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

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604617F / <i>Agile Combat Support</i>
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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	-	18.398	27.938	14.252	0.000	14.252	23.187	23.545	24.284	24.826	Continuing	Continuing
652895: <i>Civil Engineering Readiness</i>	-	18.338	26.273	14.252	0.000	14.252	21.186	21.506	22.203	22.698	Continuing	Continuing
654910: <i>Aeromedical Readiness</i>	-	0.060	1.665	0.000	0.000	0.000	2.001	2.039	2.081	2.128	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program provides lighter, leaner, rapidly-deployable and technologically-advanced materiel, forces and capabilities to the warfighter. Current projects in this program include Civil Engineering Readiness (Project 652895) and Aeromedical Readiness (Project 654910). Civil Engineering Readiness projects enable airfield protection, and airfield damage recovery for sustainment, and increased resiliency of airfield operations anywhere in the world. Aeromedical Readiness projects provide aerospace medical systems and treatment equipment to improve casualty care and meet worldwide warfighter medical operational requirements.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F. In FY21 \$0.000 were expended, and in FY22 \$0.000 is forecast for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

B. Program Change Summary (\$ in Millions)	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023 Base</u>	<u>FY 2023 OCO</u>	<u>FY 2023 Total</u>
Previous President's Budget	18.980	16.603	0.000	0.000	0.000
Current President's Budget	18.398	27.938	14.252	0.000	14.252
Total Adjustments	-0.582	11.335	14.252	0.000	14.252
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-1.665			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	13.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.582	0.000			
• Other Adjustments	0.000	0.000	14.252	0.000	14.252

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Appropriation/Budget Activity
 3600: *Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)*

R-1 Program Element (Number/Name)
 PE 0604617F / *Agile Combat Support*

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 652895: *Civil Engineering Readiness*

Congressional Add: *Carbon Materials*

Congressional Add: *Airfield Sustainment & Damage Recovery Technologies*

Congressional Add: *Modern Timber Products for Expeditionary Construction*

Congressional Add Subtotals for Project: 652895

Congressional Add Totals for all Projects

	FY 2021	FY 2022
	0.000	3.000
	0.000	5.000
	0.000	5.000
Congressional Add Subtotals for Project: 652895	0.000	13.000
Congressional Add Totals for all Projects	0.000	13.000

Change Summary Explanation

FY2022 changes includes +\$13M of Congressional adds and -\$1.665M Congressional Mark for Contract Award delays.

The FY2022 President's Budget submittal did not reflect FY 2023 through FY 2026 funding. Therefore, an explanation of the change between the two budget positions for FY2023 cannot be made in a relevant manner.

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force										Date: April 2022		
Appropriation/Budget Activity 3600 / 5					R-1 Program Element (Number/Name) PE 0604617F / Agile Combat Support				Project (Number/Name) 652895 / Civil Engineering Readiness			
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
652895: <i>Civil Engineering Readiness</i>	-	18.338	26.273	14.252	0.000	14.252	21.186	21.506	22.203	22.698	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Civil Engineering (CE) Readiness project develops Airbase Technologies (ABT), Airfield Damage Repair (ADR), Airfield Protection (AP), Energy & Utilities (E&U), and CE Materials (CEM) solutions for in-garrison, expeditionary, and contingency installations and airbases. This includes: technologies for airfield assessment, pavement repair and unexploded ordnance identification and mitigation to enable rapid recovery and regeneration of airfield operations; infrastructure design criteria, construction methods, hardened shelters, evaluation tools, materials, aviation firefighting, force protection, expeditionary energy, waste water recycling/treatment, CE materials applications and systems for improved resiliency and rapid recovery of airbase and airfield operations following an attack.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Airbase Technologies	3.022	2.723	3.352	-	3.352
Description: Technical support providing RDT&E capabilities for cross-cutting CE applications and processes for all CE functional areas. Provides replacements and repair of critical RDT&E lab equipment, test systems and instruments. Specialized RDT&E systems and software required to conduct CE RDT&E.					
FY 2022 Plans: Continue development and testing material technologies for indigenous soil-based cements and minimal basing processes including bio-based cementation for expeditionary ADR, test and evaluation of low resource manufacturing technologies for reduced life cycle costs, development and testing of additive manufacturing approaches for CE applications, development of functionalized materials for hardened infrastructure and force protection applications, evaluation, treatment, and mitigation technologies for aqueous film forming foams (AFFF) and development and testing of next generation fire-fighting and fire suppression agents, evaluation of expeditionary energy, utility, and infrastructure improvements, energy storage systems and incorporation of renewable energy systems with USAF assets. Replace/repair critical RDT&E lab equipment. Fund program management support, RDT&E IT systems and software required to conduct CE RDT&E.					
FY 2023 Base Plans: Continue development and testing material technologies to maximize indigenous resourcing for expeditionary civil engineering applications, processes for production of cementitious materials in theatre with increased sustainment and reduced life cycle costs, development and testing of deployable large-scale platforms, and variable material formulations for additive manufacturing of buildings and equipment for CE applications,					

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<p>development of functionalized materials for hardened infrastructure and force protection applications, mitigation technologies for AFFF and transition to next generation fire-fighting and fire suppression agents and systems, evaluation of energy, utility, and infrastructure improvements, energy storage systems and incorporation of alternative and renewable energy systems with USAF assets. Replace/repair critical RDT&E lab equipment. Fund program management support, RDT&E IT systems and software required to conduct CE RDT&E.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Planned increase for additive manufacturing</p>					
<p>Title: Airfield Damage Repair</p> <p>Description: This effort develops, tests, and certifies equipment, materials, and Tactics, Techniques, and Procedures (TTPs) for the rapid assessment and repair of airfield damage, which includes identification, mitigation or removal of unexploded ordnance and expedient repairs for fuel and utility systems. This effort will also accelerate the transition of proven technologies in expedient and sustained protection of critical infrastructure, including operating surfaces, shelters, fuel storage and distribution systems, and command and control (C2) systems. Further, this effort focuses on the resiliency of airbase infrastructure as well as the timely repair and regeneration of airfield operations within established time limits in order to gain and maintain air superiority.</p> <p>FY 2022 Plans: Mature and transition the rapid assessment, mitigation, and repair tool and material solutions for airfield damage recovery through research, development, testing, and evaluation. Rapid assessment includes spiral development and integration of small unmanned aircraft systems (SUAS), mobile towers, and handheld platforms to utilize various sensors, to provide data for automated damage detection software solutions to significantly decrease damage assessment time and improve automated detection of unexploded ordnance (UXO). In order to meet improved sensor requirements for enhanced detection and classification of damage/debris, new platforms will be identified to meet current and future needs. Mitigation includes development, testing and evaluation of systems to remotely remove and neutralize UXO through a family of Rapid Explosive Hazard Mitigation (REHM) components. This family of systems will include manned and unmanned systems with improved blast resistance capability to fit on both new and existing heavy equipment, physical destruction of UXO through stand-off methods, and Subsurface Location, Access, and Mitigation (SLAM) of buried UXO. Repair of damage focuses on development, testing, and transition of materials and equipment sets for rapid recovery of enemy induced battle damaged runways. New materials will have minimal dependence on shipping and logistics through use of indigenous materials, with new techniques and procedures to place locally sourced materials to provide equal or greater strength to current ADR methodologies. New systems will be developed</p>	9.397	7.000	7.000	-	7.000

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
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and tested to provide similar or greater repair speeds with smaller logistic requirement, and current equipment test and evaluation will focus heavily on testing and operation in extreme weather conditions, along with methods for repair that will support current Agile Combat Employment (ACE) operations and strategies.

FY 2023 Base Plans:

Mature and transition the rapid assessment, mitigation, and repair tool and material solutions for airfield damage recovery through research, development, testing, and evaluation. Rapid assessment includes spiral development and integration of small unmanned aircraft systems (SUAS), mobile towers, and handheld platforms to utilize various sensors, to provide data for automated damage detection software solutions to significantly decrease damage assessment time and improve automated detection of unexploded ordnance (UXO). Mitigation includes development, testing and evaluation of systems to remotely remove and neutralize UXO through a family of Rapid Explosive Hazard Mitigation (REHM) components. This family of systems will include manned and unmanned systems with improved blast resistance capability to fit on both new and existing systems. Repair of damage focuses on development, testing, and transition of materials and equipment sets for rapid recovery of enemy induced battle damaged runways. New materials will have minimal dependence on shipping and logistics, with new techniques and procedures to place locally sourced materials to provide equal or greater strength to current ADR equipment. New systems will be developed and tested to provide similar or greater repair speeds with smaller logistic requirement, and current equipment test and evaluation will focus heavily on testing and operation in extreme weather conditions. New procedures and equipment will be identified to fully replace/rejuvenate pavement runways using Full Depth Reclamation process.

FY 2022 to FY 2023 Increase/Decrease Statement:

Planned increase for Rapid Damage Recovery supporting ACE

Title: Airfield Protection

Description: Research, develop and transition technologies for hardening and protecting airfield infrastructure from munitions attack, unexploded ordnance and aircraft, equipment and infrastructure fires. Included within this effort are structural solutions, expeditionary and expedient hardening and protection solutions, explosive ordnance disposal technologies and aviation firefighting technologies. The technologies developed from this effort provide improved resiliency and rapid restoration of airbase and airfield operations following an attack.

FY 2022 Plans:

Upgrade/modernize existing personnel protective bunkers and Air Force infrastructure hardening standards to meet current threat(s). Continue RDT&E of new concepts for protection materials for lighter, less expensive solutions for infrastructure hardening. Test and evaluate technologies against penetrating munitions including

	3.000	2.800	3.000	-	3.000

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
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cruise missile hardening and improve expedient sheltering to address advanced threats through concepts such as Hasty Aircraft Inflatable Large Shelters (HAILS). Continue testing of selective hardening systems for infrastructure. Continue testing and evaluation of unconventional countermeasures technology for transition. Continue research and development of aviation firefighting technologies for treatment and replacement of the perfluorinated aqueous film forming foams (AFFF), clean firefighting agents - Halon replacement and aviation firefighting equipment. Continue RDT&E of EOD technologies for neutralization UXO threats for transition into service.

FY 2023 Base Plans:
Research and prototype Camouflage Concealment and Deception (CCD) concepts for critical equipment and small aircraft. Test and evaluate additively manufactured concrete structures for blast and ballistic performance and update design guidance accordingly. Update personnel bunker designs to reduce the likelihood of traumatic brain injuries (TBI) from emerging threats. Continue development of building wall and roof sections to reduce construction cost and increase survivability against guided munitions. Improve equipment protection systems to better align with agile combat objectives. Evaluation of Per- and polyfluoroalkyl substances (PFAS)-free foams, mitigation technologies for Aqueous film forming foam (AFFF), and new/emergent technologies for fire protection and training.

FY 2022 to FY 2023 Increase/Decrease Statement:
Planned increase to support ACE protection needs

Title: Energy & Utilities	0.969	0.750	0.900	-	0.900
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Description: Research, develop and transition technologies for energy and utilities resiliency for BEAR base and airbase infrastructure. The focus of this effort is for energy and utilities technologies that provide increased efficiency and decreased logistic costs for expeditionary and in-garrison applications. This includes: expeditionary shelters, environmental conditioning systems, water and waste stream processing, power production and power management systems.

FY 2022 Plans:
Complete development of the METER site at Tyndall AFB. Continue bench and lab scale testing of new energy and utilities technologies at the METER site prior to scaling up to full scale test and evaluation at the BTEIL site. Continue test and evaluation of expeditionary energy storage and shelter technologies that incorporate resiliency and sustainability capabilities for USAF expeditionary assets. Conduct field demonstration of innovative expeditionary water and waste disposal systems in an operational environment prior to fielding such as in Arctic environments, in order to support current Arctic strategy needs. Support test and evaluation

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<p>of commercial technologies/systems that includes: expeditionary shelters, environmental conditioning systems, hybrid renewable energy systems, energy storage, power generation and management system, water and waste stream processing system. These systems will provide warfighters with improved energy resiliency and efficiency while and reducing logistics for expeditionary and fixed base operations.</p> <p>FY 2023 Base Plans: Continue bench and lab scale testing of new energy and utilities technologies at the METER site prior to scaling up to full scale test and evaluation at the BTEIL site. Continue field testing and evaluation of expeditionary energy storage and shelter technologies that incorporate energy resiliency and sustainability capabilities for USAF expeditionary assets. Conduct field demonstration of innovative expeditionary water and waste processing systems in an operational environment prior to fielding. Continue supporting test and evaluation of commercial technologies/systems that includes: expeditionary shelters, environmental conditioning systems, hybrid renewable energy systems, energy storage, power generation and management system, water and waste stream processing system. Successful development of these systems will provide capabilities for warfighters that improve energy resiliency and energy efficiency while reducing logistics needs for expeditionary and fixed base applications.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: No change</p>					
<p>Title: Expeditionary Airfield Damage Repair (EADR) JCTD</p> <p>Description: The purpose of the EADR JCTD is to develop and transition the capability to rapidly and repeatedly repair damaged airfield surfaces operating under the dynamic basing concept of operations (CONOP). The goal is to develop and transition technologies that minimize airfield downtime and maximize combat sortie generation. The JCTD will execute a spiral development-oriented program that will transition mature technologies throughout the life of the program.</p> <p>FY 2022 Plans: None project complete in FY21</p> <p>FY 2023 Base Plans: None project complete in FY21</p> <p>FY 2023 OCO Plans: None</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p>	1.950	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
None project complete in FY21					
Accomplishments/Planned Programs Subtotals	18.338	13.273	14.252	0.000	14.252

	FY 2021	FY 2022
Congressional Add: Carbon Materials <i>FY 2021 Accomplishments:</i> None, new start CII <i>FY 2022 Plans:</i> Conduct research into Carbon Materials for Civil Engineer applications.	0.000	3.000
Congressional Add: Airfield Sustainment & Damage Recovery Technologies <i>FY 2021 Accomplishments:</i> None, new start CII <i>FY 2022 Plans:</i> Conduct research into Airfield Sustainment and Damage Recovery Technologies for Civil Engineer applications. Optimize technologies that will enable asphalt to set at cooler temperatures which will reduce energy consumption at forward base operations.	0.000	5.000
Congressional Add: Modern Timber Products for Expeditionary Construction <i>FY 2021 Accomplishments:</i> None, new start CII <i>FY 2022 Plans:</i> Conduct research into Modern Timber Products for Expeditionary Construction and Civil Engineer applications.	0.000	5.000
Congressional Adds Subtotals	0.000	13.000

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
• OPAF 04 Line Item 845100A: <i>Contingency Operations - Engineering and EOD Equipment</i>	0.000	61.464	162.523	-	162.523	173.669	167.773	171.299	-	Continuing	Continuing

Remarks
Procurement funding for Expedient Small Asset Protection (ESAP) systems, Rapid Airfield Damage Assessment System (RADAS) and Recovery of Airbases Denied by Ordnance (RADBO) in PE 0208028F.

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force		Date: April 2022
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D. Acquisition Strategy

This Civil Engineering (CE) Readiness project develops and evaluates technologies for in-garrison, expeditionary, and contingency installations & airbases. This encompasses a wide range of solutions and COTS equipment that are fielded to support the CE mission of the USAF. The acquisition strategy utilizes AFCEC RDT&E contracts as well as AFLCMC, GSA, other DoD and US Government laboratories/engineering centers, contracts and other transaction agreements whenever practical for the specific technology development effort.

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

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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Airbase Technologies	Various	AFCEC : Tyndall AFB, FL	-	2.156		1.503	Nov 2021	2.324		-		2.324	Continuing	Continuing	-
Airfield Damage Repair (ADR) ERDC	MIPR	USERDC : Vicksburg, MS	-	0.625	Jan 2021	1.200	Jan 2022	1.000		-		1.000	Continuing	Continuing	-
Airfield Damage Repair (ADR)	Various	AFCEC : Tyndall AFB, FL	-	1.875		1.200		1.200		-		1.200	Continuing	Continuing	-
Expeditionary Airfield Damage Repair eADR JCTD	Various	AFCEC : Tyndall AFB, FL	-	2.384		-		0.000		-		0.000	0.000	2.384	-
Airfield Pavements & Technologies	C/CPFF	ARA Inc : Panama City, FL	-	3.905	Oct 2020	1.600	Nov 2021	0.950		-		0.950	Continuing	Continuing	-
EOD & Robotics Technologies	C/CPFF	Torch Technologies : Huntsville, AL	-	0.548	Oct 2020	0.314	Dec 2021	0.500		-		0.500	Continuing	Continuing	-
RADAS Integration	C/CPAF	Torch Technologies : Huntsville, AL	-	2.300		2.700	Dec 2021	3.300		-		3.300	Continuing	Continuing	-
Airfield Protection (AP) Infrastructure Hardening	C/CPFF	Battelle : Panama City, FL	-	1.997	Dec 2020	1.800	Nov 2021	2.043		-		2.043	Continuing	Continuing	-
Airfield Protection (AP) Aviation Firefighting Technologies	C/CPFF	Battelle : Panama City, FL	-	0.000	Dec 2020	0.900	Nov 2021	0.750		-		0.750	Continuing	Continuing	-
Energy & Utilities RDT&E	C/CPFF	Battelle : Panama City, FL	-	0.970	Oct 2020	0.750	Nov 2021	0.950		-		0.950	Continuing	Continuing	-
Airfield sustainment and damage recovery technologies	Various	TBD : TBD	-	0.000		5.000		0.000		-		0.000	Continuing	Continuing	-
Carbon materials	Various	TBD : TBD	-	0.000		3.000		0.000		-		0.000	Continuing	Continuing	-
Modern timber products for expeditionary construction	Various	TBD : TBD	-	0.000		5.000		0.000		-		0.000	Continuing	Continuing	-
Subtotal			-	16.760		24.967		13.017		-		13.017	Continuing	Continuing	N/A

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

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Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration (PMA)	Various	AFCEC : Tyndall AFB, FL	-	0.639	Apr 2021	0.400	Apr 2022	0.300		-		0.300	Continuing	Continuing	-
Subtotal			-	0.639		0.400		0.300		-		0.300	Continuing	Continuing	N/A

Remarks
PMA includes travel and supplies to support CE Readiness RDT&E activities.

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A&AS Program Support RDT&E	C/FFP	Multiple : FL	-	0.939	Oct 2020	0.906	Oct 2021	0.935	Oct 2022	-		0.935	Continuing	Continuing	-
Subtotal			-	0.939		0.906		0.935		-		0.935	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			-	18.338	26.273	14.252	-	14.252	Continuing	Continuing	N/A

Remarks
Current delta due to most recent updates to ABIDES that is not reflected yet in IDECS.

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

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FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

CE Readiness																												
Airbase Technologies																												
ADR Robotic In-seat Appliques																												
ADR In-situ Material Repair RDT&E																												
ADR Lighter/Leaner Expeditionary Repair																												
REHM Spiral 2 Rapid UXO Clearance																												
RADAS Development, Test & Evaluation																												
Airfield Mitigation and Recovery Robotics																												
AFFF disposal and mitigation technologies																												
Directed Energy Application for UXO Neutralization																												
Civil engineering projects for sustained airbase operations																												
Airfield Protection - Advanced Hardening RDT&E																												
AFFF replacement agent test & evaluation																												
Airfield sustainment and damage recovery technologies																												
Carbon materials																												
Modern timber products for expeditionary construction																												

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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
CE Readiness				
Airbase Technologies	1	2021	4	2027
ADR Robotic In-seat Appliques	1	2021	2	2022
ADR In-situ Material Repair RDT&E	1	2021	4	2023
ADR Lighter/Leaner Expeditionary Repair	1	2022	4	2022
REHM Spiral 2 Rapid UXO Clearance	1	2021	4	2023
RADAS Development, Test & Evaluation	1	2021	4	2023
Airfield Mitigation and Recovery Robotics	1	2022	3	2027
AFFF disposal and mitigation technologies	1	2021	4	2024
Directed Energy Application for UXO Neutralization	1	2022	4	2024
Civil engineering projects for sustained airbase operations	1	2021	1	2026
Airfield Protection - Advanced Hardening RDT&E	1	2022	4	2027
AFFF replacement agent test & evaluation	1	2022	4	2026
Airfield sustainment and damage recovery technologies	4	2022	4	2025
Carbon materials	4	2022	4	2025
Modern timber products for expeditionary construction	4	2022	4	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force										Date: April 2022		
Appropriation/Budget Activity 3600 / 5					R-1 Program Element (Number/Name) PE 0604617F / <i>Agile Combat Support</i>				Project (Number/Name) 654910 / <i>Aeromedical Readiness</i>			
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
654910: <i>Aeromedical Readiness</i>	-	0.060	1.665	0.000	0.000	0.000	2.001	2.039	2.081	2.128	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

FY21 funding: Due to a database error, FY21 Congressional Mark was applied to BPAC 652895 instead of BPAC 654910 Aeromed. Correct funding for Aeromed BPAC 654910 should be \$0.060M

A. Mission Description and Budget Item Justification

Aeromedical Readiness provides key aeromedical devices, life-saving capabilities and quality of life technologies and equipment. This program enables the critical care of combat casualties by further developing and optimizing existing technologies for ground Expeditionary Medical Systems (EMEDS) and aeromedical evacuation systems. EMEDS and aeromedical evacuation systems provide the urgent care needed to treat deployed injured warfighters and return them to duty while in country, and to treat combat casualties that need to be safely transported to a stateside hospital for follow on treatment. The program also supports critical capabilities development in the multi-disciplinary areas for light-weight, durable, and rapidly deployable medical equipment to ensure the Air Force is poised to meet future medical readiness and operational requirements, to include but not limited to Spinal Immobilization Transport Device (SIT-D), Pathogen Detection Capability, Automated Vision Testing, Whole Blood Transport and other FDA approved medical treatment devices. This program supports projects ranging from research efforts to optimize human physiologic and cognitive performance for Air Combat Command, to development of patient isolation and transportation devices for Air Mobility Command that enable aeromedical evacuation of patients suffering with highly infectious diseases.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Aeromedical Equipment Testing/Studies/Minor Development	0.060	1.665	0.000	0.000	0.000
Description: Aeromedical supports Defense Health Program, Joint Services and MAJCOM medical modernization. The Air Force Medical Readiness Agency (AFMRA) Surgeon General Requirement Oversight Council (SGROC) Governance process manages medical capability gaps, research and development, funding prioritization and decisional boards. Aeromedical procures and qualifies commercial-off-the-shelf (COTS) or near COTS medical and aeromedical products and/or performs minor development, studies and management efforts, under Aeromedical Readiness. Aeromedical Program efforts evaluate integrating technologies or prototype systems in a realistic operating environment, expedite technology transition from the laboratory to operational use, emphasis on proving maturity prior to integration and viable decision ready materiel solutions.					
FY 2022 Plans: Contract Studies to develop Medical requirements.					
FY 2023 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Air Force	Date: April 2022
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Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0604617F / <i>Agile Combat Support</i>	Project (Number/Name) 654910 / <i>Aeromedical Readiness</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Contract Studies to develop Medical requirements. FY 2023 OCO Plans: NA FY 2022 to FY 2023 Increase/Decrease Statement: Decrease to support other USAF priorities					
Accomplishments/Planned Programs Subtotals	0.060	1.665	0.000	0.000	0.000

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

Multi-Modal Threat Detection and Mitigation Congressional Add improperly aligned to BPAC 654910. Funding is being executed out of BPAC 652895.

FY21 Aeromed funding incorrect due to database system error. BPAC 654910 should equal \$0.060M

D. Acquisition Strategy

Programs consider a streamlined acquisition approach. Whenever practical, commercial items are tested and evaluated as candidates for providing solutions to user needs. This normally involves contractor characterization, verification, and qualification testing to ensure Food and Drug Administration (FDA) approved, commercial off-the-shelf equipment is properly evaluated to identify any capability gaps that may require minor modifications for military use. However, acquisition strategies may also be carried out for traditional Engineering and Manufacturing Development (EMD). Funds may be used to address associated emerging Aeromedical Readiness requirements and for program management activities.

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

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0604617F / Agile Combat Support	Project (Number/Name) 654910 / Aeromedical Readiness
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Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aeromedical Equipment R&D (Production Representative Units, Testing, Manufacturing Maturation, Food and Drug Administration Clearance)	C/FFP	AFLCMC : Wright-Patterson AFB, OH	-	0.000	Sep 2021	1.665	Sep 2022	0.000	May 2023	-		0.000	Continuing	Continuing	-
Subtotal			-	0.000		1.665		0.000		-		0.000	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration	C/CPFF	AFLCMC : Wright-Patterson AFB, OH	-	0.060	Oct 2020	-		0.000		-		0.000	Continuing	Continuing	-
Subtotal			-	0.060		-		0.000		-		0.000	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			-	0.060	1.665	0.000	-	0.000	Continuing	Continuing	N/A

Remarks
 Product Development: Technology Transfer/Aeromedical Equipment is TBD due to contract source selections.
 Multi-Modal Threat Detection and Mitigation Congressional Add improperly aligned to BPAC 654910. Funding is being executed out of BPAC 652895.

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

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0604617F / <i>Agile Combat Support</i>	Project (Number/Name) 654910 / <i>Aeromedical Readiness</i>
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FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<i>Aeromedical Readiness RDTE Efforts</i>	
Aeromedical Equipment Testing/Studies/ Minor Development	
Spinal Transport Device testing concludes, mod contract award	
Digital Engineering Investment	
<i>Multi-Modal Threat Detection and Mitigation</i>	
Multi-Modal Threat Detection and Mitigation	

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Air Force **Date:** April 2022

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0604617F / <i>Agile Combat Support</i>	Project (Number/Name) 654910 / <i>Aeromedical Readiness</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Aeromedical Readiness RDTE Efforts</i>				
Aeromedical Equipment Testing/Studies/Minor Development	1	2021	4	2027
Spinal Transport Device testing concludes, mod contract award	2	2024	2	2025
Digital Engineering Investment	4	2024	4	2025
<i>Multi-Modal Threat Detection and Mitigation</i>				
Multi-Modal Threat Detection and Mitigation	3	2021	4	2024

Note

Multi-Modal Threat Detection and Mitigation Congressional Add improperly aligned to BPAC 654910. Funding is being executed out of BPAC 652895.