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Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force **Date:** February 2019

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0207227F I <i>Combat Rescue - Pararescue</i>
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COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	0.685	0.647	0.281	0.000	0.281	0.670	0.911	0.847	0.709	Continuing	Continuing
675352: <i>Guardian Angel RDT&E</i>	-	0.685	0.647	0.281	0.000	0.281	0.670	0.911	0.847	0.709	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Guardian Angel (GA) is an Air Force non-aircraft weapon system within the overarching Battlefield Airmen Modernization program. GA is a Family of Systems (FoS) based in both human and equipment capabilities formulated to execute Air Force Personnel Recovery (PR) across the full spectrum of military operations. Established by the Air Force Chief of Staff in 2003 and officially captured in AFD 10-9, the GA FoS is employed by three distinct Air Force specialties: Pararescuemen (PJ), Combat Rescue Officer (CRO), and Survival, Evasion, Resistance, Escape (SERE). The GA FoS is comprised of nine critical mission areas: Precision Aerial Insertion, Information Management, Force Application, Visual Augmentation, Maritime Recovery, Ground Mobility, Technical Rescue, Medical, and SERE. GA focus is on maintaining legacy weapon system capability while modernizing/improving subsystems for better mission effectiveness.

Funds will be used to obtain significant improvements in operational capability and develop items within the GA FoS to include but not limited to: Sound Navigation and Ranging (SONAR), Maritime Recovery, Ground Mobility, Technical Recovery, Oxygen Systems, Medical Monitoring, Aerial Insertion, Information Management (including Preservation of the Force and Family (POTFF) Tracking System), and the Battlefield Air Operations Kit. This may be conducted through industry technology demonstrations, prototypes and associated engineering support to posture the GA program for technology insertion. The Guardian Angel weapon system development activities also include studies, analysis, requirements development and developmental testing to support both current and future program planning and execution. Funding will deliver enhanced capability for the dismounted Guardian Angel soldier in terms of dramatic weight reduction and increased mission effectiveness across the conflict spectrum. This funding request will support potential DMS and obsolescence solutions, to include if optimal, life of type buys or bridge buys limited to the program of record quantity. This program element may include necessary civilian pay expenses required to manage, execute, and deliver Guardian Angel weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F. Due to rapidly changing threat environment, the acquisition program manager has the authority to redirect funding as necessary to meet current slated and emerging requirements.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is \$14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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B. Program Change Summary (\$ in Millions)		FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	
Previous President's Budget		0.693	0.647	0.658	0.000	0.658	
Current President's Budget		0.685	0.647	0.281	0.000	0.281	
Total Adjustments		-0.008	0.000	-0.377	0.000	-0.377	
• Congressional General Reductions		0.000	0.000				
• Congressional Directed Reductions		0.000	0.000				
• Congressional Rescissions		0.000	0.000				
• Congressional Adds		0.000	0.000				
• Congressional Directed Transfers		0.000	0.000				
• Reprogrammings		0.000	0.000				
• SBIR/STTR Transfer		-0.008	0.000				
• Other Adjustments		0.000	0.000	-0.377	0.000	-0.377	
C. Accomplishments/Planned Programs (\$ in Millions)					FY 2018	FY 2019	FY 2020
Title: Guardian Angel Family of Systems (FoS)					0.685	0.647	0.281
Description: Standardize, modernize and develop additional capability for the Guardian Angel (GA) weapon system used by Combat Rescue Officers and Pararescuemen. Development efforts provide enhanced and improved capabilities for execution of Air Force combat search and rescue and personnel recovery. This weapon system is utilized across the full spectrum of Personnel Recovery (PR) military operations to include patient treatment, extrication, surface/underwater search and recovery, airborne infil/exfil, and ground recovery operations.							
FY 2019 Plans:							
-Will continue to complete studies, strategic planning, and development activities for increased capability.							
-Will continue necessary software upgrades to BAO kit(G)information management system given ACC/A5/8R decision to switch to the Android Tactical Assault Kit (ATAK).							
-Will conduct oxygen system testing for parachutist oxygen system.							
-Will conduct development and system enhancements on existing and future systems through incorporating test feedback and user inputs into subsequent iterations for better capability and mission success.							
-Will work with AFRL (711 HPW) to determine if additional funding is required to mature the Preservation of the Force and Family (POTFF) Tracking System.							
-Will meet with AFRL periodically to monitor ongoing RDT&E efforts and determine the best use of such funds.							
FY 2020 Plans:							
-Will continue to complete studies, strategic planning, and development activities for increased capability.							

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C. Accomplishments/Planned Programs (\$ in Millions)								FY 2018	FY 2019	FY 2020	
-Will continue necessary software upgrades to BAO kit(G)information management system given ACC/A5/8R decision to switch to the Android Tactical Assault Kit (ATAK). -Will conduct oxygen system testing for parachutist oxygen system. -Will conduct development and system enhancements on existing and future systems through incorporating test feedback and user inputs into subsequent iterations for better capability and mission success. -Will work with AFRL (711 HPW) to determine if additional funding is required to mature the Preservation of the Force and Family (POTFF) Tracking System. -Will meet with AFRL periodically to monitor ongoing RDT&E efforts and determine the best use of such funds.											
FY 2019 to FY 2020 Increase/Decrease Statement: Funding decreased to account for the availability of prior year execution balances.											
Accomplishments/Planned Programs Subtotals								0.685	0.647	0.281	
D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• OPAF 04 Line Item 842990: <i>Items Less than \$5M (Safety)</i>	25.880	21.915	22.295	-	22.295	22.702	23.105	23.516	23.939	Continuing	Continuing
• OPAF 02 Line Item 823230: <i>Security and Tactical Vehicles</i>	0.090	0.061	0.131	-	0.131	0.205	0.281	0.287	0.292	Continuing	Continuing
• WPN test: <i>test</i>	-	1.000	-	-	-	-	-	-	-	0.000	1.000
Remarks											
E. Acquisition Strategy											
<p>The Guardian Angel (GA) program will address warfighter immediate needs to standardize, modernize, and develop additional capability for the weapon system used by Combat Rescue Officers and Pararescuemen. The program will also address future requirements for the weapon system that will encompass the needs of all three GA career fields.</p> <p>The GA program is an incremental evolutionary acquisition effort in which requirements are fulfilled through further sub-system development and integration. These are being identified through updates to the Core Function Support Plan and GA Concept of Employment by HQ Air Combat Command. The program has been divided into phases to more rapidly meet the user's immediate need to standardize and modernize the weapon system.</p>											

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F. Performance Metrics Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force												Date: February 2019			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0207227F / <i>Combat Rescue - Pararescue</i>						Project (Number/Name) 675352 / <i>Guardian Angel RDT&E</i>			
Product Development (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GA Family Of Systems	Various	Various : Various	-	0.313	Apr 2018	0.507	Apr 2019	0.181	Apr 2020	-		0.181	Continuing	Continuing	-
Human Performance Organization Support (POTFF)	Various	Various : Various	-	0.372	Feb 2019	0.140	Feb 2019	0.100	Feb 2020	-		0.100	Continuing	Continuing	-
Subtotal			-	0.685		0.647		0.281		-		0.281	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BAO Kit (G) Software	C/Various	413 TS : Eglin AFB, FL	-	-		-		-		-		-	Continuing	Continuing	-
Test Agency Support	RO	46TS : Eglin AFB, FL	-	-		-		-		-		-	Continuing	Continuing	-
Test Agency Support Other	RO	418 TS : Edwards AFB, CA	-	-		-		-		-		-	Continuing	Continuing	-
Subtotal			-	-		-		-		-		-	Continuing	Continuing	N/A
			Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	0.685		0.647		0.281		-		0.281	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force										Date: February 2019																			
Appropriation/Budget Activity 3600 / 7										R-1 Program Element (Number/Name) PE 0207227F / Combat Rescue - Pararescue										Project (Number/Name) 675352 / Guardian Angel RDT&E									

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	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
Events By Sub Project																												
BAO Kit (G) Software																												
Test Support																												
GA Equipment Upgrades																												
Human Performance Organization Support (POTFF)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207227F / Combat Rescue - Pararescue	Project (Number/Name) 675352 / Guardian Angel RDT&E

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Events By Sub Project				
BAO Kit (G) Software	1	2018	4	2024
Test Support	1	2018	2	2024
GA Equipment Upgrades	2	2018	2	2024
Human Performance Organization Support (POTFF)	2	2018	1	2024