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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force **Date:** March 2014

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604706F / <i>Life Support Systems</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	5.832	7.273	8.854	-	8.854	8.242	8.816	8.500	8.681	Continuing	Continuing
65412A: <i>Life Support Systems</i>	-	5.832	7.273	8.854	-	8.854	8.242	8.816	8.500	8.681	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

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, Engineering and Manufacturing Development (EMD) 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 2013</u>	<u>FY 2014</u>	<u>FY 2015 Base</u>	<u>FY 2015 OCO</u>	<u>FY 2015 Total</u>
Previous President's Budget	9.720	7.273	11.213	-	11.213
Current President's Budget	5.832	7.273	8.854	-	8.854
Total Adjustments	-3.888	-	-2.359	-	-2.359
• Congressional General Reductions	-0.009	-			
• Congressional Directed Reductions	-3.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.157	-			
• Other Adjustments	-0.722	-	-2.359	-	-2.359

Change Summary Explanation

FY13 Reduction of \$3M due to Congressional Directed Reduction for forward financing; -.722 for Sequestration.

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Reduction of \$2.359M in FY15 due to higher Air Force Priorities.				
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
<p>Title: Aircrew Flight Equipment (AFE)</p> <p>Description: Air Force Life Cycle Management Center's Aircrew Performance Branch is the single USAF focal point for Aircrew Flight Equipment (AFE) Safe-to-Fly (STF) testing and certification. In general, unplanned STF projects are an urgent response to real-time capabilities gaps identified by the warfighter which may be satisfied quickly by purchasing commercial-off-the-shelf (COTS) products. COTS products require a STF certification before use by the warfighter. Historically, approximately five urgent STF evaluations are made each year.</p> <p>FY 2013 Accomplishments: Completed STF testing and certification of: Airsave Survival Vest, Low Profile Parachute (LPP), Massif Cold Weather Ensemble, Aircrew Laser Eye Protection (ALEP) Block II, and compatibility of ALEP Block II with the Helmet Mounted Integrated Targeting system. Accomplished Steele Cooling Vest Follow-on STF planning and touch screen gloves STF planning.</p> <p>FY 2014 Plans: Perform STF testing and certification of COTS products.</p> <p>FY 2015 Plans: Perform STF testing and certification of COTS products.</p>		0.130	0.120	0.130
<p>Title: Cold Weather Aviation System (CWAS)</p> <p>Description: Cold Weather Aviation System (CWAS) is an Arctic weather aircrew ensemble program including garments, boots, and gloves. The ensemble employs a multi-layer approach protecting aircrews to -49 degrees Fahrenheit.</p> <p>FY 2013 Accomplishments: Updates made to the performance specifications followed by formal solicitation.</p> <p>FY 2014 Plans: Start integration testing of Government-Off-The-Shelf (GOTS) and/or Commercial-Off-The-Shelf (COTS) candidates.</p> <p>FY 2015 Plans: Publish a qualified product list.</p>		0.001	0.990	1.020
<p>Title: Integrated Aircrew Body Armor</p> <p>Description: 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 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,</p>		0.261	0.310	0.431

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
provide adequate soft/hard body armor coverage to the torso, demonstrate good overall use and maneuverability, and pass appropriate Safe-To-Fly (STF) tests. FY 2013 Accomplishments: Performed STF planning. Procured test assets. FY 2014 Plans: Conduct STF testing. Prepare test report for STF certification board. FY 2015 Plans: Brief and file STF certification; collaborate with US Army's Air Soldier body armor program to determine applicability for joint use with Air Force aircrews.				
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. FY 2013 Accomplishments: Conducted Critical Design Review (CDR) for ejection seat variant of IAE. Conducted Test Readiness Review (TRR) and initiated Design Verification Testing (DVT). FY 2014 Plans: Continue DVT and begin Low Rate Initial Production (LRIP) of the IAE system. FY 2015 Plans: Complete testing. Begin production and fielding of IAE system.		4.762	5.613	6.253
Title: Beacon Replacement Description: Beacon Replacement is an effort to replace approximately 15,000 beacons installed in ejection seats and back-style parachutes world-wide. Suitable Commercial-off-the-Shelf (COTS) replacements are available. This replacement will optionally add two-way 'line-of-sight' voice communications, though the need for voice requires additional development. Of note, this effort		0.455	0.120	-

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
was titled "Voice in Beacon" in previous Air Force budget submissions and has been renamed to allow for replacement beacons that do not include voice communications.				
FY 2013 Accomplishments: Completed market research for COTS alternatives.				
FY 2014 Plans: Establish cost, schedule, and performance scope of project. Determine COTS sources and begin qualification testing.				
FY 2015 Plans: N/A				
Title: Aircrew Laser Eye Protection (ALEP) Block III		-	0.120	1.020
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.				
FY 2013 Accomplishments: N/A				
FY 2014 Plans: Prepare a Business Case Analysis (BCA) and an Analysis of Alternatives (AoA). Establish cost, schedule, and performance scope of project.				
FY 2015 Plans: Award development contract and begin Engineering Manufacturing & Development phase.				
Title: Ballistic Aircrew Helmet Acquisition (BAHA) Urgent Operational Need		0.223	-	-
Description: This effort provides capability in support of an Air Forces Central Command (AFCENT) Urgent Operational Need (UON) for improved ballistic protection for aircrew members. The ballistic helmet will replace existing HGU-56/P helmets used for rotary aircrew. The design will factor impact protection, weight trade-offs and integration with sensors, visor-mounted displays and existing devices required for Combat Search and Rescue operations.				
FY 2013 Accomplishments: Complete test and evaluation; provide production recommendation to warfighter.				
FY 2014 Plans:				

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
N/A			
FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	5.832	7.273	8.854

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF:BA04: Line Item # 842990: <i>Items Less Than \$5 Million</i>	6.724	4.973	7.035	-	7.035	7.121	7.234	7.380	7.529	Continuing	Continuing

Remarks

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-4, RDT&E Schedule Profile: PB 2015 Air Force

Date: March 2014

Appropriation/Budget Activity
3600 / 5

R-1 Program Element (Number/Name)
PE 0604706F / Life Support Systems

Project (Number/Name)
65412A / Life Support Systems



U.S. AIR FORCE

Life Support Systems Schedule

