Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force	**Date:** May 2021
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*

COST ($ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	31.133	18.980	16.603	0.000	16.603	-	-	-	-	-	-
652895: *Civil Engineering Readiness*	-	24.347	17.326	14.938	0.000	14.938	-	-	-	-	-	-
654910: *Aeromedical Readiness*	-	6.786	1.654	1.665	0.000	1.665	-	-	-	-	-	-

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 emergent or unanticipated civilian pay expenses required to manage, execute, and deliver Civil Engineering and Aeromedical Readiness for emergent or unanticipated weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

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)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	26.944	20.609	18.006	0.000	18.006
Current President's Budget	31.133	18.980	16.603	0.000	16.603
Total Adjustments	4.189	-1.629	-1.403	0.000	-1.403
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	-1.594			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	5.060	0.000			
• SBIR/STTR Transfer	-0.871	0.000			
• Other Adjustments	0.000	-0.035	-1.403	0.000	-1.403

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Air Force	Date: May 2021
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / 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)	FY 2020	FY 2021
Project: 652895: *Civil Engineering Readiness*		
Congressional Add: *Multi-Modal Threat Detection and Mitigation*	6.032	0.000
Congressional Add Subtotals for Project: 652895	6.032	0.000
Congressional Add Totals for all Projects	6.032	0.000

Change Summary Explanation

FY 20 Increase of $7M for Congressional Add for Multi-modal threat detection and mitigation; along with reductions for Small Business Innovative Research (SBIR). Originally aligned to wrong BPAC

FY21 Decreases of $-1.594M for technology transfer delays

FY22 No significant changes

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force												Date: May 2021
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 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Cost To Complete**	**Total Cost**
652895: *Civil Engineering Readiness*	-	24.347	17.326	14.938	0.000	14.938	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

FY21 funding: Due to a database error, FY21 Congressional mark applied to this BPAC 652895 vice BPAC 654910 Aeromedical. BPAC 652895 CE should equal $18.920M

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 2020	FY 2021	FY 2022
Title: Airbase Technologies	1.698	3.009	3.259
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 2021 Plans:*** Continue development and testing material technologies for indigenous soil-based cements and bio-cementation for expeditionary ADR, test and evaluation of aviation asphalt aging mitigation 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 of disposal and mitigation technologies for AFFF and evaluation of expeditionary energy storage systems for incorporation of renewable energy systems with USAF BEAR equipment. Replace/repair critical RDT&E lab equipment. Fund program management support, RDT&E IT systems and software required to conduct CE RDT&E. ***FY 2022 Plans:*** Continue development and testing material technologies for indigenous soil-based cements and bio-cementation for expeditionary ADR, test and evaluation of aviation asphalt aging mitigation 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 of disposal and mitigation technologies for AFFF and evaluation of expeditionary energy			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 652895 / *Civil Engineering Readiness*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
storage systems for incorporation of renewable energy systems with USAF BEAR equipment. Replace/repair critical RDT&E lab equipment. Fund program management support, RDT&E IT systems and software required to conduct CE RDT&E. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Planned increase			
Title: Airfield Damage Repair ***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. ***FY 2021 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 of integration of small unmanned aerial systems (SUAS), sensors, and automated damage detection software solutions to significantly decrease damage assessment time and improve automated detection of unexploded ordnance (UXO). Mitigation includes testing and evaluation of automated 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 importance being placed on materials available on hand at any location, while new systems will focus heavily on testing and operation in extreme weather conditions. ***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 aerial 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	10.666	8.714	7.629

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 652895 / *Civil Engineering Readiness*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
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. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Across the board budget cut due to AF cost increases.			
Title: Expeditionary Airfield Damage Repair (EADR) JCTD ***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. ***FY 2021 Plans:*** Down-select final capability solution set to meet operational requirement. Conduct final Operational User Assessment exercises to demonstrate final total capability for prototype solution. Publish predictive methodology to estimate site-specific repair requirements and tactics, techniques, and procedures (TTP) necessary for capability operation across services. Begin transition and acquisition of solutions to meet requirements for expedient and expeditionary airfield damage repair (EADR). ***FY 2022 Plans:*** None project complete in FY21 ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Project ended in FY21	2.751	2.000	0.000
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 2021 Plans:*** 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 cruise missile hardening and improve expedient sheltering to address advanced threats. Continue development and begin testing of selective hardening systems for infrastructure. Continue testing and evaluation of unconventional countermeasures technology for transition. Continue research and development	2.800	2.603	3.050

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 652895 / *Civil Engineering Readiness*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
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 of sub-munition and UXO threats. ***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 cruise missile hardening and improve expedient sheltering to address advanced threats. 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 2021 to FY 2022 Increase/Decrease Statement:*** Planned increase for AFFF replacement testing & evaluation and advanced shelters.			
Title: Energy & Utilities ***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 2021 Plans:*** Continue development of the METER site at Tyndall AFB. . Conduct 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. Test and evaluate expeditionary energy and shelter technologies that incorporate resiliency and sustainability for USAF expeditionary assets. Field demonstration of innovative expeditionary water and waste systems in an operational environment prior to fielding. Support test and evaluation of commercial technologies/systems that includes: expeditionary shelters, environmental conditioning systems, energy storage, power generation and management system, water and waste stream processing system. These system will provide war-fighter with improve energy resiliency and efficiency while and reducing logistics for expeditionary and fixed base operations. ***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	0.400	1.000	1.000

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 652895 / *Civil Engineering Readiness*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
expeditionary assets. Conduct field demonstration of innovative expeditionary water and waste disposal systems in an operational environment prior to fielding. Support 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. These system will provide warfighter with improve energy resiliency and efficiency while and reducing logistics for expeditionary and fixed base operations.			
Accomplishments/Planned Programs Subtotals	18.315	17.326	14.938

	FY 2020	FY 2021
Congressional Add: Multi-Modal Threat Detection and Mitigation	6.032	0.000
FY 2020 Accomplishments: Create a force multiplier for USAF wide-area Force Protection by coupling fielded sensor technologies and countermeasures with Artificial Intelligence (AI)/Machine Learning (ML). Enhance the effectiveness of USAF defense personnel with AI/ML systems to detect and classify targets, determine intent, and deploy countermeasures ***FY 2021 Plans:*** Contract planning		
Congressional Adds Subtotals	6.032	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• OPAF 04 Line Item 845100A: *Contingency Operations - Engineering and EOD Equipment*	14.752	0.000	61.464	-	61.464	-	-	-	-	-	-

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.

FY21 CE funding reduced due to database system error. BPAC 652895 should equal $18.920M

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

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 652895 / *Civil Engineering Readiness*

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 652895 / *Civil Engineering Readiness*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Airbase Technologies	Various	AFCEC : Tyndall AFB, FL	-	1.698	Oct 2019	1.384		1.350		-		1.350	-	-	-
Airfield Damage Repair (ADR) ERDC	MIPR	USERDC : Vicksburg, MS	-	2.000	Jan 2020	2.072	Jan 2021	2.310		-		2.310	-	-	-
Airfield Damage Repair (ADR)	Various	AFCEC : Tyndall AFB, FL	-	2.400		1.300		0.000		-		0.000	-	-	-
Expeditionary Airfield Damage Repair eADR JCTD	Various	AFCEC : Tyndall AFB, FL	-	8.783		2.000		0.000		-		0.000	-	-	-
Airfield Pavements & Technologies	C/CPFF	ARA Inc : Panama City, FL	-	1.000	Apr 2020	2.500	Oct 2020	2.589		-		2.589	-	-	-
Rapid Explosive Hazard Mitigation (REHM)	C/CPAF	ARA Inc : Panama City, FL	-	0.400		0.000		0.000		-		0.000	-	-	-
EOD & Robotics Technologies	C/CPFF	Torch Technologies : Huntsville, AL	-	1.427	Apr 2020	2.000	Oct 2020	3.650		-		3.650	-	-	-
RADAS Integration	C/CPAF	Torc Robotics : Blacksburg, VA	-	2.100		0.406		-		-		-	-	-	-
Airfield Protection (AP) Infrastructure Hardening	C/CPFF	Battelle : Panama City, FL	-	1.900	Oct 2019	2.075	Dec 2020	2.000		-		2.000	-	-	-
Airfield Protection (AP) Aviation Firefighting Technologies	C/CPFF	Battelle : Panama City, FL	-	0.900	Oct 2019	1.300	Dec 2020	1.050		-		1.050	-	-	-
Energy & Utilities RDT&E	C/CPFF	Battelle : Panama City, FL	-	0.450	Jan 2020	1.000	Oct 2020	0.700		-		0.700	-	-	-
		Subtotal	-	23.058		16.037		13.649		-		13.649	-	-	N/A

Remarks

$77K increase to FY18 ADR due to inflation adjustment

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 652895 / *Civil Engineering Readiness*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support	C/CPAF	Not specified. : TBD	-	0.000		-		-		-		-	-	-	-
Program Management Administration (PMA)	Various	AFCEC : Tyndall AFB, FL	-	0.325	Apr 2019	0.325	Apr 2021	0.325	Apr 2022	-		0.325	-	-	-
		Subtotal	-	0.325		0.325		0.325		-		0.325	-	-	N/A

Remarks

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

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services	C/CPAF	Not specified. : TBD	-	0.000		-		-		-		-	-	-	-
A&AS Program Support RDT&E	C/FFP	Multiple : FL	-	0.964	Jan 2020	0.964	Oct 2020	0.964	Oct 2021	-		0.964	-	-	-
		Subtotal	-	0.964		0.964		0.964		-		0.964	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	24.347		17.326		14.938		-		14.938	-	-	N/A

Remarks

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

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		**Date:** May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 652895 / *Civil Engineering Readiness*

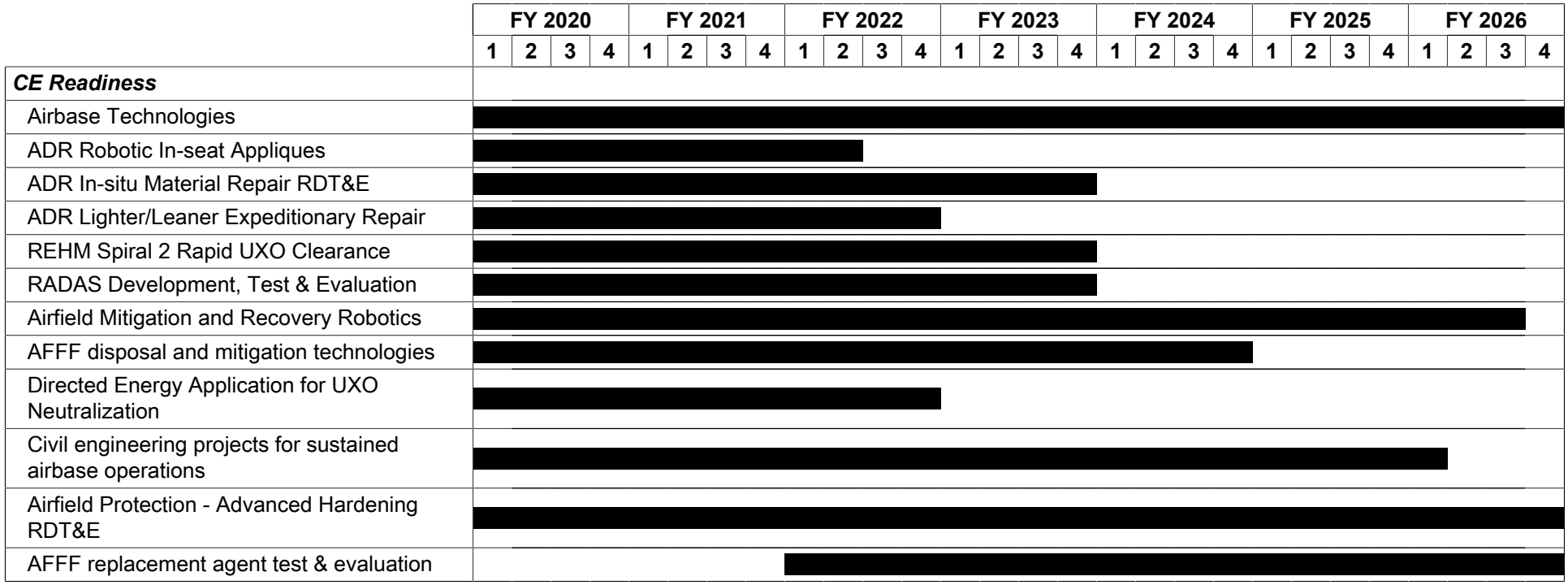

Exhibit R-4A, **RDT&E Schedule Details:** PB 2022 Air Force		**Date:** May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 652895 / *Civil Engineering Readiness*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
CE Readiness				
Airbase Technologies	1	2020	4	2026
ADR Robotic In-seat Appliques	1	2020	2	2022
ADR In-situ Material Repair RDT&E	1	2020	4	2023
ADR Lighter/Leaner Expeditionary Repair	1	2020	4	2022
REHM Spiral 2 Rapid UXO Clearance	1	2020	4	2023
RADAS Development, Test & Evaluation	1	2020	4	2023
Airfield Mitigation and Recovery Robotics	1	2020	3	2026
AFFF disposal and mitigation technologies	1	2020	4	2024
Directed Energy Application for UXO Neutralization	1	2020	4	2022
Civil engineering projects for sustained airbase operations	1	2020	1	2026
Airfield Protection - Advanced Hardening RDT&E	1	2020	4	2026
AFFF replacement agent test & evaluation	1	2022	4	2026

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force												Date: May 2021
Appropriation/Budget Activity 3600 / 5					R-1 Program Element (Number/Name) PE 0604617F / *Agile Combat Support*				Project (Number/Name) 654910 / *Aeromedical Readiness*			
COST ($ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
654910: *Aeromedical Readiness*	-	6.786	1.654	1.665	0.000	1.665	-	-	-	-	-	-
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 and life-saving capabilities and/or 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 Sterile Water for Irrigation, Multi-Channel Infusion Pump (MCIP), Antimicrobial Surface Coatings, Telemedicine 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 2020	FY 2021	FY 2022
Title: Multi-Channel Infusion Pump (MCIP) ***Description:*** A replacement multi-channel infusion pump for use by ACC, AMC, AFSOC, and other DoD medical personnel to replace the obsolete MedSystem III device for use in DoD Hospitals, during expeditionary and en-route care. The pump must be capable of independently and precisely delivering a wide-range of fluids (drugs, nutrients, blood) from separate sources through multiple lines. ***FY 2021 Plans:*** Program transferring from research to final engineering, manufacturing and development (EMD). ***FY 2022 Plans:*** Contract Award for EMD phase. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Program moving to WNU for further Development	0.000	0.000	0.000
Title: Point of Care Integrated Blood Analyzer (POCIBA)	0.000	0.000	0.100

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 654910 / *Aeromedical Readiness*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Description: Light weight, portable Point of Care (POC) complete blood count (CBC) analyzer with 5-part differential; capable of operating in the pre-hospital environment by field medical teams. Reduces the logistical footprint of the EMEDS by providing a smaller, light weight device with no cold-chain storage requirements and fewer consumables, comparable to the capability in a Role 3 EMEDS. For use by ACC, AMC, and AFSOC personnel ***FY 2021 Plans:*** Continue research and prepare for development. ***FY 2022 Plans:*** Program transition from research to developmental contract award and test. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** To fund EMD contract award preparations and plans.			
Title: Expeditionary Ground Telemedicine (EGTM) ***Description:*** Air Force operations are changing significantly in anticipation that future US engagements will be peer or near-peer conflicts in a Multi-Domain Operations battle space. EGTM System of Systems will mold the current medical force and reduces its footprint to treat patients for a prolonged period in support of Dispersed and Distributed Air Base Operations (DDABO) and Agile Combat Employment (ACE) Concepts. EGTM consists of a secure, reliable ability to provide TeleConsult, TeleMedic, TeleMentor, and TeleMonitor capability. ***FY 2021 Plans:*** Continue research and prepare scope of developmental effort. ***FY 2022 Plans:*** Program transition from research to final developmental contract award and test. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Fund final EMD and Test contract award.	0.000	0.000	0.100
Title: Aeromedical Equipment Testing/Studies/Minor Development ***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	1.726	1.654	1.465

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 654910 / *Aeromedical Readiness*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
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 2021 Plans:*** Continue the transition of Scientific and Technical (S&T) projects to Research and Development (R&D) of various items in Engineering and Manufacturing Development (EMD) phase of the acquisition life cycle. ***FY 2022 Plans:*** Contract Studies to develop Medical requirements. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** To fund programs moving to WNU for Development.			
Title: COVID JUON ***Description:*** Aeromedical equipment to support safe air transport of Covid 19 positive patients ***FY 2021 Plans:*** Completed in FY20 ***FY 2022 Plans:*** Completed FY20 ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Project completed FY20 no increase or decrease	5.060	0.000	0.000
Accomplishments/Planned Programs Subtotals	6.786	1.654	1.665

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 will 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

Exhibit R-2A, RDT&E Project Justification: PB 2022 Air Force		Date: May 2021
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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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Air Force		**Date:** May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 654910 / *Aeromedical Readiness*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	C/CPAF	TBD : TBD	-	-		-		0.200	Sep 2023	-		0.200	-	-	-
Technology Transfer Planning for Aeromedical Equipment R&D Efforts, Cost Estimates Technology Readiness Assessments, Food and Drug Administration consulting	TBD	TBD : TBD	-	0.749	Sep 2021	0.000	Sep 2022	1.465	Sep 2023	-		1.465	-	-	-
Multi-Modal Threat Detection and Mitigation	C/CPAF	TBD : TBD	-	6.032	Mar 2020	-		-		-		-	-	-	-
		Subtotal	-	6.781		0.000		1.665		-		1.665	-	-	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services	C/CPAF	Not specified. : TBD	-	0.000		-		-		-		-	-	-	-
Program Management Administration	C/CPFF	AFLCMC : Wright-Patterson AFB, OH	-	0.005	Oct 2019	1.654	Oct 2020	-		-		-	-	-	-
		Subtotal	-	0.005		1.654		-		-		-	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	6.786		1.654		1.665		-		1.665	-	-	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.

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Air Force		**Date:** May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 654910 / *Aeromedical Readiness*

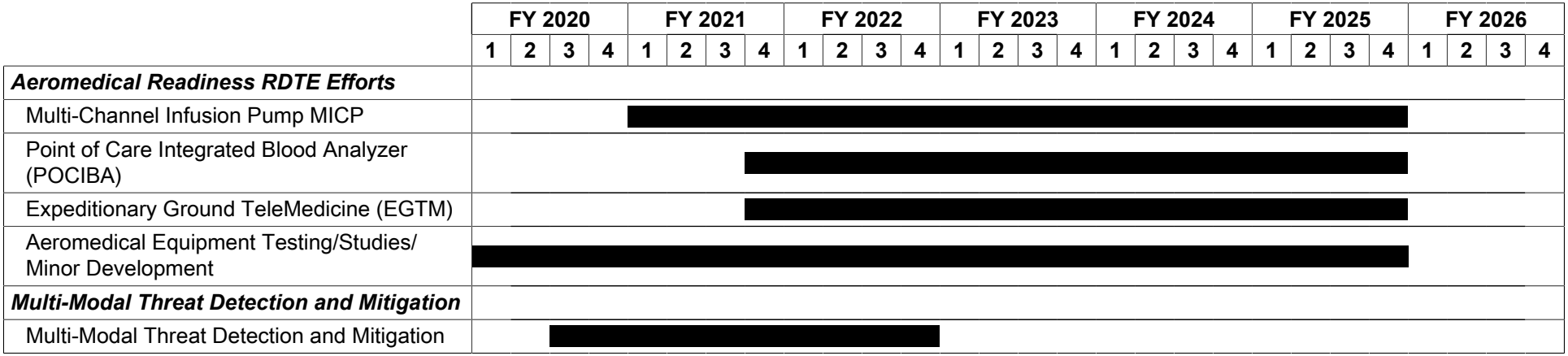

Exhibit R-4A, **RDT&E Schedule Details:** PB 2022 Air Force		**Date:** May 2021
Appropriation/Budget Activity 3600 / 5	**R-1 Program Element (Number/Name)** PE 0604617F / *Agile Combat Support*	**Project (Number/Name)** 654910 / *Aeromedical Readiness*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Aeromedical Readiness RDTE Efforts				
Multi-Channel Infusion Pump MICP	1	2021	4	2025
Point of Care Integrated Blood Analyzer (POCIBA)	4	2021	4	2025
Expeditionary Ground TeleMedicine (EGTM)	4	2021	4	2025
Aeromedical Equipment Testing/Studies/Minor Development	1	2020	4	2025
Multi-Modal Threat Detection and Mitigation				
Multi-Modal Threat Detection and Mitigation	3	2020	4	2022

Note

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