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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force										Date: February 2015		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604706F I Life Support Systems							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	7.069	14.854	8.187	-	8.187	8.747	8.430	8.608	8.763	Continuing	Continuing
65412A: Life Support Systems	-	7.069	14.854	8.187	-	8.187	8.747	8.430	8.608	8.763	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY16 project 65412A Life Support Systems New Start projects for Personal Radio Communications (PRC) and Aircrew Safety Improvements.

A. Mission Description and Budget Item Justification

This program is a human-centered program providing RDT&E recapitalization of aircrew flight equipment and airman combat systems. Air Force acquisition teams lead the upgrade and fielding of new equipment/systems by assessing deficiencies in existing equipment, conducting business case analyses, evaluating existing technologies or developing new technologies, assessing commercially available products for combat use, and conducting required Safe-to-Fly (STF) tests and certifications. Program efforts include, but are not limited to, the following projects: directed energy protective equipment; flight helmets and visors; oxygen breathing systems for aircrew; radios and locator beacons; support equipment; nuclear flash blindness protection; night vision devices; noise reduction devices; anti-gravity (anti-G) suits; flame resistant, retardant and blast protective gear; aircraft seating; impact protection equipment; flotation devices; parachutes; ejection seats; and other life support systems required by the warfighter.

BA 5 - 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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	7.273	8.854	8.242	-	8.242
Current President's Budget	7.069	14.854	8.187	-	8.187
Total Adjustments	-0.204	6.000	-0.055	-	-0.055
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	6.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.204	-			
• Other Adjustments	-	-	-0.055	-	-0.055

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Congressional Add Details (\$ in Millions, and Includes General Reductions) Project: 65412A: <i>Life Support Systems</i> Congressional Add: <i>Ejection Seat Safety/Sustainability Improvement Program for Qualification of B-2 Seat Mod</i> Congressional Add Subtotals for Project: 65412A Congressional Add Totals for all Projects		FY 2014 - - -	FY 2015 6.000 6.000 6.000
Change Summary Explanation FY15 includes a \$6M Congressional add for Ejection Seat Safety/Sustainability Improvement Program for Qualification of the B-2 Seat Mod.			
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Title: Aircrew Flight Equipment (AFE) Description: Air Force Life Cycle Management Center's Aircrew Performance Branch is the single USAF focal point for Aircrew Flight Equipment (AFE) studies, analysis, and Safe-to-Fly (STF) testing and certification. In general, unplanned STF projects are an urgent response to real-time capability gaps identified by the warfighter which may be satisfied quickly by purchasing and qualifying commercial-off-the-shelf (COTS) products and/or performing minor development efforts. The Cold Weather Aviation System (CWAS) and Aircrew Body Armor (ABA) are currently the active STF programs within Life Support Systems (LSS). Both of these efforts were originally planned as development efforts, but identification of COTS solutions allowed them to become STF efforts. Cold Weather Aviation System (CWAS) is an Arctic weather aircrew ensemble program that includes garments, boots, and gloves. The ensemble employs a multi-layer approach protecting aircrews to -49 degrees Fahrenheit. The Air Force has no approved aircrew body armor. The Integrated Aircrew Body Armor (IABA) project plans to purchase existing government or commercial body armor and integrate with aircrew survival gear, restraint & recovery harness, and a life preserver unit. The selected body armor must meet Director of Operational Test and Evaluation (DOT&E) live fire requirements, provide adequate soft/hard body armor coverage to the torso, demonstrate good overall use and maneuverability, and pass appropriate STF tests. FY 2014 Accomplishments: Drafted CWAS program strategy and test plan. Purchased CWAS test articles to include golves and ensembles. Continued ABA STF testing at various locations. FY 2015 Plans:		0.997	1.650
			1.025

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Complete purchase of all test assets and begin integration testing of the CWAS.				
Finalize STF testing of ABA and deliver the signed STF recommendation.				
FY 2016 Plans: Perform STF testing and certification of COTS and / or minor developmental products.				
Title: Integrated Aircrew Ensemble (IAE) Description: The Integrated Aircrew Ensemble (IAE) is a multi-layer battle ready system of protective clothing, survival equipment, and anti-G protection equipment worn by aircrew members. The ensemble can layer up to seven (7) components allowing for flexible combinations depending on aircraft type, mission, and threat. Each component design is unique but engineered as a single integrated ensemble to improve mobility by reducing bulk, reducing aircrew fatigue from thermal stress using new breathable materials, and increasing overall system performance. The ensemble components are: 1) outer flight layer, 2) Environmental Protection Layer (EPL) with gloves, 3) Chemical Biological Radiological Layer (CBRL) with glove inserts, 4) Life Preserver Unit (LPU), 5) Counter Chest Pressure Bladder (CCPB), 6) survival vest, and 7) G-suit.		6.072	6.884	3.447
FY 2014 Accomplishments: Continued Development Verification Testing (DVT) of the IAE system.				
FY 2015 Plans: Begin operational testing of the IAE.				
FY 2016 Plans: Finalize operational testing of the IAE and begin Low Rate Initial Production (LRIP).				
Title: Aircrew Safety Improvements & Analysis Description: Investigate and implement techniques, tactics, procedures and improvements for aircrew safety.		-	-	0.945
FY 2016 Plans: Investigate aircrew safety issues, provide recommendations / analysis and implement improvements.				
Title: Personal Radio Communications Description: The Personal Radio Communications (PRC) system is a handheld survival radio for aircrew members. Currently, USAF aircrew use the PRC-90 survival radio, which was derived from the Vietnam War era. The current device is bulky and not conducive to today's wartime environment due to obsolescence and the frequency no longer being monitored. Newer, more advanced technology is needed to improve aircrew survivability and communications.		-	-	1.750

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C. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016	
FY 2016 Plans: Award developmental contract to begin non-recurring engineering and preliminary testing of current technologies.											
Title: Aircrew Laser Eye Protection (ALEP) Block III Description: Aircrew Laser Eye Protection Block (ALEP) III is an upgrade to day-variant helmet visors to protect aircrews from laser threats. Laser shielding technology was recently developed and fielded as spectacles in ALEP Block II. Application of the laser shielding technology is viable for day-use whereas a night variant requires further development.								-	0.320	1.020	
FY 2015 Plans: Prepare a Business Case Analysis (BCA) and an Analysis of Alternatives (AoA). Establish cost, schedule, and performance scope of project.											
FY 2016 Plans: Award development contract and begin Engineering Manufacturing & Development phase.											
Accomplishments/Planned Programs Subtotals								7.069	8.854	8.187	
								FY 2014	FY 2015		
Congressional Add: Ejection Seat Safety/Sustainability Improvement Program for Qualification of B-2 Seat Mod								-	6.000		
FY 2015 Plans: One of the FY 2014 congressional reports specifically provided funds for "Ejection seat safety/sustainability B-2 seat mod" using the phrases "only for" or "only to", or the item appears in one of the project level tables.											
Congressional Adds Subtotals								-	6.000		
D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPAF:BA04: Line Item # 842990: <i>Items Less Than \$5 Million</i>	4.973	7.035	7.121	-	7.121	7.234	7.380	7.529	-	Continuing	Continuing
Remarks											

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E. Acquisition Strategy The majority of efforts funded in this project employ a streamlined acquisition approach. Whenever practical, Government-Off-The-Shelf/Commercial-Off-The-Shelf (GOTS/COTS) items are tested and evaluated as candidates for solutions to user needs. This normally involves characterization, verification, and qualification testing to ensure GOTS/COTS equipment is properly certified and adapted for military purposes. However, acquisition strategies may be carried out at the project level for traditional Engineering, Manufacturing and Development (EMD), e.g., Integrated Aircrew Ensemble (IAE) and Aircrew Laser Eye Protection (ALEP) Block III.		
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 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity 3600 / 5						R-1 Program Element (Number/Name) PE 0604706F / Life Support Systems				Project (Number/Name) 65412A / Life Support Systems					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Aircrew Flight Equipment (AFE)	Various	Multiple Contractors : ,	-	0.997		0.825		0.975		-		0.975	Continuing	Continuing	TBD
Aircrew Safety Improvements & Analysis	Various	Multiple : TBD,	-	-		-		0.945	Mar 2016	-		0.945	Continuing	Continuing	-
Integrated Aircrew Ensemble (IAE)	C/FPIF	Tiax : Lexington, MA	-	4.042	Apr 2014	5.664	Apr 2015	1.334	Apr 2016	-		1.334	Continuing	Continuing	TBD
Aircrew Laser Eye Protection (ALEP) Block III	C/FPIF	TBD : TBD,	-	-		0.120	Jul 2015	1.020	Jul 2016	-		1.020	Continuing	Continuing	-
Personal Radio Communications (PRC)	C/FPIF	TBD : TBD,	-	-		-		1.000	Jun 2016	-		1.000	Continuing	Continuing	-
Advanced Concept Ejection Seat (ACES)	SS/FPIF	TBD : ,	-	-		5.000	Nov 2015	-		-		-	Continuing	Continuing	-
Subtotal			-	5.039		11.609		5.274		-		5.274	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Program Tests (IAE, ACES, CWAS, ABA, etc.)	Various	Various : Various,	-	0.950	Jul 2014	1.500	Jul 2015	1.045	Jul 2016	-		1.045	Continuing	Continuing	-
Subtotal			-	0.950		1.500		1.045		-		1.045	-	-	-

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Appropriation/Budget Activity 3600 / 5						R-1 Program Element (Number/Name) PE 0604706F / <i>Life Support Systems</i>				Project (Number/Name) 65412A / <i>Life Support Systems</i>					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Program Management Support	TBD	AFLCMC : Wright-Patterson AFB, OH	-	0.845		1.500		1.613		-		1.613	Continuing	Continuing	-
Travel	Various	Various : Various,	-	0.235		0.245		0.255		-		0.255	Continuing	Continuing	-
Subtotal			-	1.080		1.745		1.868		-		1.868	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	7.069		14.854		8.187		-		8.187	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force	Date: February 2015
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Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0604706F / <i>Life Support Systems</i>	Project (Number/Name) 65412A / <i>Life Support Systems</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Aircrew Laser Eye Protection (ALEP) Block III [Business Case Analysis and Analysis of Alternatives]																												
ALEP Block III [Engineering Manufacturing and Development]																												
Integrated Aircrew Ensemble (IAE) [Engineering and Manufacturing Development]																												
IAE [Developmental Test & Evaluation]																												
IAE [Milestone C]																												
IAE [Low Rate Initial Production]																												
IAE [Initial Operational Test & Evaluation]																												
IAE [Full Rate Production]																												
Personal Radio Communication (PRC) Engineering and Manufacturing Development																												
PRC Milestone C																												
Advanced Concept Ejection Seat (ACES) Qualification Testing																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Air Force			Date: February 2015
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0604706F / <i>Life Support Systems</i>	Project (Number/Name) 65412A / <i>Life Support Systems</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Aircrew Laser Eye Protection (ALEP) Block III [Business Case Analysis and Analysis of Alternatives]	4	2015	1	2016
ALEP Block III [Engineering Manufacturing and Development]	2	2016	1	2019
Integrated Aircrew Ensemble (IAE) [Engineering and Manufacturing Development]	1	2014	2	2015
IAE [Developmental Test & Evaluation]	3	2014	3	2015
IAE [Milestone C]	3	2015	3	2015
IAE [Low Rate Initial Production]	3	2015	2	2016
IAE [Initial Operational Test & Evaluation]	3	2015	4	2015
IAE [Full Rate Production]	3	2016	4	2018
Personal Radio Communication (PRC) Engineering and Manufacturing Development	3	2016	1	2019
PRC Milestone C	1	2019	1	2019
Advanced Concept Ejection Seat (ACES) Qualification Testing	1	2016	3	2017