145	-
COE Support	C/CPFF	Various : Various	1.394	-		-		-		-		-	0.000	1.394	-
		Subtotal	43.500	1.752		0.822		0.410		-		0.410	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Test Support	MIPR	Various : Various	15.850	-		3.062	Jan 2022	-		-		-	0.000	18.912	15.850
		Subtotal	15.850	-		3.062		-		-		-	0.000	18.912	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	305.277	29.058		19.893		9.039		-		9.039	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
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*

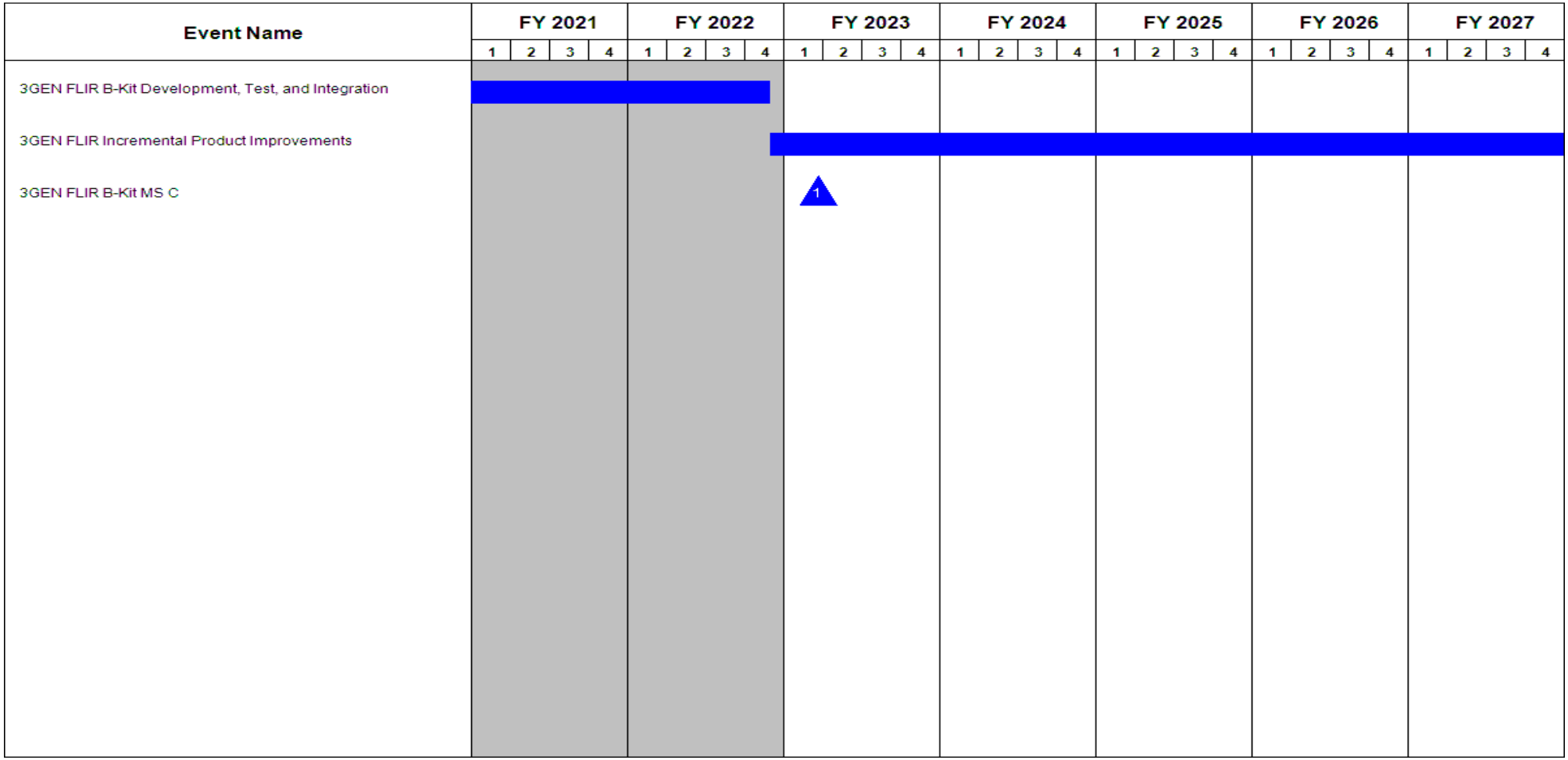

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L70 / *Night Vision Dev Ed*

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	4	2022
3GEN FLIR Incremental Product Improvements	4	2022	4	2027
3GEN FLIR B-Kit MS C	1	2023	1	2023
3GEN LRAS3 ECP to Integrate 3GEN FLIR B-Kit: Spec Development & Documentation	1	2018	4	2019
Common Operating Environment, Development	2	2012	4	2018

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
L79: *Joint Effects Targeting Systems (JETS)*	-	5.363	5.116	11.434	-	11.434	13.519	6.318	6.609	6.006	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Effects Targeting System (JETS) is an Army Joint Information Program. 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) is able to interface with existing and future Forward Entry Systems (FESs) and will be able to operate in environments where global positioning system (GPS) capabilities are degraded or denied, and integrating military GPS user equipment (M-Code) GPS receivers, when they become available. This project will develop and integrate improved precision targeting components to reduce size, weight, power, and cost of systems for dismounted precision 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 2021	FY 2022	FY 2023
Title: Joint Effects Targeting System (JETS) Low-Rate Initial Production (LRIP) Qualification Testing ***Description:*** This projects supports the LRIP Qualification Testing.	0.493	-	-
Title: Precision Azimuth and Vertical Angle Module (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 and PAVAM solutions to improve availability of precision measurements over a wider range of environments. ***FY 2022 Plans:*** Continue development of reduced SWAP-C for PAVAM architecture. ***FY 2023 Plans:*** Continue development of reduced SWAP-C PAVAM architecture for integration into the next generation JETS. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 increased funding supports testing costs.	0.463	0.225	0.241
Title: Joint Effects Targeting System (JETS) Threat Mitigation Development and Integration	0.331	0.356	0.215

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
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 2021	FY 2022	FY 2023
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, and improved targeting sensor technologies, to include passive targeting, that will reduce the Soldier?s signature on the battlefield. ***FY 2022 Plans:*** Continue integration of technologies and techniques into JETS to allow it to operate in GPS contested environments. In FY22 program will transition 3D Point Cloud applications for GPS contested operations to existing platforms. These apps will reside on the Nett Warrior End User Device and will provide the hooks necessary for the JETS to accurately determine its self-location in a GPS denied environment. Initiate development of image-based self-location and target location efforts for targeting in GPS contested environments. ***FY 2023 Plans:*** FY 2023 resources continue the development of image-based self-location and target location technologies for targeting in GPS contested environments. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 decreased funding supports an increase to JETS II Development.			
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. Incorporates JETS into the Adaptive Squad Architecture (ASA) and integrates the Intra Soldier Wireless (ISW) capability. ***FY 2022 Plans:*** Continue development and component integration of improved precision targeting prototypes. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 decreased funding supports an increase to JETS II Development.	4.076	4.348	-
Title: JETS II Development ***Description:*** This project performs engineering and manufacturing development of the next generation JETS, transitioning technologies developed in the Precision Targeting and Target Acquisition Development project. The JETS II will be an advanced, lighter weight precision targeting systems incorporating improved target acquisition sensors and optics, improved targeting sensors, updated targeting algorithms, and a M-Code GPS receiver while reducing size, weight, and power requirements. It will integrate JETS into the Adaptive Squad Architecture (ASA) using the Intra Soldier Wireless (ISW) capability.	-	-	10.978

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
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 2021	FY 2022	FY 2023
FY 2023 Plans: The FY23 resources will initiate the engineering and manufacturing development of JETS II. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 increased funding reflects the initiation of an engineering and manufacturing development phase for JETS II.			
Title: SBIR/STTR Transfer ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638	-	0.187	-
Accomplishments/Planned Programs Subtotals	5.363	5.116	11.434

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• VT8: *SOLDIER PRECISION TARGETING DEVICES - ADV DEV*	2.665	2.524	2.045	-	2.045	2.053	2.050	2.050	2.070	Continuing	Continuing
• K32101: *JOINT EFFECTS TARGETING SYSTEM (JETS)*	54.206	62.082	10.304	-	10.304	49.938	70.355	70.269	70.891	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 2023 Army			Date: April 2022
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 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	MIPR	PM-SMPT : Ft Belvoir, VA 22060	4.733	0.552	Dec 2020	0.418	Dec 2021	0.333	Dec 2022	-		0.333	Continuing	Continuing	Continuing
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.187		-		-		-	0.000	0.187	-
		Subtotal	4.733	0.552		0.605		0.333		-		0.333	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PAVAM 2 Development	C/FFP	Various : Various	12.781	0.350	Jul 2021	0.225	Apr 2022	0.100	Jan 2023	-		0.100	Continuing	Continuing	Continuing
Threat Mitigation Development	C/FFP	Various : Various	4.837	0.250	Jul 2021	0.264	Apr 2022	0.185	Feb 2023	-		0.185	Continuing	Continuing	Continuing
Precision Targeting & Target Acquisition Development	C/FFP	Elbit : Merrimack, NH	6.278	3.081	Nov 2020	3.230	Jan 2022	-		-		-	Continuing	Continuing	Continuing
JETS II	C/FFP	TBD : TBD	-	-		-		9.666	Mar 2023	-		9.666	Continuing	Continuing	Continuing
		Subtotal	23.896	3.681		3.719		9.951		-		9.951	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Night Vision Electronics Sensors Directorate : Ft. Belvoir, VA	13.254	0.202	Dec 2020	0.225	Dec 2021	0.225	Dec 2022	-		0.225	Continuing	Continuing	-
Science and Engineering Support	SS/CPFF	Johns Hopkins University : Laurel, MD	7.933	0.555	Jan 2021	0.567	Jan 2022	0.800	Jan 2023	-		0.800	Continuing	Continuing	-
		Subtotal	21.187	0.757		0.792		1.025		-		1.025	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
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 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing	MIPR	Various : Various	5.688	0.373	Feb 2021	-		0.125	Jan 2023	-		0.125	Continuing	Continuing	-
		Subtotal	5.688	0.373		-		0.125		-		0.125	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	55.504	5.363		5.116		11.434		-		11.434	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
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)*

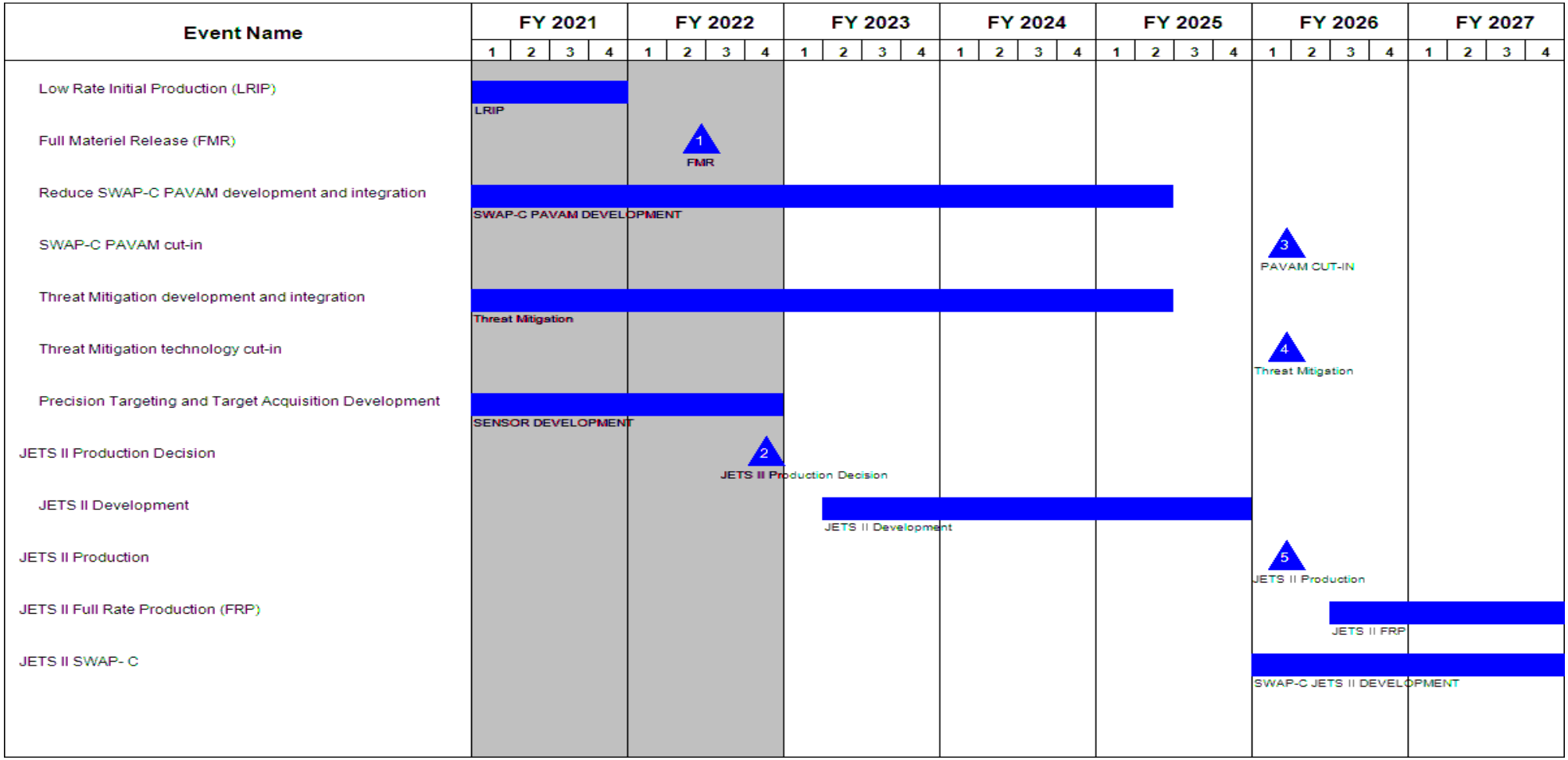

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604710A / *Night Vision Systems - Eng Dev*	**Project (Number/Name)** L79 / *Joint Effects Targeting Systems (JETS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Low Rate Initial Production (LRIP)	1	2017	4	2021
Full Materiel Release (FMR)	2	2022	2	2022
Reduce SWAP-C PAVAM development and integration	3	2016	2	2025
SWAP-C PAVAM cut-in	1	2026	1	2026
Threat Mitigation development and integration	2	2017	2	2025
Threat Mitigation technology cut-in	1	2026	1	2026
Precision Targeting and Target Acquisition Development	2	2019	4	2022
JETS II Production Decision	4	2022	4	2022
JETS II Development	2	2023	4	2025
JETS II Production	1	2026	1	2026
JETS II Full Rate Production (FRP)	3	2026	2	2032
JETS II SWAP- C	1	2026	4	2030