Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army											Date: March 2023	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603827A / *Soldier Systems - Advanced Development*							
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
Total Program Element	-	25.288	23.444	27.681	-	27.681	29.981	32.267	32.607	32.970	Continuing	Continuing
CF2: *Integrated Soldier Systems Prototyping (SL CFT)*	-	2.963	3.831	3.688	-	3.688	3.728	3.988	4.030	4.075	0.000	26.303
ET8: *Personnel Airdrop System Development*	-	1.113	1.853	2.208	-	2.208	0.932	2.311	2.336	2.363	Continuing	Continuing
S53: *Clothing And Equipment*	-	6.431	3.078	4.700	-	4.700	8.150	8.790	8.884	8.982	Continuing	Continuing
S54: *Small Arms Improvement*	-	10.659	9.248	9.094	-	9.094	9.183	9.184	9.281	9.384	0.000	66.033
VS4: *Soldier Protective Equipment*	-	4.122	5.434	7.991	-	7.991	7.988	7.994	8.076	8.166	Continuing	Continuing

A. Mission Description and Budget Item Justification

A portion of this funding line is directly aligned to the Soldier Lethality Army Modernization Priority. This Program Element (PE), Advanced Component Development and Prototypes, manages the Soldier as a system to increase combat effectiveness, test and deliver tangible products that save Soldiers lives and improve combat capability. The PE provides funding for evaluating, developing, and testing emerging technologies and critical Soldier support systems to reduce technology risk.

CF2
Develop and maintain a PEO Soldier Futures Strategy ICW the Soldier Lethality Cross Functional Team and all DEVCOM Centers laying out a road-map for the Army of 2040 and beyond to execute Multi Domain Operations. Provide prototyping capabilities for evaluation and integration. Execute evaluation of new measurements and methodologies from the S&T community, execute system level evaluation environments, and support Soldier system modeling. Funding for this project aligns with the Army's priorities in support of the National Defense Strategy and is a priority of the Soldier Lethality Cross Functional Team.

ET8
Personnel Airdrop System improves Low Altitude and High Altitude personnel parachutes and associated equipment to include canopy improvement based on integration of new technology with the goal of enhancing the insertion capability and safety of the airborne Soldier and increasing the performance, reliability, and durability of personnel airdrop equipment.

S53
This Project evaluates and integrates technologies and representative or prototype systems that help expedite Soldier Clothing and Individual Equipment technology transition from the laboratory to operational use. Efforts focus on proving out commonality across as broad a spectrum of users as possible to provide a modular, integrated uniform/clothing system from skin out and head-to-toe. It funds efforts to transition new technologies and domestically available fabrics with Flame Resistant (FR), moisture wicking, insect protection and camouflage technologies, including integration of fabrics appropriate for uniforms and equipment used in jungle/tropical and

arctic environments. New technologies are identified to monitor health and improve Soldier survivability, reduce weight, and improve affordability, mobility and comfort in combat and training/administrative environments. Includes integration and interface on the Soldier system.

S54
The Small Arms Improvement Advanced Component Development and Prototypes (ACD&P) program provides funds to mature, demonstrate, test and evaluate emerging technology from Budget Activity (BA) 3 Program Element 0603607A Joint Service Small Arms Program (JSSAP) Project 627 Defense Advanced Research Projects Agency (DARPA), Department of Energy National Laboratories, Research Development & Engineering Centers (RDECs) and other domestic and foreign sources for small arms weapon systems and technology. Small arm weapon systems include weapons ranging up to 40 millimeter in caliber. Current and future efforts focus on improvements designed to enhance lethality, target acquisition and tracking, fire control, usability, training effectiveness and reliability of weapons to include ammunition when developing and/or evaluating standard and non-standard weapons. Focus areas include the maturing of technology through testing and evaluation of sub-system or system prototypes which demonstrates light weight materials, wear resistant/protective/anti-reflective coatings, observation/situational awareness improvements, human-systems integration, robotic armament capability, non-lethal capability, and equipment enhancements. Benefits include continuous improvements to small arms weapon systems, fire control equipment, optics, gun barrels, training devices, suppressors, component mounts, weapon mounts, and weapon/ammunition interface. Includes costs associated with efforts for integration and interface of products on Soldiers' head, body and weapons.

VS4
This Project supports efforts to evaluate integrated technologies and representative or prototype systems that help expedite Personal Protective Equipment (PPE) technology transition from the laboratory to operational use.

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	25.925	25.971	28.265	-	28.265
Current President's Budget	25.288	23.444	27.681	-	27.681
Total Adjustments	-0.637	-2.527	-0.584	-	-0.584
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.500			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.637	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.584	-	-0.584
• FFRDC Transfer	-	-0.027	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Project: S53: *Clothing And Equipment*		

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603827A *I Soldier Systems - Advanced Development*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Congressional Add: *Congressional Add for Multi-spectral Signature Management*	4.500	-
Congressional Add Subtotals for Project: S53	4.500	-
Project: S54: *Small Arms Improvement*		
Congressional Add: *New Weapon Systems Congressional Add*	4.000	-
Congressional Add Subtotals for Project: S54	4.000	-
Congressional Add Totals for all Projects	8.500	-

Change Summary Explanation

Decreased funding to support higher Army priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603827A / *Soldier Systems - Advanced Development*	Project (Number/Name) CF2 / *Integrated Soldier Systems Prototyping (SL CFT)*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
CF2: *Integrated Soldier Systems Prototyping (SL CFT)*	-	2.963	3.831	3.688	-	3.688	3.728	3.988	4.030	4.075	0.000	26.303
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Develop and maintain a PEO Soldier Futures Strategy ICW the Soldier Lethality Cross Functional Team and all DEVCOM Centers laying out a road-map for the Army of 2040 and beyond to execute Multi Domain Operations.
Prototype capabilities for evaluation and integration. Execute evaluation of new measurements and methodologies from the S&T community, execute system level evaluation environments, and support Soldier system modeling. Funding for this project aligns with the Army's priorities in support of the National Defense Strategy and is a priority of the Soldier Lethality Cross Functional Team.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Integrated Soldier Systems Prototyping	2.963	3.691	3.688
Description: Develop and maintain a PEO Soldier Futures Strategy ICW the Soldier Lethality Cross Functional Team and all DEVCOM Centers laying out a road-map for the Army of 2040 and beyond to execute Multi Domain Operations. Provide prototyping capabilities for evaluation and integration. Execute evaluation of new measurements and methodologies from the S&T community, execute system level evaluation environments, and support Soldier system modeling. Funding for this project aligns with the Army's priorities in support of the National Defense Strategy and is a priority of the Soldier Lethality Cross Functional Team.			
FY 2023 Plans: Continue to develop components, algorithms, and demonstrations in support of Squad as an Integrated Combat Platform.			
FY 2024 Plans: Continue to update the synchronized PEO Soldier futures plan and execute prototype integration demonstrations in support of Squad as an Integrated Combat Platform.			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreases between FY23 and FY24 due to anticipated changes in requirements			
Title: SBIR/STTR Transfer	-	0.140	-
Description: Funding transferred in accordance with Title 15 USC §638			
FY 2023 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** CF2 / *Integrated Soldier Systems Prototyping (SL CFT)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Funding transferred in accordance with Title 15 USC §638			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638.			
Accomplishments/Planned Programs Subtotals	2.963	3.831	3.688

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• CF3: *Integrated Soldier Systems (SL CFT)*	4.211	4.403	4.407	-	4.407	4.451	4.544	4.591	4.642	0.000	31.249

Remarks

D. Acquisition Strategy

PEO Soldier ICW the Soldier Lethality Cross Functional Team and DEVCOM Centers will develop a synchronized road-map of future programs to progress though S&T to programs of record to be developed, produced and fielded to the Army in support of Multi Domain Operations. In support of this Futures Strategy, execute component and system level evaluations in the Soldier Integration Facility and support Soldier system modeling.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** CF2 / *Integrated Soldier Systems Prototyping (SL CFT)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.140		-		-		-	0.000	0.140	-
		Subtotal	-	-		0.140		-		-		-	0.000	0.140	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Adaptive Squad Architecture (ASA)	C/FFP	Various : Various	1.305	0.607	Jan 2022	1.275	Jan 2023	1.135	Jan 2024	-		1.135	Continuing	Continuing	Continuing
Soldier Modernization Plan Development	Option/ CPFF	Natick ACC : Natick MA	-	-		0.900		0.945		-		0.945	0.000	1.845	-
		Subtotal	1.305	0.607		2.175		2.080		-		2.080	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ASA Test & Eval	C/FFP	Various : various	3.022	2.356	Dec 2021	1.141	Jan 2023	1.196	Jan 2024	-		1.196	Continuing	Continuing	Continuing
Soldier Integration Facility Evaluations	C/CPFF	Natick ACC : Natick MA	-	-		0.375		0.412		-		0.412	0.000	0.787	-
		Subtotal	3.022	2.356		1.516		1.608		-		1.608	Continuing	Continuing	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.327	2.963		3.831		3.688		-		3.688	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** CF2 / *Integrated Soldier Systems Prototyping (SL CFT)*

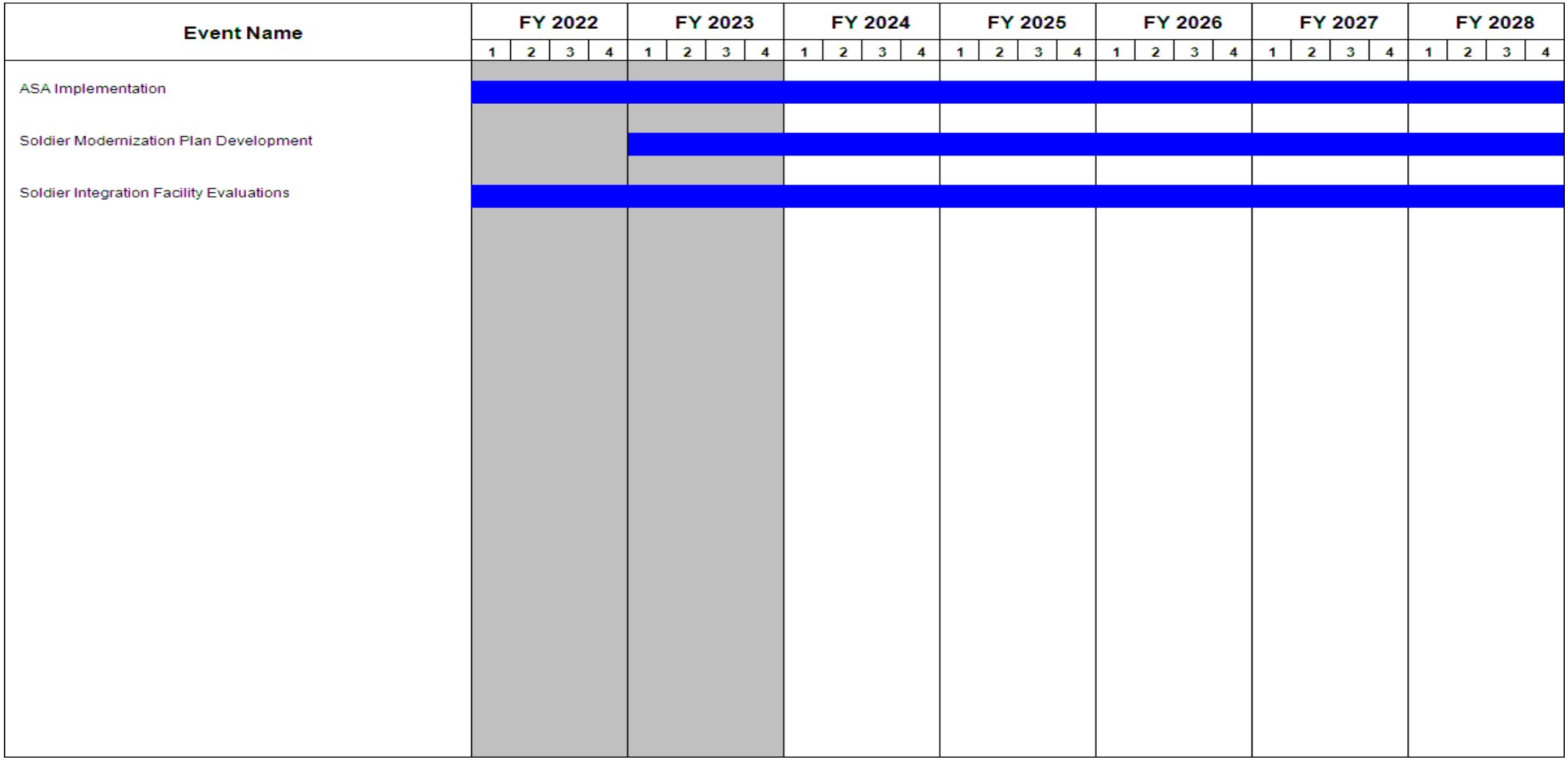


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** CF2 / *Integrated Soldier Systems Prototyping (SL CFT)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ASA Implementation	2	2020	4	2028
Soldier Modernization Plan Development	1	2023	4	2028
Soldier Integration Facility Evaluations	2	2020	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603827A / *Soldier Systems - Advanced Development*	Project (Number/Name) ET8 / *Personnel Airdrop System Development*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
ET8: *Personnel Airdrop System Development*	-	1.113	1.853	2.208	-	2.208	0.932	2.311	2.336	2.363	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Funding in this project supports the Army's Cross Functional Teams (CFT) initiatives. Project ET8, Personnel Airdrop System Development, improves Low Altitude and High Altitude personnel parachutes and associated equipment to include canopy improvement based on integration of new technology with the goal of enhancing the insertion capability and safety of the airborne Soldier and increasing the performance, reliability, and durability of personnel airdrop equipment. This project will transition capabilities from our Science and Technology partners to increase performance and safety of Soldier equipment. It will continue to support cross-service initiatives to improve commonality.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Personnel Airdrop System Development	1.113	1.785	2.208
Description: Improve Low Altitude and High Altitude personnel parachutes and ancillary equipment that supports airborne operations to include canopy improvements based on integration of new technology with the goal of enhancing the insertion and safety of the airborne soldier and increasing the performance, reliability, and durability of personnel airdrop equipment. ***FY 2023 Plans:*** Continue evaluation of Low Altitude Static Line Reserve Parachute Automatic Activation Devices. Mature form factor and operational concepts in addition to initial integration testing with the T-11 Reserve Single Pin. ***FY 2024 Plans:*** Continue integration testing of the Low Altitude Static Line Reserve Parachute Automatic Activation Device (SLRPAAD) to mature technology of product to enter Developmental Testing (DT). Evaluate technology for next generation parachutes, detecting towed jumper within the parachute system, and parachutists' ancillary safety equipment. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increased funding supports increased scope of testing for the Low Altitude Static Line Reserve Parachute Automatic Activation Device (SLRPAAD).			
Title: SBIR/STTR Transfer	-	0.068	-
Description: Funding transferred in accordance with Title 15 USC 638. ***FY 2023 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** ET8 / *Personnel Airdrop System Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Funding transferred in accordance with Title 15 USC 638. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638.			
Accomplishments/Planned Programs Subtotals	1.113	1.853	2.208

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• ES9: *Advanced Tactical Parachute System*	1.705	3.029	2.776	-	2.776	3.732	4.070	4.114	4.160	0.000	23.586
• MA7801: *Advanced Tactical Parachute System*	34.959	42.444	39.279	-	39.279	36.044	33.201	33.218	33.247	0.000	252.392

Remarks

D. Acquisition Strategy

Programs pursue technology maturation and prototype development, culminating in the transition of mature technologies (Technology Readiness Level (TRL) 6-7) to system development and demonstration (SDD).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603827A / *Soldier Systems - Advanced Development*	Project (Number/Name) ET8 / *Personnel Airdrop System Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.068		-		-		-	0.000	0.068	-
		Subtotal	-	-		0.068		-		-		-	0.000	0.068	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Contracts	C/FFP	TBD : TBD	0.955	0.392		0.633		0.780		-		0.780	2.588	5.348	-
Engineering Support	MIPR	DEVCOM-SC : Natick, MA	0.576	0.020		0.223		0.240		-		0.240	0.827	1.886	-
		Subtotal	1.531	0.412		0.856		1.020		-		1.020	3.415	7.234	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Allot	PM SCIE : Belvoir	0.745	0.424		0.171		0.188		-		0.188	0.811	2.339	-
		Subtotal	0.745	0.424		0.171		0.188		-		0.188	0.811	2.339	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	TBD : TBD	0.764	0.277		0.758		1.000		-		1.000	0.782	3.581	-
		Subtotal	0.764	0.277		0.758		1.000		-		1.000	0.782	3.581	N/A

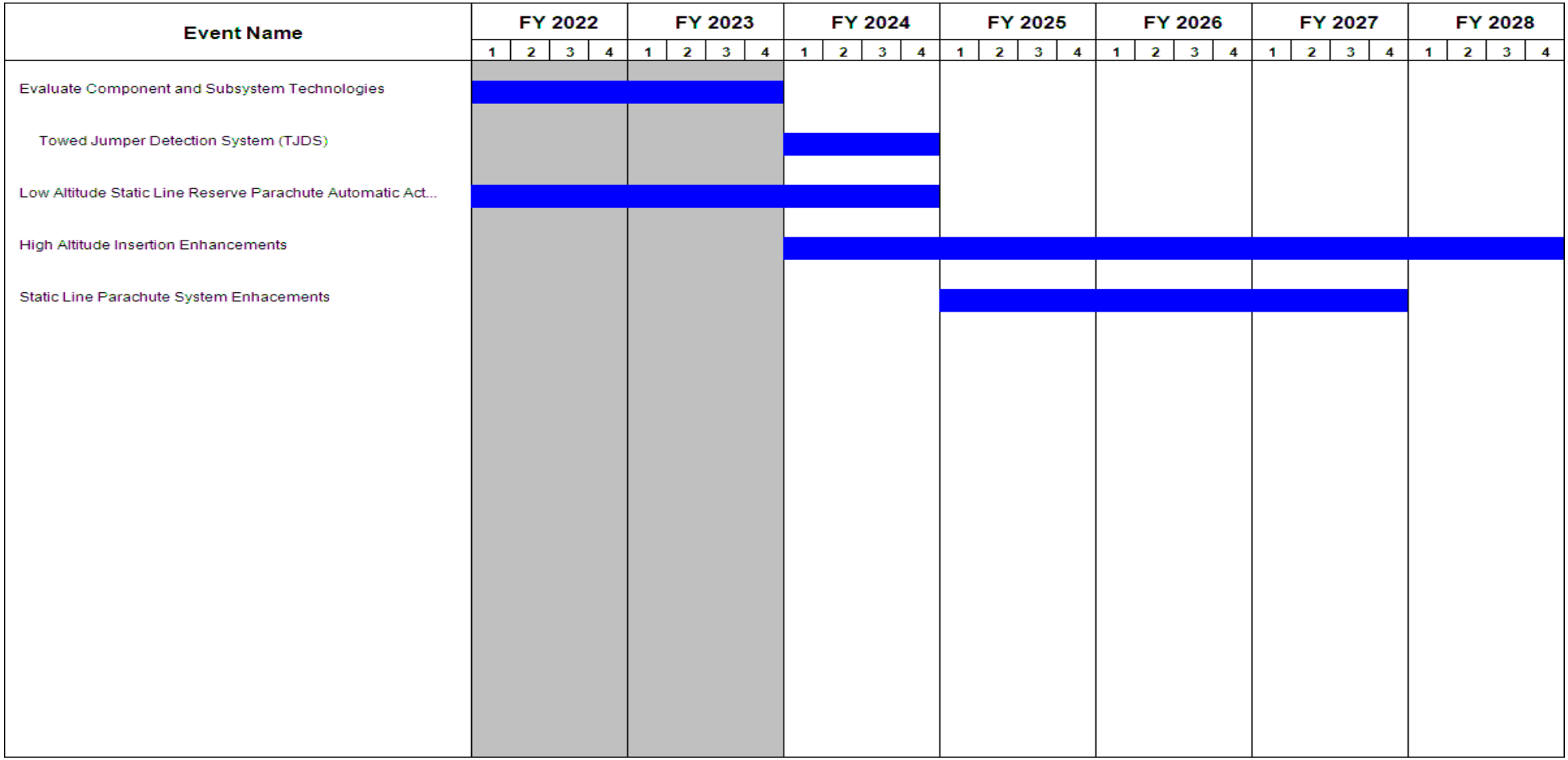
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.040	1.113		1.853		2.208		-		2.208	5.008	13.222	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603827A / *Soldier Systems - Advanced Development*	Project (Number/Name) ET8 / *Personnel Airdrop System Development*	

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** ET8 / *Personnel Airdrop System Development*



Note

High Altitude Insertion Enhancements includes the following: Glide Technology, Situational Awareness Aids, and GPS Denied Navigation Aid.

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** ET8 / *Personnel Airdrop System Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Evaluate Component and Subsystem Technologies	1	2019	4	2023
Towed Jumper Detection System (TJDS)	1	2024	4	2024
Low Altitude Static Line Reserve Parachute Automatic Activation Device (SLRPAAD)	3	2020	4	2024
High Altitude Insertion Enhancements	1	2024	4	2028
Static Line Parachute System Enhacements	1	2025	4	2027

Note

Note: Towed Jumper Detection System (TJDS) formerly known as Advanced Universal Static Line (AUSL).

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603827A / *Soldier Systems - Advanced Development*	Project (Number/Name) S53 / *Clothing And Equipment*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
S53: *Clothing And Equipment*	-	6.431	3.078	4.700	-	4.700	8.150	8.790	8.884	8.982	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Funding in this effort supports the Army's Cross Functional Teams (CFT) initiatives to evaluate and integrate technologies and prototypes that expedite Product Manager Soldier Clothing and Individual Equipment (PM SCIE) technology transitions from the laboratory to operational use. Efforts focus on achieving commonality across all services to provide footwear, uniforms and clothing systems consisting of all layers required to accommodate Warfighters in all environments resulting in Soldier as an integrated system. PM SCIE efforts include female Warfighter specific items and sizing. This effort funds the transition of new, improved technologies and domestically available fabrics with capabilities such as Flame Resistance (FR), moisture wicking, vector protection and innovative multi-service efforts to advance camouflage technologies to mitigate multi-spectral signature detection. This effort also funds integration of fabrics for uniforms and equipment for use in all environments focusing on arctic and jungle. PM SCIE will transition capabilities from our Science and Technology partners to increase performance of Warfighter clothing and equipment and identify emerging technologies to integrate smart textile capabilities into combat uniforms and equipment. Additional advances in existing technologies to improve survivability by focusing on reducing weight and improving performance, mobility and comfort. PM SCIE will continue to support multi-service commonality initiatives through technology that enables combat operations in a gender integrated fighting force.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Soldier Uniforms and Clothing	1.561	2.208	3.410
Description: Develop superior and sustainable integrated clothing and footwear for the Soldier in a rapidly changing global environment.			
FY 2023 Plans: Supports opportunities for commonality in OCIE across all Services (Army, Navy, Air Force, Marines and Coast Guard) and further supports the domestic Clothing and Textile Industrial Base. Evaluate fabric and system designs that provide improved vector protection, enhanced camouflage and identification capability, Flame Resistant (FR) protection and improved comfort for inclusion in tactical and environmental clothing. Focus on improvements for cold weather and extreme cold weather clothing and handwear. Transition government developed materials that meet SWIR requirement and reduces costs across all Services. Develop enhanced Aircrew uniforms utilizing enhanced, domestically available FR fabrics. Investigate and evaluate conductive textiles (fabric level). Supports The Chief of Staff Army's directives resulting from the Army Uniform Board held twice annually to include upgrades to clothing bag items. Transition materials to reduce spectral as well as thermal signature to further mitigate detection.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** S53 / *Clothing And Equipment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Supports opportunities for commonality in OCIE across all Services (Army, Navy, Air Force, Marines and Coast Guard) and further supports the domestic Clothing and Textile Industrial Base. Evaluate transitioned fabric and system designs that provide improved vector protection, enhanced concealment and identification capability, Flame Resistant (FR) protection and improved comfort for inclusion in tactical and environmental clothing. Focus on improvements for cold weather and extreme cold weather clothing and handwear. Transition to system development and demonstration government developed materials that meet Signature Management requirements, to include enhance Identification of Friend or Foe (IFF) and reduction of costs across all Services. Transition functional textiles to mitigate Ground Surveillance Radar (GSR) detection by opposing forces. Develop enhanced uniforms utilizing enhanced, domestically available FR fabrics. Transition materials that will improve breathability for dismounted Soldiers and reduce spectral and thermal signature to further mitigate detection. Investigate and evaluate e-textiles (fabric level). Transition materials that will protect against emerging microwave threats. Evaluate transitioned fabric and designs for the next generation cold weather clothing system. Supports The Chief of Staff Army's directives resulting from the Army Uniform Board held twice annually to include upgrades to clothing bag items. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding increases between FY23 and FY24 due to increased focus on signature management.			
Title: Individual Equipment	0.370	0.758	1.290
Description: Develop and provide superior and sustainable integrated individual equipment for the Soldier in a rapidly changing global environment. ***FY 2023 Plans:*** Supports opportunities for commonality in OCIE across all Services (Army, Navy, Air Force, Marines and Coast Guard) and further supports the domestic Clothing and Textile Industrial Base. Perform laboratory testing on novel materials to support Cold Weather Equipment programs. Evaluate current load carriage equipment to assess its ability to support the modernization of current individual weapons and situational awareness capabilities. Continue to optimize the capability of Load Carriage items to support modernization of weapons and tactical equipment. Evaluate new technology to effectively camouflage and reduce thermal signature on exposed skin (face, neck, hands, etc.) and enhance individual equipment camouflage. Investigate new technology for the desalinization of salt water as part of the Individual Water Treatment Device program. ***FY 2024 Plans:*** Supports opportunities for commonality in OCIE across all Services (Army, Navy, Air Force, Marines and Coast Guard) and further supports the domestic Clothing and Textile Industrial Base. Perform laboratory testing on novel materials to support Cold Weather Equipment programs and enhanced load management systems. Evaluate current load carriage equipment to assess its ability to support the modernization of current individual weapons and situational awareness capabilities. Continue to optimize the			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** S53 / *Clothing And Equipment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
capability of Load Carriage items to support modernization of weapons and tactical equipment. Evaluate new technology for the desalinization of salt water as part of the Individual Water Treatment Device program. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding increases between FY23 and FY24 due to anticipated increased requirements in Load Carriage items.			
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2023 Plans:*** Funding transferred in accordance with Title 15 USC 638 ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638	-	0.112	-
Accomplishments/Planned Programs Subtotals	1.931	3.078	4.700

	FY 2022	FY 2023
Congressional Add: Congressional Add for Multi-spectral Signature Management	4.500	-
FY 2022 Accomplishments: Mature, incorporate and demonstrate infrared sensor detection mitigation technology into combat uniforms, body armor and operational clothing & individual equipment by building and conducting large scale field tests of subsystem and system prototypes in relevant environments. Transition the mature materiel solutions into combat uniforms to mitigate detection by opposing forces.		
Congressional Adds Subtotals	4.500	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• S60: *Clothing & Equipment*	5.196	6.313	3.427	-	3.427	6.364	8.879	8.974	9.074	0.000	48.227
• OMA - CFF-OMA 121018: *OMA SCIE 121018*	-	-	-	-	-	-	-	-	-		

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** S53 / *Clothing And Equipment*

D. Acquisition Strategy

Programs pursue technology maturation and prototype development, culminating in the transition of mature technologies (Technology Readiness Level (TRL) 6-7) to Systems Development and Demonstration. This Project continues to exercise competitively awarded contracts using best value source selection procedures.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603827A / *Soldier Systems - Advanced Development*	Project (Number/Name) S53 / *Clothing And Equipment*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	TBD	PM SCIE : Ft. Belvoir, VA	16.363	0.909		0.265		0.480		-		0.480	Continuing	Continuing	Continuing
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.112		-		-		-	0.000	0.112	-
		Subtotal	16.363	0.909		0.377		0.480		-		0.480	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	NSRDEC : Natick, MA	18.450	1.514		0.785		1.110		-		1.110	Continuing	Continuing	Continuing
Development Contracts	C/FFP	Various : Various	37.595	1.516		0.565		0.973		-		0.973	Continuing	Continuing	Continuing
		Subtotal	56.045	3.030		1.350		2.083		-		2.083	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program OfficeSupport Costs	MIPR	Natick,MA : Natick, MA	9.310	0.820		0.415		0.653		-		0.653	Continuing	Continuing	Continuing
		Subtotal	9.310	0.820		0.415		0.653		-		0.653	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing Costs	MIPR	Various : Various	29.692	1.672		0.936		1.484		-		1.484	Continuing	Continuing	Continuing
		Subtotal	29.692	1.672		0.936		1.484		-		1.484	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603827A / *Soldier Systems - Advanced Development*	Project (Number/Name) S53 / *Clothing And Equipment*	

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	111.410	6.431		3.078		4.700		-		4.700	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** S53 / *Clothing And Equipment*

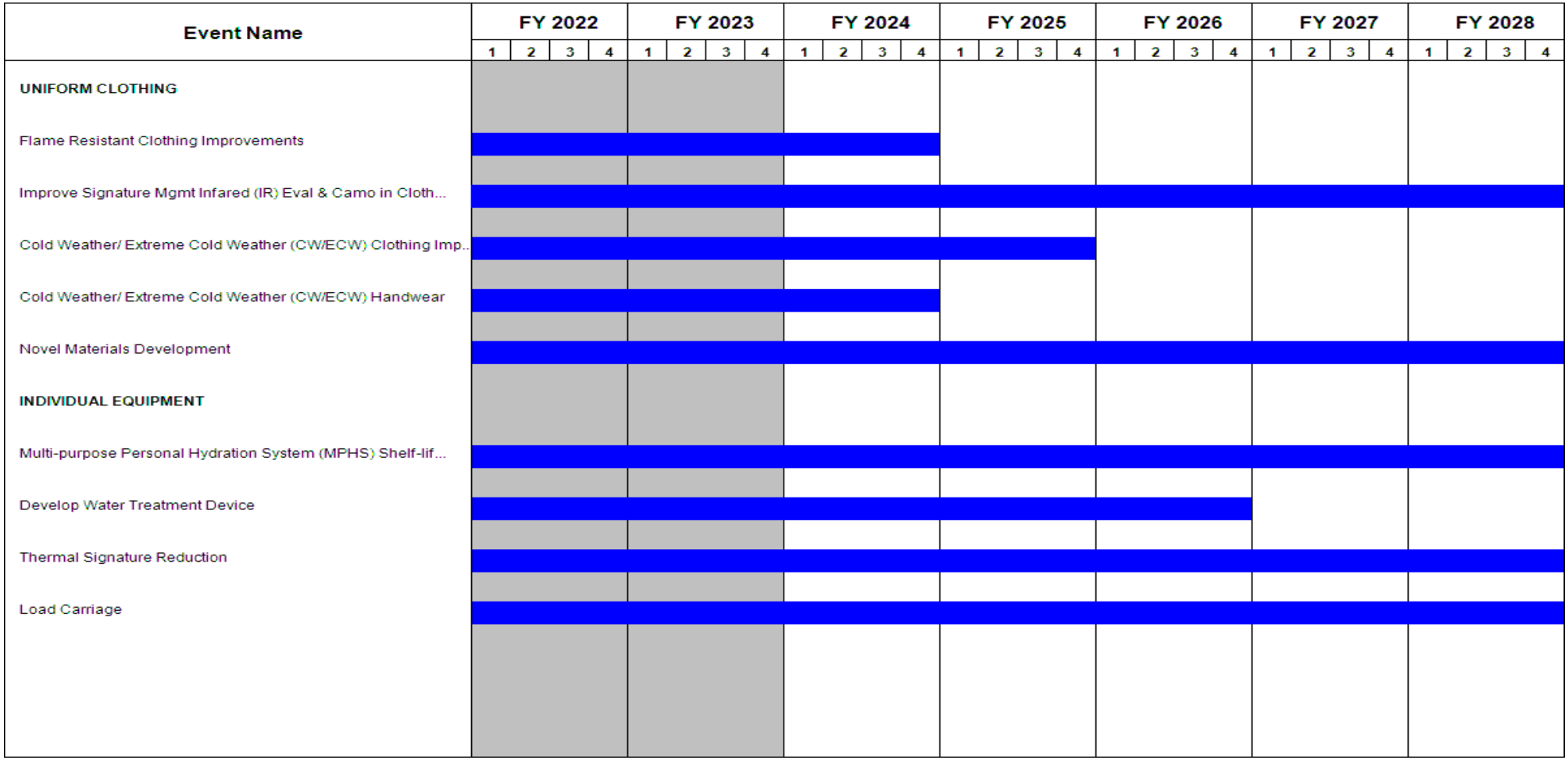


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** S53 / *Clothing And Equipment*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
UNIFORM CLOTHING	1	2010	4	2028
Flame Resistant Clothing Improvements	1	2012	4	2024
Improve Signature Mgmt Infared (IR) Eval & Camo in Clothing & Equipment	2	2012	4	2028
Cold Weather/ Extreme Cold Weather (CW/ECW) Clothing Improvements	1	2019	4	2025
Cold Weather/ Extreme Cold Weather (CW/ECW) Handwear	1	2020	4	2024
Novel Materials Development	1	2020	4	2028
INDIVIDUAL EQUIPMENT	4	2015	4	2025
Multi-purpose Personal Hydration System (MPHS) Shelf-life Extension Evaluation	1	2019	4	2028
Develop Water Treatment Device	1	2022	4	2026
Thermal Signature Reduction	1	2021	4	2028
Load Carriage	1	2020	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603827A / *Soldier Systems - Advanced Development*	Project (Number/Name) S54 / *Small Arms Improvement*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
S54: *Small Arms Improvement*	-	10.659	9.248	9.094	-	9.094	9.183	9.184	9.281	9.384	0.000	66.033
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Small Arms Improvement Advanced Component Development and Prototypes (ACD&P) program provides funds to mature, demonstrate, test and evaluate emerging technology from Budget Activity (BA) 3 Program Element (PE) 0603607A Joint Service Small Arms Program (JSSAP) Project 627 Defense Advanced Research Projects Agency (DARPA), Department of Energy National Laboratories, Research Development & Engineering Centers (RDECs) and other domestic and foreign sources for small arms weapon systems and technology. Small Arms Improvement supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). Small Arms weapon systems include weapons ranging up to 40 millimeter in caliber, recoilless rifles and remote weapon stations. Current and future efforts focus on improvements designed to enhance lethality, target acquisition and tracking, fire control, usability, training effectiveness and reliability of weapons to include ammunition when developing and/or evaluating standard and non-standard weapons. Focus areas include the maturing of technology through testing and evaluation of sub-system or system prototypes which demonstrates light weight materials, wear resistant/protective/anti-reflective coatings, observation/situational awareness improvements, human-systems integration, robotic armament capability, non-lethal capability, and equipment enhancements. Benefits include continuous improvements to small arms weapon systems, remote weapon systems, fire control equipment, optics, gun barrels, training devices, suppressors, component mounts, weapon mounts, ancillary Items and weapon/ammunition interface. Includes costs associated with efforts for integration and interface of products on Soldiers' head, body and weapons.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: New Weapon Systems	0.336	0.870	1.000
Description: Development of new small arms weapon systems.			
FY 2023 Plans: Advanced Technologies for Machine Gun: Will conduct market research, evaluations, trade studies and assessments for new Medium Machine Gun technologies to address capability needs. These technologies may include, but are not limited to, novel recoil mitigation, alternative lightweight materials, barrel technologies, suppressor technologies, mounting and fire control interfaces. New Weapons and Enabling Technology Evaluation and Assessments: Will continue to perform initial and follow-on evaluations, assessments and integration of new weapons to include various new weapon system platforms.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** S54 / *Small Arms Improvement*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Advanced Technologies for Machine Gun: Will conduct market research, evaluations, trade studies and assessments for new Medium Machine Gun technologies to address capability needs. These technologies may include, but are not limited to, novel recoil mitigation, alternative lightweight materials, barrel technologies, suppressor technologies, mounting and fire control interfaces. Will develop and build test fixture for evaluation of various weapons' recoil profiles to facilitate measuring operating mechanism kinematics and transmitted recoil. New Weapons and Enabling Technology Evaluation and Assessments: Will continue to perform initial and follow-on evaluations, assessments and integration of new weapons to include various new weapon system platforms. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase in efforts to support market research, evaluations, trade studies and assessments for future Medium Machine Gun technologies.			
Title: Small Arms Weapon Systems Enhancements ***Description:*** Enhancements and development of small arms weapon systems. ***FY 2023 Plans:*** Small Business Innovative Research (SBIR) Enhancements will continue future efforts to focus on improvements designed to enhance lethality, target acquisition and tracking, fire control, training effectiveness and reliability of weapons. Enhanced System for Remote Weapon Stations & Kinetic Counter-Unmanned Aerial System (UAS) Weapons will down select to a candidate Inertial Navigation System (INS) and integrate it to the Common Remotely Operated Weapon Station (CROWS) to demonstrate enhanced CROWS overall spatial environment awareness and improve accuracy in slewing to targets provided from external remote sources. i.e. off-board radar systems in support of network lethality operation. Continue software development and integration to include Counter Unmanned Aerial System (CUAS) kinetic defeat functionality into the CROWS Baseline Tech Refresh Software. Continue integration of prototype slip rings to the CROWS system. Engineering and environmental level testing of enhanced slip ring. Smart Rail System Controller and Remote will continue to integrate different components together and then demonstrate its ability to control devices and manage data traffic. The completion of this effort will provide a path for future capability growth to systems such as, but not limited to Next Generation Squad Weapon Fire Control, Fire Control for M3E1 Multi-purpose Anti-armor Anti-personnel Weapon System (MAAWS), and Family of Weapon Sights - Individual (FWS-I). This effort will be critical in ensuring we	2.151	3.018	4.954

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
don't have duplicative hardware on weapon systems as well as ensuring the devices on the weapons can properly communicate with each other. Power and Data Integration onto Open Architecture Accessory Rails will continue to integrate power and data capability in a negative space rail system. This will have potential applicability to systems such as, but not limited to Next Generation Squad Weapon-Rifle/Automatic Rifle, Precision Sniper Rifle, and Next Generation Medium/Heavy Machine Gun. Weapon Enhancements for Improved Ammunition will continue to enhancement weapons as ammunition is improved. New Weapons and Enabling Technology Evaluations and Assessments will continue to assess and evaluate selected capabilities and improvements for all current and legacy weapon systems. ***FY 2024 Plans:*** Small Business Innovative Research (SBIR) Enhancements will continue future efforts to focus on improvements designed to enhance lethality, target acquisition and tracking, fire control, training effectiveness and reliability of weapons. Enhanced System for Remote Weapon Stations & Kinetic Counter-Unmanned Aerial System (UAS) Weapons will begin development of enhanced sensor packages to improve target identification range. This program will also continue software development to integrate Counter Unmanned Aerial System (CUAS) kinetic defeat functionality into the CROWS Baseline Technology Refresh Software. In addition, it will continue development of hardware solutions to expand system power and data capacity to accommodate integration of future effectors. Power and Data Enabled Rail (PDER) (formerly Power and Data Integration onto Open Architecture Accessory Rails) will continue to integrate power and data capability in a negative space rail system. This will have potential applicability to systems such as, but not limited to Next Generation Squad Weapon-Rifle/Automatic Rifle, Precision Sniper Rifle, and Next Generation Medium/Heavy Machine Gun, Family of Weapon Sights and STORM. Weapon Enhancements for Improved Ammunition will continue to enhance weapons as ammunition is improved. New Weapons and Enabling Technology Evaluations and Assessments will continue to assess and evaluate selected capabilities and improvements for all current and legacy weapon systems. ***FY 2023 to FY 2024 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** S54 / *Small Arms Improvement*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Increased from FY 2023 to FY 2024 due to a focus on continued software development to integrate Counter Unmanned Aerial System (CUAS) kinetic defeat functionality into the CROWS Baseline Technology Refresh Software.			
Title: Combat Optics ***Description:*** Improvement of small arms combat optics. ***FY 2023 Plans:*** Advanced Combat Optics will continue to integrate current and emerging target acquisition component technologies such as, but not limited to rifle optics, binoculars and variable magnification spotting scopes. Will continue to evaluate state of the art advances in optical component technologies for inclusion in future combat optic products. ***FY 2024 Plans:*** Advanced Combat Optics will continue to integrate current and emerging target acquisition component technologies such as, but not limited to rifle optics, binoculars and variable magnification spotting scopes. Will continue to evaluate state of the art advances in optical component technologies for inclusion in future combat optic products.	0.050	0.050	0.050
Title: Fire Control ***Description:*** Small arms fire control. ***FY 2023 Plans:*** Next Generation Weapons/Enhancements will continue to support technology development for future Next Generation Weapon variants addressing operational force needs for increased lethality, increased probability of hit, increased soldier acceptance, decreased signature, reduced recoil, reduced soldier aim error, and reduced engagement time. New weapons may be variants or enhancements of the Next Generation Squad Weapon Rifle (XM5) and Next Generation Squad Automatic Rifle (XM250) or new weapon platforms to fulfill other roles such as machine guns, sniper rifles, and others. Next Generation and Fire Control Technology Enhancements will continue to support technology integration with Next Generation Weapons addressing soldier aim error, engagement time, probability of hit, situational awareness, lethality, and soldier acceptance. Iterative prototyping will be utilized to develop component technologies to support future variants of the Next Generation Squad Weapon. Technology may include enhanced camera based technology, target tracking, automatic target detection, increased networked lethality, reduced signature, increased user acceptance, along with other emerging weapon, ammunition, and fire control technologies that will increase the lethality of the next generation squad weapons. Small Arms Fire Control Enhancements will continue research test and evaluation efforts on laser based wind sensors, proof-of-concept devices, and other optical designs for prototypes that incorporate fire control sensors and ballistic solver software and	4.072	4.922	3.040

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** S54 / *Small Arms Improvement*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
integration of sensor input and communication with ammunition for all small arms weapon platforms. The purpose of this effort is to evaluate downrange wind sensing technologies for incorporation into future fire control systems. Downrange wind sensing is the largest unmeasured variable remaining in ballistic calculation. ***FY 2024 Plans:*** Next Generation Weapons/Enhancements will continue to support technology development for future Next Generation Weapon variants addressing operational force needs for increased lethality, increased probability of hit, increased soldier acceptance, decreased signature, reduced recoil, reduced soldier aim error, and reduced engagement time. New weapons may be variants or enhancements of the Next Generation Squad Weapon Rifle (NGSW Rifle) and Next Generation Squad Automatic Rifle or new weapon platforms to fulfill other roles such as machine guns, sniper rifles, and others. Next Generation and Fire Control Technology Enhancements will continue to support technology integration with Next Generation Weapons addressing soldier aim error, engagement time, probability of hit, situational awareness, lethality, and soldier acceptance. Iterative prototyping will be utilized to develop component technologies to support future variants of the Next Generation Squad Weapon. Technology may include enhanced camera based technology, target tracking, automatic target detection, increased networked lethality, reduced signature, increased user acceptance, along with other emerging weapon, ammunition, and fire control technologies that will increase the lethality of the next generation squad weapons. Small Arms Fire Control Enhancements will continue research test and evaluation efforts on laser based wind sensors, proof-of-concept devices, and other optical designs for prototypes that incorporate fire control sensors and ballistic solver software and integration of sensor input and communication with ammunition for all small arms weapon platforms. The purpose of this effort is to evaluate downrange wind sensing technologies for incorporation into future fire control systems. Downrange wind sensing is the largest unmeasured variable remaining in ballistic calculation. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decreased from FY 2023 to FY 2024 as fire control technologies are being integrated into the XM157 program.			
Title: Research and Analysis ***Description:*** Research and analysis of small arms. ***FY 2023 Plans:*** Will continue Market Research and Benefit Analysis of new weapons and enabling technology evaluations and assessments to include, but not limited to 360 degree situational awareness, active stabilization, advanced kinetic weapons, low flying drone engagement, and other small arms research to include new technologies in emerging robotic and aerial armaments. ***FY 2024 Plans:***	0.050	0.050	0.050

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** S54 / *Small Arms Improvement*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Will continue Market Research and Benefit Analysis of new weapons and enabling technology evaluations and assessments to include, but not limited to 360 degree situational awareness, active stabilization, advanced kinetic weapons, low flying drone engagement, and other small arms research to include new technologies in emerging robotic and aerial armaments.			
Title: SBIR/STTR Transfer ***Description:*** Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) ***FY 2023 Plans:*** Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease in Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) from FY23 to Fy24 due to tax for FY24 not established.	-	0.338	-
Accomplishments/Planned Programs Subtotals	6.659	9.248	9.094

	FY 2022	FY 2023
Congressional Add: New Weapon Systems Congressional Add	4.000	-
FY 2022 Accomplishments: Lightweight C-sUAS Force Protection System: Began development of the extremely lightweight and reliable externally powered weapon for arming small Unmanned Aerial Systems (sUAS). Developed schedule for integration of externally powered weapon into a small UAS, including performance of engineering and operational testing, and demonstration of armed sUAS capability for destroying enemy sUAS and providing force protection.		
Congressional Adds Subtotals	4.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• EW4: *Crew Served Weapons Engineering Development*	8.854	7.458	4.300	-	4.300	3.772	4.074	4.116	4.162	0.000	36.736
• FF2: *Small Arms Fire Control*	6.752	8.179	10.050	-	10.050	4.966	4.971	5.025	5.081	0.000	45.024
• FM4: *Next Generation Squad Weapons*	13.103	17.616	16.141	-	16.141	11.058	11.072	11.191	11.316	0.000	91.497
• S63: *Individual Weapons Engineering Development*	3.518	3.956	3.549	-	3.549	3.510	3.791	3.830	3.873	0.000	26.027

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** S54 / *Small Arms Improvement*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• FL4: *Small Caliber Ammo for Next Gen Squad Weapons*	27.336	25.558	11.809	-	11.809	11.931	11.945	12.073	12.208	0.000	112.860
• E06002: *NEXT GENERATION COMBAT ROUND*	53.459	23.523	35.896	-	35.896	38.064	70.087	70.079	70.079	Continuing	Continuing

Remarks

In support of Small Arms Initial Capability and Capability Development Requirements, advanced technology of small arms weapon systems is transitioned from Joint Service Small Arms Program (JSSAP), Project 627, Program Element 0603607A, (Budget Activity 3) to Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4). After the technology is demonstrated and/or validated, the program transitions to Infantry Support Weapons, Program Element 0604601A, (Budget Activity 5) for engineering and manufacturing development.

D. Acquisition Strategy

Primary strategy is to study, develop, demonstrate and evaluate emerging technologies that ultimately lead to modernizing, enhancing and/or improving the small arms inventory.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603827A / *Soldier Systems - Advanced Development*	Project (Number/Name) S54 / *Small Arms Improvement*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Allot	PM Soldier Lethality : Picatinny Arsenal	8.446	0.280	Mar 2022	0.357	Mar 2023	0.354	Mar 2024	-		0.354	Continuing	Continuing	Continuing
SBIR/STTR Transfer	FFRDC	Army Budget Office : Pentagon, Washington DC	0.282	-		0.338		-		-		-	Continuing	Continuing	Continuing
		Subtotal	8.728	0.280		0.695		0.354		-		0.354	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	MIPR	DEVCOM AC : Multiple	57.697	8.061	Mar 2022	5.833	Jun 2023	5.640	Mar 2024	-		5.640	Continuing	Continuing	Continuing
		Subtotal	57.697	8.061		5.833		5.640		-		5.640	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering	MIPR	DEVCOM AC : Multiple	32.453	1.128	Mar 2022	1.433	Mar 2023	1.600	Mar 2024	-		1.600	Continuing	Continuing	Continuing
		Subtotal	32.453	1.128		1.433		1.600		-		1.600	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	MIPR	Army Test and Evaluation Centers, : Multiple	21.375	1.190	Mar 2022	1.287	Jun 2023	1.500	Mar 2024	-		1.500	Continuing	Continuing	Continuing
		Subtotal	21.375	1.190		1.287		1.500		-		1.500	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603827A / *Soldier Systems - Advanced Development*	Project (Number/Name) S54 / *Small Arms Improvement*	

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	120.253	10.659		9.248		9.094		-		9.094	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** S54 / *Small Arms Improvement*

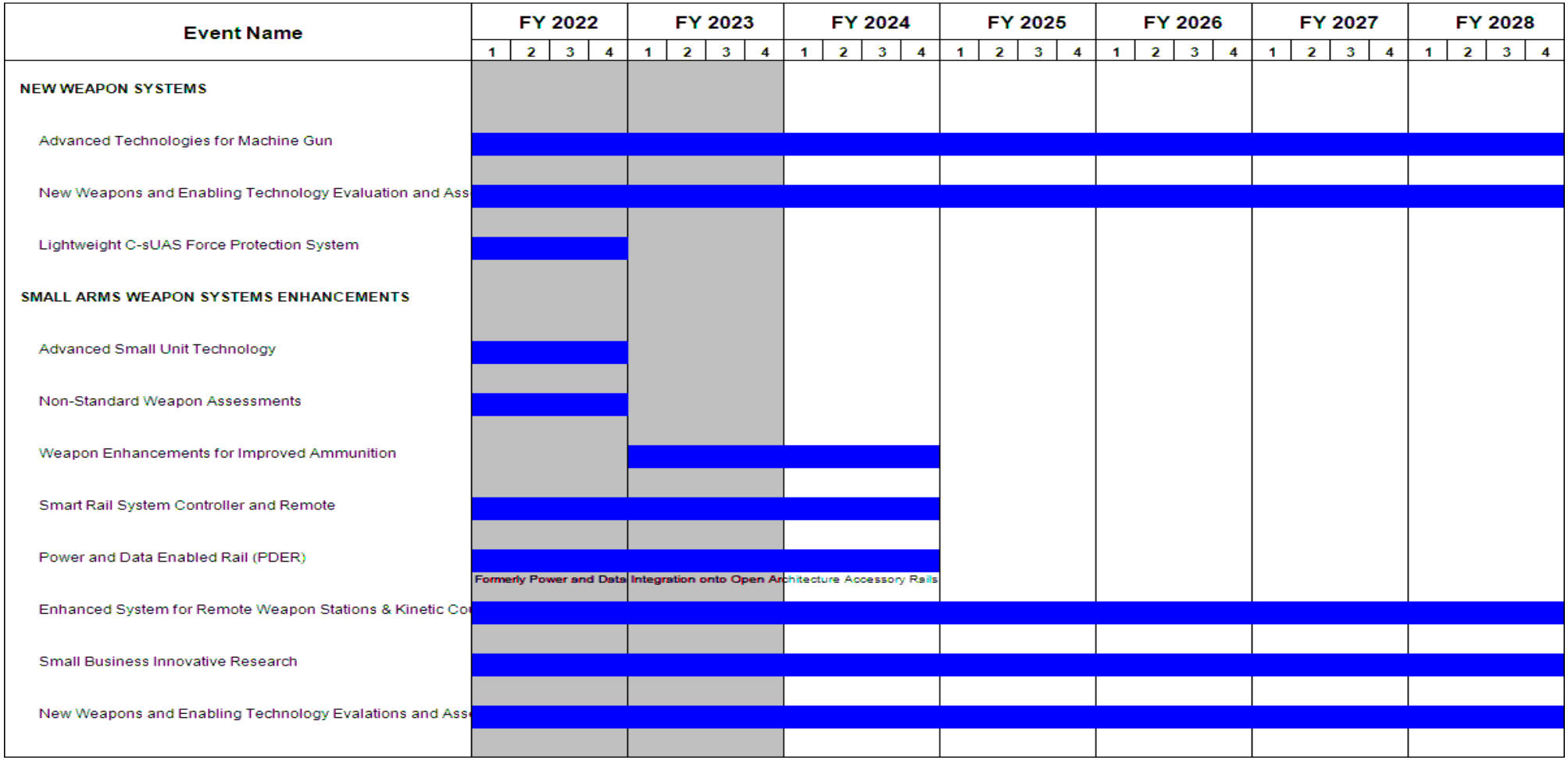

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** S54 / *Small Arms Improvement*

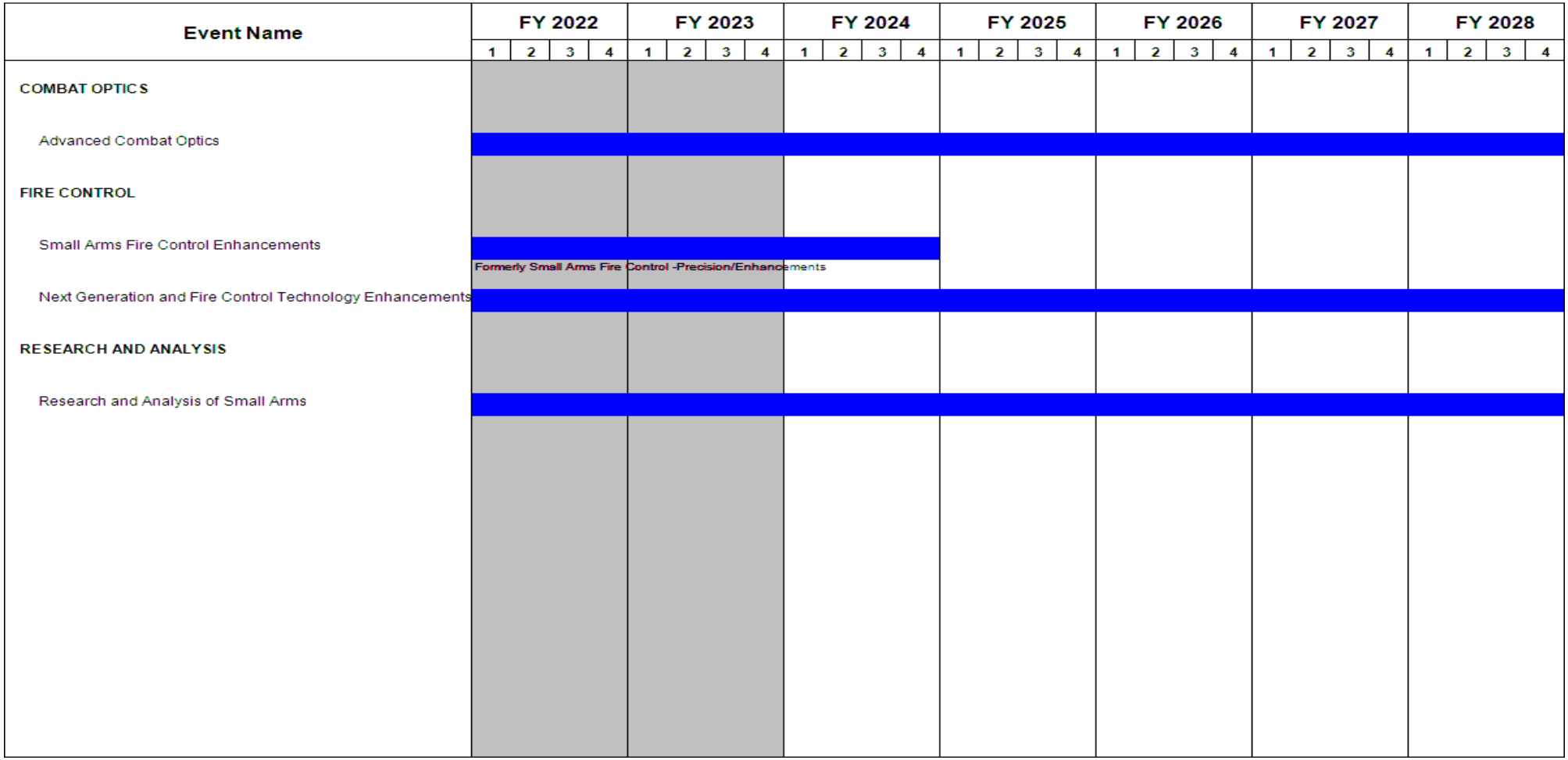

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** S54 / *Small Arms Improvement*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NEW WEAPON SYSTEMS	1	2008	4	2028
Advanced Technologies for Machine Gun	1	2022	4	2028
New Weapons and Enabling Technology Evaluation and Assessments	1	2020	4	2028
Lightweight C-sUAS Force Protection System	1	2022	4	2022
SMALL ARMS WEAPON SYSTEMS ENHANCEMENTS	1	2008	4	2028
Advanced Small Unit Technology	1	2021	4	2022
Non-Standard Weapon Assessments	1	2020	4	2022
Weapon Enhancements for Improved Ammunition	1	2023	4	2024
Smart Rail System Controller and Remote	1	2021	4	2024
Power and Data Enabled Rail (PDER)	1	2021	4	2024
Enhanced System for Remote Weapon Stations & Kinetic Counter-UAS Weapons	1	2020	4	2028
Small Business Innovative Research	1	2015	4	2028
New Weapons and Enabling Technology Evalations and Assessments	1	2020	4	2028
COMBAT OPTICS	1	2008	4	2028
Advanced Combat Optics	1	2020	4	2028
FIRE CONTROL	1	2008	4	2028
Small Arms Fire Control Enhancements	1	2017	4	2024
Next Generation and Fire Control Technology Enhancements	1	2019	4	2028
RESEARCH AND ANALYSIS	1	2012	4	2028
Research and Analysis of Small Arms	1	2015	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603827A / *Soldier Systems - Advanced Development*	Project (Number/Name) VS4 / *Soldier Protective Equipment*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
VS4: *Soldier Protective Equipment*	-	4.122	5.434	7.991	-	7.991	7.988	7.994	8.076	8.166	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Funding in this project supports the Army's Cross Functional Teams' (CFT) initiatives. This Project supports efforts to evaluate integrated technologies and representative or prototype systems that help expedite Personal Protective Equipment (PPE) technology transition from the laboratory to operational use. This project will transition capabilities from our Science and Technology partners to increase performance and safety of Soldier clothing and protective equipment. Project supports the Secretary of the Army's directive to identify opportunities for commonality across all Services (Army, Navy, Air Force, Marines, and Coast Guard).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Soldier Protective Equipment (SPE)	4.122	5.236	7.991

Description: Effort to increase Warfighter survivability and mobility by optimizing Soldier protection while effectively managing all life cycle aspects of Personal Protective Equipment (PPE).

FY 2023 Plans:

With emerging innovations in materials and manufacturing, project will build on previously developed Technology/Maturation and Risk Reduction efforts across the PPE portfolio: Torso and Extremity Protection (TEP); Vital Torso Protection (VTP); Integrated Head Protection System (IHPS); Next Generation (NG) IHPS, and Military Protective Eyewear Systems to support SPS requirements for lighter-weight ballistic materials with improved performance and manufacturing/ testing process improvements. Product Management Office will evaluate current and future material, processing upgrades, and inform stakeholders of new operational capabilities. These new future materials may come from S&T transitions, like Novel Fabric for Torso Protection. The Program will incorporate the new capabilities into SPS designs as appropriate. The Program will continue efforts to increase form, fit, and function of body armor for all Soldiers regardless of size and gender. The Program will also continue to develop conformal body armor and equipment to better accommodate female Soldiers. Maintain development initiatives to increase durability, shelf life, and functional service life of existing personal protective systems at the subsystem/component level. Continue the development of improved measurement, evaluation, and testing processes for existing systems and emerging requirements. Initiate Head Protection efforts to pursue Durable Anti-fog Coatings for Combat Eye Protection and Transparent Surfaces. Product office will begin efforts to update gender geometric anatomy into models, such as Operational Requirements-based Casualty Assessment, to inform designs, sizing, and variations development and improvements to support Department of Defense (DoD) Soldier protection needs.

FY 2024 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** VS4 / *Soldier Protective Equipment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
The project will build on previously developed Technology/Maturation and Risk Reduction efforts across the PPE portfolio to support SPS requirements for lighter-weight ballistic materials with improved performance and manufacturing/ testing process improvements. In FY24, the program office will coordinate with the S&T community with efforts such as Novel Fabric for Torso Protection, Novel Defeat Mechanisms, Fragmentation uniform protective materials, Hearing Protection, Eye Protection Anti-Scratch Coating, and Improved Blunt Impact Protection. Product Management Office will evaluate current and future material, processing upgrades, and inform stakeholders of new operational capabilities. The program will continue developing conformal body armor and equipment to better accommodate female soldiers. In FY24, the program will continue efforts to update gender geometric anatomy into models, such as Operational Requirements-based Casualty Assessment, to inform designs, sizing, and variations development and improvements to support Department of Defense (DoD) Soldier protection needs. Hard Armor protection efforts will leverage technical testing on prototypes of single plate transitioning designed to defeat multiple threats with low weight. Head Protection efforts will include technology transitioning for anti-fog capability and its applicability on the battlefield and test eyewear film that reduces the occurrence of scratches and allows for self-healing of the lenses. Overarching efforts for this program will be to maintain development initiatives to increase durability, shelf life, and functional service life of existing personal protective systems at the subsystem/ component level. Continue the development of improved measurement, evaluation, and testing processes for existing systems and emerging requirements. Program Office will develop, and test prototype assets built with materials and methodologies transitioning from S&T community. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding change in Soldier Protective Equipment portfolio is due to anticipated requirement changes in FY 2024 that result in an increase level of effort to address improved materials and emerging threats.			
Title: SBIT/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC 638. ***FY 2023 Plans:*** Funding transferred in accordance with Title 15 USC 638. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638.	-	0.198	-
Accomplishments/Planned Programs Subtotals	4.122	5.434	7.991

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** VS4 / *Soldier Protective Equipment*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• VS5: *Soldier Protective Equipment*	8.837	9.303	8.150	-	8.150	8.710	8.712	8.800	8.899	0.000	61.411
• OMA - 121 - 12101700/ RJSI: *Soldier Modernization - Soldier Protection Systems*	-	-	-	-	-	-	-	-	-		

Remarks

D. Acquisition Strategy

Programs pursue technology transition from science and technology, maturation, and prototype development, culminating in the transition of mature technologies (Technology Readiness Levels (TRL) 6-7) to Engineering and Manufacturing Development. This Project continues to exercise competitively awarded contracts using best value source selection procedures where applicable.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603827A / *Soldier Systems - Advanced Development*	Project (Number/Name) VS4 / *Soldier Protective Equipment*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Allot	PM SSV Various : Various	3.928	0.798		0.472		1.805		-		1.805	Continuing	Continuing	Continuing
SBIR/STTR Transfer	TBD	Continuing : To Be Determined	-	-		0.198		-		-		-	Continuing	Continuing	Continuing
		Subtotal	3.928	0.798		0.670		1.805		-		1.805	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Dev/Sys Engineering Spt	MIPR	CCDC-SC : Natick, MA	9.952	0.500		1.664		1.522		-		1.522	Continuing	Continuing	Continuing
Dev/Integ Contracts	TBD	CCDC-SC : Natick, MA	80.108	2.190		1.225		2.700		-		2.700	Continuing	Continuing	Continuing
		Subtotal	90.060	2.690		2.889		4.222		-		4.222	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Ballistic/Blast/Nonballistic Testing	MIPR	Various : Various	19.531	0.634		1.875		1.964		-		1.964	Continuing	Continuing	Continuing
		Subtotal	19.531	0.634		1.875		1.964		-		1.964	Continuing	Continuing	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	113.519	4.122		5.434		7.991		-		7.991	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** VS4 / *Soldier Protective Equipment*

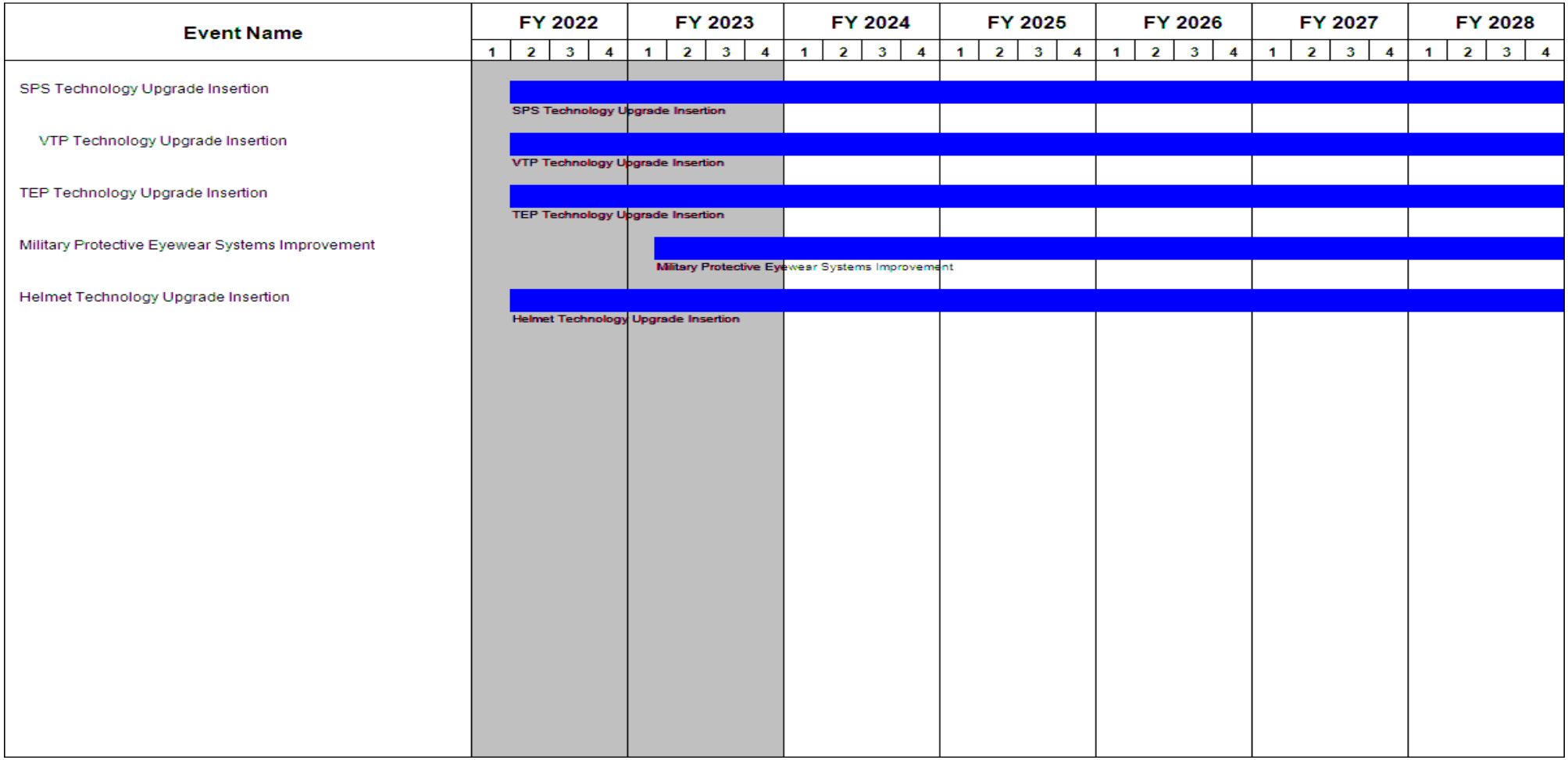

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603827A / *Soldier Systems - Advanced Development*	**Project (Number/Name)** VS4 / *Soldier Protective Equipment*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SPS Technology Upgrade Insertion	1	2018	4	2028
VTP Technology Upgrade Insertion	1	2021	4	2028
TEP Technology Upgrade Insertion	1	2021	4	2028
Military Protective Eyewear Systems Improvement	1	2023	4	2028
Helmet Technology Upgrade Insertion	1	2021	4	2028