Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607143A / *Unmanned Aircraft System Universal Products*

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	-	19.460	4.594	0.512	-	0.512	0.514	0.513	0.514	0.519	Continuing	Continuing
EX1: *Unmanned Aircraft Systems Universal Products*	-	19.460	4.594	0.512	-	0.512	0.514	0.513	0.514	0.519	Continuing	Continuing

A. Mission Description and Budget Item Justification

This funding line directly aligns to the Future Vertical Lift (FVL) portfolio. Scalable Control Interface (SCI) will be the primary means of Command and Control (C2) for Future Unmanned Aircraft Systems (FUAS), to include Air Launched Effects (ALE), Future Tactical UAS (FTUAS) and optionally manned rotary wing aircraft. Mission Command devices in both ground and airborne platforms will host SCI software, serving as nodes on the Integrated Tactical Network to retrieve and provide data. SCI distributes UAS capabilities by greatly increasing the number of UAS control devices available to Soldiers, Commanders, and Battle Staff. SCI provides simultaneous employment of multiple aircraft/payloads from a single control node. SCI leverages a Modular Open System Approach (MOSA) to software in order to reduce time and cost to integrate new hardware and software in response to the dynamic future operating environment.

Deployment of SCI will include, but is not limited to, devices in the Mobile/Handheld Computing Environment (such as Nett Warrior) and Mounted Computing Environment (such as MFoCS [Mounted Family of Computer Systems]), and Command Post Computing Environment (such as TSI [Tactical Server Infrastructure). SCI will integrate decision aiding, autonomy, and artificial intelligence as they mature technically, in order to support MDO and reduce cognitive workload.

Justification: Fiscal Year (FY) 2023 SCI (Universal Products) Base funding of $0.512 million will continue the development, testing, and integration of software applications needed to address the SCI requirements that support Nett Warrior, Mounted Family of Computer Systems (MFoCS), and Tactical Server Infrastructure (TSI).

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	19.460	4.594	0.000	-	0.000
Current President's Budget	19.460	4.594	0.512	-	0.512
Total Adjustments	0.000	0.000	0.512	-	0.512
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	0.512	-	0.512

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Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: EX1: *Unmanned Aircraft Systems Universal Products*		
Congressional Add: *Micro Identification Friend or Foe Transmitters*	5.000	-
Congressional Add: *Program increase - scalable control interface*	7.000	-
Congressional Add Subtotals for Project: EX1	12.000	-
Congressional Add Totals for all Projects	12.000	-

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 / 7					R-1 Program Element (Number/Name) PE 0607143A / *Unmanned Aircraft System Universal Products*				Project (Number/Name) EX1 / *Unmanned Aircraft Systems Universal Products*			
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**
EX1: *Unmanned Aircraft Systems Universal Products*	-	19.460	4.594	0.512	-	0.512	0.514	0.513	0.514	0.519	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line directly aligns to the Future Vertical Lift (FVL) portfolio. Scalable Control Interface (SCI) will be the primary means of Command and Control (C2) for Future Unmanned Aircraft Systems (FUAS), to include Air Launched Effects (ALE), Future Tactical UAS (FTUAS) and optionally manned rotary wing aircraft. Mission Command devices in both ground and airborne platforms will host SCI software, serving as nodes on the Integrated Tactical Network to retrieve and provide data. SCI distributes UAS capabilities by greatly increasing the number of UAS control devices available to Soldiers, Commanders, and Battle Staff. SCI provides simultaneous employment of multiple aircraft/payloads from a single control node. SCI leverages a Modular Open System Approach (MOSA) to software in order to reduce time and cost to integrate new hardware and software in response to the dynamic future operating environment.

Deployment of SCI will include, but is not limited to, devices in the Mobile/Handheld Computing Environment (such as Nett Warrior) and Mounted Computing Environment (such as MFoCS [Mounted Family of Computer Systems]), and Command Post Computing Environment (such as TSI [Tactical Server Infrastructure). SCI will integrate decision aiding, autonomy, and artificial intelligence as they mature technically, in order to support MDO and reduce cognitive workload.

Justification: Fiscal Year (FY) 2023 SCI (Universal Products) Base funding of $0.512 million will continue the development, testing, and integration of software applications needed to address the SCI requirements that support Nett Warrior, Mounted Family of Computer Systems (MFoCS), and Tactical Server Infrastructure (TSI).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Scalable Control Interface (SCI)	7.460	4.426	0.512
Description: SCI will be the primary means of C2 for Program of Record Army UAS. SCI software will be hosted on Mission Command devices in both ground and airborne platforms serving as nodes on the Integrated Tactical Network to retrieve and provide data. SCI distributes UAS capabilities by greatly increasing the number of UAS control devices available to Soldiers, Commanders, and Battle Staff. SCI provides simultaneous employment of multiple aircraft/payloads from a single control node.			
FY 2022 Plans: Base Funding of $4.594 million will be used to continue the development, integration, test, and demonstration of software applications meeting the SCI MOSA/FACE compliant Software requirement on host Mission Command devices.			
FY 2023 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0607143A / *Unmanned Aircraft System Universal Products*	**Project (Number/Name)** EX1 / *Unmanned Aircraft Systems Universal Products*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Base Funding of $0.512 million will be used to continue the development, integration, test, and demonstration of software applications meeting the SCI Software requirements and hosted Mission Command devices as detailed in the SCI A-CDD. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Based on shifting Army priorities, the UAS Universal Products requirement/mission shifted to Scalable Control Interface (SCI) under the Army Modernization effort and aligned with the Future Vertical Lift program.			
Title: FY22 SBIR/STTR Transfer ***FY 2022 Plans:*** SBIR/STTR amount in accordance with Title 15 USC 638 ***FY 2022 to FY 2023 Increase/Decrease Statement:*** SBIR/STTR amount in accordance with Title 15 USC 638	-	0.168	-
Accomplishments/Planned Programs Subtotals	7.460	4.594	0.512

	FY 2021	FY 2022
Congressional Add: Micro Identification Friend or Foe Transmitters ***FY 2021 Accomplishments:*** This funding is planned to take a micro transponder capable of Mode 5 through certification and integration in support of UAS Universal Products. This includes IFF capabilities added to include: ADS-B in support of Gray Eagle UAS; Diversity with dual antennas and processing both antenna signals; Mode 5 Level 2-B (added message set and extended squitter); and TCAS / Collision Avoidance support. .	5.000	-
Congressional Add: Program increase - scalable control interface ***FY 2021 Accomplishments:*** Completed SCI portable software component development and integration for MVP1. Conducted lab and live flight tests demonstrations of MVP1 capability. Participated in Project Convergence 2021 Capability Showcase. Developed SCI user interface for ALE employment from FARA cockpit. Completed SCI Mounted/Dismounted MVP1 capability and conducted lab and live flight tests demonstrations.	7.000	-
Congressional Adds Subtotals	12.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0607143A / *Unmanned Aircraft System Universal Products*	**Project (Number/Name)** EX1 / *Unmanned Aircraft Systems Universal Products*

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
• A02706: *Universal Ground Control Equipment (UAS)*	7.509	-	0.000	-	0.000	-	-	-	-	0.000	7.509

Remarks

D. Acquisition Strategy

SCI Software development and integration efforts are conducted under separate contracts awarded to niche experts in UAS software development, Human Machine Interface development and integration, and Mobile/Handheld and Mounted Computing Environment capabilities. Government ownership and management of the MOSA software interface standards is streamlining time and cost required to integrate future unmanned aircraft and payloads and reduce training resources by implementing a common user interface.

SCI promotes a competitive software application industry and provides warfighters with prompt updates by rapidly integrating best of breed software applications instead of relying on costly sole source sustainment of monolithic software well past its usable lifecycle.

SCI will reuse the Arbitrator Suite software. SCI reuses other government owned software as available in order to reduce program schedule and cost.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 7	R-1 Program Element (Number/Name) PE 0607143A / *Unmanned Aircraft System Universal Products*	Project (Number/Name) EX1 / *Unmanned Aircraft Systems Universal Products*	

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
SBIR/STTR	TBD	TBD : TBD	-	-		0.168	Apr 2022	-		-		-	0.000	0.168	-
		Subtotal	-	-		0.168		-		-		-	0.000	0.168	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
Universal Products (UGCS) Improvements	C/CPFF	TBD : TBD	17.124	-		-		-		-		-	0.000	17.124	-
Training Device Improvements	C/CPFF	TBD : TBD	3.917	-		-		-		-		-	0.000	3.917	-
Scalable Control Interface (SCI) Software Development	C/Various	Various : Various	69.759	14.460	Mar 2021	4.426	Mar 2022	0.512	Mar 2023	-		0.512	0.000	89.157	-
Micro Identification Friend or Foe Transmitter	C/CPFF	R3 Engineering : Palmetto, FL	-	5.000	Apr 2021	-		-		-		-	0.000	5.000	-
		Subtotal	90.800	19.460		4.426		0.512		-		0.512	0.000	115.198	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	90.800	19.460		4.594		0.512		-		0.512	0.000	115.366	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0607143A / *Unmanned Aircraft System Universal Products*	**Project (Number/Name)** EX1 / *Unmanned Aircraft Systems Universal Products*

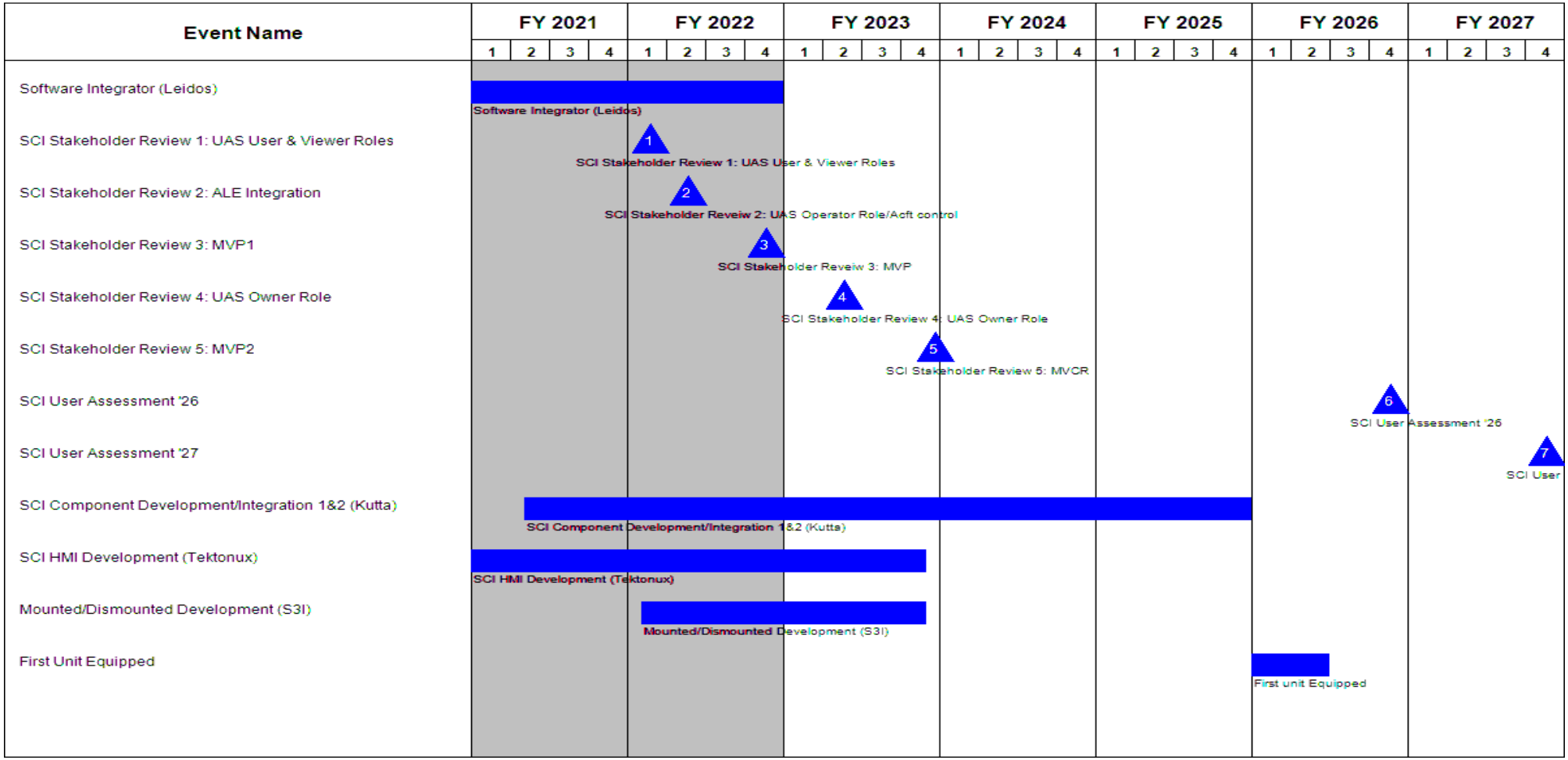

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 7	**R-1 Program Element (Number/Name)** PE 0607143A / *Unmanned Aircraft System Universal Products*	**Project (Number/Name)** EX1 / *Unmanned Aircraft Systems Universal Products*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Kutta Software Infrastrurcture Prototyping	3	2019	2	2020
Software Integrator (Leidos)	2	2020	4	2022
SCI Reference Architecture Demo	2	2020	2	2020
SCI Flight/Network Demo	4	2020	4	2020
SCI Stakeholder Review 1: UAS User & Viewer Roles	1	2022	1	2022
SCI Stakeholder Review 2: ALE Integration	2	2022	2	2022
SCI Stakeholder Review 3: MVP1	4	2022	4	2022
SCI Stakeholder Review 4: UAS Owner Role	2	2023	2	2023
SCI Stakeholder Review 5: MVP2	4	2023	4	2023
SCI User Assessment '26	4	2026	4	2026
SCI User Assessment '27	4	2027	4	2027
SCI Component Development/Integration 1&2 (Kutta)	2	2021	4	2025
SCI HMI Development (Tektonux)	4	2020	4	2023
Mounted/Dismounted Development (S3I)	1	2022	4	2023
First Unit Equipped	1	2026	2	2026